OBSTACLES TO DETERMINING THE FAIR VALUES OF FINANCIAL INSTRUMENTS IN MOZAMBIQUE

by

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Summary

The implementation of International Accounting Standard 32 *Financial Instruments: Disclosure and Presentation* (IAS 32), International Accounting Standard 39 *Financial Instruments: Recognition and Measurement* (IAS 39) and International Financial Reporting Standard 7 *Financial Instruments: Disclosures* (IFRS 7) by developing countries has been met with mixed reactions largely due to the extensive use of the fair value concept by the three accounting standards. The use of the fair value concept in developing countries has proved to be a significant challenge due to either a lack of formal capital market systems or very thinly traded capital markets. This study investigates the obstacles to determining fair values of equity share investments, government bonds and corporate bonds, treasury bills and loan advances in Mozambique.

The study was done through a combination of literature review and empirical research using a questionnaire. The trading statistics of the financial instruments on the Mozambique Stock Exchange and the prospectuses of bonds were used. The empirical research was carried out using a type of non-probability sampling technique called purposive sampling. A subcategory of purposive sampling called expert sampling was used to select the eventual sample which was composed of people with specialised knowledge on the capital market system in Mozambique. The results of the empirical research were analysed using pie charts to summarise the responses.

The research concluded that the Mozambique Stock Exchange is an inactive market for financial instruments characterised by thin trading in both equity shares and bonds. The estimation of fair values evidenced by observable market transactions is therefore impossible. The absence of credit rating agencies in Mozambique presents a significant challenge in assigning credit risk and pricing financial instruments such as bonds. The research also noted that significant volatility of the main economic indicators such as treasury bills interest rates and inflation made it difficult to determine fair values of financial instruments using financial modelling techniques. Due to the above obstacles to determining fair values of certain financial instruments in Mozambique, the best alternatives are to value these financial instruments at either cost or amortised cost.

Key terms: Financial Instrument, IAS 32, IAS 39, IFRS 7, fair value, equity, bonds, volatility, credit rating agency, yield curve, observable market transactions.

TABLE OF CONTENTS

CHAPTER 1

CHAPTER 2

CHAPTER 4

CHAPTER 5

CHAPTER 6

CHAPTER 1

INTRODUCTION AND PROBLEM STATEMENT

1.1   INTRODUCTION AND BACKGROUND

The implementation of International Accounting Standard 32 *Financial Instruments: Disclosure and Presentation* (IAS 32), International Accounting Standard 39 *Financial Instruments: Recognition and Measurement (*IAS 39) and International Financial Reporting Standard 7 *Financial Instruments: Disclosures* (IFRS 7) has been met with mixed reactions as will be seen in this dissertation. These standards stand out as some of the most hotly debated financial reporting standards produced by the International Accounting Standards Board (IASB) in recent times. The controversy has largely been due to the extensive use of fair value concept by the three accounting standards. The adoption of the concept of fair valuation by the IASB has had major implications to the traditional historical cost basis of accounting on which financial reporting has all along been based. The historical cost basis of accounting is now being seriously questioned for its relevance and adequacy in providing users of financial statements with useful up-to-date information when compared to the fair value basis of accounting. It is not surprising if the historical cost basis is to disappear from the accounting scene as an external financial reporting basis in the near future. For example, Chisman (2004:3) notes that "in many cases, historic cost is of no relevance for long-held freehold property and a current value is more appropriate". The Financial Instruments Joint Working Group of Standard Setters (JWG) (1999:6) asserts that "since fair values embody current information about current economic conditions and market expectations, they can be expected to provide a superior basis for prediction than can out of date cost figures".

In Europe, the European Union (EU) (EU business, 2004) partially adopted IAS 39 and excluded two "carve outs" provisions on the use of the full fair value option and on hedge accounting when it initially considered the adoption of all International Financial Reporting Standards (IFRS) statements in 2004. This prompted the IASB to revisit IAS 39 on the issues that the EU had raised resulting in the amendment which limited the designation financial instruments as at fair value through profit or loss to situations where doing so would result in more relevant information being presented because either:

(a) "it eliminates or significantly reduces a measurement or recognition inconsistency… that would otherwise arise from measuring assets or liabilities or recognising the gains and losses on them on different bases; or

(b) a group of financial assets, financial liabilities or both is managed and its performance is evaluated on a fair value basis, in accordance with a documented risk management or investment strategy, and information about the group is provided internally on that basis to party disclosures…" (IAS 39, IASB, 2006:para. 9).

Unlike the first world countries such as the United States of America (USA) and the United Kingdom which have active and advanced capital markets such as the New York Stock Exchange and the London Stock Exchange respectively, a majority of African countries and similar developing countries are characterised by either non-existent stock markets or very thinly traded stock markets. As a result African countries face different obstacles in implementing the three international accounting standards. The majority of these obstacles seem to emanate from the fact that the use of the fair value concept was researched in the developed economies with active markets for financial instruments.

1.2 PROBLEM STATEMENT AND SUB-PROBLEM AREAS

1.2.1 Problem statement

The main problem explored in this dissertation is to investigate the obstacles to determining the fair values of financial instruments in Mozambique. The obstacles will be investigated with reference to the IASB's IAS 32, IAS 39 and IFRS 7.

1.2.2 Sub-problem areas

The problem statement will be analysed with specific reference to the obstacles associated with obtaining fair values of the following types of financial instruments which are generally the most common financial instruments in Mozambique from the perspective of the investor:

1.2.2.1   Equity shares investments

The typical obstacles to be investigated include the issues associated with an inactive stock market, which is relatively new and has thin trading and few quoted companies. The research seeks to highlight the obstacles of arriving at fair values of equity instruments in such markets.

1.2.2.2   Government bonds, corporate bonds and treasury bills

In most developing economies, long-term government bonds, corporate bonds and treasury bills (TBs) are not traded on the stock exchange. Where they are traded, the level of activity on the formal market is very thin. This means that there is no active secondary market for these bonds and TBs. Yet in Mozambique, government bonds and corporate bonds with maturity periods of five to ten years can be found. As a result, fair values have to be arrived at by using financial valuation models and assumptions for future interest rates and cash flows. This dissertation will investigate the problem areas that present difficulties in determining fair values to be used for external financial reporting.

1.2.2.3   Loans advances

This section will discuss the main obstacles associated with loan advances made by banks to their clients. The characteristics of loan advances will be analysed to investigate if there are any fair value obstacles. IFRS 7 (IASB, 2006: para. 25) requires disclosures of fair values for each class of financial assets and financial liabilities.

1.3   HYPOTHESIS

The problem statement and sub-problem areas have been formulated into the following hypothesis which will be tested by the study:

It is difficult to determine reliable fair values of certain financial instruments in Mozambique.

1.4   RESEARCH STRUCTURE

The remainder of the dissertation will be organised as follows:

Chapter 2 of the dissertation will set the theoretical basis of the study by analysing the generally accepted requirements to measure and disclose financial instruments at fair value according to IAS 32, IAS 39 and IFRS 7. It will also consider literature reviews on the subject. In this chapter, an analysis of the definition of fair value as a concept is given and the definition is split into its component parts in accordance with the IASB's definition of fair value.

The various definitions of fair value from different literature reviews will be compared to highlight other variations and additions to this definition. This is important in that the definition of fair value is the foundation of the three standards, IAS 32, IAS 39 and IFRS 7. In theory, the interpretation of the definition seems fairly clear but in practice, it is not. This chapter will show the particular parts of the definition that are potentially controversial or unclear through a literature review of various articles on the subject.

The chapter will also discuss the issues surrounding the use of the concept of fair values in external financial reporting. There are many issues that have been raised for and against the fair value concept. This dissertation will make a critical analysis of some of the arguments against the fair valuation of financial instruments. It will also consider the arguments in favour of the fair valuation of financial instruments.

Chapter 3 will discuss the characteristics and obstacles to fair valuation of equity shares, government bonds, corporate bonds, TBs and bank loan advances in Mozambique. The major obstacles to be looked at are two fold. Firstly, those associated with marketability of the instruments in the secondary market. Secondly, where there are no secondary markets, valuation techniques have to be used in accordance with IAS 39 (IASB, 2006:para. 48A). The obstacles to using valuation techniques to model for fair values resulting from the characteristics of the financial instruments will be analysed. The chapter will also consider the work of credit rating agencies in developed economies and how their absence in most developing economies affects the fair valuation of financial instruments such as corporate bonds.

Chapter 4 will consider the classification issues surrounding financial instruments in Mozambique and discuss the financial statement impact of measuring financial instruments at fair value.

Chapter 5 will be an empirical research of the views and opinions of interested parties in Mozambique concerning the obstacles noted in chapter 3 and classification issues noted chapter 4. The empirical research will be in the form of a questionnaire.

Chapter 6 will analyse the responses from the questionnaires and compare the results of the questionnaires to the issues raised in chapters 2, 3 and 4. The chapter will highlight the practical issues from the point of view of the people currently affected by the three accounting statements and the problems they face and draw conclusions on the results of the questionnaires.

Chapter 7 will be the conclusion to the dissertation which will summarise the major obstacles noted in the earlier chapters and will discuss the alternatives to the measurement of fair values of financial instruments in order to overcome the obstacles identified in the prior chapters. The chapter will end with a brief discussion of areas for further research.

1.5   RESEARCH METHOD

The research method will consist mainly of a literature review of relevant articles and publications on the subject and an investigative study in the form of a questionnaire to relevant people on the difficulties they encounter in determining fair values for financial reporting. The literature review sources include the various accounting statements issued by the IASB, the FASB, and various articles published in accounting journals and official websites in response to IAS 32, IAS 39 and IFRS 7. It also includes the draft standards and comments of the Financial Instruments Joint Working Group of Standard Setters (JWG), a partnership of various national standard setters and the IASB established in 1997 with the objective of developing a comprehensive standard on accounting for financial instruments. Discussion papers on Mozambique's financial system will also be used, for example the World Bank Country Financial Accountability Assessment reports on Mozambique.

For TBs, government bonds and corporate bonds, a literature review of the prospectuses will be done to investigate their characteristics.

The Mozambique Stock Exchange (MSE) will be used to obtain data on trading information of various financial instruments that are quoted on the stock exchange.

1.6   IMPORTANCE OF THE STUDY

The three accounting standards IAS 32, IAS 39 and IFRS 7, are based on the concept of fair value. However, fair values are easier to obtain in developed economies where there are active and sophisticated financial markets with publicly quoted prices for financial instruments such as bonds and equity instruments. In developed markets such as the USA and the United Kingdom, financial markets awareness and participation is significant and active enough to provide a reasonable basis for fair value measures. However, in developing economies, the financial markets are either very thin due to lack of awareness and financial resources or non-existent for some financial instruments. In such cases, the IASB suggests the use of valuation models to obtain fair values.

The purpose of this research is to investigate and highlight the obstacles to obtaining reliable fair values that a typical developing economy faces, with Mozambique as an example of such an economy. The study will focus on a sample of the most common financial instruments currently found in Mozambique. The instruments chosen are not meant to be the whole list of financial instruments that can be found in the economy. They are a sample of the most commonly found financial instruments in the market.

The dissertation will provide alternatives to the valuation issues in light of the obstacles identified and will show the practical issues encountered when modelling for fair values and set the ball rolling for suggestions or study of valuation methods in such markets that will be acceptable for the purposes of objective financial reporting. This is important because there are many multinational companies that use IFRS that have subsidiaries in developing economies. These subsidiaries will have to make IFRS adjustments to their financial statements to conform to group accounting policies. Hence, the impact of the whole IFRS reporting framework is felt also in developing economies where the local reporting frameworks may not be IFRS based.

1.7   MATTERS GENERALLY CONSIDERED TO BE OUTSIDE THE SCOPE OF THIS DISSERTATION

This dissertation will not attempt to value financial instruments or provide valuation methods that may be applied to financial instruments in a non-active market. This is primarily because valuation of most financial instruments such as bonds, just like the valuation of post-employment benefits per International Accounting Standard 19 Employee Benefits, is a specialised topic that requires expert and specialised valuation knowledge. However, the issues and alternatives raised in the dissertation are meant to highlight practical obstacles and make suggestions to valuation experts to consider.

This dissertation is also not an attempt to exhaust all the types of financial instruments found in developing economies. Other financial instruments that have been left out of this discussion include derivatives, embedded derivatives and financial effects of hedges and forward exchange contracts.

1.8   LIST OF ABBREVIATIONS USED

The following abbreviations are used in this study:

AFS:	Available-for-sale financial assets
FAFVTPL:	Financial assets at fair value through profit or loss
FLFVTPL:	Financial liabilities at fair value through profit or loss
FASB:	Financial Accounting Standards Board
HTM:	Held-to-maturity investments
IAS:	International Accounting Standard
IASB:	International Accounting Standards Board
IFRS:	International Financial Reporting Standards
JSE:	Johannesburg Securities Exchange
LR:	Loans and receivables
MSE:	Mozambique Stock Exchange
Para:	paragraph
TBs:	Treasury Bills
USA:	United States of America

CHAPTER 2

LITERATURE REVIEW: THE FAIR VALUE CONCEPT AND ISSUES TO THE USE OF FAIR VALUES

2.1   INTRODUCTION

The term "fair value" is the cornerstone of the three accounting standards, IAS 32, IAS 39 and IFRS 7. It is the application of the fair value concept that has made these accounting standards a topic for debate in the countries that use International Financial Reporting Standards (IFRS) for financial reporting. The definition of the concept of "fair value" is unclear. As will be seen in this chapter, there is no universally accepted single definition of this term. Many commentators and academics have expressed views both for and against the use of the fair value concept in external financial reporting.

The aim of this chapter is to critically analyse the meaning of "fair value" according to the International Accounting Standards Board (IASB) and to compare the meaning to other various definitions of "fair value" from other accounting standard setting bodies such as the USA's Financial Accounting Standards Board (FASB) and other literature reviews discussing the same concept. The chapter also aims at highlighting and evaluating the issues against the three accounting standards and will also consider the arguments in favour of the fair value concept.

The chapter firstly considers the definition of a financial instrument and the different types together with the related accounting treatment as the IASB's IAS 32 and IAS 39. This will be followed by a discussion and analysis of the fair value concept focussing on the definition of fair value and its various parts. The chapter will then consider the issues that have been raised against the use of fair values and the arguments in favour of the use of the concept. A conclusion of the main points will close the chapter.

2.2 FINANCIAL INSTRUMENTS: DEFINITION AND TYPES OF FINANCIAL INSTRUMENTS

Before considering the fair value concept and the issues to the use of fair values for financial instruments, it is important to define the meaning of a financial instrument. The definitions of a financial instrument, financial asset, financial liability and an equity instruments are contained in IAS 32 (IASB, 2006:para. 11) which states:

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

A financial asset is any asset that is:

(a) cash

(b) an equity instrument of another entity

(c) a contractual right

> *(i)   to receive cash or another financial asset from another entity; or*
>
> *(ii)   to exchange financial assets or financial liabilities with another entity under conditions that are potentially favourable to the entity; or*

(d) a contract that will or may be settled in the entity's own equity instruments and is:

> *(i)   a non-derivative for which the entity is or may be obliged to receive a variable number of the entity's own equity instruments; or*
>
> *(ii)   a derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments. For this purpose, the entity's own equity instruments do not include instruments that are themselves contracts for the future receipt or delivery of the entity's own equity instruments.*

A financial liability is any liability that is:

(a) a contractual obligation:

> *(i)   to deliver cash or another financial asset to another entity; or*

> (ii) to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity; or

> (b) a contract that will or may be settled in the entity's own equity instruments and is:

> (i) a non-derivative for which the entity is or may be obliged to deliver a variable number of the entity's own equity instruments; or

> (ii) a derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments. For this purpose, the entity's own equity instruments do not include instruments that are themselves contracts for the future receipt or delivery of the entity's own equity instruments

> An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all its liabilities.

IAS 39 (IASB, 2006:para. 9) lists the four major categories of financial instruments as:

> (a) A financial asset or a financial liability at fair value through profit or loss;
> (b) Held-to-maturity investments;
> (c) Loans and receivables; and
> (d) Available-for-sale financial assets.

2.3   ACCOUNTING TREATMENT OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES

According to IAS 39 (IASB, 2006:para. 43), financial assets and financial liabilities are to be measured at fair value at initial recognition. Transaction costs that are directly attributable to the acquisition of the financial asset or liability are also included except for financial assets at fair value through profit or loss (FAFVTPL) and financial liabilities at fair value through profit or loss (FLFVTPL) where transaction costs are excluded.

For most financial instruments, this does not present any new challenges because at initial recognition, the transaction price normally equals fair value and this is consistent with the measurement criteria under the historical cost concept (IAS 39, IASB, 2006:para. AG64).

Subsequent to initial recognition, IAS 39 (IASB, 2006:paras. 46-47) requires FAFVTPL, FLFVTPL and available-for-sale financial assets (AFS) to be measured at fair value. As per IAS 39 (IASB, 2006:para. 55), gains and losses arising from re-measurement of FAFVTPL and FLFVTPL to fair value are recognised in the profit or loss and gains and losses on re-measurement of AFS are recognised directly in equity.

Held-to-maturity investments (HTM) and Loans and receivables (LR) are measured at amortised cost using the effective interest rate subsequent to initial recognition and hence are not re-measured at fair value (IAS 39, IASB, 2006:para. 46).

2.4 THE FAIR VALUE CONCEPT

2.4.1 Definitions of fair value

The IASB's official definition of fair value according to IAS 32 (IASB, 2006:para. 11) is:

> *Fair value is the amount at which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arms length transaction.*

However, despite such a short and concise definition, a clear interpretation of the definition remains elusive. What follows below is an analysis of the definitions drawn from other various literature reviews on the subject of fair value. The literature review is based on articles and accounting statements from other professional boards such as actuaries, real estate professionals and other countries' accounting boards such as the USA's Financial Accounting Standards Board (FASB), the United Kingdom's Accounting Standards Board (ASB) and the Canadian Accounting Standards Board, among others, discussing the fair value concept.

The FASB (2005) revised its definition of fair value in its exposure draft on fair value measurements to mean:

An estimate of the price that could be received for an asset or paid to settle a liability in a current transaction between market place participants that are both able and willing to transact in the reference market for the asset or liability.

This definition emphasises that the fair value of an item should be "in a current transaction" and that the transaction should be "between market place participants". The reference to a market is not apparent in the IASB's definition and will be considered further below.

The eventual FASB accounting statement on fair value measurements, SFAS 157 (FASB, 2006:para.14) defines fair value as:

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

This definition is not significantly different from the definition proposed in the FASB's exposure draft of fair value measurement. It adds an emphasis that fair value is considered for an asset being sold or liability being transferred. Ernst & Young (2005:4) concedes that "the term fair value implies active and liquid markets with knowledgeable and willing buyers and sellers and observable arm's length transactions".

Ernst & Young's interpretation of the definition of fair value not only requires a market but also requires the market to be "active and liquid". Notably, the phrase, "active and liquid", is not apparent in the IASB and FASB definitions.

Dullaway and Bice (2002), who are actuaries by profession, define fair value as:

An estimate of the price an enterprise would have received if it had sold an asset or paid if it had been relieved of a liability in an arms length exchange, motivated by normal business considerations, in a deep and liquid market.

This definition is almost similar to the IASB's definition but has an emphasis on the exchange transaction happening in a "deep and liquid market". The requirement for a "deep and liquid market" is similar to Ernst & Young's interpretation seen above.

Chisnall (2000:2) defines fair value as:

> *The fair value of a financial instrument represents the present value of its expected cash flows discounted at the current market rate of return.*

This definition acknowledges the use of discounted cash flow analysis or the present value technique to obtain a fair value and does not refer to market forces or to an exchange transaction as envisaged by the IASB and the FASB. The IASB and the FASB definitions do not explicitly mention calculated present values as fair values and are more in favour of market determined fair values than calculated fair values.

The Canadian Accounting Standards Board (2006:1) states that "the fair value objective should be to reflect the market's view…" and considers fair value to be:

> *The price that an asset or a liability would be exchanged for in an open, active and competitive market.*

This definition clearly emphasises the need for an "active and competitive market" which is consistent with the concept of a "deep and liquid" market noted above. A simple exchange on an arms' length basis without existence of an "active and competitive market" may not suit this definition of fair value since fair value should reflect the "market's view".

The United Kingdom's FRS 7 (ASB, 1994:6) defines fair value as:

> *The amount at which an asset or liability could be exchanged in an arm's length transaction between informed and willing parties, other than in a forced or liquidation sale*

This definition is very similar to the IASB definition above except that it explicitly excludes transactions in "a forced or liquidation sale". This emphasis is not apparent in the other

definitions already noted. Its importance can be seen when considering assets disposed of by auctioning assets in a company that is liquidating or in financial distress.

As can be seen from the various definitions above, the term fair value has no universally accepted single definition. It is still an ambiguous term despite the existence of many definitions seeking to clarify it. The active market requirement represents a major obstacle to determining fair values in developing economies where markets are either thinly traded or non-existent.

The next sections will analyse the various parts of the IASB's definition of fair value and relate them to other definitions and commentaries on the subject to clarify the actual and implied meaning of the concept.

2.4.2 Concepts of fair value

2.4.2.1 Fair value as an exit price

The Canadian Accounting Standards Board (IASB, 2005:para. 54) notes that "traditionally, measurement bases have been classified and evaluated in terms of whether they are entry or exit values". They define an entry value as "a measure of the amount for which an asset could be bought or a liability could be incurred" and an exit value as "a measure of the amount for which an asset could be realised or a liability could be settled". The market concept that has gained acceptance as will be shown in this section has been an "exit value" based fair value.

The IASB (as noted by the JWG (2000:iii)) concludes that a fair value is an exit price and ranks the exit price as the benchmark value for fair value purposes. This is the same view that is shared in the FASB's definition. SFAS 157 (FASB, 2006:para. 7) notes that "the objective of a fair value measurement is to determine the price that would be received to sell the asset or paid to transfer the liability at the measurement date (an exit price)".

The problem of an exit value representing fair value is the fact that an exit price assumes that the item is being sold at the date of determining fair values. This assumption is not

necessarily true for all assets because a lot of companies hold and use assets for their full useful lives. Also, the assignment of fair values by the market is sometimes based on incomplete information about an asset or liability. For example, the Statement of Financial Accounting Concepts No.7 (FASB, 2000:para. 32) notes that the entity may be holding information, trade secrets or processes that may allow it to realise cash flows that are different from market expectations or simply that management might intend different use of an asset than anticipated by the market. Hence values of assets when they are assumed to be sold may be different from values assuming use of the assets internally for their useful lives. A value determined by assuming use of an asset is referred to as a "value in use".

There are strong supporters of the use of the concept of "value in use" for fair value measurement and both the IASB and the FASB consider "value in use" to be an alternative to fair value if an exit price is not available. The next sub-section discusses the concept of "value in use" as it relates to fair values.

2.4.2.2   Fair value as "value in use"

The use of discounted cash flow analysis has its history in financial management where it has for long been used for capital investment decisions and capital rationing. The IASB first considered the application of discounted cash flow analysis for external financial reporting when it approved IAS 36 *Impairment of Assets* (IAS 36) in 1998.

Before the approval of IAS 36 in 1998, the IASB had restricted the concept of fair value to market based measures. The fair value concept had all along been used in IAS 16 *Property, Plant and Equipment* (IAS 16) as an allowed alternative treatment to the historical cost accounting of property, plant and equipment subsequent to initial recognition. Entities were permitted to carry property, plant and equipment at revalued amounts, "being its fair value at the date of revaluation less any subsequent accumulated depreciation and impairment losses" (IAS 16, IASB, 2004:para. 31). In cases where there is "no evidence of market value", depreciated replacement cost was the preferred alternative (IAS 16, IASB, 2004:para. 33) which again has its basis on the market. Discounted cash flow models were not specifically considered alternatives to fair values.

IAS 36 (IASB, 2006:para. 6) is the standard that introduced the concept of "value in use" which is the same as discounted cash flow value and defines value in use as:

The present value of the future cash flows expected to be derived from an asset or cash generating unit.

FRS 7 (ASB, 1994:7) defines "value in use" as:

The present value of the future cash flows obtainable as a result of an asset's continued use, including those resulting from ultimate disposal of an asset

The IASB and the ASB's definitions are very similar in that a value in use reflects "future cash flows" expected from the use of the asset.

For financial instruments, IAS 39 (IASB, 2006:para. AG74) specifically allows use of valuation techniques where there are no active markets. The IASB does not specifically prescribe any preference for particular models. Rather, it is very flexible and even allows use of "valuation technique commonly used by market participants to price the instrument and that technique has been demonstrated to provide reliable estimates…". It allows valuation techniques to "include recent arm's length transactions.., current fair value of another instrument that is substantially the same, discounted cash flow analysis…"

The FASB (2004:7) allows consideration of valuation techniques consistent with the market approach, income approach and cost approach. The market approach essentially makes use of observable prices and other information generated by actual transactions involving identical, similar or otherwise comparable assets or liabilities. The income approach uses valuation techniques to convert future amounts (for example cash flows or earnings) to a single present value (discounted). The income approach under FASB would equate to value in use. The market approach is very much related to the primary definition of fair value based on exit/entry concept because of their reference to the observable prices in a market.

Statement of Financial Accounting Concepts No.7 (FASB, 2000:para. 25) explicitly supports and recognises present value based fair values with its comment that "the only

objective of present value, when used in accounting measurements at initial recognition and fresh start measurements, is to estimate fair value".

As seen in section 2.4.1, Chisnall's (2000:2) definition also acknowledges the use of discounted cash flows for the determination of a fair value of a financial instrument.

Hence, the use of "value in use" has its supporters and is also well accepted by the IASB and the FASB as an alternative to a market based fair value. The definition of "value in use" is closely related to discounted cash flow analysis or present value based measurements. The next section discusses whether "value in use" is a credible substitute for an exit based fair value measure.

2.4.2.3 Is "value in use" a credible substitute for an exit based fair value?

An analysis of the definitions of value in use shows that value in use differs from exit based fair values in that value in use assumes that the asset is never sold but used for the purpose it was bought for until it loses all its intrinsic value. The question that comes with the use of present value based measures of fair value is whether the present value concept is a credible alternative to market-based exit prices. The Financial Instruments Joint Working Group (JWG)(1999:12) comments that it is well accepted that capital markets price financial instruments by discounting expected future cash flows using current rates of return available in the marketplace and consequently establishes a case for the use of present value based measurements as alternatives to market-based fair value measurements.

IAS 40 *Investment Property* (IAS 40) (IASB, 2006:para. 49) concedes that fair value and value in use are different as follows:

> *Fair value differs from value in use, as defined in IAS 36 Impairment of Assets. Fair value reflects the knowledge and estimates of knowledgeable, willing buyers and sellers. In contrast, value in use reflects the entity's estimates, including the effect of factors that may be specific to the entity and not applicable to entities in general.*

The difference between the two values is a result of the assumptions used to arrive at the fair value. An entity calculating fair values has access to privileged and private information which as noted earlier, general market participants may not have.

The Statement of Financial Accounting Concepts No.7 (FASB, 2000:para. 24) agrees with the IASB that value in use is entity specific and that the value in use measurement substitutes the entity's assumptions for those that the market place participants would make. For example, if an entity were estimating the fair value of a production machine, then assumptions about the expected machine utilisation capacity may be made by management and the assumptions may not necessarily be what the market expects.

Edge (2002:13) also categorically states that value in use is entity specific and is a non-market assessment and highlights that it is a subjective assessment whose reliability is questionable.

The Canadian Accounting Standards Board (2006:1) highlights that the fair value objective reflects "the market's view rather than an entity's or its management's preferences and expectations". The use of discounted cash flows in a value in use computation reflects management's expectations of the use of the asset which may be different from the market view. Consequently, it seems that the Canadian Accounting Standards Board does not consider value in use to be a credible substitute for a market based fair value.

In summary, a value in use is considered to be entity specific, meaning that it cannot be expected to be a uniform base because management assumptions and expectations of the use of an asset may differ between entities.

2.4.3   What is "fair?"

After discussing the definitions and concepts of fair value, this sub-section analyses the qualities that are needed for a value to be labelled "fair". Most of the definition of the phrase 'fair value" seems to be dedicated to the clarification of the word "fair". What follows is a discussion and analysis of the various other parts of the definition of fair value for the purposes of clarifying the meaning of "fair".

2.4.3.1 "Knowledgeable" parties

From the IASB's definition of fair value, parties to a fair value transaction have to be knowledgeable. The IASB's analysis of fair value in greater detail beyond the definition was first done in IAS 40 despite the fact that the term has been in use in earlier accounting statements such IAS 16 Property, Plant and Equipment. It is only in IAS 40 (IASB, 2004:para. 42), where the term "knowledgeable" was considered to mean that:

... both the willing buyer and the willing seller are reasonably informed about the nature and characteristics of the investment property, its actual and potential uses and the state of the market as of the balance sheet date.

Thus, a transaction where either both parties or one party is not knowledgeable cannot be classified as fair. The assigning of fair values by knowledgeable parties should yield similar or uniform results with other markets.

SFAS 157 (FASB, 2006:para. 10) defines knowledgeable parties as:

..having a reasonable understanding about the asset or liability and the transaction based on all available information, including information that might be obtained through due diligence efforts that are usual and customary.

Thus, the FASB requires a knowledgeable party to be a reasonably informed party about the asset or liability under consideration. SFAS 157 (FASB, 2006:para. C34) decided to have a presumption that an able and willing party is a "market place participant who would undertake efforts necessary to be knowledgeable about factors relevant to the asset or liability".

A discussion paper prepared by the staff of the Canadian Accounting Standards Board (IASB, 2005:para. 183) also proposes that the concept of a "knowledgeable" party be "presumed to mean that market participants have reasonable access to publicly available information" without precluding "the possibility that some participants may have additional private information that, had it been known to other participants, could have affected the price that they would have been willing to pay or receive".

In summary, fair values are dependent on "knowledgeable" market participants to assign realistic market values. The knowledgeable requirement means that the party to the exchange transaction is aware of the relevant factors used in pricing the item under consideration and is presumed to have reasonable public information on the asset or liability, giving allowance to the possibility that some market participants may have more information than others.

2.4.3.2   "Willing Parties"

IAS 40 (IASB, 2004:para. 43) states that a willing seller "is neither an over-eager nor a forced seller, prepared to sell at any price nor one prepared to hold out for any price not considered reasonable in current market conditions." It adds that "the willing seller is motivated to sell the investment at market terms for the best price obtainable".

The ASB's definition of fair value noted above in section 2.4.2 clearly includes the fact that the concept of fair value does not include values obtained in a forced or liquidation sale. For example, sales in a liquidation may involve auctioning where the best offer on the day gets the goods. This is obviously not the intention of the concept of a willing seller as per the IASB to have the best price offer of the day which may not be representative of prices of the same items in other similar markets.

In support of this, the staff of the Canadian Accounting Standards Board (IASB, 2005:para. 91) noted that the IASB's definition, even though not explicitly excluding "forced sale or liquidation values", presumes "that willing parties at arm's length can be under no compulsion to act other than in their own self interest and that an arm's length transaction between willing parties excludes a forced or liquidation sale".

From a buyer's perspective, IAS 40 (IASB, 2004:para. 42) clarifies that "a willing buyer is motivated, but not compelled to buy. This buyer is neither over eager nor determined to buy at any price" and they buy "in accordance with the realities of the current market and with current market expectations …". However, with an over eager or desperate buyer, above market prices or premium prices may arise and the IASB does not consider such values to form the basis of fair values. An over eager buyer may be "determined to buy at any price".

The FASB exposure Draft on Fair Value measurements (FASB, 2004:2) describes willing parties as being presumed to be "marketplace participants representing unrelated buyers and sellers…". It adds that the concept of fair value presumes the absence of compulsion (duress) and that it is not a forced liquidation transaction or distress sale. The definition includes an element of "unrelated" parties which will be considered further below.

SFAS 157 (FASB, 2006:para. C33) clarifies that the concept of willing parties refers to "buyers and sellers in the principal (or most advantageous) market for the asset or liability that are independent of the reporting entity (unrelated), knowledgeable and both able and willing to transact". Thus, the current FASB position is that the concept of willing parties does not include related parties.

 In summary, "willing parties" are presumed to be unrelated parties not acting under duress or compulsion and acting in their own self interest without the influence of another party. A willing party would exclude a party making a "distress sale" such as under a voluntary liquidation.

2.4.3.3   Market activity and fair value: The concept of a "deep and liquid" market

Having seen that the FASB and the IASB's best measure of a fair value is an exit price-based market value, the issue turns to the level of activity on the market that may be deemed to be sufficient enough to provide the required "fairness".

Dullaway and Bice's (2002) definition of fair value noted in section 2.4.1 explicitly emphasises that the transaction should be "in a deep and liquid market". The concept of "deep and liquid" market is an important factor in the determination of a fair value and needs to be investigated and analysed further.

The IASB's definition discussed in section 2.4.1 does not make reference to market activity as a test of a fair value. There does not seem to be a direct requirement for existence of an active market. Just any two "knowledgeable, willing parties" seems to be enough for the purposes of setting a fair value measure.

However, IAS 39 (IASB, 2006:para. AG74) says that "if a market for a financial instrument is not active, an entity establishes fair value by using a valuation technique" and here, the IASB categorically supports that the existence of an active market is a prerequisite for market related quotations. If there is a market but the market is not considered "active", that value may not be acceptable for fair valuation purposes.

The IASB's official definition of an active market can be obtained from IAS 36 (IASB, 2006:para. 6) where the term "active market" is defined as " a market in which all the following conditions exist:

    (a)   the items traded in that market are homogenous
    (b)   willing buyers and sellers can normally be found at any time; and
    (c)   prices are available to the public."

The FASB also shares the same view of an active market as the IASB. SFAS 157 (FASB, 2006:para. 24) defines an active market as:

> *An active market for the asset or liability is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an on-going basis.*

Hence, active markets are easy to access for information and prices for items are not temporarily quoted or quoted at such infrequent intervals that at times, prices are not available. This fits in well with the IASB's definition of an active market seen earlier on.

Ernst & Young (2005:4) emphasise that the term fair value implies active and liquid markets with knowledgeable and willing buyers and sellers and observable arm's length transactions. From this emphasis, a market for fair value measurements should be "active and liquid " and liquidity is a measure of how easy it is to find buyers and sellers at any particular time. This again fits in well with the definition of an active market by the IASB.

The Canadian Accounting Standards Board (IASB, 2005:para. 78) explored the concept of an active market and suggested the following definition:

A body of knowledgeable, willing, arm's length parties carrying out sufficiently extensive exchange transactions in an asset or liability to achieve its equilibrium price, reflecting the market expectation of earning or paying the market rate of return for commensurate risk on the measurement date.

This analysis of an active market requires a "sufficiently extensive exchange transaction" or trade in an asset or liability. In this definition, extensive trade is assumed to drive the prices closer to equilibrium or optimal price. This is similar to the FASB's definition noted above that requires an active market to have "sufficient frequency to provide pricing information on an ongoing basis".

Thus, an active market is a prerequisite for fair value measurements under both the IASB and the FASB. Market activity, as discussed in the various definitions above, is a measure of volume of units traded, the frequency of trading of the item and the ease of obtaining pricing information on an ongoing basis. The concept of an active market is thus synonymous with the concept of a "deep and liquid" market found in other definitions of fair value as noted above.

2.4.3.4   Arm's length

The phrase "arm's length", like other parts of the definition of fair value, was not defined by the IASB until the issue of IAS 40, despite its use in earlier IASB accounting standards. However, the term is important to the IASB's definition of fair value and a transaction between knowledgeable and willing parties still has to pass the arm's length test to qualify as a fair value transaction.

IAS 40 (IASB, 2004:para. 44) defines arm's length as:

An arm's length transaction is one between parties who do not have a particular or special relationship that makes prices of transactions uncharacteristic of the market. The transaction is presumed to be between unrelated parties, each acting independently.

Hence, the IASB makes it specifically clear that a transaction between related parties cannot be considered to be at "arm's length". Independence of action is the test for an arm's length transaction.

The discussion paper by the staff of the Canadian Accounting Standards Board (IASB, 2005:para. 110) proposes that the term "willing arm's length parties" "presumes that the abilities and motivations of participants are determined by competitive market conditions and their individual profit-maximization goals, risk preferences, and expectations". The paper adds that, "the market value objective presumes that participants are not under any compulsion to transact with other parties at disadvantaged prices as a result, for example, of being under the control of another party, or being subject to insolvency conditions". This view explicitly considers transactions between related parties to be non-arm's length and seeks to eliminate any form of influence of one party over another in making a fair value transaction.

The Basle Committee on Banking Supervision (1998:17) defines an arm's length transaction as "…a transaction entered into by unrelated parties each acting in its own best interest." The Basle Committee definition makes it clear that the transaction has to be between unrelated parties. Consequently, if parties are related, then it becomes more difficult to prove the "arm's length" principle. The difficulty may be due to the fact that it is not easy to prove whether related parties were acting in their own best interest or not. There is perceived lack of independent action.

Having noted that related parties to a transaction impede a fair value measure, the definition of related parties is now considered. The IASB's definition of related parties is fairly straight forward and is defined in IAS 24 *Related Party Disclosures* (IAS 24) (IASB, 2004:para. 9) as:

Parties are considered to be related if one party has the ability to control the other party or exercise significant influence over the other party in making financial and operating decisions.

The Australian Commission of Industry and Science (ACIS) (2000) has issued guidance on this concept. The guidelines state the circumstances under which parties may be treated as not being at arm's length and these are:

1   The parties to a relevant transaction may be treated as not being at arm's length if the parties are related or associated parties.

2   One party controls the other

3   The parties are involved in a cartel or other price fixing arrangement.

The view of ACIS is similar to the IASB view which considers related party transactions not suitable for "arm's length".

The existence of control of one entity over another is demonstrated through a parent-subsidiary company relationship or a parent-joint venture company relationship. The existence of significant influence is demonstrated through a parent-associate company relationship. Hence, where there is a subsidiary, joint venture or associate company relationship, arm's length is difficult to prove and consequently, it is difficult to prove fair value in a transaction entered into between any of the parties.

2.5   ISSUES TO THE USE OF FAIR VALUES

2.5.1   Problems of fair valuation of liabilities

IAS 39 (IASB, 2006:para. 47(a)) provides for the fair valuation of financial liabilities classified as FLFVTPL subsequent to initial recognition. As is noted in this section, this phenomenon has not been well received by a number of commentators for a variety of reasons which range from the illegality of the concept in some jurisdictions to the income statement and balance sheet effects which seem to go against what has all along been perceived to be the "norm".

At the first adoption of IAS 32 and IAS 39 in 2004, the EU rejected IAS 39's use of the fair value option which made it possible for any entity to elect to recognise any financial liability in the financial statements at fair value on the basis that the EU law prohibited fair valuation of liabilities and made it illegal. In particular, the EU notes that, "Article 42a of the Fourth Company Law Directive (Directive 78/660/EEC) does not allow full fair valuation of all liabilities; the main category of liabilities excluded from fair valuation is companies fair valuing their own debt" (EU business, 2004).

The effect of using an entity's credit rating in pricing financial instruments has been a cause of concern when applied to liabilities. While IAS 39 does not specifically discuss the effect of an entity's credit rating on the fair value of its liabilities, FASB (2004:15-16) emphasises that an entity's credit standing determines the interest rate it pays and the amount of funding it can raise in the market. The effect on the measurement would be reflected as an adjustment to the discount rate used to perform a present value based measure of fair value. IAS 39 (IASB, 2004:para. AG82) states that the inputs to a valuation technique include the effect on fair value of the credit risk of an entity which is normally reflected as an interest rate premium over the basic interest rate.

Under the historical costing view of amortising loans at original rate of interest, the effect of an entity's change in the entity's credit rating is not reflected in the financial statements. However, with the introduction of the fair valuation of liabilities, a decrease in an entity's credit standing will increase its rate of borrowing cost and consequently reduce its liability outstanding and the Basle Committee on Banking Supervision (2005:22) are of the opinion that gains recorded when an entity's credit worthiness deteriorates produce information that "undermines the quality of capital measures and performance ratios" and have recommended that national regulatory supervisors "exclude these gains and losses from regulatory capital". Heckman (2004) also agrees that such an approach "brightens an otherwise grim financial situation" through reducing an entity's liabilities in the balance sheet and thus improving its debt ratio. Chisnall (2000) agrees when he notes that the effect of such an approach is to record an accounting profit at a time when an institution is experiencing deterioration in its credit rating and this would present regulatory inconsistencies.

Even where there is no consideration of credit rating of the issuer of a debt security, market movements of interest rates still cause information noise. Joisce & Wright (2000:8) observe that a fall in the market interest rates leaves the borrower in a worse off position under fair valuation. They note that the liability will increase because of a lower discounting factor and from a cash flow point of view, their interest payments remain at historical cost (which is higher than market rates), that is, they do not get a cash flow relief from the fall (Joisce & Wright, 2000:8).

In summary, the fair valuation of liabilities produces conflicting information to the users of financial instruments and the IASB may need to issue further guidance on the issue.

2.5.2   Problems of the bid-offer spread in active markets

The IASB's definition of fair value, as was seen in section 2.4.1, is an exit price-based market value. Where active and liquid markets for financial instruments exist, the concept of the dealer spread has caused differences of opinion over its meaning and accounting treatment. In active markets, the prices of financial instruments are quoted on a bid and offer (asking) price basis and the difference between these two values is what is commonly known as the dealer spread.

The major issue is determining at which price to measure financial instruments where there is a bid and an offer price. The IASB is clear and specific when it comes to the measurement criteria in such cases. IAS 39 (IASB, 2006:para. AG72) requires that for an asset held or liability to be issued, the current bid price should be used and for an asset to be acquired or liability held, the asking price should be used. The same section also allows use of mid-rates only in assets and liabilities with a hedging relationship.

In its exposure draft on fair value measurements, the FASB shared the same opinion with the IASB. The FASB (2004: ii) proposed that for long positions (assets), bid prices should be used and for short positions (liabilities), asking prices should be used. In this instance, the FASB did not distinguish between assets already held (or liability to be issued) and assets to be acquired (or liability held) which according to the IASB, should be measured differently.

However, the FASB's final accounting statement on fair value based measurements, SFAS 157 (FASB, 2006:para. C91) takes a more flexible approach than the exposure draft. It states that in active markets, the use of bid prices for assets (long positions) and asked prices for liabilities (short positions) is permitted but not required. In this aspect, the FASB is taking a flexible approach unlike the IASB which only allows use of mid-rates in proven hedged positions.

Where assets are being bought, the purchase price normally includes capitalised transaction costs and where assets are being sold (exit), transaction costs are normally deducted to take into account the net receipts and this further increases the gap between the entry and exit prices. The Accounting Standards Executive Committee (AcSEC) (2000) of the American Institute of Certified Public Accountants illustrates the point with an

example of an entity purchasing a share with a bid price of $98 and an ask price of $100 with both transactions having transaction costs of $1 commission. The exit price would be $97 (after deducting transaction costs) and the entry price of $101 (after adding transaction costs). This would mean that the entity purchasing the share would recognise a $4 reduction (being $101 entry price written down to $97 exit price) in net assets immediately upon purchase. Whether this effect is fully acceptable was not clarified by the IASB and has attracted attention and controversy. While the effect of the dealer spread may be minimal for small deals, the effect on large sums of investment may be significant, for example, asset managers where financial assets make up a significant part of their balance sheets. The bid-offer spread in active markets is therefore still an area of concern and could be further researched by the IASB.

2.5.3   Volatility of earnings and equity and their effect on banks' regulatory capital

The aspect of volatility of earnings (and consequently equity) has been one of the major areas of financial institutions' concerns against the fair value model. Ernst & Young (2005) states that "for most companies, earnings and equity reported under IFRS will be different and more volatile than under their previous national accounting standards". Fargher (2001) (as cited in Bradbury, 2003) reported that "members of the Australian Markets Association have a greater concern about income volatility than they have about measuring fair value".

But the question is whether the fears of volatility of earnings and equity are supported by empirical evidence and if they are, do they have an effect on the regulatory capital ratios for banks. Various scholars have investigated this concept. Yonetani & Katsuo (1998), who based their research on the Japanese Banks, empirically proved that indeed bank earnings based on fair values of investment securities are significantly more volatile than earnings based on historical cost securities. This supported similar findings by Barth, Landsman and Wahlen (1995) (as cited in Yonetani & Katsuo, 1998) which in addition to concluding that fair value based earnings were more volatile than historical cost earnings, also noted that the share prices do not reflect this increased volatility.

The meaning of the volatility is also difficult to link to the business objectives of management. Chisnall (2000:2) raises the concern that the volatility of earnings generated by fair value accounting bears no relationship to the fundamentals of the business objective of transactions.

Beatty (1995) investigated if financial institutions reacted to the volatility effects of the fair valuation of financial instruments by altering their investment portfolio. The results were that, since the adoption of SFAS 115 (which requires that investment securities be valued using market interest rates and make an adjustment to equity for the fair value movements) there was a reduction in the proportion of securities classified as available for sale and the maturities on investment securities were shortened in an attempt to reduce the volatility of earnings and equity. Long-term investments were seen as being more exposed to volatile movements of the market. This was supported by Gesmondi (1998) who reported that after the introduction of SFAS 115, banks reacted by classifying most of their investments as held to maturity in an apparent attempt to avoid recognising fair value changes in the income statement and in equity because of the volatile effects of other classifications such as the available-for-sale classification and trading securities.

The effects and meaning of the fair value model on banks' regulatory capital adequacy ratios has also been investigated by various commentators. One of the major issues has been the question of aligning regulatory accounting requirements and definitions with generally accepted accounting principles. The US Governors of the Federal Reserve System initially made proposals in 1993 to include unrealised holding gains and losses on available-for-sale securities only to withdraw and reverse the decision in 1994, three quarters into the effective reporting date of SFAS 115 (Beaty, 1995). Barth, Landsman and Wahlen (1995) (as cited in Yonetani and Yuko, 1998) empirically showed that banks violate regulatory capital requirements more frequently under fair value than under historical cost. However, Yonetani & Katsuo (1998) argue that the volatility shown in capital adequacy ratios such as those that use the Basle capital adequacy ratios is caused by inconsistencies in the formula for calculating the capital adequacy ratios which use a mixed model of fair values for equity and historical costs for assets. For example, they note that unrealised gains on investment securities are included only in the calculation of capital (numerator) but not the assets (denominator). The research showed that regulatory capital ratios where both the capital and the assets include unrealised gains and losses of investment securities are less volatile. The Basle formula is thus considered biased

towards a volatile capital numerator where the denominator is more stable and hence produces predictably volatile results. However, according to the Bank of Intenational Settlements (2004), the Basle Committee on Banking Supervision issued guidance on treatment of unrealised holding gains which advised national supervisors to exclude from equity, the cumulative gains and losses of cash flow hedges and those arising from changes in an institution's own credit risk as a result applying the fair value option for the purposes of calculating Tier 1 and Tier 2 capital. From the results of that research, regulators may have to re-define their formulas to eliminate effects of inconsistencies that emanate from applying a mixed model in a way that predictably creates volatility in regulatory capital ratios.

However, supporters of the fair value model argue that volatility is part of the current business environment and should not be artificially hidden. For example, Barth (1997) highlights that "the increased equity volatility results from the economic effects of the firm's activities. The lower equity volatility based on current accounting model rules is artificially created by accountants ignoring the economic effects of derivatives". The JWG (1999:17) also supports the view and argues that the role of financial accounting is to report events and circumstances that have occurred as faithfully as possible which may include reporting volatile fair value movements. Brandon (2004) notes that some supporters of fair values are of the opinion that showing the volatility that exists rather than masking it with smoothed figures helps regain investor confidence. He further notes the historical costs are only accurate and relevant on the day that they are recorded.

2.5.4   Reliability

Ernst & Young (2005:7) is of the view that the IASB is placing too much emphasis on relevance and has "given insufficient consideration to the other attributes, in particular reliability and understandability" resulting in "accounting standards that require measurements that frequently lack reliability, without giving due attention to ensuring that users of financial statements understand that lack of reliability". This concern comes from the acceptability of estimate based calculated fair values in financial statements by most IASB accounting standards.

The use of present values largely depends on management estimates of the future expected cash flows and discount rates both of which are subjective. The reliability characteristic is a major challenge in developing countries where there are no active markets for financial instruments on which to base the values in the financial statements. The use of mathematical models by companies may compromise the reliability of fair values reported by management through deliberate manipulation of the models to suit target results. Notably, the central bank of Zambia (Bank of Zambia, 2006), through a circular to Zambian banks on the application of IAS 39, required that any valuation models that any Zambian bank wants to use should be "subject to Bank of Zambia approval."

The issue of reliability is of major concern in developing economies where assets and liabilities have no active and liquid market. IAS 39 (IASB, 2004:para. AG74) specifically requires that "if the market for a financial instrument is not active, an entity establishes fair value by using a valuation technique". Hence, the use of valuation techniques is considered the next best alternative to determine a fair value where market determined prices are non-existent as noted in chapter 2 section 2.4.2.2.

The IASB's Framework for the Preparation and Presentation of Financial Statements (IASB, 2006:para. 32) considers reliability of financial information to be an overriding requirement above relevance and emphasises that "information may be relevant but so unreliable in nature or representation that its recognition may be potentially misleading". The fact that reliability takes precedence over relevance is also supported by IAS 39 (IASB, 2004:para. AG81) which states that for equity investments, "if the range of reasonable fair value estimates cannot be reasonably assessed, an entity is precluded from measuring the instrument at fair value".

The FASB (2004:3) states that in the absence of a market value, fair value is to be determined using the income approach which uses valuation techniques to convert future amounts (for example, cash flows or earnings) to a single present amount (discounted). Those valuation techniques include present value techniques and option-pricing models, such as the Black-Scholes-Merton formula and lattice models of present value techniques. Like the IASB, the FASB does not prescribe particular valuation models for particular financial instruments but only suggests that present value based measures should be used where there are no active markets. It is such lack of prescribed mathematical models that has been a cause for concern to some commentators because some of the models may give unreliable results.

The European Central Bank (2004:9) notes that a fair value has a short shelf life; this means that fair values may not be useful beyond the date of issue. They point out that a fair value at a particular date may not be relied upon other dates. In active and liquid markets, fair value changes on a daily basis. One only needs to analyse the stock exchanges fluctuations to realise that past fair value movements may not necessarily provide so much insight into the future behaviour of such stocks.

Ernst & Young (2005:4) shares the view that calculated fair values are unreliable especially considering the fact that they do not represent the actual observable position as at the date of measurement and is of the opinion that "a calculated mark-to-model "fair value" is a prediction not an observation…It involves theorising about hypothetical markets that have hypothetical buyers and sellers….". Consequently, a calculated fair value represents "opinions of a partial group rather than the market".

The JWG (1999:17) recognises the reliability concerns caused by modelling for fair values with a comment: "We do, however, recognise concerns that estimates of fair values of financial instruments that are not traded in an active market may not be reliable, so that volatility may be a product of variability of estimation or of the parameters of the measurement model selected, rather than reflecting real market conditions".

IAS 39 (IASB, 2000:para. 69), an earlier version of IAS 39, specifically excluded from subsequent measurement at fair value "any financial asset that does not have a quoted market price in an active market and whose fair value cannot be reliably measured". But in IAS 39 (IASB, 2006:para. 46 (c)), this was amended to exclude from fair value only "equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured…." This mind shift of IASB is notable and the objective seems to be to limit cases where fair value would not be disclosed simply because it is difficult to determine. Hence, IAS 39 is in favour of coming up with a fair value of some sort even where there is no apparent observable market data. The fact that a fair value may not be reliable now does not seem to be an excuse for not disclosing the fair value of an item. This aspect has not been received so well by some commentators who have expressed the concern that the IASB is now taking relevance above reliability. For example, Ernst & Young (2005) as noted above.

However, the use of discounted estimated future cash flows in accounting is not new. The net present value approach is used in appraising investment projects for profitability and the level of confidence placed in the concept is a function of the accuracy and reliability of assumptions used in the model.

2.5.5 Relevance of fair values and the related unrealised gains and losses

The JWG (1999:6) asserts that fair value measurement of financial instruments has superior relevance over historical cost based figures in that it reflects the effects of current economic conditions, and changes in fair values reflect the effects of changes in conditions when they occur. In comparison, under a cost based system, the effects of current market conditions are only reflected when the financial instruments are realised and if the instrument is held over many years, then the cumulative effects are an accumulation of the effects of various periods. Moreover, because fair values embody current economic conditions, they provide superior predictive power for the future than written down cost based figures.

However, some stakeholders are yet to be convinced about the relevance of fair values and their financial statement effects. For example, Will (2002), a financial analyst, comments that all the major international credit rating agencies (Standard & Poor's, Moody's and Fitch Ratings) said that they focused on operating income which is adjusted for the effects of SFAS 133. This means that these credit rating agencies adjust accounting income to eliminate the fair value effects of SFAS 133. He further comments that analysts focus more on the economic value of a company and less on unrealised gains and losses and that the volatility in earnings and equity caused by SFAS 133 does not consistently reflect economic activity. This means that unrealised gains and losses are considered irrelevant by the major credit rating agencies.

Large (2004:5) also questions the economic relevance of fair value unrealised gains and losses especially where they are not immediately realisable and gives an example of bank loans where, because of the absence of a developed secondary market, the gains cannot be realised "up-front". In such cases, fair value information becomes ceremonial with no economic relevance.

However, Barth (1997) observes that the values of financial instruments including banks' investment securities, loans and derivatives are significant in explaining bank share prices and their research findings in the discussion paper suggested that fair value estimates are sufficiently relevant for investment decisions.

Chisnall (2000) notes that profits generated by fair valuation may not be relevant to investors in that they raise the expectation of a dividend distribution when in fact, they are actually based on theoretical economic values rather than actual cash flows forcing banks to adopt a new approach to liquidity. Also, losses, he argues, would impinge on the financial stability of the banks owing to the fact that they may also be theoretical with no direct cash flow impact yet not all investors may be complicated enough to know the difference. The argument is worth taking note of especially the relationship between fair value profits and distributable earnings in the form of dividends.

The concerns about relevance are important because financial statements have all along been based on the reliability principle. However, research by Barth, Beaver and Landsman (1996)(as cited in JWG, 1999:62) which was based on a study of USA's banks revealed that fair value estimates of loans, securities and long-term debt disclosed under SFAS 107 provided significant explanatory power for bank share prices beyond that provided by related book values. This in effect supports the JWG's assertion that fair values are relevant to users.

In support of the relevance theory, Cates (1997) (as cited in JWG, 1999:67) points out that banks are already managed on a mark-to-market basis but publish historical financial information thus thrusting support for the fact that mark-to-market values are more relevant for proactive decision making than historical figures.

While fair values and the related unrealised gains and losses do not represent actual cash flows at year end, the relevance of the fair values at any particular point in time cannot be underestimated especially in the modern financial markets where fair values of financial instruments can be very different from the historical cost values.

2.5.6 Fair value and performance measurement

The role of accounting is a hotly debated issue. To answer the question of the role of accounting in the modern economic environment is not as easy as reporting financial effects of transactions for shareholders. Financial reporting has become complex with the realisation that there are many stakeholders to a company that go beyond the traditional shareholder reporting view.

The IASB Framework (IASB, 2006:para. 9) identifies seven users of financial statements as: investors, employees, lenders, suppliers, customers, governments and the public in general. From an analysis of all these stakeholders, they are all arguably interested in the financial performance of the company because a well performing company benefits all these stakeholders positively. Therefore, one of the primary uses of accounting is to report the financial performance of the company.

The income statement represents a primary financial statement component which is used to measure management's performance. Consequently, one of the most important issues surrounding the fair value debate has been whether fair value gains and losses should be recognised in the income statement or in equity. This gives rise to the question of whether fair value gains and losses meet the definition of income and expenses respectively. The IASB Framework (IASB, 2001:para. 70) defines income and expenses as:

> *Income is increases in economic benefits during the accounting period in the form of inflows or enhancements of assets or decreases of liabilities that result in increases in equity, other than those relating to contributions from equity participants.*

> *Expenses are 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.*

From the definitions above, it is seen that income and expenses are defined from an equity perspective. This is to say that all increases in equity (other than by way of contributions from equity holders) qualify for recognition as income without consideration of whether the income is realised or not. Realisation is not a condition for recognition of an equity increase as income. IASB Framework (IASB, 2001:paras. 74-76) justifies

classifying unrealised gains as income because they represent increases in economic benefits and as such are no different from income.

Expenses on the other hand represent all decreases in equity (other than distributions to equity holders). This is to say that all decreases in equity (other than distributions to equity holders) qualify for recognition as expenses without consideration to whether the losses are realised or not. Realisation is again not a condition for recognition of an equity decrease as an expense. IASB Framework (2002:paras. 78-79) emphasizes that losses represent decreases in economic benefits and as such are no different in nature from other expenses. As a result, it seems that the recognition of fair value increases as income and fair value decreases as expenses in the income statement would be is in full compliance with IASB Framework.

With respect to gains on revaluation of non-financial assets, the IASB only allows investment property gains and losses to be recognised in the income statement as noted in IAS 40 (IASB, 2004:para. 35). In IAS 16 (IASB, 2004:paras. 39-41), revaluations gains to property, plant and equipment are recognized directly in equity without passing through the income statement except to the extent that the revaluation surplus reverses a previous revaluation decrease of the same asset that was recognised in profit or loss in which case it is recognised in the profit or loss. Revaluation losses are recognised through the income statement except to the extent that they reverse a previous revaluation surplus which was recognised directly in equity, in which case they are recognised through equity. IAS 38, *Intangible assets* (IASB, 2004:paras. 85-86) follows exactly the same accounting treatment as per IAS 16 for intangible assets in terms of recognition of revaluation surpluses and losses. The IASB's approach is indeed an application of the prudence concept to the reporting of income.

The United States of America has for long been debating the recognition and presentation of unrealised gains and losses on revaluation of assets. Several statements and opinions were issued discussing the recognition and presentation of unrealised revaluation gains and losses. Luecke & Meeting (1998:1) report that the American Institute of Certified Public Accountants (AICPA) Accounting principles Board supported the all-inclusive income concept as far back as 1966 with the issue of Opinion No.9, *Reporting the Results of Operations* in which all gains were recognised through the income statement. In 1997, FASB issued Statement of Financial Accounting No.130, *Reporting comprehensive*

Income (SFAS 130) which focused mainly on the reporting of comprehensive income. Statement of Financial Accounting Concepts No.6 (SFAC 6) (FASB, 1985:para. 70) provides FASB's official definition of comprehensive income as the change during a period in an enterprise's equity from transactions and other events and circumstances from non-owner sources, including all changes in equity except those resulting from investments by owners and distributions to owners. The reporting of comprehensive income under SFAS130 (FASB,1997:para. 13) emphasizes the need to separate comprehensive income into its components of net income and other comprehensive income and warns that a single focus on total comprehensive income is likely to result in a limited understanding of the operation activities of an entity. The JWG (1999:17) also accepts "the importance of developing appropriate performance statement reporting gains and losses by risk and function" to facilitate better transparency of performance income reporting. In September 2007, the IASB (IASB,2007) made a press release in which it advised that IAS 1, *Presentation of Financial Statements* had been revised to introduce, among other things, a statement of comprehensive income and noted that "this will enable readers to analyse changes in a company's equity resulting from transactions with owners in their capacity as owners…separately from non-owner changes". This change means that the IASB and FASB have harmonised the presentation of the income statement.

Chisnall (2000) comments that the reference to current market conditions for calculation of fair values and calculation of profit for banks is indeed calculating performance based on "opportunity cost". He also argues that the fair value concept sets financial institutions on a different accounting framework to other non-financial industrial sectors whose major business is not carried out through financial instruments and are using the historical cost basis which forms the basis of most of the IASB's accounting statements. This makes financial performance comparison across industries difficult to interpret. Even within the financial institution balance sheet, assets falling under the historical accounting framework such as fixed assets still comprise a significant part of the balance. Kovaleski (2003) argues that if the financial performance of a going concern is to be based solely on the value of a company as adjusted for external factors, then the value of management's ability to create value is undermined.

However, Morris and Sellon (1991) note that historical cost accounting by banks is open to abuse through selective realisation of assets. Under historical cost, banks can boost their earnings by realising those assets which have gained and record the assets showing

losses at historical cost. Under market value accounting, there is no distinction between realised and unrealised gains and consequently banks cannot take advantage of accounting loopholes.

The determinants of fair values in an economy range from entity level decision making to macro-economic factors from which few economic entities have control over and most entities play a responsive role and cannot affect the fair value movements in the market because individually, they may be insignificant to the total market. Both the IASB and FASB are of the opinion that the income statement should clearly show a split between company trading profits net income and other comprehensive income which comprises such items as unrealised gains and losses.

2.5.7   Accounting for derivatives

Developments in financial risk management and speculative activities in capital markets have given rise to sophisticated transactions which, though they benefit or obligate an economic entity, they can not qualify for recognition in the financial statements using the traditional historical cost basis of accounting. These complex transactions have given rise to such complex financial instruments as financial derivatives. While not qualifying for immediate recognition in the financial statements under the historical cost basis which requires an actual inflow/outflow of cash or a probable inflow/outflow of cash, derivatives such as interest rate swaps or foreign currency forwards have exposed entities to financial risks such as interest rate risk or foreign exchange risk respectively.

Ernst & Young (2005:1) notes that the limitations of historical cost accounting were exposed with the advent of these sophisticated financial instruments such as derivatives, which had little or no initial cost but exposed companies to substantial off balance sheet financial risk and the over reliance on the concept of realisation.

Jackson & Lodge (2000) also make a similar observation that the developments of derivatives and swaps raised significant questions over the continued appropriateness of the use of historical cost accounting especially the fact that initially, they need no or only a small exchange of value and they remained invisible on the balance sheet. In the same article, Jackson & Lodge (2000) point out that proponents of fair value argue that fair value

is the "best way to ensure that embedded losses are fully recognised in accounts" which would contrast with historical cost accounting where the embedded value is not reflected in the financial statements for external reporting.

Clearly, the historical cost basis of accounting alone cannot capture adequately the economic effects of all management actions and fair value accounting goes a significant way towards closing the gaps in the historical cost model.

2.5.8   Dealing with volatility of interest rates in financial markets

The volatility of the modern financial markets also seriously threatened the relevance of historical cost determined financial instruments (Day, 2000). Jackson and Perraudin (1999), in their study of bank credit risk, point out that fair value accounting for financial institutions would adjust for expected future losses as the credit quality deteriorates. From this we can infer that fair value accounting takes a proactive approach to valuation of financial instruments unlike historical accounting where the current market trends about the financial instruments in the balance sheet are ignored and deferred to the last day when the financial instrument is realised. Fair value accounting moves with the realisable value trends as they happen and allows investors to appreciate and anticipate the movements in the realisable value of their investments prior to maturity.

Morris and Sellon (1991) also argue that market value accounting anticipates both the eventual decline of the book value of an asset and the insolvency of the bank through its use of current market interest rates to value the bank's capital (equity). The authors highlight that, the significance of interest rate risk exposure to banks cannot be underestimated especially where a company has a mismatch of assets and liabilities, for example, some fixed interest rate assets may be funded by variable interest rate liabilities. They note that, in this case, the present value (market value) of the fixed rate assets will decrease with increasing market rates while the variable rate liabilities' market value will not change. As a result, bank equity will be reduced. This is because the assets with fixed interest rates until maturity will be discounted at a higher rate of interest thereby reducing their market value. This fact is virtually ignored under a historical cost system which will only record the actual losses as they occur (Morris and Sellon, 1991).

Consequently, fair value accounting adopts a proactive approach with respect to the realisable values of financial instruments than historical accounting.

2.5.9 Comparability

The need for comparability of information firstly within the same entity from time to time and secondly among companies in the same industry at a particular point in time is critical to investors. The IASB Framework (IASB, Framework, 2006:para. 39) emphasises that, as one of the qualitative characteristics of financial information, "users must also be able to compare the financial statements of an entity through time in order to identify trends in financial position and performance" and that "users must also be able to compare the financial statements of different entities in order to evaluate their relative financial position, performance and changes in financial position".

The Joint Working Group of Banking Associations on Financial Instruments (1999:19) notes that historical cost accounting does not facilitate the comparability characteristic because similar items recognised at different dates or for different purposes have different carrying values. Historical cost accounting would record assets such as buildings at acquisition cost less accumulated depreciation and accumulated impairment losses (IAS 16, IASB, 2006:para. 30). In this case, comparing two entities with assets bought at different dates would not be meaningful. Campbell (2004) agrees that the introduction of the fair value model has improved comparability of financial statement information which was difficult under historical cost accounting.

As discussed in section 2.4.1, the values disclosed in the balance sheet under fair values represent what an entity would obtain in an arm's length exchange transaction at the balance sheet date irrespective of when it was bought which would be comparable between entities with similar assets since all the values of assets will have been updated to one reference date. Consequently, comparability of financial instruments recognised in the balance sheet is enhanced by fair value accounting.

2.6   SUMMARY AND CONCLUSION

From the discussion above, a fair value is a market value. The IASB and the FASB's definitions noted above consider this value to be an exit price rather than an entry price where the exit price assumes that the asset is being sold or liability being transferred or settled.

A value would constitute a fair value if it is derived from trade in an active or deep and liquid market where prices are easily and regularly available to the public on an on-going basis. If the market is a thin market, such as the markets of developing economies, then such values are not considered to be fair values. But the IASB does not consider this in its definition of fair value.

Fair value is also considered in terms of participants to the transaction who should be knowledgeable. Knowledgeable parties would include a market place participant who would take reasonable efforts to find out about the factors affecting the pricing of the product and will in most cases be aware of alternative markets for the same product for comparison and thus eliminate unjustified overpricing in one market over others.

The concept of a willing party in an arm's length transaction is also central to the definition of a fair value. Parties to a transaction are not considered to be willing parties if they are related, for example, a holding company and its subsidiary. A transaction where one of the parties is acting under the control or significant influence of another cannot give rise to a fair value since they are not considered to be at arm's length.

The concept of "value in use" uses discounted cash-flows to arrive at a fair value of any an asset. The analysis of the "value in use" concept showed that it is not a credible substitute of a fair value. However, both the IASB and the FASB consider "value in use" to be a reasonable alternative for fair values where active market do not exist.

The chapter also considered the issues to the application of the fair value concept. The fair valuation of liabilities has not been received well by some commentators because liabilities would decrease in value when a company's credit rating deteriorates and would increase in value when a company's credit rating improves. The fair valuation of liabilities is legally prohibited in some jurisdictions e.g. in the European Union.

Active markets trade financial instruments on a bid and offer basis. The IASB requires liabilities to be measured using the offer price and assets using the bid rates. This may create "fictitious" differentials between assets and liabilities. The IASB has not clarified its position on this.

The effect of volatile earnings on equity and banks' regulatory capital has also been a topic of debate with some arguing that the volatile effects of fair values should not be included when considering banks' regulatory capital because banks would violate capital adequacy more regularly. However, some submit that volatility is part of the current business environment and consequently should be included in capital adequacy ratios.

The reliability of fair values especially in non-active markets has been a concern since entities will use mathematical models to value financial instruments thereby introducing an element of subjectivity in the fair value measure.

Some commentators have expressed the concern that management's performance should not be measured solely on the value of a company as adjusted for external factors for which management may have no control. However, others note that historical cost accounting by banks is open to abuse by management through selective realisation of assets that have gained. The FASB and IASB now require a statement of comprehensive income which shows a split between net income and other comprehensive income which includes unrealised gains and losses.

The historical cost accounting concept began to be questioned for its inability to capture the financial effects of modern financial transactions such as derivates where the entity becomes exposed to significant financial risks. The fair value concept is favoured to capture such transaction in the financial statements more timely than under historical cost accounting.

The volatility of the modern capital markets led to some finance professionals questioning the continued relevance of historical cost based figures in the financial statements. This again led to the increased preference for the fair value concept for financial instruments because current fair values would capture up-to-date values of financial instruments at each reporting date.

Fair value accounting increased the comparability of financial statements among entities because all the financial figures are updated to one reporting date unlike under historical cost where it became increasingly difficult to compare different entities financial positions because the acquisition date values were not updated to the current market values.

Having discussed the concept of a fair value, the arguments against and in favour of its use, the next chapter considers the practical obstacles to the fair valuation of financial instruments in Mozambique.

CHAPTER 3

OBSTACLES TO THE FAIR VALUATION OF FINANCIAL INSTRUMENTS IN MOZAMBIQUE

3.1 INTRODUCTION

Mozambique is a typical developing country which is characterised by a relatively young and inactive capital market system. The Mozambique Stock Exchange (MSE) was established in 1999 and up to 2006 had only one company with publicly traded shares. Developing countries are faced with either thin trading in quoted financial instruments such as shares and bonds or non-existent formal stock markets for such financial instruments. The secondary market for unquoted bonds and treasury bills (TBs) is also very thin and underdeveloped.

The aim of this chapter is to discuss the specific obstacles to the fair valuation of financial instruments in Mozambique. The chapter discusses equity share investments, government bonds and corporate bonds, TBs and loan advances. The obstacles are discussed with reference to the actual characteristics of certain types of financial instruments in Mozambique.

The chapter begins with an overview of the extent of formalised capital markets in Africa. It will then consider the specific obstacles to the fair valuation of equity share investments focussing on the quoted equity shares of Cervejas De Moçambique (CDM). This will be followed by a discussion of the specific obstacles to the fair valuation of government and corporate bonds. The main obstacles discussed include those related to an inactive market for bonds, absence of credit rating agencies in Mozambique to facilitate construction of reliable yield curves and the obstacles relating to the main economic indices used in Mozambique to index bonds interest rates. The obstacles to the fair valuation of Mozambican TBs will also be considered, more specifically the high volatility in the market rates of TBs and the absence of an active secondary market. Obstacles to the fair valuation of loan advances will finally be considered and a conclusion closes the chapter.

3.2 OVERVIEW – THE EXTENT OF FORMALISED CAPITAL MARKETS IN AFRICA

In Africa, a majority of the countries do not have publicly traded stock exchanges. Figure 3.1 shows the African countries that have formal stock exchange markets and the related statistics of quoted companies and quoted bonds quoted on the market.

A scrutiny of the table shows that developing countries either do not have public stock exchanges for equity shares or where there are public stock exchanges, they have few quoted companies. In Africa, out of a total of 53 countries, only 16 have formal stock exchange markets. South Africa's Johannesburg Securities Exchange (JSE) has not been included in Figure 3.1 because its statistics would distort the statistics of the rest of Africa. This is because the JSE alone has over 40% of the total number of listed entities in the whole of Africa combined. The JSE has a total of 472 listed entities on its own and the other 15 countries have 708 quoted companies. This represents 30% of the total number of countries on the continent with formal capital market systems. The other 70% have no formal stock exchanges and hence all economic activities in these countries is conducted through private equity where information on the company's activities is not easily accessible to the public. The average number of stock exchanges per country for the rest of Africa (excluding South Africa) is 47, which is too low when compared to the JSE's 472 companies.

An analysis of the year of establishment shows that the majority of the stock exchanges are very young having started in the 1990s. They are still in the process of development. Magnusson & Wydick (undated:6) assert that African markets have a history of neglect by international investors, are frequently hard to penetrate, located in war-torn regions or in countries subject to sanctions and hence most of them are thinly traded. The same report notes that only three African stock exchanges of Nigeria, South Africa and Zimbabwe are not considered "frontier" markets while the others are considered to be subject to manipulation by insiders at the expense of other investors with no access to private information.

Figure 3.1: African countries stock exchanges

Country	Name of Stock exchange	Number of companies listed on the stock exchange	Number of companies with quoted bonds	Number of quoted bonds	Year of estabilishment of stock exchange
Ivory Coast	Abidjan Stock Exchange	39	2	20	1998
Botswana	Botswana Stock Exchange	23	7	17	1989
Egypt	Cairo Stock Exchange	96	0	0	1903
Morocco	Casablanca Stock Exchange	55	0	0	1929
Tanzania	Dar-es-Salaam Stock Exchange	4	2	3	1998
Ghana	Ghana Stock Exchange	22	1	4	1990
Uganda	Uganda Securities Exchange Ltd	8	15	15	1997
Zambia	Lusaka Stock Exchange	16	0	0	1994
Malawi	Malawi Stock Exchange	9	0	0	1994
Mozambique	Mozambique Stock Exchange	1	9	9	1999
Namibia	Namibia Stock Exchange	32	6	10	1992
Nigeria	Nigerian Stock Exchange	283	ni	ni	1960
Mauritius	Stock Exchange of Mauritius	39	0	0	1988
Swaziland	Swaziland Stock Exchange	6	2	2	1990
Zimbabwe	Zimbabwe Stock Exchange	75	0	0	1946
Total		708	44	80	

Source: related stock exchanges web sites (see reference list)

ni – no information

This analysis highlights the extent of the obstacles to the fair valuation principle in Africa and the obstacles encountered in Mozambique may be similar to the obstacles that will be found in a significant number of other African countries.

3.3 OBSTACLES TO THE FAIR VALUATION OF EQUITY INVESTMENTS

3.3.1 Inactivity of the Mozambican Stock Exchange

The Mozambique Stock Exchange (MSE) is still in its early stages of development having been officially launched in 1999. As at the end of 2006, there was only one listed company, CDM. This company first listed on the MSE in 2001. The assessment of whether the MSE is an active market for equity shares can thus be made with reference to CDM shares only since this is the only entity quoted on the MSE.

The following analysis of the shareholding structure of CDM was made based on the annual reports of CDM for the financial years of 2001 to 2005. As at the end of 2005, the total shares of CDM in issue were 112 089 014 ordinary shares (CDM, 2005). The major shareholder is SAB Miller, a South African beer manufacturing multi-national company holding 79% of the issued share capital. 9% of the shares are held by an Employee Shares Trust (EST) on behalf of the employees of CDM. 5% of the shares are held by a private company, SPI SARL. The government of Mozambique (GoM) holds a 2% stake and another private company, Mozambique Investimentos (MI), holds 1%. Hence, in total, 96% of the shares are held by five entities. The remainder of 4% is held by various individuals and it is from this 4% where all the trade in CDM shares has been occurring. This is shown by the fact that there has been no significant change in the shareholding percentages of the shareholders since inception (refer to Figure 3.2 below) (CDM annual reports (2001-2005))

The research sought to analyse the change in the shareholdings of the shareholders from the time the company was floated on the stock exchange in 2001 to 2005 to find out if the major shareholders have been buying and selling their shares at the stock exchange. The results are as presented in Figure 3.2.

Figure 3.2: Shareholding structure of CDM by number of shares (2001 to 2005)

Number of shares held by entity						
Year	**SAB Miller 000**	**GoM 000**	**SPI 000**	**MI 000**	**EST 000**	**Others 000**	**Total 000**
2001	156,260	4,000	10,700	0	20,000	9,040	**200,000**
2002	156,260	4,000	10,700	0	20,000	9,040	**200,000**
2003	177,489	4,000	10,700	2,949	20,000	9,040	**224,178**
2004	177,505	4,000	10,700	2,949	19,992	9,032	**224,178**
2005	177,505	4,000	10,700	2,949	19,992	9,032	**224,178**

Shareholding %						
Year	**SAB Miller**	**GoM**	**SPI**	**MI**	**EST**	**Others**	**Total**
2001	78%	2%	5%	0%	10%	5%	**100%**
2002	78%	2%	5%	0%	10%	5%	**100%**
2003	79%	2%	5%	1%	9%	4%	**100%**
2004	79%	2%	5%	1%	9%	4%	**100%**
2005	79%	2%	5%	1%	9%	4%	**100%**

Source: CDM annual reports (2001-2005)

The major shareholder, SAB Miller has not sold any of the shares it holds. It has kept a largely constant shareholding since the company was listed in 2001. SAB Miller has kept a shareholding of 78% which rose to 79% in 2003 when new shares were issued to acquire a subsidiary company Laurentina SARL (CDM, 2003). The GoM and SPI have also maintained their shareholdings of 2% and 5% respectively since the listing of the company on the MSE in 2001. The EST shareholding was 10% at inception in 2001 and decreased by 1% to 9% in 2003 at the same time when MI acquired its 1% shareholding which suggests that the 1% acquired by MI may have been sold by the EST to that entity. Other than these two changes which are insignificant movements, both MI and EST kept their shareholding constant at 1% and 9% respectively since 2003. This means that currently, investors holding 96 % of the shares are not trading them actively on the stock exchange. The shares have not been released for trade. Consequently, about 4% of the shares are the only shares available on the market for trading.

The level of activity of the CDM shares with reference to number of shares in circulation shows that the company is thinly traded. An analysis of the trading of the shares between 2003 and 2005 (Banco de Moçambique, 2006) shows that the maximum number of shares ever transacted was 66 600 shares, which happened on 16th May 2003. This represents

0.06% of the total shares in issue. The reason for such a thin trading in the shares is partly due to the shareholding structure of the company in which a significant majority of the shares are held by very few entities as is shown in Figure 3.2. In other words, the shares are not widely held to facilitate trading.

Based on the analysis above, trade in CDM shares is very thin and cannot be considered to be active and liquid. Consequently, the MSE cannot be considered to be an active market for equity investments. This presents significant challenges to the determination of fair values for equity investments in Mozambique because entities have to use mathematical techniques as substitutes to market determined fair values. The next section will consider the alternatives to obtaining fair values in the absence of an active market.

3.3.2   Obstacles to alternative methods of fair valuation of equity instruments

In IAS 39 (IASB, 2006:para. AG74), the IASB allows the use of "a valuation technique" if the market of a financial instrument is not active and liquid. This section will consider some of the alternative valuation models and evaluate the obstacles to using such models in the Mozambican economy.

Correia, Flynn, Uliana & Wormald (2003: 6-12) note that the main approaches to valuation of equity are relative valuation models, dividends based models and free cash flow models. Dividends based models and cash flow based models use the present value concept.

This section will consider the use of the relative valuation approach and the present value based approaches. The use of the present value based approach, as was shown in chapter 2 section 2.4.2.2, is preferred by both the IASB and the FASB in the absence of an active market. IAS 39 (IASB, 2006:para. AG82e) recommends that "present value based techniques may be used to estimate the current market price of equity instruments for which there are no observable prices".

The models evaluated in this section will be analysed for their application to the CDM financial information, principally because it is the only entity quoted on the MSE. Being a

public company, its financial information is publicly available and is not protected from public analysis. This is in contrast to private companies where financial information is not available for public use and is difficult to obtain.

3.3.2.1   The relative valuation approach and the obstacles to its use

Relative valuations are market-based measures relying on identifying comparable companies on the quoted public stock exchange market and adjusting the entity being valued for items that are different from the related quoted company (Correia et al, 2003:6-20). The application of the relative valuation approach is impeded by the fact that its use heavily relies on the presence of an active public stock exchange for comparable companies. In Mozambique, the use of such comparisons faces the obstacle that there is only one company quoted on the stock exchange. This means that the approach cannot be used since a majority of the entities will not have a quoted comparative company.

3.3.2.2   The dividend-based models and the obstacles to their use

Gitman (2000:302) states that "the value of a share of common stock is equal to the present value of all future dividends it is expected to provide over an infinite time horizon''. In order to simplify the valuation process within the existing limitations, two major dividend-based models have evolved, the constant growth model, popularly known as the Gordon growth model and the zero growth model (Correia et al, 2003:6-12) which made simplified assumptions about dividends growth. The constant growth model assumes that the rate of growth of dividend pay-outs is constant in every successive year for an infinite period. The zero growth model assumes that the actual dividend payments stay the same for the infinite life of the entity. The dividends are discounted at the entity's cost of equity.

However, the reliability of the dividend models is compromised by the fact that most companies do not pay dividends according to some predetermined and predictable pattern. For instance, a company may not adopt a constant dividend growth model because constant earnings growth are not guaranteed and the assumptions are "unrealistic". The application of this model to CDM will now be considered.

Figures 3.3 and 3.4 analyse the movement of earnings and dividends of CDM over a period of six years from 2001 when the company was listed to 2006. From Figures 3.3 and 3.4, it is difficult to establish a particular pattern on the movement of earnings and dividend

Figure 3.3: CDM earnings and dividends movements

Year	Earnings MT'000	% increase (decrease)	Dividends MT'000	% increase (decrease)	Dividend payout %
2001	142,750,884		107,473,000		75%
2002	183,105,562	28%	137,811,000	28%	75%
2003	119,234,743	-35%	113,273,323	-18%	95%
2004	77,252,719	-35%	54,076,905	-52%	70%
2005	347,215,780	349%	243,051,046	349%	70%
2006	439,501,655	27%	307,651,159	27%	70%

Source: CDM annual reports (2001-2006)

Figure 3.4: Graph of earnings and dividends of CDM (2001-2006)
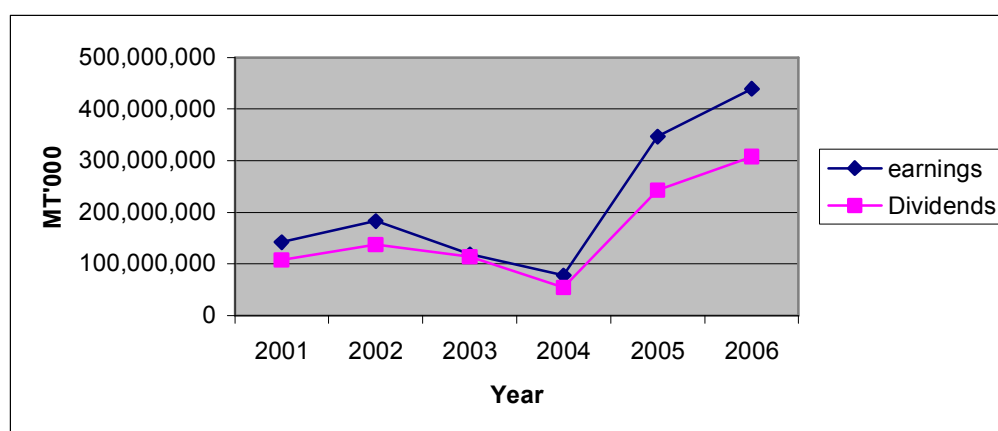
Source: CDM annual reports (2001-2006)

A rise in earnings between 2001and 2002 of 28% is followed by two successive significant decreases in the 2002-2003 and the 2003-2004 financial years of 35% in each year. For the same years, dividends initially rose by 28% and then decreased by 18% and 52% respectively. From 2004 to 2005, earnings grew by a very huge percentage of 349% with dividends increasing by the same percentage owing to the same dividend payout ratio of 70% applied to both years. The year to March 2006 however shows a slower rate of growth in earnings of 27% when compared to the year to 2005.

From the above analysis, it can be seen that the pattern of earnings movement is not predictable. Some growth percentages of 349% and decrease percentages of 52% are not sustainable in the long run. The dividend pay-out ratio is reasonably estimated to be constant at around 70%. However, the dividend policy on its own has little information content for use in present value analysis because the actual dividends paid out are affected by the magnitude of earnings. In a company with a constant dividend payout ratio, dividends paid move in direct proportion with the earnings. In other words, dividends are not an independent variable. This relationship is shown in the Figure 3.4. Consequently, the obstacles associated with prediction of earnings also manifest themselves in dividends estimation.

The high volatility of earnings and dividends in developing countries such as Mozambique make it difficult to obtain reliable estimates of fair values using mathematical models such as the dividend-based models. This is primarily because it is difficult to reliably estimate the future movements in dividends given the wide range of variability of earnings and dividend payouts.

3.3.2.3   The free-cash-flow based model and the obstacles to its use

The use of free cash flows for valuation uses the concept of the present value of expected free cash flows to infinity as the basis for the value of equity. According to Correia et al (2003:6-17), the "free cash flow to equity is the amount of cash generated by the company which is available to be withdrawn by shareholders" and it is obtained after adjusting for non-cash flow items such as depreciation , future capital investments, changes in working capital and changes in debt financing". The growth of the earnings assumptions are made in the same manner as noted in the dividend-based model where zero growth, constant growth or the mixed growth model combining zero growth and constant growth is used.

Because of its similarity to the dividend-based model with respect to the growth assumptions, it suffers from the same obstacles with respect to the practicability of the growth assumptions as noted above. An analysis of the growth of free cash flows of CDM will be considered.

The free cash flows of CDM from 2001 to 2006 do not show a predictable trend for use as a basis for estimating future free cash flow growth in a present value analysis (refer to Figures 3. 5(a) and (b)). Between 2001 and 2002, the free cash flows fell by 140% and between 2002 and 2003, again fell by 540%. However, between 2003 and 2004, the free cash flows rose by 162%. This was followed by a 193% rise between 2004 and 2005. The year between 2005 and 2006 however recorded a fall of 93%.

Figure 3.5(a) : Annual free cash flow movements

Annual free cash flow movements		
Year	MT'000	% change
2001	57,462,372	
2002	-22,784,737	-140%
2003	-145,728,998	-540%
2004	90,095,244	162%
2005	263,888,811	193%
2006	19,699,103	-93%

Source: CDM annual reports (2001-2006)

Figure 3.5(b): Graph of annual free cash flow movements
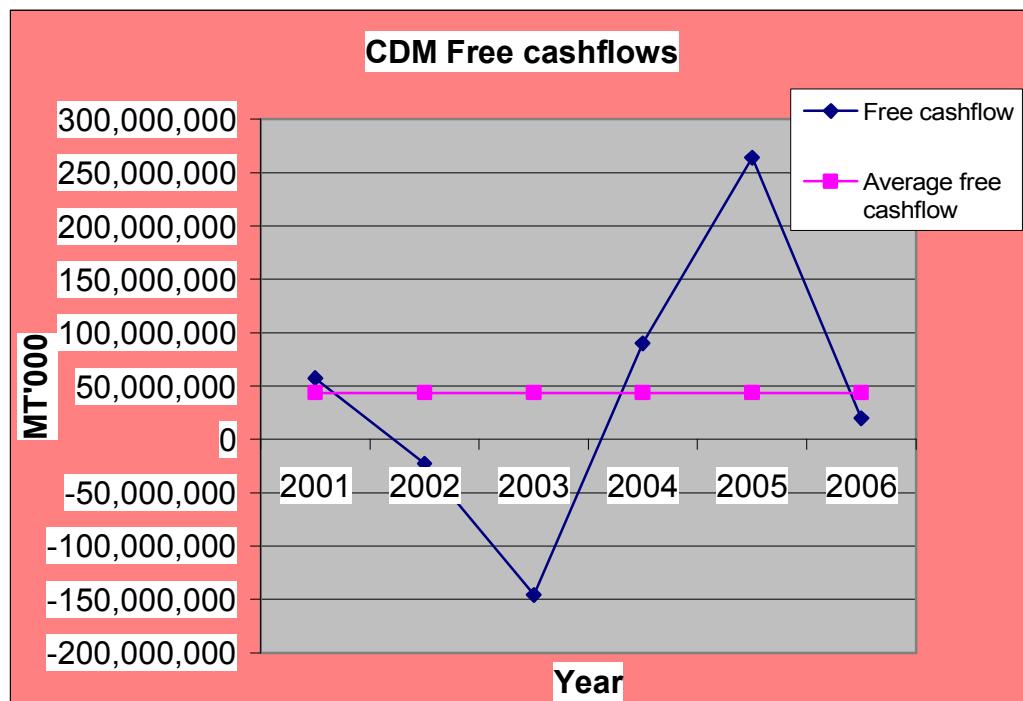
Source: CDM annual reports (2001-2006)

The movement of the free cash flows is thus haphazard and does not follow any particular growth pattern. The yearly cash flows change by very significant percentages either way of the average free-cash flow for the years 2001 to 2006 with no clear pattern or trend. The trend is neither zero growth nor constant growth. The percentage increases and decreases are huge in a manner that makes prediction of future movements difficult. One of the tests of an alternative reliable measure as envisaged by IAS 39 (IASB, 2004:para. AG80) is that "the variability in the range of reasonable fair value estimates is not significant for that instrument". With a range of cash flow growth of -540% and 193%, the range of fair value estimates would be too wide to be reliable.

3.3.2.4   Obstacles to calculating the cost of equity

The valuation of a company using present value of the expected dividends makes use of the cost of equity as the discount rate (AT Foulks Lynch,1999:55). According to Madura (2003:515), "a firm's cost of equity represents an opportunity cost: what shareholders could earn on investments with similar risk if the equity funds were distributed to them". Hence, the cost of equity is what shareholders would expect as a return on their equity investment. This sub-section will look at the obstacles to calculating the cost of equity.

According to Gitman (2000:459), the two most common models used to calculate the cost of equity are the constant dividend growth model and the capital asset pricing model (CAPM). The use of the constant dividend growth model is subject to the drawback that it relies on the company obtaining a value of equity in an open market such as a stock exchange and using this equity value, dividends and constant growth statistics to obtain the cost of equity. AT Foulks Lynch (1999:55) gives the following equation for the constant growth model:

$$Po = \frac{D1}{Ke-g}$$

Po - the price of shares ex-div
D1 - dividend to be paid next year
Ke - cost of equity
 g - constant annual growth rate.

In Mozambique, the absence of an active and liquid market means that Po is difficult to obtain and consequently, deriving the cost of equity from the equation above becomes difficult.

The CAPM uses the concept of firm risk to calculate the rate of return that equity investors may require. It defines total security risk as a sum of non-diversifiable risk (market risk) and diversifiable risk (entity specific risk). Gitman (2000:257) notes that beta, a measure of the firm's market risk, is used to calculate the firm's risk premium over and above the risk-free rate of return and the risk-free rate is generally the rate on government securities such as bonds.

However, the calculation of beta values is a concept that also relies on the presence of a sophisticated public stock exchange market. For example, in the US (Gitman, 2000:258), official stock indices such as the *Standard & Poor's 500 stock composite index* or the *Value Line Investment Survey* calculate and publish beta coefficients of companies. The MSE had its first stock listing in 2001 and has never had another listing since then to 2005. This means that application of such principles such as the CAPM do not yield reliable results owing to the non-existence of the reference indices for calculating market risk for use in the determination of the beta factor. The CAPM also assumes "perfect capital markets" (Correia et al, 2003:4-25)) which assumption does not apply to the MSE because of its inactivity and very thin liquidity.

Consequently, the major obstacle in developing economies in determining the cost of equity is the absence of financial expertise such as that provided by *Value Line Survey* to calculate beta values for companies.

3.4 OBSTACLES TO THE FAIR VALUATION OF CORPORATE BONDS AND GOVERNMENT BONDS

3.4.1 Inactive market for bonds

Having discussed the meaning of an active market in chapter 2 section 2.4.3.3, the discussion now considers whether trade in bonds on the MSE fits the definition of an active market with "readily and regularly available" prices. This can be done by looking at the daily trade activity of the market and the annual frequency of trading activity in the particular bonds in Mozambique-refer to Figures 3.6 and 3

Figure 3.6: Corporate bonds trading - number of transactions per annum (1999 to 2005)

	Entity	Year of Issue	Bond Term (Years)	1999	2000	2001	2002	2003	2004	2005
1	Grupo Madal	9 December 1999	3	0	0	0				
2	Banco Standard Totta de Moçambique	16 October 2000	3	na	0	0	0	0		
3	Banco Internacional de Moçambique	22 September 2000	5	na	0	0	0	0	0	0
4	Telecomunicações de Moçambique	26 February 2001	3	na	na	0	0	0	0	0
5	Cimentos de Moçambique	13 June 2002	5	na	na	na	1	1	2	0
6	Banco Internacional de Moçambique, S.A.R.L.(BIM)	22 September 2003	10	na	na	na	na	0	0	0
7	Banco Internacional de Moçambique	20 November 2003	10	na	na	na	na	0	0	0
8	Cimentos de Moçambique	13 December 2004	2 1/2	na	na	na	na	na	na	1
9	Mcel	15 June 2005	10	na	na	na	na	na	na	1

Source.**www.bancomoc.co.mz**

Key
na - the bond was not in issue at this period

Figure 3.7:Government bonds trading - number of transactions per annum (1999 to 2005)

	Issue	Issue	Bond Term (Years)	1999	2000	2001	2002	2003	2004	2005
1	Government Bond1999	24 June 1999	3	0	0	0	0	0	0	0
2	Government Bonds 2000	22 December 2000	10	na	0	0	0	0	0	0
3	Government Bonds 2001/1	03 September 2001	10	na	na	0	0	13	0	1
4	Government Bonds 2002-2nd Series	08 September 2002	5	na	na	na	0	0	5	3
5	Government Bonds 2004	06 September 2004	5	na	na	na	na	na	0	2
6	Government bonds 2005-1a series	21 June 2005	5	na	na	na	na	na	na	1
7	Government bonds 2005-2a series	28 June 2005	perpertual	na	na	na	na	na	na	0
8	Government bonds 2005-3a series	22 November 2005	10	na	na	na	na	na	na	0

Source:www.bancomoc.co.mz

Key
na - bonds did not exist in the period

Figure 3.6 and Figure 3.7 show the number of transactions recorded on the MSE per annum for each corporate and government bond for the period 1999 to 2005.

The approach of analysing the frequency of activity is supported by FASB (2004:3) which defines an active market as meaning that "quoted prices that represent actual observable transactions…are readily and regularly available" and "readily available means that pricing information is currently accessible and where regularly available means that the transactions occur with sufficient information on an ongoing basis". Consequently one of the tests is a trading frequency test and the question is: Is the frequency of trading transactions in the bonds on the MSE regular enough "to provide pricing information on an ongoing basis"? From the IASB's perspective of an active market quoted in chapter 2 section 2.4.3.3, are willing buyers and sellers "found at any time"?

Trading statistics show that out of the total of nine corporate bonds that have been registered on the MSE, four of them never recorded any trade transaction during their term

and they have since matured. These are the bonds of Grupo Madal, BSTM, BIM and TDM (Bank of Mozambique, 2006).

This means there were no buyers and sellers of the bonds that conducted their transactions through the formal market, the MSE, during the life of the bond. No information is available on trades that took place in the secondary market outside the MSE. Even if such trades would have occurred, the definition of fair value, as noted in chapter 2 section 2.4.3.3 requires pricing information to be "readily and regularly" available to the public on an on-going basis. This means that transactions taking place outside the public market where the public cannot access the information "easily" do not qualify for consideration of whether a market is active or not because they are private transactions taking place in a closed market environment.

Two BIM bonds issued in 2003 with maturities of ten years had, as at 31 December 2005, did not record transactions on the MSE since their inception (Bank of Mozambique, 2006).

The government bonds show a similar thin trading pattern to that of corporate bonds (refer to Figure 3.7). The 1999 issue never recorded any trading activity on the MSE during its three year life. The 2000 bond issue has a life of ten years and as at end the of 2006 had also not recorded any transaction on the MSE. No trading data was also recorded for the government bonds issued in 2005. The issues of 2001, 2002 and 2004 did not record trading transaction in some years and recorded very thin trading transactions in some years. The maximum recorded trading data in any year was 13 transactions recorded for the 2001 government bond issue in 2003 (Bank of Mozambique, 2006).

The conclusion from the analysis of the trading statistics is that Mozambican bonds are thinly traded. Actual observable transactions are few and far between and in some cases, non- existent for the life of the bond. Prices are not readily available and are also not regularly available. The trade in bonds does not happen with sufficient frequency to provide pricing information on an ongoing reliable basis. Some years have no transactions recorded on the stock exchange. This means that willing buyers and willing sellers are not available at any time, which is one of the requirements of an active and liquid market. A willing buyer does not reasonably expect to find a willing seller of the bonds on the MSE at any time. Also, a willing seller cannot reasonably expect to find a willing buyer of the bonds on the MSE at any time of their choice. Trade in bonds is very

infrequent. As a result, fair values of Mozambican bonds need to be obtained through use of mathematical techniques.

3.4.2 The obstacles to tracing reliable yield curves

3.4.2.1 The concept of the yield curve

This section discusses the concept of the yield curve which has become a fundamental concept in the valuation of bonds and similar instruments. Gitman (2000:60) defines a yield curve as showing the "relationship between yield to maturity and the remaining time to maturity" and shows "the pattern of interest rates on securities of equal quality and different maturities". An analysis of this definition shows that a yield curve allows one to locate the yield to maturity of a particular bond even where there are no issues using the yield curve principle. The yield curve thus answers the question of how interest rates vary for differing times to maturity for the same financial instrument.

For entity specific financial instruments such as corporate bonds, it is not possible to have several issues to all possible differing maturities at any particular point in time because very few individual firms have the capacity to issue various bonds with various maturities frequently on an ongoing basis. However, the developed capital markets use the concept of "securities of equal quality" as noted above. This means that companies of similar quality are identified and their issues to different maturities are plotted to complete the yield curve for terms that a particular entity has not issued bonds. Hence, the market for the financial instruments must have many participants to facilitate the grouping of entities of similar quality. The assessment of what constitutes similar quality heavily relies on the work of credit rating agencies.

3.4.2.2 The role of credit rating agencies

The concept of credit quality has been a fundamental concept in the pricing of financial instruments such as bonds. The fair values of financial instruments normally factor in the credit risk of the issuer. The credit risk is reflected in the premium paid by the issuer of a financial instrument above the risk-free interest rate or basic interest rate (IAS 39, IASB, 2006:para. AG 82b). IAS 39 (IASB, 2006:para. AG69) emphasises that fair value "reflects

the credit quality of the instrument". The measurement of the credit risk of various issuers of financial instruments is the subject of this sub-section.

The concept of credit rating is a critical component of credit risk assessment in the developed capital markets such as those of USA. The IASB acknowledges the use of credit ratings in fair valuation. For example, IAS 39 (IASB, 2004:para. AG64) suggests the use of a "prevailing market rate(s) of interest for a similar instrument…with similar credit rating" when pricing financial instruments. This means that the presence of credit ratings enhances the comparison between entities and identification of entities with similar credit risk.

The credit rating function is carried out by credit rating agencies. Three credit rating agencies, Standard & Poor's, Moody's and Fitch Investors Service have established themselves worldwide as market leaders in the credit rating business. Standard and Poor (2002) define credit rating as an "opinion as of specific date on the credit worthiness of obligator in general or with respect to a particular financial obligation" and "credit ratings help the market to effectively and efficiently evaluate and assess credit, price debt securities, benchmark issues and create a robust secondary market for those issues".

Hence, credit rating is an assessment of default risk by the issuer of a financial instrument. Brigham & Davies (2002:124) concur that "the bond's rating is an indicator of its default risk" and consequently, "has an effect on the bond's interest and a firm's cost of debt".

In the developed financial markets such as the USA, the work of credit rating agencies has gained regulatory authorities recognition and they have now become one of the crucial official credit risk monitors. Galil (2002:5) notes that "…portfolio managers are required by regulators or executives not to hold speculative bonds". The classification of what constitutes "speculative bonds" or "junk bonds" is based on the credit rating index. The speculative bonds are defined as those with ratings lower than "BBB" or "Baa" while those with the grade "BBB" or "Baa" or higher, are classified as "investment bonds". Brigham & Daves (2002:123) note that many banks and other institutional investors are not allowed to hold bonds lower than single A or Triple B grades. This legal requirement for banks and institutional investors has given the credit rating agencies official recognition of their activities in the USA and the United Kingdom. The absence of credit rating agencies in developing economies may thus present significant obstacles to the fair valuation process

through the lack of a formal credit risk assessment at a national level to assist in pricing financial instruments such as bonds when they are issued and on a continuous basis while they remain in issue.

3.4.2.3 The absence of credit rating agencies in Mozambique

One of the major obstacles to the Mozambican capital market system is the absence of credit rating agencies. There is no professional service for comparing the risk of different entities. A study by the International Monetary Fund (IMF) (2003:21) attributes the limitations to, "among other things, lack of legal framework for information sharing that is needed to facilitate the establishment of private credit registries".

The credit rating of a bond issue is an indicator of its default risk. Mozambique faces significant obstacles over the determination of default risk of bond issues because of the absence of credit rating agencies. This makes it difficult to distinguish between any two bond issuers default risk. Thus, if any two companies were to issue corporate bonds at the same time, there is no professional reference scale such as that provided by credit rating agencies to facilitate pricing of the two issues and to distinguish their pricing. An assessment of the pricing of current bond issues will help show some pricing challenges in bond pricing which is a result of the lack of credit rating agencies. An example will consider one financial institution BIM, which issued two ten year corporate bonds in 2003 as illustrated in Figure 3.8.

Figure 3.8: BIM corporate bonds

Entity	Date of issue	Bond term (Years)	Type of index	Margin on index
Banco Internacional de Moçambique (BIM 2003 a)	22 September 2003	10	Last 6 Issues of Monetary Authority Bills(MABs) for 28 or more days and Last 6 issues of TBs for 28 or more days	0
Banco Internacional de Moçambique (BIM 2003b)	20 November 2003	10	Last 6 Issues of Monetary Authority Bills (MABs) for 28 or more days and Last 6 issues of TBs for 28 or more days	0.50%

Source: BIM 2003a & BIM 2003b

The 2003 issues of September and November are easier to compare since they were issued a month apart and have different interest rates albeit the same base index and same maturity of 10 years. The issues are both indexed to the monetary authority bills (MABs).

The September issue has no margin on index whereas the November issue had a margin of 0.5%. The issue at zero margin to the MABs means that the bank is issuing its bond at the risk-free rate. This fact cannot be substantiated by a reference as would have been the case if a credit rating agency had rated the bank.

The November issue attracted a margin of 0.5% only a month later. As a result, investors in the September issue are at a disadvantage because they hold a bond from the same entity at a lower rate of return. Notably, the November issue coincided with the central bank's issue of MABs. The 0.5% margin may have been motivated by the bank's need to attract funding from MABs that were also issued at the same time because an issue at the MABs rate directly competes with the MABs themselves and investors may have little reason to invest in a company at the risk-free rate. If default risk was the basis for pricing bond issues, the difference in the margin to the same index within a month may be difficult to corroborate. The issue price seems to have been more driven by the need to attract funding than default risk assessment of the institution.

Another case to consider is a case involving two entities in the same industry. The challenge in developing economies such as Mozambique is to justify the interest rates charged by different entities in the same industry. Of all the corporate bonds issued between 1999 and 2006, only two financial institutions, BIM and BSTM are in the same industry. The other issues have only one company in a particular industry. In September 2000, BIM issued a five-year corporate bond at an index of TBs plus 2 to 3% (BIM, 2000). In October 2000, another financial institution BSTM, issued a three-year bond at an index of TBs plus 1.5% (BSTM, 2000). Note is taken of the fact that these have different maturities and the interest rates would thus, expected to be different in any case. However, the problem is how to distinguish the default risks of the two banks. There are no credit rating agencies to rate the two entities and assign a default risk measure to help in differentiating the pricing of one issue from the other. BSTM enjoyed a lower rate of interest than BIM by 0.5% to 1.5%.

A comparison of the financial figures of the two banks in 2000 (KPMG banking survey, 2001) shows that BIM had a better financial position and market share than BSTM except for profitability (see Figure 3.9).

Figure 3.9 : Financial figures for BIM and BSTM year 2000

Financial figures for BIM and BSTM Year 2000							
	Total Assets MT'000 000	Loan Advances MT'000 000	Customer deposits MT'000 000	Shareholder Funds MT'000 000	Net profit MT'000 000	Average return on equity	Average return on assets
BIM	4,580,801	1,955,809	3,611,542	498,433	44,460	9%	1%
BSTM	3,621,791	1,252,571	2,591,585	408,222	94,122	23%	3%

Source: KPMG Banking survey 2001

BIM's total assets were 26% more than those of BSTM and BIM's loans advances book was 56% more than that of BSTM. In terms of depositors' market share, BIM's deposits were 39% more than those of BSTM. The BIM shareholders equity was also significantly more than BSTM's by 22%. BSTM though had a higher profitability of 53% more than that of BIM. One may argue that based on these financial figures, BIM would have a better credit rating than BSTM and consequently, BIM could have enjoyed a lower rate of interest on its bonds when compared to BSTM.

This illustrates that the Mozambican capital market system indeed needs the services of credit rating agencies to help in assigning credit risk of various entities and to provide uniformity in the assigning of credit risk. Without credit rating agencies, it becomes difficult to justify the credit risk premium above the risk-free rate that is assigned to any entity.

3.4.3   Infrequent issues of bonds to various maturities

One of the obstacles to constructing reliable yield curves in Mozambique is the unavailability of frequent issues of a particular type of financial instrument to various different maturities.

Figure 3.10 shows the number of issues of corporate bonds in each year from 1999 to 2006.

Figure 3.10: Corporate bond issues: 1999 to 2005

Year	Number of corporate bonds	Years to Maturity	Name of entity
1999	1	3	Madal
2000	2	3 & 5	BSTM & BIM
2001	1	3	TDM
2002	1	5	CM
2003	2	10	BIM
2004	1	2.5	CM
2005	1	5	Mcel

Sources: **Madal,1999**
BSTM, 2000
BIM, 2000
TDM, 2001
CM, 2002
BIM, 2003
CM, 2004
Mcel, 2005

Taking the Grupo Madal bond issue of 1999 as an example, there was only one corporate bond on the stock exchange and the bond was issued with a maturity of three years. Madal is in the agricultural industry. To construct the yield curve of the bond would require identifying other corporate bonds in the agricultural industry of equal quality in issue but maturing at different periods. However, this is not possible because there are no other bonds in issue in the same industry that were quoted on the MSE, making Madal the only entity with quoted bonds in the agricultural industry. This means that it would be difficult to construct reliable yield curves and fair values of bonds issued by companies in the agricultural industry in Mozambique.

In the year 2000 two financial institutions, BSTM (BSTM, 2000) and BIM (BIM, 2000) issued bonds maturing after three and five years respectively. These two corporate bonds were issued by companies in the same industry, banking and finance, and would form a reasonable basis to draw a yield curve. However, two obstacles would be encountered.

Firstly, there is no basis to classify the two as falling in the same risk class or quantify the risk differential apart from the fact that they operate in the same industry and are competitors. This obstacle is caused by the absence of credit rating agencies as noted earlier on. Secondly, plotting a reliable yield curve is made difficult by the fact that there are only two reference periods, the three years for BSTM and the five years for BIM. There are no statistics for what investors would require for similar bonds issued with maturities below three years, maturities between three and five years and maturities over five years. This means that as the BSTM bond approaches maturity, for example, with two years remaining to maturity, it will not be possible to have a reliable market rate of return to use as the discount factor in a present value based measure. The same problems are encountered with the BIM issue. Hence, constructing reliable yield curves and calculating fair values of bonds issued by financial institutions in Mozambique would be difficult.

The government bonds also share the same obstacles as the corporate bonds with regard to activity and liquidity of the market. Government issues were so infrequent that between 1999 and 2002, only one government bond was issued per year. In 2003, there was no bond issue and 2004 had just one government bond issue. In 2005, there were only three bond issues. This makes it difficult to draw yield curves at specific dates such as year ends since there will be no fresh issue to use as a basis for a current market rate of return.

Moreover, all the bond issues were issued only over four maturity periods – three years, five years, ten years and one that was issued to perpetuity – refer to Figure 3.11.

Figure 3.11: Government bond issues: 1999 to 2005

Year	Number of government bonds	Years to Maturity
1999	1	3
2000	1	10
2001	1	10
2002	1	5
2003	0	0
2004	1	5
2005	3	5, 10, Perpertual

Source: Republic of Mozambique (1999-2005)

Such limited maturity periods make it difficult to construct a smooth continuous yield curve covering shorter and longer periods. The calculation of fair values using mathematical techniques relies heavily on the possibility of tracing smooth continuous yield curves of the bonds under consideration. This means that the fair valuation of Mozambican government bonds would face significant obstacles due to the difficulty of tracing reliable yield curves.

3.4.4 Mozambican indices and the related obstacles

3.4.4.1 Mozambican indices

All the corporate bonds and government bonds that have been issued from the inception of the MSE in 1999 to 31 December 2005 carry floating interest rates. The interest rate for each bond is indexed to an underlying base index rate plus a margin factor. The four main indices are the Maibor, TBs, MABs and the inflation index. This section will briefly describe each index.

3.4.4.1.1 The Maputo inter-bank offer rate (Maibor) index

The Maibor is the local equivalence of the London inter-bank offer rate (Libor). The Mozambican Institute of National Statistics or Instituto Nacional de Estatística (INE)(2006) defines Maibor as "an average of the offer prices of banks that have signed the Participation Agreement" and is compiled and published daily by the Mozambican central bank since its introduction in July 1999. According to the INE (2006), "the rate covers terms of one day to a year with intervening terms of one, two, and three weeks and one, two and three months".

A review of the various prospectuses shows that out of a total of nine corporate bonds that were issued between 1999 and 2005, two corporate bonds were indexed to the Maibor. Out of the nine government bonds quoted on the MSE for the same period, one is indexed to the Maibor. A margin is added over and above the index factor and this margin is not uniform across the bonds. This could be because of the different risk classes of the entities (refer to Figure 3.12 for the bonds information).

Figure 3.12: Corporate bonds indexed to Maibor - 1999 to 2005.

	Entity	Year of Issue	Bond Term(Years)	Type of index	Margin on Index
1	Grupo Madal	9 December 1999	3	Maibor	3%
2	Cimentos de Moçambique	13 June 2002	5	Maibor	2%

Government bonds indexed to Maibor - 1999 to 2005.

	Issue	Year of Issue	Bond Term(Years)	Type of index	Margin on Index
1	Government Bonds 2000	22 Decemebr 2000	10	Maibor	4%

Sources: Grupo Madal, 1999
Republic of Mozambique, 2000
Cimentos, 2002

The Mozambican challenge is to justify the choice of the Maibor over other indices such as TBs and Inflation.

3.4.4.1.2 Treasury bills index

TBs are debt securities issued by the central bank of Mozambique, Banco de Mozambique, for terms of three to twelve months. According to Banco de Mozambique (2004:14), TBs are used to "manage liquidity in the money market through open operations in the domestic financial market and to provide short term funding to the Government of Mozambique".

Five of the total corporate bonds and five of the total government bonds that were issued between 1999 and 2005 are indexed to the TBs interest rate plus a margin factor-refer to Figures 3.13 and 3.14. This makes this index the most popular in the market. The interest rate applicable to each period is determined in advance and calculated as the average rate of the last six issues of TBs of 28 days plus, 60 days plus or 90 days plus. It is important to emphasise that the interest rate is announced in advance at each coupon date. Thus, at each coupon date, the average of the last six issues of TBs becomes the applicable interest rate of payment at the next coupon date.

Figure 3.13: Corporate bonds indexed to treasury bills – 1999 to 2005

	Entity	Date of Issue	Bond Term(Years)	Primary Index	Margin on Index
1	Banco Standard Totta de Moçambique	16 October 2000	3	TBs	1.50%
2	Banco Internacional de Moçambique	22 September 2000	5	TBs	2-3%
3	Telecomunicações de Moçambique	26 February 2001	3	TBs	3%
4	Cimentos de Moçambique, S.A.R.L.(Cimentos)	13 December 2004	2 1/2	TBs or MABs	5.25%
5	Mcel	15 June 2005	10	TBs	3.75%

Sources: BSTM, 2000
BIM, 2000
TDM, 2001
CM, 2004
Mcel, 2005

Figure 3.14: Government bonds indexed to treasury bills-1999 to 2005.

	Series	Date of Issue	Bond Term(Yrs)	Primary Index	Margin on Index
1	Government Bond1999	24 June 1999	3	TBs	None
2	Government Bonds 2001/1	03 September 2001	10	TBs	0.25%
3	Government Bonds 2002-2nd Series	08 September 2002	5	TBs	0.75%
4	Government bonds 2005-1a series	21 June 2005	5	TBs	1.00%
5	Government bonds 2005-3a series	22 November 2005	10	TBs	0.75%

Source: Republic of Mozambique (1999-2005)

The challenge is to justify the choice of the TB index over other indices such as Maibor and inflation. For example, as noted in section 3.4.4.1.2 above, the government has some bond issues that are indexed to the Maibor.

3.4.4.1.3 Monetary authority bills (MABs)

According to Banco de Mozambique (2004:15), MABs are debt securities issued by the central bank for terms between four days and a year. They are issued "to manage the liquidity in the money market through open market operations in the domestic financial market."

Two of the nine corporate bonds were issued with floating interest rates indexed to the MABs. The interest rate payable at the next date of interest payment or coupon date is equal to the average rate of the last six issues of the MABs of 28 days or more or MABs of 60 days or greater. In the event that no MABs are issued or discontinued, then the average of the last six TBs of a similar range of days is used (refer to Figures 3.15 and 3.16 for the bonds indexed to MABs).

Figure 3.15: Corporate bonds indexed to MABs – 1999 to 2005

	Entity	Year of Issue	Bond Term(Years)	Primary Index	Margin on Index
1	Banco Internacional de Moçambique	22 September 2003	10	MABs	None
2	Banco Internacional de Moçambique	20 November 2003	10	MABs	0.50%

Sources: BIM, 2003a, BIM, 2003b

Figure 3.16: Government bonds indexed to MAB – 1999 to 2005

	Series		Bond Term(Years)	Primary Index	Margin on Index
1	Government Bonds 2004	06 August 2004	5	MABs	1%

Source: Republic of Mozambique - 2004 government bond prospectus

The challenges associated with the use of MAB include the significant volatility of this index which makes the yield curve of bonds indexed to this index also volatile.

3.4.4.1.4 Inflation index

Inflation is the least popular index in the market. No corporate bonds have so far been issued indexed to the inflation index between 1999 and 2005. Only one Government Issue of 2005 with a perpetual term was issued indexed to inflation. Developing economies are characterised by significantly volatile inflation figures even in the short term (refer to Figure 3.17). Mozambique is no exception and this affects the volatility of the fair values of financial instruments indexed to this factor.

3.4.4.2 Volatility of base indices

IAS 39 (IASB, 2006:para. AG82) defines volatility as the "magnitude of future changes in prices of the financial instrument or other item" and considers the volatility of actively traded items to be capable of being estimated based on such techniques as trend analysis of historical data.

The Mozambican market for corporate bonds and government bonds is inactive. As a result of this lack of activity, the yield curve for periods where there are no issues may have to be obtained by estimation techniques such as interpolation and regression analysis (Caribbean Money Market Brokers Ltd, 2004:9). The challenge lies in obtaining reliable yield estimates in the long term. The Bank of England (not dated:5) prefers to provide yield curve data at maturities where the yield curve fits in a "stable and meaningful " way and where it is considered not meaningful, breaks in the yield curve are presented, for example, when there is "not enough information from observed prices at a given maturity." If a similar approach is adopted in Mozambique, then the yield curve will show many breaks and make it difficult to interpret the yield curve because of the existence of many periods of inactivity.

The main indices used to price bonds have experienced significantly volatile movements between 2002 and 2005. The percentage movements cannot be sustained in the long

term because of their size. The sustainability of the low rates experienced at the end of 2005 is also difficult to support in view of the huge changes that have been seen in the last four years up to 2005. A study in Mozambique by Ingves & Bio-Tchane (2003:11) notes that "significant and volatile inflation constitutes an important potential source of macro-vulnerability". This macro-economic vulnerability may reflect itself through volatile equity and financial results of financial institutions caused by fair values reported.

The Mozambican Institute of National Statistics (INE, 2006) maintains a database of inflation for various years and the inflation statistics shown in Figure 3.17 were obtained from their website. The statistics for the period 1 January 2002 to 31 December 2005 for inflation movements show high volatility and a lot of noise around the four year average.

**Figure 3.17: Inflation four year movement 2002- 2005**
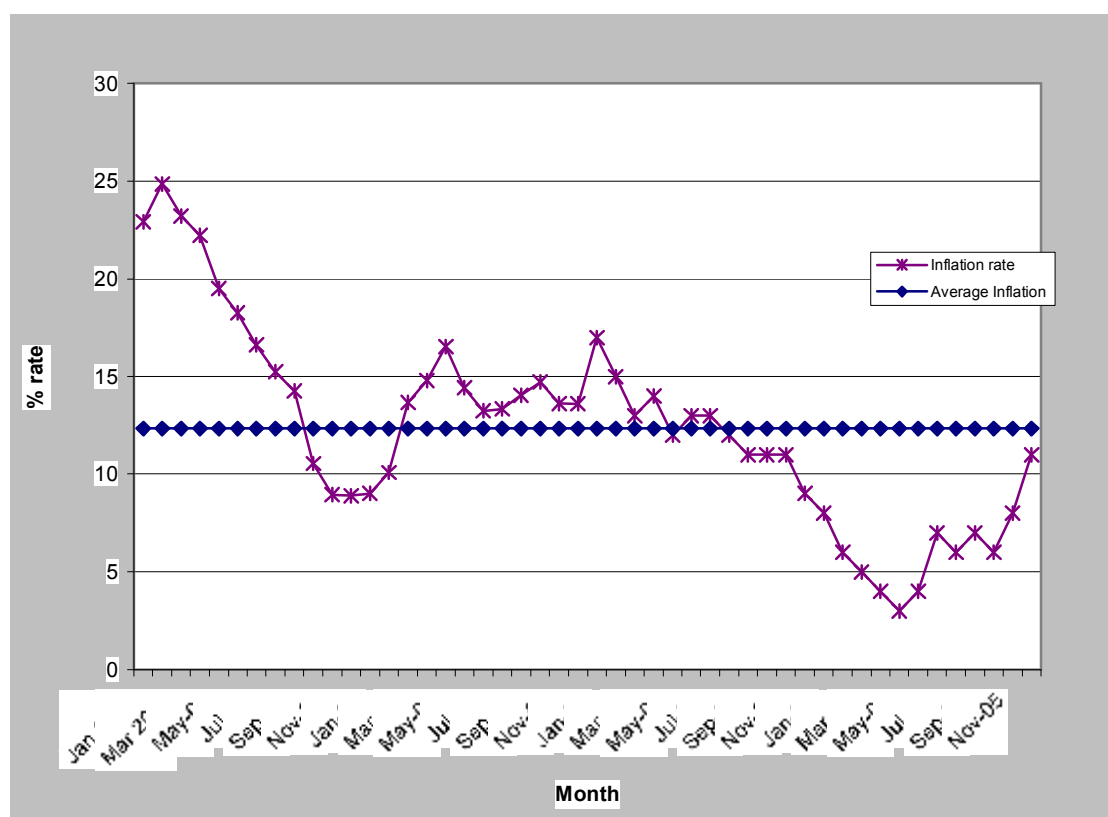
 Source: Mozambique Institute of National Statistics, 2006

Inflation moved from 23% in January 2002 to 9% in December 2002. This represented a decrease of 14%. The 2003 movements rose to a peak of 17% in May 2003 and a lowest rate for the year of 9% in January 2003. This was a maximum gain of 8%. The year 2004

showed a gradual decline from 17% in January 2004 to 9% in December 2004 which was a fall of 8%. The year 2005 recorded a low of 3% in May and ended the year with a maximum of 11% in December 2005. The four year average was 18% with a maximum of 25% in February 2002 and a low of 3% in May 2005. The four year range between the maximum rate of 25% and the lowest rate of 3% is 22% and this represents significant volatility in the inflation of the economy. This means that it is difficult to make reliable estimates of the future inflation movements which is critical in a fair valuation exercise, for example, estimating future returns on a bond indexed to inflation.

The Maibor reference index has also shown significant movement - refer to (Figure 3.18 below).

**Figure 3.18: Three and six months Maibor rates 2000-2005**
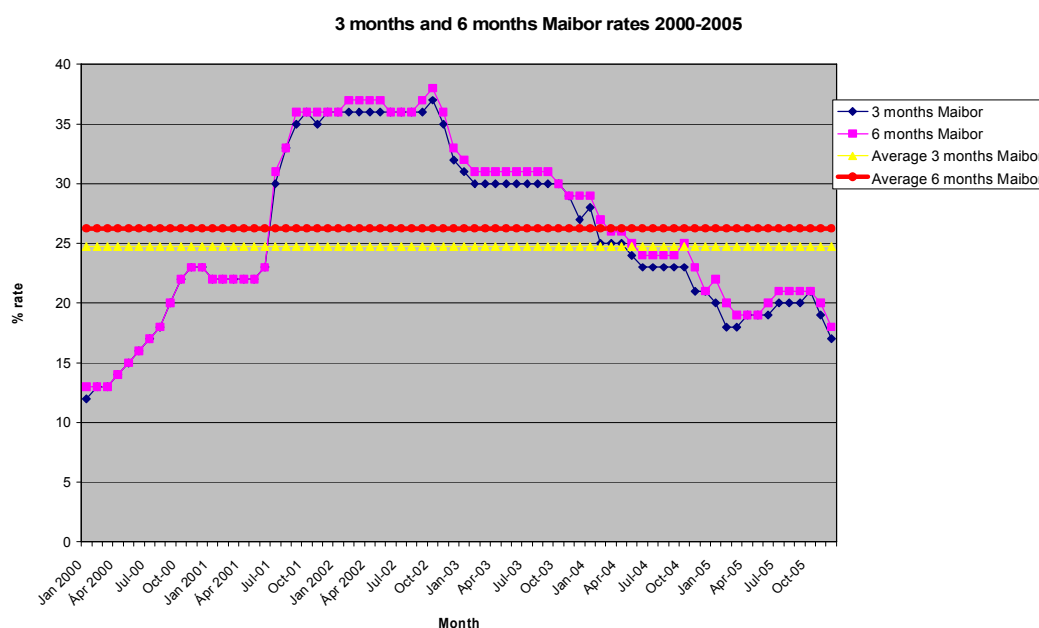
Source:www.bancomoc.co.mz and the Bank of Mozambique Economics Department

The statistics for three months Maibor and six months Maibor for the years 2000 to 2005 show highest percentages of 37% for three months Maibor and 38% for six months Maibor and lowest percentages of 12% for three months Maibor and 13% for six month

Maibor. These represented a spread of 25% for both three months and six months Maibor for the six years.

The TBs and MABs have also shown significant volatility (refer to Figure 3.19). Between 2002 and 2005, TBs recorded a highest rate of 33% and a lowest rate of 9% giving a four year spread of 24%. MABs also recorded a highest rate of 28% and lowest of 13% giving a spread of 15%. The ranges of variations are significantly volatile and wide to be useful as a basis for estimation of reliable future movements and behaviours.

Figure 3.19: TBs and MAB rates
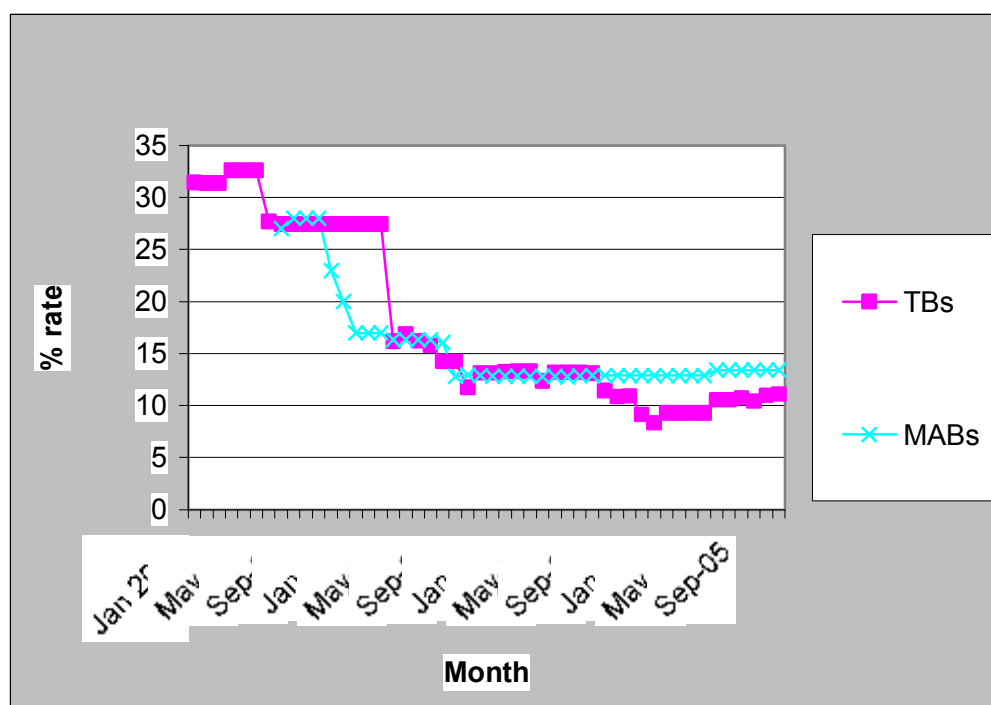
Source:www.bancomoc.co.mz and the Bank of Mozambique Economics Department

The use of discounted cash flows requires an entity to make estimates of future cash flows from an asset over its life. An entity which invested in bonds that are indexed to TBs and MABs will face the challenge of obtaining reliable estimates of future cash flow movements in the form of interest returns on the bonds because of the high volatility in the two indices.

73

3.4.4.3 Inconsistent behaviour of some base indices with macro-economic fundamentals

The behaviour of some indices does not reflect the macro-economic fundamentals of the country. Only the Maibor has traded consistently above inflation from 2002 to 2005 (refer to Figure 3.20).

Figure 3.20: Profile of main economic indicators
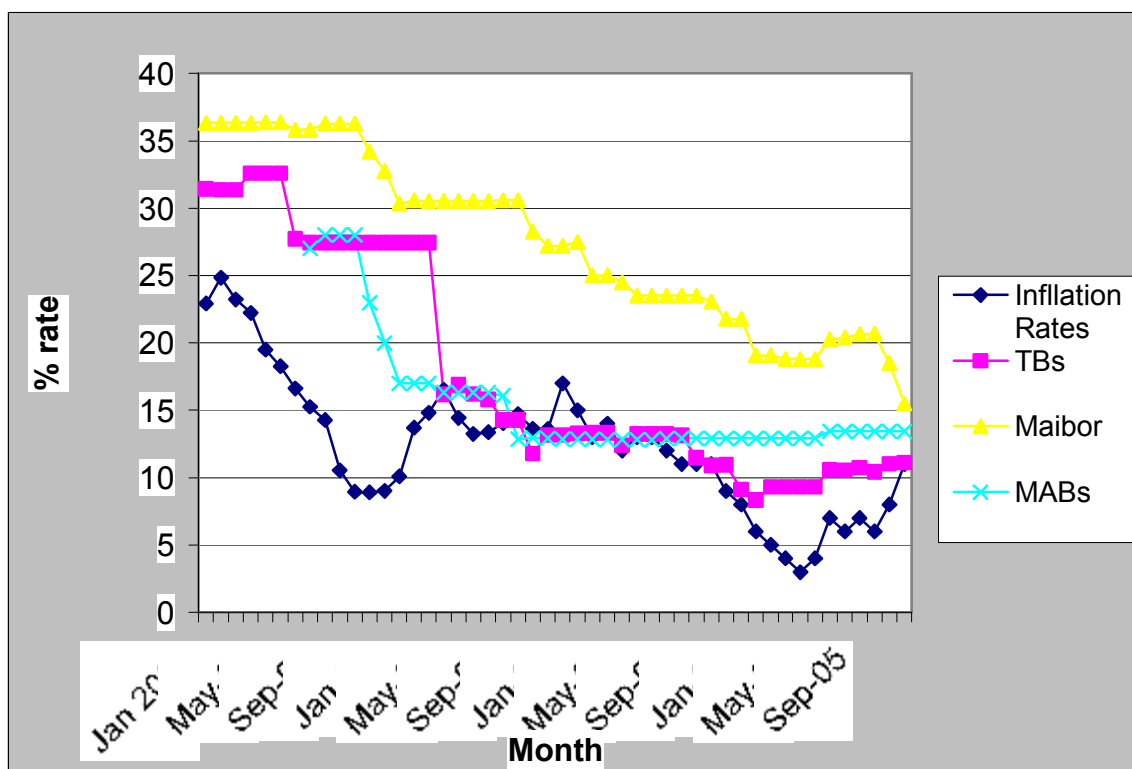
Source:www.bancomoc.co.mz and the Bank of Mozambique Economics Department

The TBs only traded above inflation up to April 2003. From May 2003 to December 2005, the TBs traded at marginally higher rates to the inflation rates with a maximum of 6%. Comparatively, Maibor traded at an average of 15% above inflation from 2002 to 2005.

MABs initially traded at a range of 7% to 19% above the inflation rates for the period from September 2002 to April 2003. From May 2003, the MABs began to trade at rates that are marginally different from the inflation rates sometimes trading at rates lower than inflation.

It is such inconsistent trends and behaviours that make it difficult to reliably estimate future movements and hence hinder the tracing of reliable yield curves for use in the valuation of bonds in Mozambique.

3.4.4.4 Change in the base index by the market: are the Mozambican bonds exposed to interest-rate risk?

3.4.4.4.1 Effect of floating coupon rates on bond value

IFRS 7 (IASB, 2006) defines interest rate risk as "the risk that the fair value or future cash-flows of a financial instrument will fluctuate because of the changes in market interest rates". It is important to consider if the Mozambican bonds are exposed to interest rate risk.

Mozambican corporate and government bonds carry floating rates of interest. The effect of floating interest rates on bond values is crucial to the analysis of bond valuation. Morris & Sellon (1991:9) point out that interest rate changes do not affect the market values of variable rate instruments. In other words, the market value of an instrument does not change if contractual interest payments rise or fall with the market. This is because the expected cash flows will be calculated at the new market rate each time the market rate changes and be discounted using the same rate. This is in contrast to a fixed rate bond where the fair value changes with each change in the market rate of return.

3.4.4.4.2 Obstacles to the fair valuation of bonds caused by the existence of various indices in the market

The choice of a reference index aims to use an index that best reflects the macro-economic fundamentals of the economy. A favourable index is one which moves with the economy-wide fundamentals and hence cushion the investor from loss of capital and obtain a competitive return on their investment.

As seen in section 3.4.4.1, various indices comprising the Maibor, TBs, MABs and inflation have been used by the market to price bond issues. The question is: does the existence of

various reference indices expose the bonds to interest rate risk? The answer to this is not straight forward. Part of the obstacles is caused by the fact that some entities have issued bonds in different periods using different indices. In other words, many indices have been used by the market and some companies have also used different indices for similar financial instruments issued at different times.

The obstacles caused by the use of different indices by the same entity can be illustrated using examples of entities that have used more than one indices for different bond issues. Between 1999 and 2005, only two companies issued bonds more than once and these are Cimentos and BIM. Cimentos issued its first bond on 13 June 2002 indexed to Maibor plus 2% with a term of five years (Cimentos, 2002). The bonds had a call option midway through the term on 13 December 2004. Cimentos exercised the call option and issued on the same day another new issue maturing on the same date as the original issue of 13 June 2002. However, the new issue was indexed to TBs plus 5.25%. Effectively, Cimentos simply changed the floating base rate from three months Maibor to TBs. The possible reason for the change of the base index is not difficult to see. The graph of the movements of the Maibor between 2002 and 2005 shows that the Maibor rate has been at a higher percentage than TBs rates (refer to Figure 3.20). Between January 2002 and April 2003, the Maibor average between 3% and 9% above the TBs rates. From April 2003 to October 2005, the Maibor averaged 10% to 16% above the TBs rates. On the date Cimentos exercised their call option, the Maibor was trading at 11% above TBs rates. At that date, Cimentos was paying 23% (being Maibor of 21% plus a margin of 2%). With the change in the base index to TBs, the rate that day changed to 16.25% (being TBs rate of 11% plus a margin of 5.25%). This generated a saving of 6.75% to Cimentos. This may have been a strong enough incentive to call the initial issue and re-issue at a changed base index.

 If Cimentos had another non-callable bond running for example, ten years indexed to the Maibor, then this would mean that the Cimentos bonds are exposed to interest rate risk whenever the market prices similar financial instruments at a different base index. In the example noted above for Cimentos, the change in base index from Maibor to TBs would mean a change in the yield curve of the Cimentos bond. As a result of this analysis, it can be noted that the yield curve of the Cimentos bond would show significant volatility at the time of changing indices. This makes it difficult to plot reliable yield curves of the Cimentos bonds and consequently the fair values of the bonds.

Another example is the bond issues by BIM (refer to Figures 3.13 and 3.15). BIM's first corporate bond issue was on 22 September 2000. The base index used was the TBs plus 2% to 3% margin (BIM, 2000). In 2003, BIM issued two more bonds but this time the bank changed the base index to MABs. The issue on 22 September 2003 was indexed to MABs with no margin (BIM, 2003a). The issue of 20 November 2003 was indexed to MABs plus a margin of 0.5% (BIM, 2003b). Between August 2002 and May 2003, there were no TBs issues. So the MABs replaced the TBs as a reference index in the market. This may have necessitated BIM to use the MABs as the base index because of the absence of the TBs in the market. TBs rates and the MABs rates have not been equal at any point in time thereby introducing a potential problem of interest rate risk. The interest rate risk arises from the fact that a particular bond issue may remain indexed to one base index such as TBs but the market may have changed to another base index such as the MAB. Between June 2003 and December 2005, TBs traded at a maximum rate of 5% over the MABs. The 1% to 5% difference is compensated by the margin. The trend up to 2005 has been that MABs carry a lower margin than the TBs index.

The analysis above shows that the change in the base index creates an interest rate risk exposure to the entity. This is because the company will continue to pay interest based on a reference index that is no longer appealing to the market. The new index becomes the market reference index for similar financial instruments. A present value calculation will compute the expected cash flows using the original base index that remains applicable to the bond issue. However, it can be argued that these expected cash flows should be discounted using the new base index. The interest rate exposure will be equal to the difference in the indices at any particular point in time adjusted for any margin differentials. Hence in Mozambique, the presents of many reference indices for pricing bonds creates significant obstacles in the tracing of reliable and consistent yield curves for use in the valuation of bonds using mathematical models. Without reliable yield curves, fair valuation of bonds becomes a difficult task if one is to achieve comparability between various entities.

The government bonds have also shown similar obstacles. On the 22nd of December 2000, a ten year bond indexed to Maibor was issued (Republic of Mozambique, 2000). On the 3rd of September 2001, another ten year bond was issued but this time indexed to TBs (Republic of Mozambique, 2001). The two bond issues are of the same quality and their maturity terms are similar (subject to the limitation that they were issued at different dates

and hence have a difference of nine months in actual maturity dates) since they are from the same entity. As a result, the differences in rates of return should emanate from the time to maturity factor than any other factor. This is in line with the concept of the yield curve which traces yields of instruments of the same quality but with different maturities. The obstacle for Mozambican government bonds is to answer the question of whether a fair valuation at any particular point will use the original index or the new revised index. If the market discount rates follow the new base index currently in use, then the investors are exposed to interest rate risk. This creates a significant obstacle to obtaining fair values for government bonds in Mozambique because there is no rational way of estimating which indices could have been used by the government for periods where there were no government bond issues to complete the yield curve.

As noted in Figure 3.21, between January 2002 and April 2003, the Maibor averaged 3% to 9% above the TBs rates and from April 2003 to October 2005, the Maibor averaged 10% to 16 % above the TBs rates.

Figure 3.21: Maibor and TBs rates: 2002 to 2005
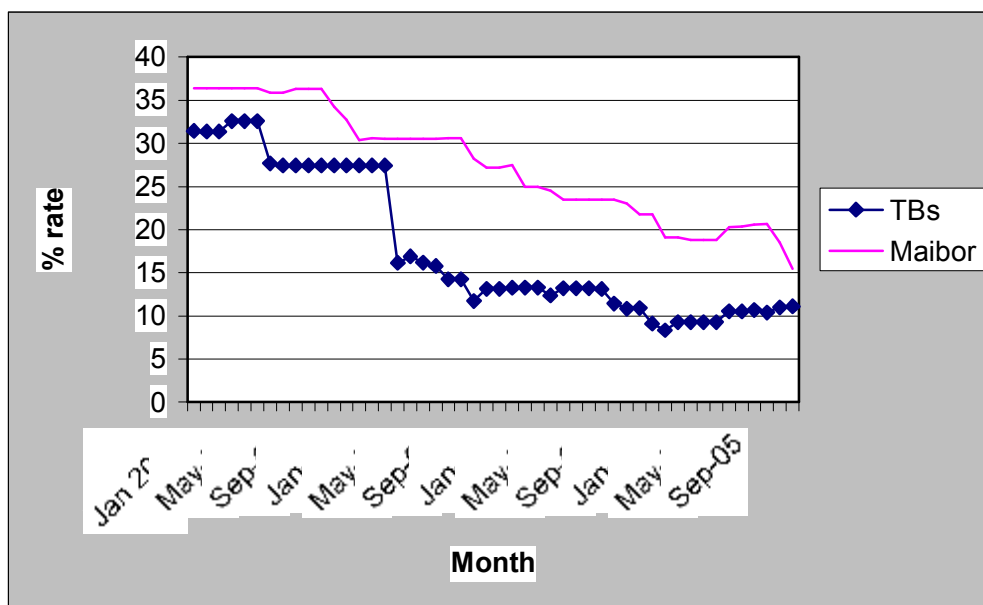
Source: www.bancomoc.co.mz and the Bank of Mozambique Economics Department

If indeed the bonds have interest rate exposure, then fair value movements would be very volatile. The volatility will be caused by the wide gap between some of the indices. The variations between the Maibor and the TBs are very wide and their effects are likely to be material for huge investments.

3.4.4.5 Inconsistencies in the availability of reference indices

In an active and liquid market, indices are regularly available and this facilitates the valuation process. In Mozambique, there are significant obstacles caused by the inconsistencies in the availability of some of the indices.

The rates of inflation and Maibor are available regularly. The Maibor is determined by participating banks that are required by the central bank to submit their daily quotations on inter-bank borrowing and lending transactions. This central bank requirement facilitates the availability of the index on a continuous basis.

The rates of inflation are also available on a continuous basis since these are calculated by the National Statistical Institute of Mozambique based on a standard inflation model. The inputs to an inflation model are available in a uniform way since the inflation model makes use of a collection of identifiable traded items that are monitored for price changes over time.

However, the TBs interest rates and the MABs interest rates are not issued in a continuous and smooth manner. There are certain periods when TBs or MABs were not issued. This is shown in Figure 3.21 as flat portions of the graph. For example, between August 2002 and April 2003, there were no TB issues resulting in the flat portion of the line graph for this period. This results in breaks and distortions since the reference index sometimes disappears in the market. When a chosen index disappears from the market, some prospectuses offer alternatives to replace the index with another index. For example, TBs interest rates and MABs are allowed alternatives in case one of them temporarily or permanently remains unissued. However, some bond issues do not have alternatives in case the identified index disappears. This means that the last recorded value of the index may continue to be used for dates when the index was not in issue.

One example of the problems of inconsistent issues of base indices was BSTM which issued a bond indexed to TBs in 2000 (BSTM, 2000). Between September 2002 and April 2003, there were no TB issues. This meant that the index rate of 27% last used in August 2002 continued to be used for the period when there were no bond issues until there were new TB issues in May 2003 (refer to Figure 3.21). The new issues of May 2003 were issued at 16%. The result was a shock 11% decrease in the base index as shown in Figure 3.21 above. This shock decrease is mainly due to the fact that, while the TBs were not being issued, economic fundamentals were changing and manifesting themselves in other economic indicators that were active. In such cases, investors may earn premium rates or rates significantly below the market rates since their base index will remain fixed.

From September 2004 to December 2005, no MABs of 28 or more days were issued. Only MABs of up to six days were issued. This meant that those bonds that were indexed to MABs changed the base index to TBs as per the relevant prospectuses. This again creates sudden movements up or down in the yield curve of bonds indexed to MABs depending on the yield curve of bonds indexed to MABs and TBs at a particular time. These sudden movements present a valuation problem for Mozambican bonds because the resultant fair values based on significantly fluctuating yield curves will give rise to significantly volatile fair value movements in the results and balance sheets of Mozambican companies.

3.5 OBSTACLES TO THE FAIR VALUATION OF MOZAMBICAN TREASURY BILLS

3.5.1 High volatility in market rates of return of treasury bills

TBs have fixed interest for their whole term. As a result of this, they are exposed to interest-rate risk. In a stable economy where interest rates do not vary significantly over the short term (short term being a period of one year or less), fair valuation of TBs does not yield a significant variance with the historical carrying amounts. On the other hand, economies with high volatility in interest rates will experience significant fair value volatility even in the short term in line with the movements in the market interest rates.

However, because of the short-term nature of the TBs, the impact or materiality of this will need to be considered against the cost-benefit of performing a fair valuation. A case by case assessment may be necessary since the TB terms range between three months and one year. For example, a three-month TB that has one month to maturity at year-end may not have a material difference with its historical carrying amount because either the time period remaining to maturity from year-end may be short or because the interest rates may have moved very little since the day of issue. Comparatively, a one year TB issued at mid-year and still has six months to maturity at year-end may give material differences between the historical carrying amount and the calculated fair value. This may be due to the fact that a time period of six months remaining to maturity may have a material impact even where there is a small change in the interest rates for new TBs issued at year-end with maturity of six months. Also, because of the highly volatile interest rates, a period of one year is long enough to experience significant changes in market interest rates. For example between July 2002 and May 2003, the TBs interest fell by 12% from 28% to 16% and between June 2004 and January 2005, the TBs fell by 4% from 13% to 9%. In overall, the movements in between were also quite volatile (refer to Figure 3.21). Between January 2002 and December 2005, the TB rates fell by 20% from 31% to 11%. This represents an average fall of 5% per annum. Where the financial effects of fair valuation of TBs are material, the Mozambican companies that invest in TBs would experience materially fluctuating results and financial positions between various years.

3.5.2   Absence of a secondary market

The secondary market for TBs in Mozambique is very thin and can be considered to be almost non-existent. Once an entity invests in TBs, they may be forced to hold them to maturity because of lack of buyers. This means that obtaining market driven fair values is not possible. The IASB alternative is modelling for fair values where active markets do not exist.

3.5.3   Problems of drawing a yield curve

Plotting a smooth continuous and reliable yield curve requires an active and liquid market of the financial instrument. The Mozambican TBs have experienced breaks in their issue and few annual issues to facilitate the plotting of reliable yield curves.

Figure 3.22: Number of treasury bills issued per annum (2000-2005)

Number of TBs
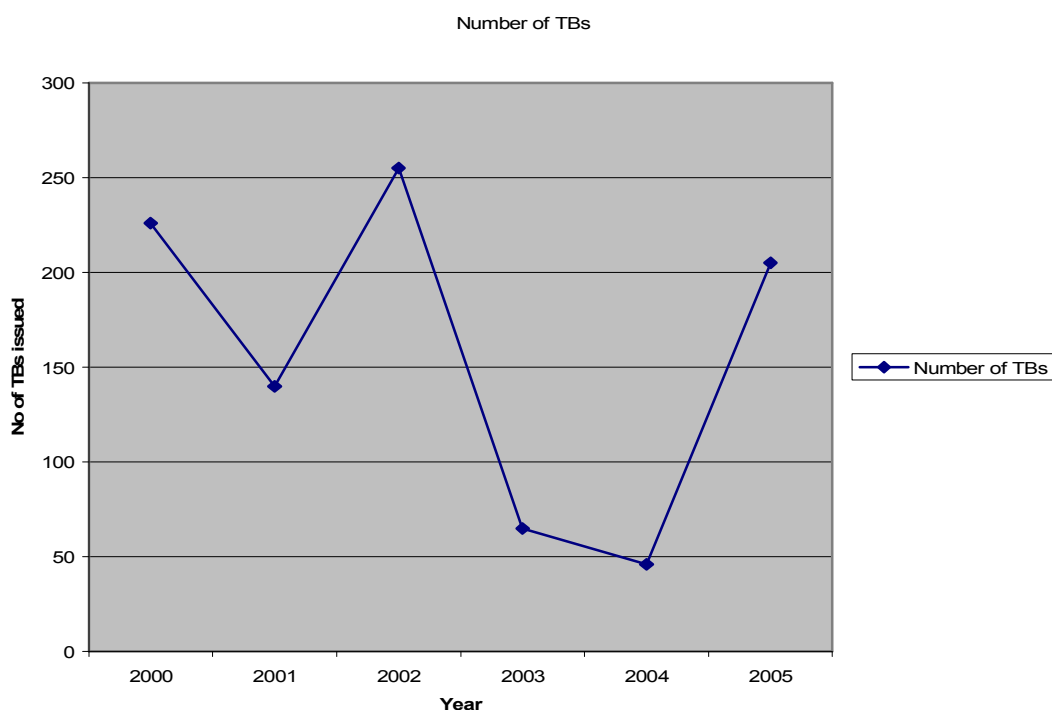
Source. www.bancomoc.co.mz

An analysis of the trend of issues of TBs reveals that there were no TB issues between September 2002 and April 2003. This break distorts the market trends and the yield curve because the TBs show no reaction to the economic fundamentals during their period of absence from the market. Figure 3.22 shows the number of TBs issued per annum. The trend shows a decreasing trend in the issue of TBs with the year 2003 and 2004 recording on 65 and 46 issues of TBs respectively as compared to 226 TBs issued in 2000.

The history of the use of TBs in Mozambique is very young. Statistics are available from the year 2000 and there was no extensive use of TBs before 2000 according to the Bank of Mozambique Economics Department (2006). The period of 2000 to 2005 is too short to allow for proper establishment of a reliable yield curve. The use of estimation techniques such as interpolation and regression analysis is also facilitated by a longer history to allow for the elimination of noise in the statistics. This means that problem of plotting reliable yield curves for TBs creates a significant obstacle to the computation of reliable and credible fair values of TBs in Mozambique.

3.6　OBSTACLES TO THE FAIR VALUATION OF LOAN ADVANCES

The floating rate nature of the interest on loan advances means that there is no interest rate risk exposure because the value of the loan is not affected by market changes. Morris & Sellon (1991:9) note that interest rate changes do not affect the market value of a variable rate instruments. This means that a loan advance re-prices itself to the market whenever market base interest rates change. This means that there are no fair valuation challenges presented to the banks.

The challenges facing the pricing of loan advances by financial institutions in Mozambique include the lack of credit rating agencies to facilitate pricing of loan advances among different financial institutions (see section 3.4.2.2). Currently, pricing is financial institution specific and one entity may obtain funding from various financial institutions at varying interest rates which may not be justified by such factors as default risk of the borrowing entity.

3.7　SUMMARY AND CONCLUSION

Developing economies either do not have public stock exchanges for the trade of equity investments and debt instruments such as bonds or where such stock exchanges exist, they are characterised by thin trading statistics. The concept of a market determined fair value becomes difficult to apply to the financial instruments in developing economies. The example of the African continent serves to illustrate the extent of the problem. Only 30% of the African countries have stock exchanges. The other 70% do not have stock exchanges. This means that all equity investments in these countries is private equity where information to facilitate their valuation is difficult to obtain.

The MSE is inactive and has only one company with quoted equity shares, CDM. The trading statistics of CDM show that the company's shares are very thinly traded. The holders of 96% of the CDM shares have not diluted their shareholdings for the last first five years since the company listed in 2001 on the MSE leaving 4% of the shares as the shares that are in circulation. The earnings and dividends of CDM for the first five years of

its listing have been significantly volatile with differential percentages ranging between 349% and -35%. This makes it difficult to apply the traditional valuation methods such as the dividend growth models and the frees-cash-flow models.

The market for bonds is also significantly inactive. An analysis of the trading statistics of all the bonds listed on the MSE between 1999 and 2005 shows that some bonds never recorded a trading transaction for their full life and the maximum recorded data in any year was 13 transactions which were recorded for a government bond issue in 2001.

Tracing reliable yield curves for use in the valuation of bonds in Mozambique is difficult. This is mainly because of the absence of credit rating agencies in Mozambique and the fact that there issues of bonds is very infrequent to facilitate constructing yield curves.

The Mozambican capital market for bonds also uses four main indices, the Maibor, TBs, MABs and inflation. These indices are also significantly volatile over the short term and the indices sometimes move in an inconsistent manner with each other and with the macro-economic fundamentals in Mozambique. The indices are also not consistently available with since some month record no issue of the some of the indices.

The fair valuation of TBs also faces the same obstacles as those of the bonds. There is no secondary market for TBs and the issues of TBs is not consistent. Some months have recorded no TB issues by the central bank.

Loan advances have no major fair valuation challenges since they normally have floating interest rates and consequently have minimal interest rate risk exposure.

The characteristics and thin trading pattern of the financial instruments in Mozambique also presents obstacles to the classification of some of the financial instruments. The next chapter discusses the classification challenges for Mozambican financial instruments in accordance with IAS 32 and IAS 39.

CHAPTER 4

CLASSIFICATION ISSUES OF MOZAMBICAN FINANCIAL INSTRUMENTS AND THEIR FINANCIAL STATEMENT EFFECTS

4.1 INTRODUCTION

The previous chapter considered the obstacles to the fair valuation of equity investments, bonds, treasury bills (TBs) and loan advances. The characteristics of some of the financial instruments present classification challenges that need to be considered. The accounting treatment of the financial instruments and the financial statement effects are determined by the classification category of the financial instruments according to IAS 32 and IAS 39.

The aim of this chapter is to discuss the classification issues of equity investments, bonds, treasury bills (TBs) and loan advances. These issues are discussed by focussing on the characteristics of these financial instruments. The financial statement effects of each category are also discussed under the related financial instruments. The characteristics are derived mainly from trading statistics on the stock exchange and an analysis of the prospectuses of bonds when they are issued.

The chapter firstly considers the classification issues of equity investments and the financial related financial statement effects. This is then followed by classification issues of both corporate and government bonds and the related financial statement effects. The classification issues and financial statement effects of TBs are also discussed in this chapter. Lastly loan advances together with the related financial statement effects are discussed. A conclusion summarising the main points will end the chapter.

4.2   CLASSIFICATION ISSUES OF EQUITY INVESTMENTS

As per IAS 39 (IASB, 2006:para. 9), investments in equity instruments may either be classified as financial assets at fair value through profit or loss (FAFVTPL) or as available-for- sale financial assets (AFS). An equity investment cannot be classified as held-to-maturity (HTM) because by its nature, equity has no fixed maturity as is the case with for example, bonds. IAS 39 (IASB, 2006:para. 9) also states that they may also not be classified as loans and receivables (LR) because they do not have "fixed or determinable payments".

The two possible classes for equity investments, namely, FAFVTPL and AFS, are measured at fair value subsequent to initial recognition. However, IAS 39 (IASB, 2006:para. 9) disallows classification of equity investments as FAFVTPL if the equity investments "do not have a quoted market price in an active market and whose fair value cannot be reliably measured". This analysis presents significant obstacles for developing economies where active markets may not be existent and it is not possible to reliably measure the fair value of the equity instruments through alternative methods. Notably, it is only the equity investments that have that dispensation.

4.2.1   Financial statement effect of equity investments

4.2.1.1   Balance sheet effects

If equity investments are classified as FAFVTPL or AFS, then IAS 39 (IASB, 2006:para. 43) and IAS 39 (IASB, 2006:para. 46) require the equity investments to be measured at fair value at initial recognition and subsequent to initial recognition respectively. This means that any fair value increases or decreases directly increase or decrease the total assets reported in the balance sheet.

Investments in equity instruments that do not have a quoted price have an exemption from fair value accounting even if they are classified as FAFVTPL or AFS. IAS 39 (IASB, 2006:para. 46c) requires that "equity instruments that do not have quoted market prices in an active market and whose fair value cannot be reliably measured" should be measured

at cost. The cost approach would not have an impact on the balance sheet because the investment would be shown at cost for each financial year unless the investment is impaired in accordance with IAS 36 (IASB, 2006:para. 9) in which case the investment will be showed at cost less accumulated impairment losses.

Most developing economies with inactive stock markets and significant impediments to determining fair values using valuation models would use the cost approach and consequently not have a balance sheet effect.

4.2.1.2 Income statement effects

IAS 39 (IASB, 2006:para. 55a) requires that only the fair value gains and losses of financial instruments classified as FAFVTPL or FLFVTPL shall be recognised in the profit or loss. If equity investments have been classified as FAFVTPL, then any fair value gains and losses would directly affect the reported profits.

SFAS 115 (FASB, 1993:para. 13) has the same approach in that it requires "unrealised holding gains and losses for trading securities shall be included in earnings".

If the equity investments are classified as AFS, then the fair value changes have no impact on the income statement. Rather, they affect the statement of changes in equity as shown below.

Equity financial assets can either be classified as FAFVTPL or AFS. Consequently, IAS 39 (IASB, 2006:para. 55) requires impairment losses on FAFVTPL to be expensed through the profit or loss. IAS 39 (IASB, 2006:para. 66) defines an impairment loss for a financial asset carried at cost as the difference between the asset's carrying amount and the estimated future cash flows from the asset discounted at the current market rate of return for a similar financial asset.

As already noted under the balance sheet effect, most developing economies with inactive stock markets and the significant obstacles to determining fair values using valuation models would use the cost approach and consequently would not have an income statement effect even if they classify their equity investments as FAFVTPL.

4.2.1.3   Statement of changes in equity effects

IAS 39 (IASB, 2006:para. 55b) requires that only fair value gains and losses on AFS shall be recognised through the statement of changes in equity. With respect to impairment losses, IAS 39(IASB, 2006:para. 67) states that "when a decline in the fair value of an available-for-sale financial asset has been recognised directly in equity and there is objective evidence that the asset is impaired, the cumulative loss that had been recognised directly in equity shall be removed from equity and recognised in the profit or loss even though the financial asset has not been derecognised".

Developing markets have no active markets for equity investments. This means that there may be no fair value gains and losses to consider. However, where an equity investment is impaired and has to be measured below cost, then the impairment loss would be charged through the income statement if there are no previous gains that were recognised in the statement of changes in equity.

4.3   CLASSIFICATION ISSUES OF BONDS

The classification of corporate and government bonds depends on the characteristics of the bond issue and management's intention. Consequently, it is possible to have two entities classifying the same instrument differently.

4.3.1   Classification as financials assets at fair value through profit or loss

According to IAS 39 (IASB, 2006:para. 9), an entity can classify its financial assets as FAFVTPL if it is held for trading or if it designates the financial asset as such on initial recognition. An entity is allowed to designate a financial asset as a FAFVTPL if such classification "eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise from measuring assets or liabilities or recognising the gains and losses on them on different bases" or "the group of financial assets, financial liabilities or both is managed and its performance is evaluated on a fair value basis in

accordance with a documented risk management or investment strategy..". An exception to this classification are investments in equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured.

Thus if an investor in Mozambique can provide evidence of trading in bonds, then they can classify them as FAFVTPL. An investor can also use the classification if they can prove the other alternative requirements noted above.

4.3.2 Classification as held-to-maturity investments

The specific characteristics of the Mozambican bonds which affect their classification as HTM are considered. These characteristics include the put and call-option features which are attached to some bond issues.

4.3.2.1 Fixed or determinable payments and fixed maturity

As per IAS 39 (IASB, 2006:para. 9), the classification into the HTM category has two main conditions: the financial asset, in addition to not being a derivative, should have "fixed or determinable payments and fixed maturity" and that the entity should have the positive intention and ability to hold the financial asset to maturity. Hence, the key factors are the fixed or determinable payments and fixed maturity. However, fixed maturity is qualified in that the entity has to have both the intention and ability to hold the investment to maturity. Failure to prove the intention and the ability to hold a financial asset to maturity, e.g. through sale of part of the portfolio, taints the whole portfolio classification and an entity will be prohibited from continued classification of the portfolio or part thereof as HTM.

An analysis of the prospectuses of the bonds issued between 1999 and 2005 shows that the bonds in Mozambique carry floating interest rates that are indexed to different types of base indices. Typical base indices in use are the Maputo inter-bank offer rate (Maibor), Treasury Bills (TBs), monetary authority bills (MABs) and Inflation index. The interest rates are indexed so as to give a bond interest rate of the base index plus margin. The margin on the base index is generally fixed for the duration of the loan for a majority of the bonds but the base index is floating. The payment of interest and repayment of capital is

fixed to particular dates. Consequently, the bonds satisfy the "fixed or determinable payments and fixed maturity" criteria.

Thus, from the IAS 39 analysis above, if an entity can satisfy the intention and ability to hold to maturity criteria, then they can classify their investment in Mozambican bonds as HTM. However, two further characteristics of the bonds may affect the classification into HTM and these are the call and the put features in some of the bonds.

4.3.2.2   The call-option feature

A scrutiny of the prospectuses of bonds issued between 1999 and 2006 shows that all the nine corporate bonds and all the six government bonds issued during this time period have a call-option feature. The call-option feature allows the issuer of the bonds to call the bond issue and return capital to the investors at any time after issue subject to giving a notice of the number of days specified in the prospectus. The call-option can be exercised at the issuer's option if, for example, they obtain cheaper funding and would want to replace the bond issue with the cheaper funding or simply an improvement in the cash flow that puts an entity in a position to repay its borrowings.

Bond issues with a call-option feature are not peculiar to Mozambique only. Brigham and Daves (2002:102) comment that most corporate bonds in the USA have provisions for early repayment (call features). One issuer, Cimentos (Cimentos, 2004) exercised this option and redeemed the initial issue and immediately replaced it with a fresh issue. The first issue of the bond was on 13 June 2002 (Cimentos, 2002) as a five-year bond issue maturing on 13 June 2007. The capital raised by the issue was MT 238 billion. The nominal value of the issue was MT 100 000 each and was priced at par value. The base index used was three months Maibor plus a 2% margin. The call option was exercisable starting from the date of the tenth coupon payment which was 13 December 2004. On 13 December 2004, Cimentos exercised the call option and repaid money amounting to the total issue of MT 238 billion. The fresh issue was issued on the same date for MT 198 333 300 000 (83% of the original issue).The fresh issue expires on the same date as the original issue on 13 June 2007.

The notable feature of the new issue (Cimentos, 2004) is that it was issued at a different base index to the original issue. Whereas the original issue was issued indexed to the three months Maibor plus 2%, the new issue was indexed to the average of the last six issues of TBs plus 5.25%. The redemption may thus have been necessitated by the need to change the base index from Maibor to TBs. As at 13 December 2004, the call date, three months, Maibor was 21% and Cimentos would pay 23% after adding the 2% margin. At the same date, the TBs index (the average of the last six issues) was 11% and at a margin of 5.25%, Cimentos would pay 16.25%. This meant a saving of 6.75% and this could have motivated Cimentos to call the issue before maturity.

IAS 39 (IASB, 2006:para. AG18) allows an investment with a call feature to be classified as HTM because the "call option, if exercised, simply accelerates the asset's maturity" subject to the fact that the holder of the investment will recover substantially all of the carrying amount.

The Mozambican bonds allow the holder to recover substantially the carrying amount in the event that the call-option is exercised. Hence, the call feature does not prevent an entity from classifying the Mozambican bonds as HTM.

4.3.2.3   The put-option feature

A review of the prospectuses of bonds issued between 1999 and 2005 shows that some corporate bonds and some government bonds have a put-option feature which gives the bond holder or investor the right to require the issuer to repay the bond issue before maturity. Out of the total of nine corporate bonds that were issued since the inception of the Mozambique Stock Exchange (MSE), five have a put-option feature. These are Madal 1999, BIM 2000, Cimentos 2002, BIM 2003a and Cimentos 2004. The holder or investor is required to give notice (ranging from 10 to 30 days) of his intention to exercise the put-option subject to an initial grace period specified in the prospectus.

IAS 39 (IASB, 2006:para. AG 18) notes that a "financial asset that is puttable….cannot be classified as a held-to-maturity investment because paying for a put feature in a financial asset is inconsistent with expressing an intention to hold the financial asset until maturity". Thus, the notable feature that disqualifies the classification of say a bond investment as

HTM is an entity's payment of a premium for the put option which is translated to mean that the entity is considering the possibility of "putting" the investment to the issuer before maturity. In other words, if an investor has an honest intention about wanting to hold the investment to maturity, then they should not pay for a put-option premium. If they do not pay for the put-option premium, then they will eliminate the chance of pulling out of the investment through exercising the put option before maturity.

However, the Mozambican bonds put-options have no upfront payment of a premium for all the put options. Rather, they provide for a penalty commission that the investor is charged for redemption before maturity e.g. the Banco Internacional de Moçambique (BIM) bonds provide for a commission penalty of 0.5% of capital should an investor exercise the put option (BIM, 2000). The absence of an upfront premium payment in the Mozambican bonds means that it is not possible to anticipate the holder's intention in a manner noted by IAS 39 (IASB, 2006:para. 18) where an investor would buy the put-option and hence show an advance possibility of putting the investment before maturity.

The presence of this open put-option for which the holder is not required to pay an upfront premium means there is a strong case for not classifying the bonds as HTM. The option to "put" the bonds exists and is open to be exercised any time at the choice of the holder and the premium is only payable on exercising the option. Banco Standard Totta de Moçambique (BSTM) (2003:58) classified some of their investment in corporate bonds of Cimentos as HTM. This was despite the existence of the put feature in the bond issue. However, those corporate bonds and government bonds with no put feature meet the criteria for classification as HTM.

4.3.3   Classification of bonds as loans and receivables

IAS 39 (IASB, 2006:para. 9) defines LRs as "non-derivative financial assets with fixed or determinable payments that are not quoted in an active market, other than:

(a) *those that the entity intends to sell immediately or in the near term, which shall be classified as held for trading, and those that the entity upon initial recognition designates as at fair value through profit or loss;*

(b) *those that the entity upon initial recognition designates as available-for-sale; or*

(c) those for which the holder may not recover substantially all of its initial investment, other than because of credit deterioration, which shall be classified as available for sale.

An interest acquired in a pool of assets that are not loans or receivables (for example, an interest in a mutual fund or a similar fund) is not a loan or receivable".

The major distinguishing feature of the LRs from HTM is that for LRs, the entity does not necessarily need to have the intention or ability to hold them to maturity. If an entity is undecided, then they may be able to classify the financial asset with fixed or determinable payments and fixed maturity as a LR. This concession to classify financial assets as LRs while the entity has not yet decided what it wants to do with the financial asset is also enhanced by the exemption of the loans and receivables from the tainting provisions that exist for HTM (IAS 39, IASB, 2006:para. BC 25)). This means that the entity may later decide, for example, to sell part of financial assets classified as LRs without necessarily tainting the portfolio classification. The major limitation though is the fact that the financial asset should not be traded in an active or liquid market for it to qualify as LR as per the definition above.

Notably, IAS 39 (IASB, 2006:para. BC28) no longer has the requirement that LRs have to be originated by the entity. This means that even purchased loans can now be classified as LRs.

The Mozambican corporate bonds and government bonds are quoted in a market which may not be considered to be active or liquid (see chapter 3 conclusion). There is no active and liquid secondary market for these instruments hence, an entity can easily meet the requirement that it has no intention to sell the financial assets immediately or in the near term. The call and put features do not restrict the classification into LRs.

As a result, there is a strong case for classifying the Mozambican corporate bonds and government bonds as LRs and measure them at amortised cost subsequent to initial recognition.

4.3.4 Classification of bonds as available-for-sale

The classification category of AFS is by designation or simply the financial assets that have not fallen into any of the other three types of classifications which are LRs, HTM or FAFVTPL (IAS 39, IASB, 2006:para. 9). Consequently, the corporate bonds and the government bonds may be classified as AFS at an organisation's choice.

4.3.5 Financial statement effect of bonds

The financial statement effects of corporate bonds and government bonds also depends on their classifications as discussed above. The financial statement effects are analysed below.

4.3.5.1 Balance sheet effects

As noted under section 4.2.1, fair value movements have an effect on the balance sheet for only two categories of financial instruments; FAFVTPL and AFS because these financial instruments are measured at fair value both at initial recognition and subsequent to initial recognition. All fair value increases (or decreases) will increase (or decrease) the value of reported financial assets in the balance sheet. SFAS 115 (FASB, 1993:para. 12) has similar accounting treatment for financial assets classified as trading securities and AFS.

If the bonds are classified as HTM or LRs, then they are measured at amortised cost subsequent to initial recognition using the effective interest rate method as per IAS 39 (IASB, 2006:para. 47). These two categories of financial instruments are not subsequently adjusted for fair value movements. The fair value changes are ignored in the subsequent measurement of these financial instruments, hence they have no balance sheet effect. SFAS 115 (FASB, 1993:para. 12) has similar accounting treatment for the HTM category where it is measured at amortised cost subsequent to initial recognition. SFAS 115 (FASB, 1993) has no category called LRs.

Developing economies face significant obstacles in the fair valuation of bonds because of the insignificant activity in the market for these bonds. Valuation models would have to be used to arrive at fair values for the investments in bonds classified as FAFVTPL and AFS.

4.3.5.2   Income statement effects

The fact that bonds can fall into all the four categories means that the income statement effects of FAFVTPL and AFS classifications are as noted above for equity investments. As noted in section 4.2.1.2 for equity investments, the classification of bonds as FAFVTPL will result in increases or decreases in the reported results of the entity since any fair value gains and losses are recognised through the income statement. On the other hand, classification as AFS will result in fair value movements that affect the statement of changes in equity with no income statement effects.

The classification categories of HTM and LRs have no fair value effects on the income statement since these financial instruments are recognised at amortised cost subsequent to initial recognition. The effect of fair value movements are not recognised in the financial statements.

However, IAS 39 (IASB, 2006:para. 63) defines an impairment loss for a financial asset carried at amortised cost as the difference between the asset's carrying amount and the present value of the estimated future cash flows (excluding future credit losses that have not been incurred) discounted at the financial asset's original effective interest rate. The resulting impairment loss is recognised in the profit or loss.

4.3.5.3   Statement of changes in equity effects

IAS 39 (IASB, 2006:para. 55b) requires that only fair value gains and losses on AFS shall be recognised through the statement of changes in equity. Impairment losses and foreign exchange gains and losses are recognised through the profit or loss. Only if an investment in bonds is classified as an AFS will the fair value changes affect the statement of changes in equity.

Developing economies such Mozambique do not have active markets for bonds, hence, determining reliable fair values is a major challenge. Where reliable fair values cannot be determined, the cost model may be used and consequently will not have an effect on the statement of changes in equity.

4.4   CLASSIFICATION OF TREASURY BILLS

As discussed in chapter 3 section 3.4.4.1.2, TBs are short-term (three to twelve months) debt securities issued by the central bank of Mozambique for money market liquidity management and short-term government funding. The major difference between TBs and government bonds is the maturity term at inception. Whereas government bonds are long term in nature covering periods as long as ten years, TBs are short-term financial instruments. The maximum period of Mozambican TBs is 364 days (Bank of Mozambique, 2006).

4.4.1   Classification as financial assets at fair value through profit or loss

TBs can be classified as FAFVTPL under IAS 39 (IASB, 2006:para. 9) if an entity acquired them for trading. Alternatively, the classification is allowed if "it eliminates or reduces a measurement or recognition inconsistency".

The held-for-trading (HFT) sub-category needs further analysis. The IAS 39 requirement for classification into HFT is that the financial asset or financial liability to have been "acquired or incurred principally for the purpose of selling or repurchasing…in the near term", be "part of a portfolio of identified financial instruments that are being managed together and for which there is evidence of a recent actual pattern of short-term profit taking" or "a derivative (except for a derivative that is a designated and effective hedging instrument)". The classification as HFT presents significant obstacles in developing countries. In Mozambique, as was seen in chapter 3 section 3.5.2, trade in TBs is inactive and very thin because there is no active secondary market for TBs. This presents the problem of proving that the TBs were held-for-trading. There is no observable secondary market for treasury bills. Unless a company can show evidence of short-term profit taking, then this classification may prove difficult.

However, it is important to note that the requirement of HFT does not specifically require the holder to prove the existence of a market, albeit an active one. It just requires the holder to have a short-term profit taking motive and a recent actual pattern of short-term profit taking may suffice. From this analysis, there is a strong case for classifying Mozambican TBs as HFT despite the absence of an active and liquid secondary market for TBs. Whether the actual short-term profit taking happens or not as per management's objective ("purpose") does not seem to matter. For example, TBs acquired for the purpose of short-term profit taking may be held to maturity because the market movements have been unfavourable for the entity to sell profitably.

4.4.2 Classification as held-to-maturity investments

The secondary market for TBs in Mozambique is very thin. This means that once an investor invests in TBs, there is limited opportunity for selling them in the secondary market before maturity. If an active secondary market for TBs existed, then investors would be able to sell the TBs in the secondary market before maturity at their choice. Consequently, TBs in Mozambique fit in well in the HTM category provided the investor can show both the intention and ability to hold them to maturity.

4.4.3 Classification as loans and receivables

IAS 39 (IASB, 2006:para. AG26) notes that "any non-derivative financial asset with fixed or determinable payments (including loan assets, trade receivables, investments in debt instruments and deposits held in banks) could potentially meet the definition of loans and receivables". There is no consideration of the entity's intention and ability to hold the financial asset to maturity. However, the financial assets do not have to be quoted in an active market. The Mozambican TBs are not quoted in an active market and have fixed or determinable payments. Consequently, Mozambican TBs may be classified as LRs.

4.4.4 Classification as available-for-sale financial assets

The classification of AFS has no major limitations except that the financial asset should not be a derivative. This classification is by designation at initial recognition. Thus, if TBs are not derivatives, they can be designated as AFS.

4.4.5   Financial statement effects of treasury bills

As noted under section 4.1, the financial statement effects of financial instruments are determined by their classification. The financial statement effects of TBs depend on how the entity holding the TBs classifies them as in accordance with IAS 39.

4.4.5.1   Balance sheet effects

If an entity is able to classify its investments in TBs as either FAFVTPL or AFS, then unrealised fair value gains and losses associated with the subsequent measurement will increase or decrease the amounts disclosed in the balance sheet. On the other hand, if an entity classifies its investments as HTM or LRs, then there are no fair value re-measurements subsequent to initial recognition and consequently, there are no fair value effects on the balance sheet.

4.4.5.2   Income statement effects

If TBs are classified as FAFVTPL, then the related unrealised gains and losses will recognised through the income statement (IAS 39, IASB, 2006: para 55). Similarly, under SFAS 115 (FASB, 1993:para. 13), if investments in TBs are classified as trading securities, then unrealised fair value gains and losses are accounted for through the profit or loss. Impairment losses on TB classified as HTM or LRs are accounted for through the profit or loss as noted in section 4.3.5.2 because they will be measured at amortised cost subsequent to initial recognition. If TBs are classified as AFS, then IAS 39 (IASB, 2006:para. 67) requires that when a decline in the fair value of an AFS financial asset has been recognised directly in equity and there is objective evidence that the asset is impaired, then the cumulative loss that had been recognised directly in equity shall be removed from equity and recognised through the income statement.

4.4.5.3　Statement of changes in equity effects

The statement of changes in equity is affected by the classification category of AFS financial assets. If investments in TB are classified as AFS, then unrealised fair value gains and losses subsequent to initial recognition are accounted for through the statement of changes in equity unless the unrealised losses are an indication of impairment (see 4.4.5.1 above). SFAS 115 (FASB, 1993:para. 13) has a similar accounting treatment for financial instruments classified as AFS.

4.5　LOAN ADVANCES TO CUSTOMERS

Loan advances form a major part of the Mozambican financial institutions' assets and principal activities. They are commonly referred to as the bank loan book. According to the KPMG banking survey (2004:11), over 30% of the total assets of all the financial institutions for the years 2003 and 2004 consisted of loan advances to customers. As a result, their classification is important.

4.5.1　Classification as financial assets at fair value through profit or loss

Loan advances cannot be classified as HFT because there is no market for selling loan advances in Mozambique. There are no factoring houses where entities can sell their loan book or debtors in advance at a discount. Consequently, the banking book is held to maturity with minimal possibility of selling before maturity. The entity may intend to sell, but currently the expectation of finding a buyer is difficult to prove.

4.5.2　Classification as loans and receivables

Loan advances, as noted in chapter 3 section 3.6, have floating rates of interest. This means that their repayments are not fixed. However, the payments are determinable and because the floating rates are indexed to easily available indices such as the London inter-bank offer rate (Libor) and the Maibor. The loan advances are not quoted in an active market since there is no market for loan advances. As noted above, the absence of an

active market for loan advances means that an entity cannot easily prove the ability to execute an intention to sell the loan advances immediately or in the near term.

From the above analysis, the loan book can be classified as LRs.

4.5.3   Classification as held-to-maturity investments

The classification of the loan book according to IAS 39 (IASB, 2006:para. 9) as HTM requires that the financial assets have fixed or determinable payments and fixed maturity. However, among other requirements of the definition of the HTM classification, the financial asset should not meet the definition of LRs. One of the key elements of the LRs definition is that the financial asset should not be quoted in an active market in addition to having fixed or determinable payments. Because of the absence of a quoted active market for loan advances in Mozambique, the loan book meets the definition of LRs. This means that a Mozambican bank's loan book cannot be classified as HTM.

4.5.4   Classification as available-for-sale financial assets

The classification as AFS requires that an entity designates the assets as AFS or be assets that are not already classified as LRs, HTM or FVTPL. It is a residual classification which can be determined by default if not having fallen into the other categories. An entity can designate a financial asset at initial recognition as an AFS (IAS 39, IASB, 2004:para. 9). Hence, a bank's loan advances can be classified as AFS by designation at initial recognition. IAS 39 does not require the bank to justify this designation at initial recognition. There is no explicit requirement for the bank to prove the existence of a market for the financial assets classified under this category.

4.5.5   Financial statement effects of loan advances

Loans and advances in Mozambique fall into the category of LRs. As a result, loans and advances cannot be classified as AFS unless an entity classifies them as AFS by designation on initial recognition (IAS 39, IASB, 2006:para. 9).

4.5.5.1   Balance sheet effects

IAS 39 (IASB, 2006:para. 47) requires that LRs be measured at amortised cost subsequent to initial recognition. As a result, there are no fair value re-measurements for loan advances. This means that the balance sheet is not affected. If they are classified as AFS, then as noted above, the balance sheet will increase or decrease with the fair value increases or decreases respectively because AFS are re-measured to fair value subsequent to initial recognition.

4.5.5.2   Income statement effects

As noted above, loan advances are measured at amortised cost subsequent to initial recognition. Consequently they have no fair value effects on the income statement. Similarly, if loan advances are classified as AFS, they have no fair value effects on the income statement.

4.5.5.3   Statement of changes in equity effects

The statement of changes in equity would only be affected by the financial instrument category of AFS (IAS 39, IASB, 2006:para. 55). LRs would not have an impact on the statement of changes in equity.

4.6   FAIR VALUE DISCLOSURES FOR ALL FINANCIAL INSTRUMENTS

IFRS 7 is the standard that requires fair value disclosures even for those assets measured at amortised cost under IAS 39. IFRS 7 (IASB, 2006:para. 25) requires that "for each class of financial assets and liabilities…, an entity shall disclose the fair value of each class of financial assets and liabilities in a way that permits it to be compared with the carrying amount". This means that, while some financial assets such as HTM investments and LRs may be measured at amortised cost in the financial statements the entity still has to perform a fair value exercise for disclosure purposes.

4.7   SUMMARY AND CONCLUSIONS

The classification of equity instruments as FAFVTPL is impeded by the fact that there is no active market for equity financial instruments and consequently, it is difficult to show that they are held for trading. Consequently, developing countries may have to use the historical cost basis for equity investments.

Mozambican bonds may be classified as FAFVTPL if the investor can prove evidence of trading in the bonds or if they meet the alternative requirements and designate financial instruments as FAFVTPL. The thin trading pattern of bonds makes it difficult to prove that bonds are held for trading. The classification of Mozambican bonds as HTM complicated by the fact that some bonds have a put-option feature which the holder can exercise after giving notice to the issuer. The option feature is not paid for upfront but rather when the holder exercises their option. The bonds may also be classified as LRs because they are not quoted in an active market. Bonds can be classified as AFS by designation or if the bonds have not fallen into any of the other categories.

TBs can be classified as FAFVTPL if the holder can show evidence of trade in TBs. There seems to be no requirement to prove the existence of a market but nevertheless, the non-existence of a secondary market would lead to some questioning the classification category of HFT. TBs may be classified as HTM if the entity has both the intention and ability to hold the TBs to maturity. The TBs in Mozambique are not quoted in an active making it possible to classify them as LRs. The classification of TBs as AFS is by designation or if they do not fall into the other categories provided that they are not derivatives.

It would be difficult to classify loan advances to customers by banks as FAFVTPL because there are no factoring houses in Mozambique where entities can sell their loan book in advance at a discount. Loan advances can be classified as LRs because there is no active market for loan advances in Mozambique. A bank may not classify loan advances as HTM because they already meet the definition of LRs. The classification category of AFS is by designation or if they have not fallen into the other categories.

The financial statement effects of the financial instruments depends on the classification. All financial instruments classified as FAFVTPL and AFS will be re-measured at fair value

subsequent to initial recognition. The unrealised gains and losses on FAFVTPL are recognised through the profit or loss while the unrealised gains and losses of AFS financial assets are recognised through equity unless the unrealised losses are an indication of impairment. Financial instruments that are classified as HTM and LRs are not re-measured at fair value subsequent to initial recognition. Consequently, the HTM and LRs categories have no fair value impact on financial statements subsequent to initial recognition.

It is important to highlight that IFRS 7 (IASB, 2006:para. 25) requires all entities to disclose fair values for all financial instruments recognised in the balance sheet including those that are classified as HTM and LRs.

The next chapter discusses the empirical research methodology that was adopted as part of the study.

CHAPTER 5

EMPIRICAL RESEARCH AND METHODOLOGY

5.1 INTRODUCTION

The need for empirical evidence to support or refute the assertions and analyses noted in the previous chapters is undoubtedly critical. It is important to obtain views of interested practitioners in the market to avoid views which may in actual fact not be shared by the other professionals and interested groups.

This chapter's aim is to conduct an empirical investigation using questionnaires to finance professionals in Mozambique with banking experience. The questions used in the questionnaire were derived from the observations noted in chapters 2, 3, and 4. A rating scale is used for respondents to select their choice.

The chapter starts by defining the population and the challenges faced in defining the population. The sampling method is then discussed followed by the sample size determination criteria. The chapter then discusses the questionnaire design and the data collection method. The limitations of the empirical research are also discussed. The chapter ends with a conclusion.

5.2 DEFINING THE POPULATION

Mouton (2003:173) defines a population as "the theoretically specified aggregation of study elements".

Defining the population is a critical component of the study. This research faced several challenges to the definition of the population and several factors had to be considered, some of which were particular to the Mozambican environment.

5.2.1   Technical challenges

Due to the technical nature of the study, the target population had to be particular groups of people who are reasonably aware of the principles of fair valuations and IFRS statements. For example, in a banking environment, the people most likely to be aware of these principles are the accountants and senior treasury personnel. Junior finance and treasury staff may only be aware of particular sections on which they work but not the whole picture to enable them to be reasonably aware of fair value principles and IFRS.

5.2.2   Industry sectors

Financial instruments can virtually be found in any business entity. However, they are more prevalent in banks and the impact of IAS 32, IAS 39 and IFRS 7 is felt more in financial institutions than in other type of business. Closely related to the group of financial institutions are audit firms that audit banks. Hence, the primary target groups were all banks' personnel in finance and treasury and audit firms personnel who had performed bank audits since these were the people that had reasonable knowledge of the operations of the capital markets in Mozambique.

5.2.3   Language constraints

The official language in Mozambique is Portuguese. Consideration had to be given as to whether the target population group would be able to understand a questionnaire written in English. Fortunately, most bank employees and audit firm employees understand English reasonably well.

5.2.4   Monopoly of audit firms

There are only two major audit firms in Mozambique. These are currently KPMG and Ernst & Young. PriceWaterhouseCoopers and Deloitte have very small practices in the country. This can be illustrated by the dominance of these two firms in the audits of banks. KPMG currently audits seven of the nine banks in Mozambique and Ernst & Young audits the other two. It could have been beneficial to this study if other firms audited banks and provided their opinions on the Mozambican financial market system.

5.2.5   Limited local expertise of IFRS knowledge

Knowledge of IFRS is still limited in Mozambique. Some audit firms like Ernst and Young make significant use of expertise from sister-firms in Portugal and South Africa for their local bank audits as per discussion with some Ernst & Young personnel. Although KPMG makes minimal use of external assistance, it too heavily relies on teams of expatriates to perform the bank audits. This affected the sample size as noted later. The knowledge of financial instruments is even more limited in other industries that are outside financial services.

Taking the above factors into account, the population was defined to be senior finance and treasury staff of banks and audit firms' employees (both current and former that could be accessed during the research) with bank audit experience in the Mozambican market. Accessibility of former bank employees and audit firm employees with Mozambican experience was difficult and consequently a limiting factor of the research.

5.3   SAMPLING METHOD

A sample is part of the population whose results the researcher will use to make generalisations about the whole population. The two main sampling methods are probability sampling and non-probability sampling. The main difference between the two is that "non-probability sampling does not involve random selection and probability sampling does" though this does not mean that non-probability samples are not representative - only that they do not use the probability theory (Social research methods, 2006). Probability sampling requires all units in a population to have an equal probability of being chosen. This obviously requires a large population pool of units with similar characteristics from which a researcher wishes to make generalisations after testing only a sample of the population.

A type of non-probability sampling called expert sampling was used. This "involves the assembling of a sample of persons with known or demonstrable experience and expertise in some area" (Social research methods, 2006). This type of sampling falls under the purposive sampling sub-group and the choice in this case was driven by the fact that the

subject matter requires specialised knowledge and would not be expected from people as general information. The sample composed mainly of senior finance and treasury personnel of banks and auditors of these banks since these are considered to be reasonably knowledgeable about fair values issues and IFRS and this had to be taken into consideration during the design of the questionnaire (Mouton, 2003:236). Mouton (2003:166) again concurs that in sampling, it may sometimes be appropriate for one to select the sample on the basis of one's "knowledge of the population, its elements and the nature of the research aims."

5.4   SAMPLE SIZE DETERMINATION

The sample size was determined to be 22. This sample size was arrived at after taking into account the following factors:

Total banks in Mozambique	9
Audit firms auditing banks	2

The target was to get at least one finance employee per bank to give a total of nine bank employees. Additionally, only four of the banks have separate treasury functions, hence, the research aimed to sample at least one treasury employee, the head of treasury for each of the four banks. As for audit firms, at least seven members from each of the two audit firms that do bank audits for a total of 14 people. However, because KPMG audits 78% of the banks (7 out of the 9 banks), then at least 9 people were to be from KPMG. From Ernst and Young, the following notes were relevant:

- **Language -** The firm generally speaks Portuguese as the medium of communication. Consequently, the questionnaire was limited by that fact.

- **Inaccessibility of potential respondents from Ernst and Young -** The two banks being audited by Ernst & Young are done with lead teams coming from Portugal and South Africa. These teams were not accessible to the researcher.

As a result, there were no respondents from Ernst & Young.

Sample lists for banks used was mainly from contacts used by KPMG for its banking survey.

Judgemental sampling was used due to prior knowledge of the market by the researcher and his experiences gained through auditing the majority of the banks for several years. The subject matter is mainly known by banks Head of Finance personnel and banks treasury staff. The researcher has no reason to believe the sample will not be a representative sample since the issues contained in the questionnaire are mainly issues of fact about the economy rather than issues of opinion, e.g. the question: *The Mozambique Stock Exchange is not an active market for ordinary shares, government bonds and corporate bonds* is a matter of fact for a person with knowledge of the market.

5.5   QUESTIONNAIRE DESIGN

A significant majority of the questions used in the questionnaire (refer to appendix A) were derived from the findings in chapters 3 and 4 and some arguments for and against the use of fair values as discussed in chapter 2. This suited the research well in that the answers would either confirm or refute the theoretical findings noted in earlier chapters. A rating scale was used with choices of Strongly Agree, Agree, Unsure, Disagree, and Strongly Disagree. These were used to make it easy to use by the respondents. The agreement scale type of rating scale was considered appropriate in that they would either confirm or refute the researcher assertions. The questionnaire choice of "unsure" was added owing to the technical nature of the questions. A preliminary test of the questionnaire with five of the respondents revealed that not all respondents will have knowledge of the issues being dealt with in the questionnaire. The use of "unsure" was also considered necessary since the questions were of a factual nature and there was a possibility that some respondents may not have experienced the question being asked. Stapack.com (2006) notes that "unlike attitude questions, respondents might legitimately not know the answer to a factual question". For example, a question asking if the respondent considered CDM shares to be actively traded on the Mozambique Stock Exchange may be asked to respondents who may never have closely analysed the trade of CDM shares on the MSE.

The initial questionnaire was pre-tested using five of the respondents. The major contribution obtained was that the questions were of a technical nature and thus needed

to be defined and where necessary, explanations provided as appropriate before each question to avoid ambiguity.

To facilitate the questionnaire structure, related questions were grouped together and a brief definition or description was added before each category of similar questions. This was in line with the results of the pre-testing done by the researcher as noted above.

5.6   DATA COLLECTION METHOD

The self-administered questionnaire approach was used to collect data mainly because the population under study was "adequately literate" (Mouton, 2003:258).The population comprises mainly of finance personnel who were all adequately literate. Many different methods of data collection exist. These include personal interviews, telephone surveys, mail surveys and e-mail surveys. The main factors used to choose the best method that suits a particular situation are speed, cost, internet usage, literacy levels, sensitivity of questions and the need to get reaction to video, sound and graphics (Survey System, 2006).

Personal interviews and telephone interviews were considered as data collection methods. However, owing to their high cost and their heavy reliance on setting mutually agreeable time with interviewee, they would be more time consuming and not very favourable to the sample category selected for data collection. Normally, senior finance and treasury personnel are busy people and it is not easy to obtain an interview meeting with them. However, their main advantage is that it would have been possible to obtain explanations to certain questions and obtain clarifications from interviewees and thus improve the quality of the responses.

Mail surveys "allow the respondent to answer at their leisure time" (Survey System, 2006) but their major disadvantage is that they are slow with a long time lag between dispatching the questionnaire or response and receiving it.

The e-mail survey method was chosen because of its fast speed, low cost, high literacy levels in the sample and availability of e-mail to all members of the sample. It also allowed

sample members to answer at their leisure time and convenience as opposed to interviews.

5.7 LIMITATIONS OF THE EMPIRICAL RESEARCH

The empirical research has limitations which are highlighted in this sub-section. Some of these limitations are applicable to a number of similar developing countries.

5.7.1 Small population and sample size

The banking sector in Mozambique has few banks and is dominated by a few players. The whole economy has nine banks. As a result, the population size and sample size were small. The results of the research would be more representative with a larger population size to select the sample from.

5.7.2 Limited knowledge of IFRS and fair valuation issues

As already noted, there is a limited knowledge of IFRS and fair valuation issues in Mozambique. Currently, Mozambique uses local GAAP which is also used for tax purposes and is considering adopting IFRS. This limited knowledge of IFRS resulted in the questionnaires having to provide explanations and examples to research questions in an attempt to simplify the questions. The research would have been more accurate had Mozambique been using IFRS as it financial reporting framework since the population would have been more knowledgeable about the issues under discussion.

5.7.3 Absence of analysts and similar institutions

There are no organisations functioning as financial analysts and credit rating agencies to provide specialised opinions on the various financial research questions. In the developed world such as the USA and the United Kingdom, financial analysts and credit rating agencies provide specialised knowledge on financial markets and the factors that drive them. The research would have benefited from the availability of such specialists.

5.7.4 Inaccessibility of some potential respondents

Some audit firms such as PriceWaterhouseCoopers and Ernst & Young use expertise from Portugal and South Africa to audit financial institutions. The identity and availability of these persons could not be established. Again, the research would have benefited from the contributions of such practitioners.

5.7.5 Inability to provide explanations to answers by respondents

The disadvantage of the questionnaire as a method of gathering evidence is that it does not allow respondents to explain their reasons for the answers they give. The research could have gained a further insight into the Mozambican capital market system if respondents explained their choices especially where they disagreed.

5.8 SUMMARY AND CONCLUSION

The population was defined as senior finance and treasury staff of banks and audit firms' employees with bank audit experience in the Mozambican market. The sample size was determined on the basis of the possible number of people working for financial institutions and audit firms who were expected to have reasonable knowledge of the subject matter.

Due to the specialised nature of the investigation, a type of non-probability sampling called purposive sampling was used. A subcategory of purposive sampling called expert sampling was used to select the eventual sample which was composed of people with specialised knowledge on the capital market system in Mozambique. Questions used for the questionnaire were derived from observations made in the previous chapters. To avoid ambiguity, definitions and explanations were added to the questions.

The email survey approach was used owing to its high speed, low cost and high literacy levels in the population. The research faced various challenges such as language, limited access to all potential respondents and limited knowledge of IFRS in Mozambique. However, this was compensated for through explanations and definitions to each question used in the questionnaire as already noted. The next chapter summarises and analyses the responses from the questionnaires.

CHAPTER 6

ANALYSIS OF EMPIRICAL RESEARCH FINDINGS

6.1   INTRODUCTION

The results of the empirical research will need to be analysed and compared to the evidence from literature reviews on the subject as noted in chapters 2, 3 and 4 to support or refute the theoretical research findings.

This chapter's main focus is the analysis of the empirical research findings obtained from the responses to the questionnaires designed, relating these findings to the main theme of the study.

The chapter begins with an analysis of the response rate. This is followed by a discussion of the actual research findings focussing of each of the questions in the questionnaire. Pie charts are used to present the results of the analysis. The chapter end with a summary of the main conclusions from the empirical research findings.

6.2   RESPONSE RATE

The study sample consisted of 22 respondents comprising bank finance and treasury personnel and auditors of these financial institutions. The basis of this sample was established taking into account the specialised nature of the subject. Not any ordinary person is expected to be conversant with IFRS requirements for fair valuation of financial instruments and the operations of the Mozambique Stock Exchange (MSE). The target sample was 22 people and 20 responses were obtained representing an overall response rate of 91%. Appendix A shows the summary results of all the questionnaire questions and the related responses per question. Appendix B shows the list of respondents and the response rate. The high response rate was caused mainly by the fact that the researcher established personal contact with a significant number of the respondents during his work both as an auditor of the majority of the banks for several years and during his research

for the Mozambique Banking survey project, officially published by KPMG-Maputo annually, where he was the project leader. This facilitated follow-ups since and also encouraged openness where some respondents needed clarification.

6.3 RESEARCH FINDINGS

6.3.1 Activity of the Mozambique Stock Exchange

Figure 6.1: Question 1a – *The Mozambique Stock Exchange is not an active market for ordinary shares, government bonds and corporate bonds.* The aim of this question was to obtain the respondents opinion on whether they considered the MSE to be an active market for ordinary shares, government bonds and corporate bonds. Figure 6.1 summarises the results.
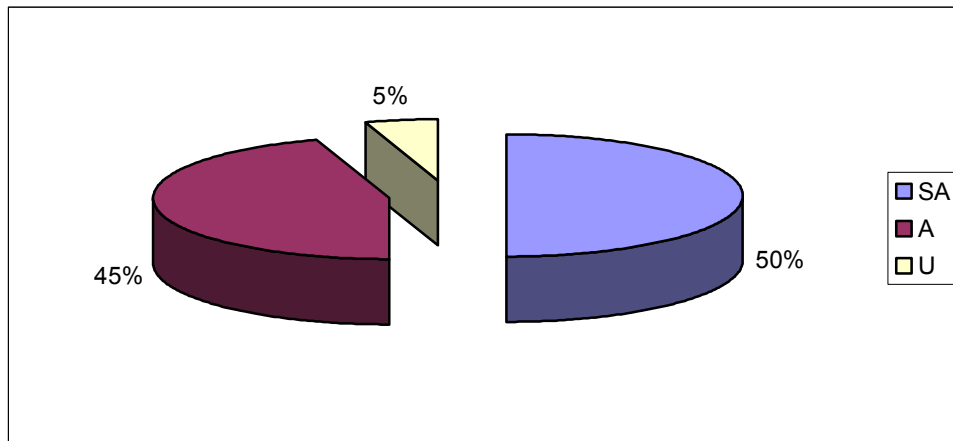
Figure 6.1

The results in Figure 6.1 above show that exactly 50% of the respondents strongly agreed with the assertion that the MSE is not an active market for equity shares and bonds. 45% agreed and 5% were unsure. This means that 95% of the respondents consider the MSE to be non-active which is consistent with the findings in chapter 5 which concluded that the MSE was inactive and illiquid for trade in equity shares and bonds. The inactivity of the MSE is therefore a constraint in the determination of fair values for equity investments and bonds.

Figure 6.2: Question 1b – *Ordinary shares of Cervejas de Mozambique are not actively traded on the Mozambique Stock Exchange.* The aim of this question was to investigate the view of the respondents about the activity of the shares of CDM, the only quoted company on the MSE. Figure 6.2 below summarises the results.
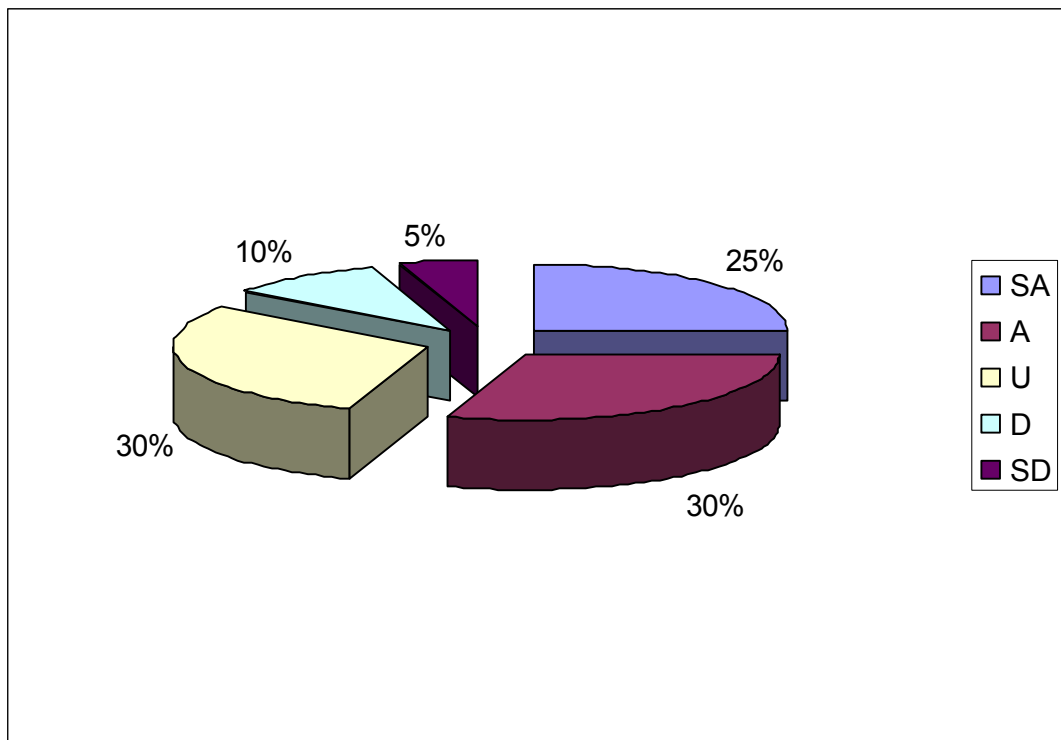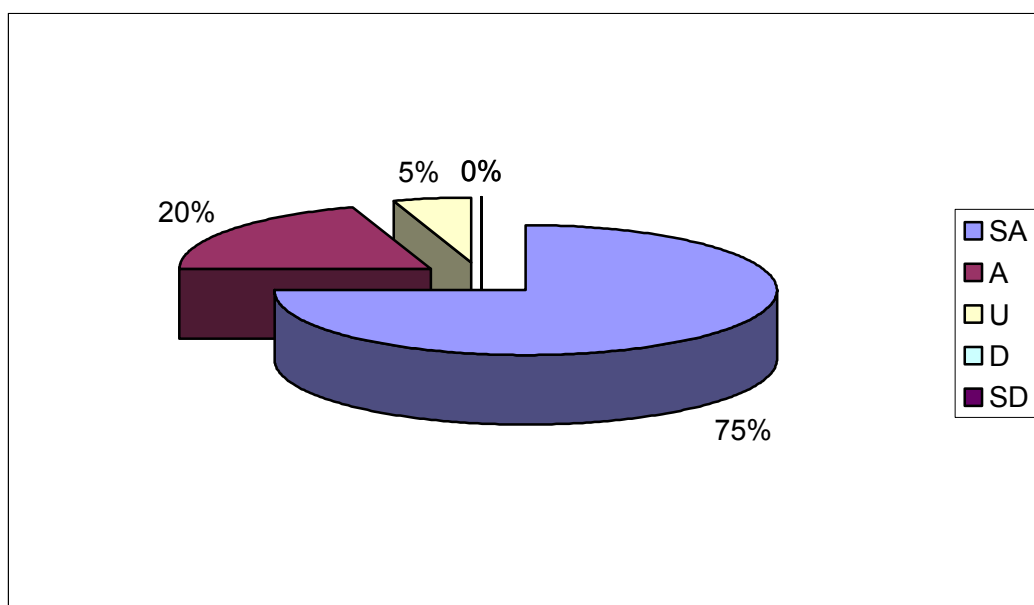
Figure 6.2

The results shown in Figure 6.2 show that 25% strongly agree with 30% in agreement. This represents 55% of respondents who at least agree that CDM shares are not actively traded on the MSE. However, it is notable that 30% of the respondents are not sure. This in itself shows the potential low levels of knowledge about the actual trading activities on the MSE. This suggestion is followed below by question 6(a) (see Figure 6.12). Actual evidence as noted in chapter 3 section 3.3.1 shows that the CDM shares are not actively traded as they are being held by very few entities which are not placing their shares for trading on the MSE. Hence, the prices of equity shares of CDM that are found on the MSE cannot be considered to be fair values because of the MSE is not an active market for shares.

Figure 6.3: Question 2 - *The Mozambique Stock Exchange is underdeveloped and it is not possible to obtain reliable fair values of bonds and equity shares from the Mozambique Stock Exchange.* The question sought to confirm whether the respondents considered the MSE to be underdeveloped. Figure 6.3 summarises the results.

Figure 6.3

75% of the respondents strongly agree that the MSE is still underdeveloped. 20% were in agreement to represent an overall 95% consensus and 5% were unsure. The results in Figure 6.3 confirm that the majority of respondents are of the opinion that the MSE is still underdeveloped. It is still in its early stages of development and cannot help in the quest for reliable fair values of financial instruments. Most African stock exchanges are also in their early stages of development. As a result, trade in shares is very thin and the quoted values of shares on these stock markets cannot be considered to be fair.

6.3.2   Secondary market trade for treasury bills

Figure 6.4: Question 3 - *Secondary market trade in treasury bills in Mozambique is very thin. This means that it is not easy to find willing buyers and sellers of financial instruments in the secondary market at any time.* The aim of the question was to investigate whether respondents agreed that the secondary market for treasury bills is thin and that it is not easy to find willing buyers and sellers of treasury bills. The results are shown in Figure 6.4.

Figure 6.4
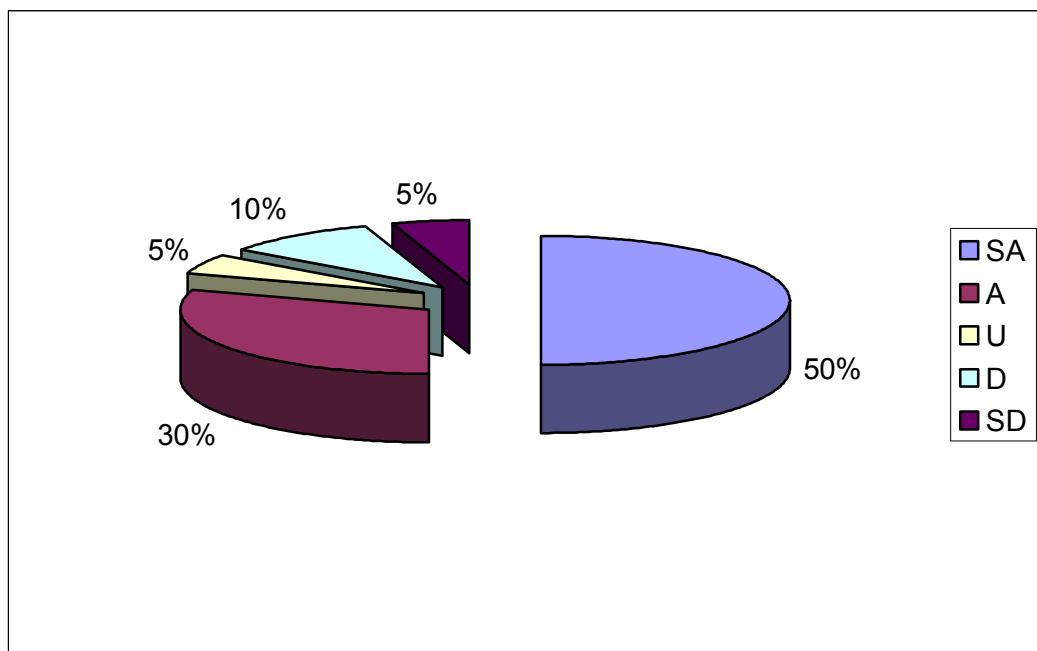
The results show that 50% of the respondents strongly agreed with the assertion and 30% agreed resulting in an 80% overall agreement. 5% were unsure, 10% disagreed and 5% strongly disagreed. The 80% overall agreement is in line with the conclusion in chapter 3. The overwhelming agreement by the respondents shows Mozambique faces significant valuation challenges for TBs because of the lack of an active secondary market. Similarly, other developing countries face the same challenges as those in Mozambique because the secondary market for TBs is very limited and sometimes non-existent.

6.3.3 Credit rating agencies

Figure 6.5: Question 4 (a) - *Credit rating agencies are an important element of an effective capital market system for the assessment of the credit risk or default risk of companies.* This question's aim was to investigate the extent to which the respondents considered the work of credit agencies to be an important element of an effective capital market system in general. It also sought to consider whether the non-existence of credit rating agencies in an economy is considered to be an important missing link in assessing default risk of economic entities. The results were as in Figure 6.5.

Figure 6.5
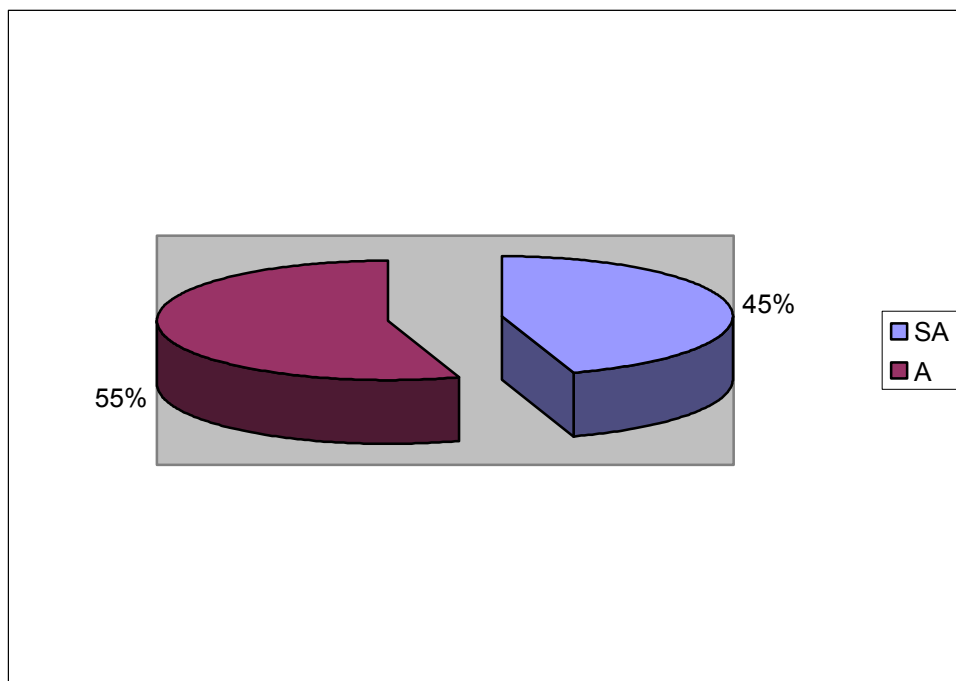
The results show that 45% strongly agreed with the fact that they considered credit rating agencies to be an important part of an effective capital market system. 55% agreed giving a general agreement of 100%. This is in line with the theoretical research conclusion in chapter 3 which noted that credit rating agencies are critical to the assessment of credit risk of entities. This means that the respondents view the absence of credit rating agencies as an obstacle to ascertaining the default risk associated with bond issues in Mozambique.

Figure 6.6: Question 4 (b) - *There are no credible and reliable credit rating agencies in Mozambique*. The question sought to empirically confirm whether respondents concurred with the assertion that there are no credit rating agencies in Mozambique. The results are as shown in Figure 6.6.
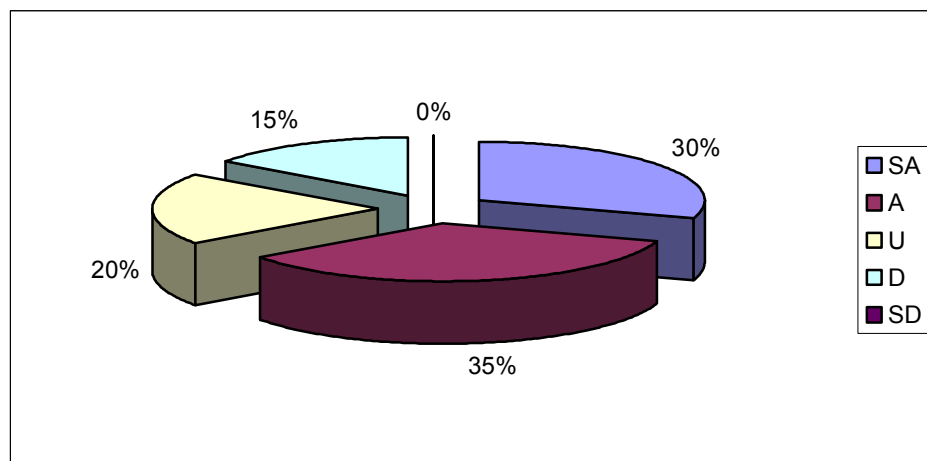
Figure 6.6
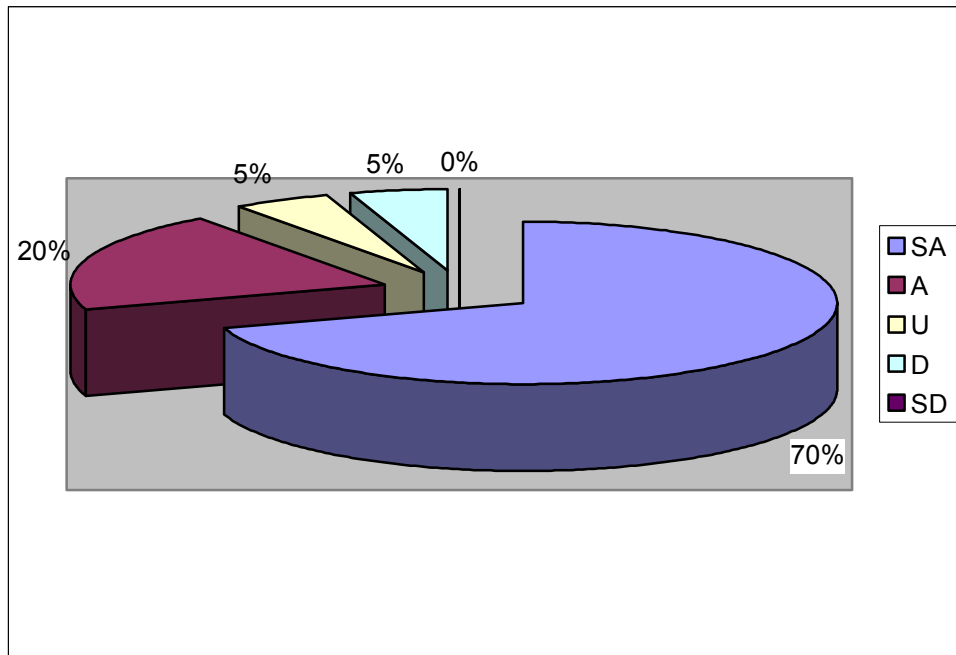
The results show that 70% strongly agreed that there were no reliable and credible credit rating agencies in Mozambique and 20% agreed. This gives an overall agreement percentage of 90% and confirms the findings noted in chapter 3 section 3.4.2.3; that there were no reliable and credible credit rating agencies in the economy. In the absence of credit rating agencies, it becomes difficult to construct reliable yield curves for use in the fair valuation of such financial instruments as bonds and TBs and to assign default risk to both new issues of bonds and to tack default risk on a continuing basis.

Figure 6.7: Question 4 (c) - *The absence of credible and reliable credit rating agencies in Mozambique makes it difficult to value bond issues that are issued by companies in the economy*. The question sought to investigate the extent to which the absence of credit rating agencies was considered an obstacle to obtaining fair values in Mozambique. The results are presented in Figure 6.7
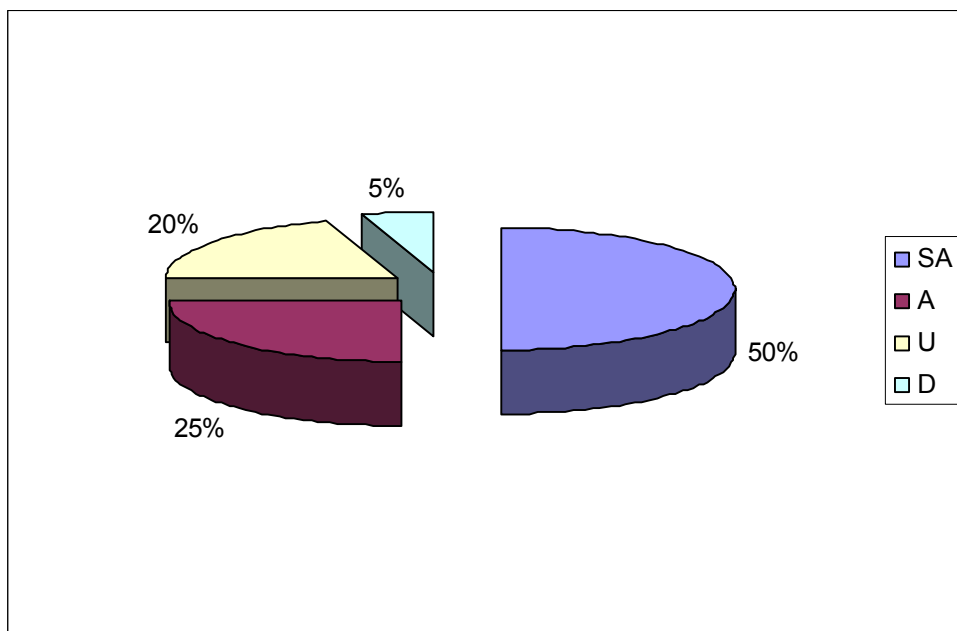
Figure 6.7

The results presented in Figure 6.7 show that 30% strongly agree and 35% agree to give an overall acceptance total of 65%. 20% were unsure which may represent uncertainty as to the extent to which the work of credit rating agencies is used in the valuation process itself. The remainder 15% disagreed, most likely on a realisation that alternative work could be done in place of the work of credit rating agencies. This may include use of internally built models by a bank for default risk assessment through internal risk management departments or other internal arrangements. This shows that a majority of people believe that the absence of credit rating agencies creates a significant obstacle in the valuation of bonds.

6.3.4   Plotting reliable yield curves

The challenges encountered in attempting to construct a reliable yield curve were investigated in question 5 under four separate sub-questions.

Figure 6.8: Question 5 (a) - *Plotting reliable yield curves for bonds in Mozambique is limited by the fact that there are few bond issues quoted on the Mozambique Stock Exchange. This is because it will be difficult to find similar companies with bonds quoted on the Mozambique Stock Exchange that can be used in periods where a particular bond issue does not exist.* The aim of the question was to investigate whether the fact that there are few bond issues presented problems to the plotting of a reliable yield curve. The results are noted in Figure 6.8.

Figure 6.8

The results show that 50% strongly agreed that the existence of few bond issues presented challenges to plotting reliable yield curves and 25% agreed to give an overall acceptance of 75% (refer to Figure 6.8). 20% were unsure and 5% disagreed. A 75% majority of the respondents agree that plotting reliable yield curves is limited by the fact that there are few bond issues which in turn makes it difficult to estimate reliably the fair values of both government bonds and corporate bonds. This is in line with the conclusion noted in chapter 3.

Figure 6.9: Question 5 (b) - *Plotting reliable yield curves for bonds is limited by the fact that there are no issues of these instruments in the long term, e.g. there are no issues with terms greater than 10 years.* The question sought to confirm whether the absence of long-term bond issues, e.g. absence of bond issues greater than ten years presented obstacles to plotting reliable yield curves. The results are shown in Figure 6.9.

Figure 6.9
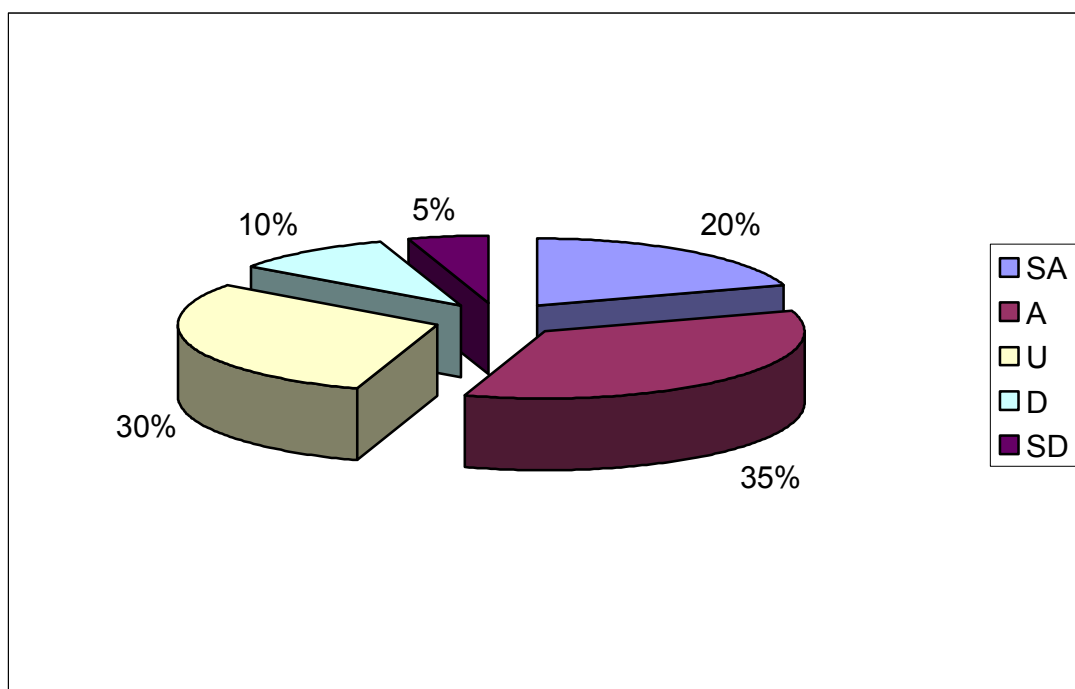
The results in Figure 6.9 show that 20% are in strong agreement and 35% agree to give an overall acceptance majority of 55% that plotting reliable yield curves for bonds is limited by the fact that there are no issues of these instruments in the long term. On the other hand, 30% were unsure which may be a fact arising from uncertainty as to the use of yield curves in fair valuation. The results confirm that it is difficult to plot reliable yield curves in Mozambique and in similar developing countries because there are no issues of bonds in the long term. Without issues of bonds in the long term, it becomes difficult to trace reliable profiles of the yield curves for use in the valuation of bond that have a long-term maturity cycles.

Figure 6.10: Question 5 (c) - *Inconsistencies in the availability of some economic indicators such as Monetary authority bills and Treasury bills (e.g. there are periods in which there are no issues of TBs or MABs) makes it difficult to plot reliable yield curves for bonds indexed to these indices. This is of the difficulty of estimating the rate of the economic indicator during periods of non-activity.* The question's objective was to inquire the respondents as to whether they considered the inconsistencies in the issue of base indices to be an impediment to plotting reliable yield curves. Chapter 5 suggests that this is one of the obstacles to plotting yield curves. Figure 6.10 shows the results.

Figure 6.10
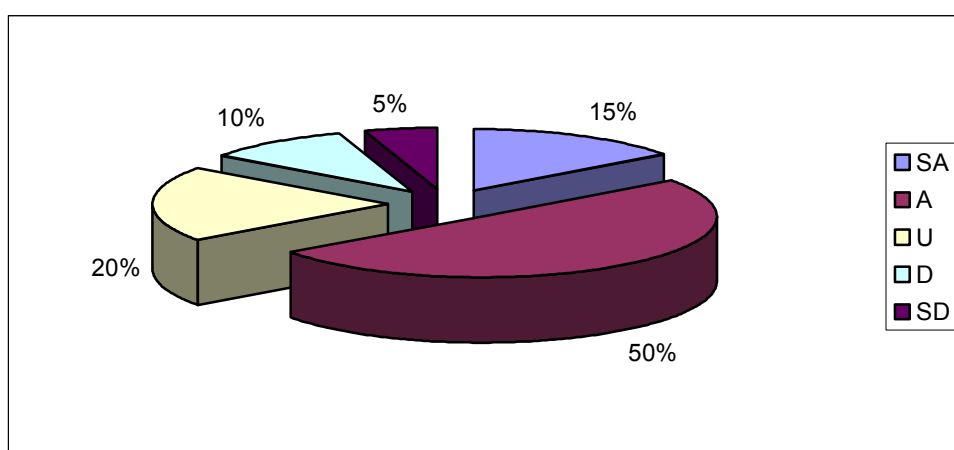
The results show that 15% strongly agree and 50% agree to give an overall acceptance of 65%. 20% were unsure and 10% disagreed. However, the majority seem to be of the same line of thought as the theoretical conclusions made in chapter 3 that the inconsistencies in the availability of some of the main economic indicators such as TBs and MABs makes it difficult to plot reliable yield curves. The yield curve will show breaks for periods in which there were no issues and consequently cause a lot of information noise.

Figure 6.11: Question 5 (d) - *The absence of credit rating agencies in Mozambique makes it difficult to plot reliable yield curves of government bonds and corporate bonds over the long term because there is no basis to classify any two entities as being similar and falling within the particular credit risk classes.* This final question on the yield curves sought to obtain empirical evidence of the extent to which respondents considered the work of credit rating agencies in assessing default risk as important in plotting yield curves. The results are presented in Figure 6.11 below.
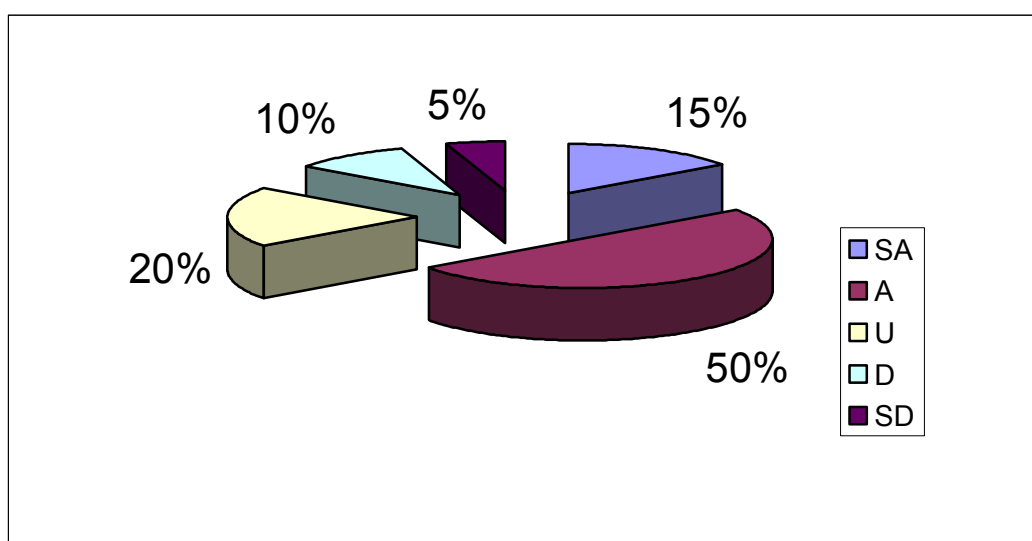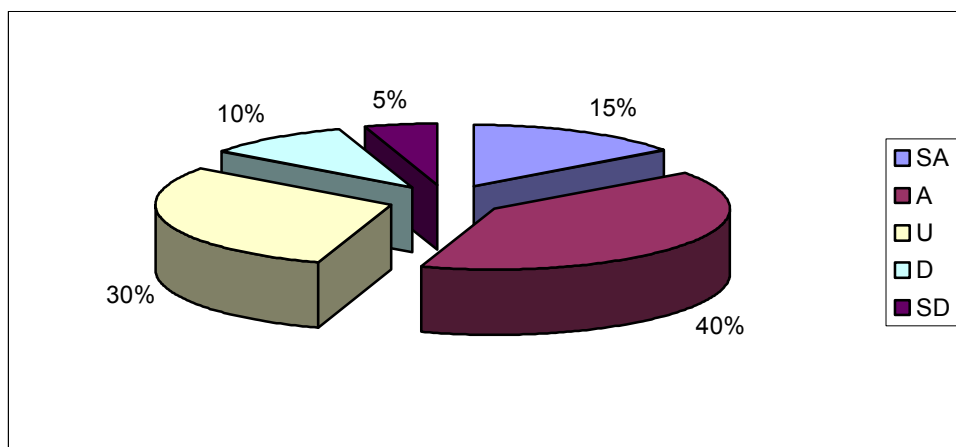
Figure 6.11

Figure 6.11 shows that 15% of the respondents strongly agree and 50% agree for an overall acceptance of 65%. 20% remained unsure. The majority confirm the theoretical research assertion in chapter 3 section 3.4.2.2 noted that the work of credit rating agencies was important in assessing credit risk of entities and assisted in constructing reliable yield curves. As a result, the absence of credit rating agencies in Mozambique makes it difficult for banks and other companies to assign credit risk ratings and price bond issues on an on-going basis.

6.3.5   Exposure to interest-rate risk

The bonds in Mozambique have floating interest rates since they are indexed to TBs, MABs, Maibor and Inflation.

Figure 6.12: Question 6 (a) - *Government bonds and corporate bonds are exposed to interest rate risk because of the existence of many indices that are used to price bonds (i.e. treasury bill rates index, monetary authority bills rates (MABs) index, Maibor index and Inflation index). A change in one reference index for say bonds will create exposure to the bond.* One of the aims of this research was to investigate whether the bonds faced interest rate risk exposure. It is important to establish if the bonds have interest rate risk exposure because if there is no interest rate risk exposure, then there would be no need for periodic fair value assessments. Figure 6.12 shows the summary results.

Figure 6.12

The results in Figure 6.12 reveal that 15% strongly agree with the fact that the bonds are exposed to interest-rate risk and 40% agree that government bonds and corporate bonds are exposed to interest rate risk. This represents an overall acceptance of the question of 55%. 30% of the respondents were unsure which could be explained by the fact that the question is fairly high technical and some respondents may not have encountered the scenario asked in the questionnaire.

Figure 6.13: Question 6 (b) - *The existence of many economic indicators (Maibor, Treasury Bills, MABs and Inflation) makes it difficult to decide on the appropriate interest rate to use in present value based measures of fair value.* The aim of this question was to find out if the use of various economic indicators by bond issuers presented problems to the respondents as to the choice of the discount factor. The response is shown in Figure 6.13 below:
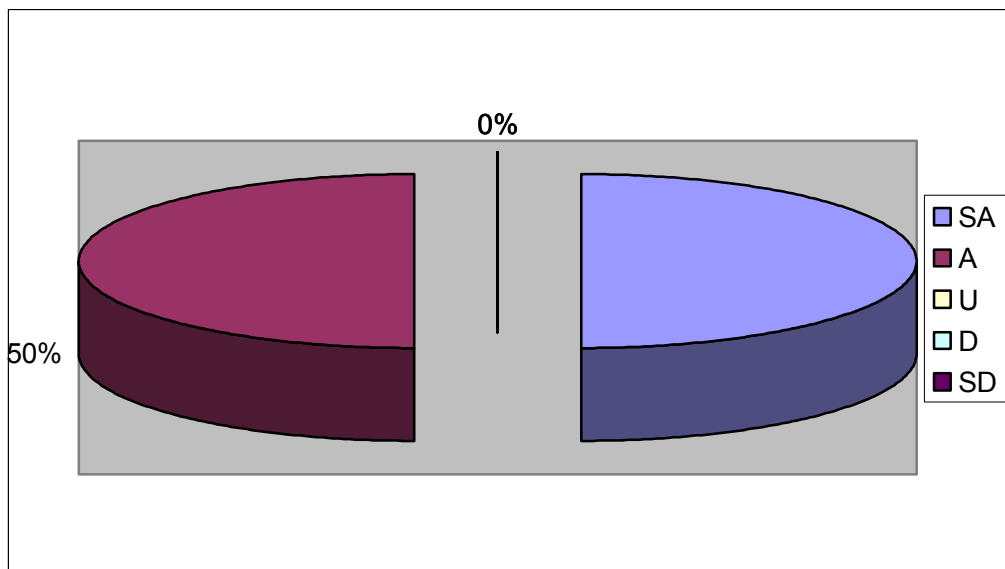
Figure 6.13
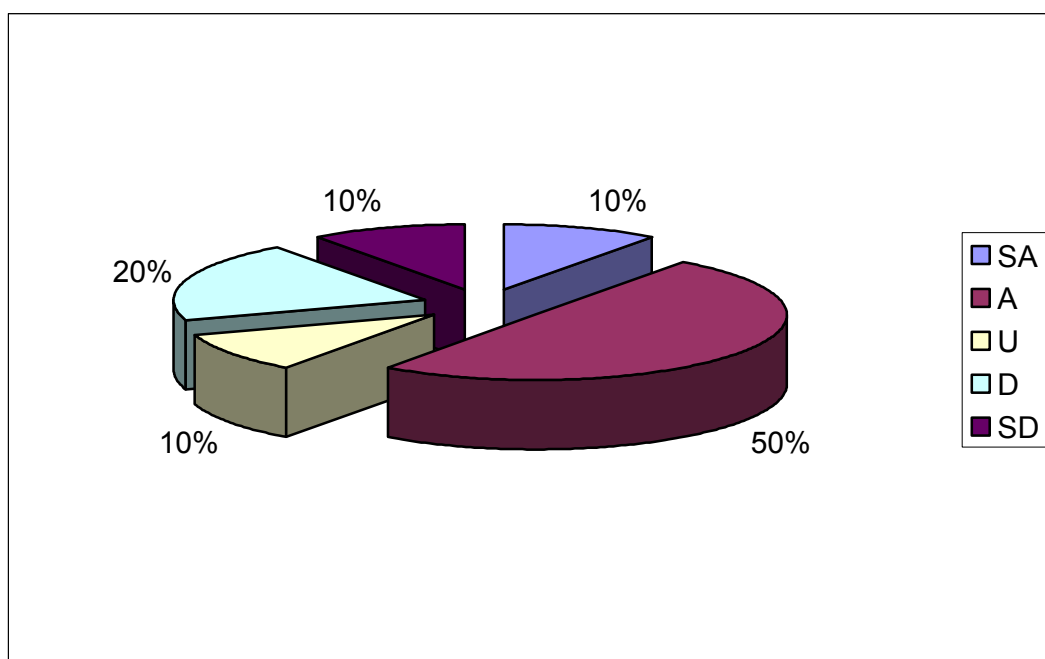
The results above show that 60% (10% strongly agree and 50% agree) of the respondents consider the use of many economic indicators by bond issuers as presenting obstacles in deciding on the appropriate discount rate to use in discounting future cash flows such as in a present value analysis. Notably 10% are unsure and 20% disagree and the remainder of 10% strongly disagree. In Mozambique, the choice of a discount rate to use in fair valuation computation is impeded by the existence of many economic indicators which are in use at any given time thereby presenting a notable obstacle to the fair valuation of bonds.

6.3.6   Public awareness on the Mozambique Stock Exchange activities and ease of obtaining information for fair valuation

Figure 6.14: Question 7 (a) - *Public awareness of the activities and functions of the Mozambique Stock Exchange and the capital market in general is very low as evidenced by minimal participation of the public in the purchase and sale of shares and bonds on the Mozambique Stock Exchange.* The aim of the question was to test whether the public in Mozambique were reasonably informed about the activities and functions of the MSE. The results are as presented in Figure 6.14.

Figure 6.14

The results (see Figure 6.14) show that 50% of the respondents strongly agreed and 50% agreed to give an overwhelming 100% acceptance of the assertion. Public awareness of the activities of the MSE is important in that it stimulates active trading on the public bourse. One of the factors why the MSE is not active may be a result of the fact that the public are not aware of the functions and activities of the MSE. As a result, their participation would be minimal. This results in the MSE not assigning reliable fair values to financial instruments quoted on the bourse and hence present difficulties in determining reliable fair values of financial instruments.

Figure 6.15: Question 7 (b) - *Information for use in valuation techniques such as present value analysis cannot be obtained without significant cost and effort. For example, information on the historical trend of Maibor, treasury bills interest rates and MAB interest rates for the past 5-10 years is not readily available in the central bank library or website.* The aim of the question was to investigate if respondents considered it is easy to obtain information for use in valuation techniques in Mozambique. The results are presented in Figure 6.15.

Figure 6.15
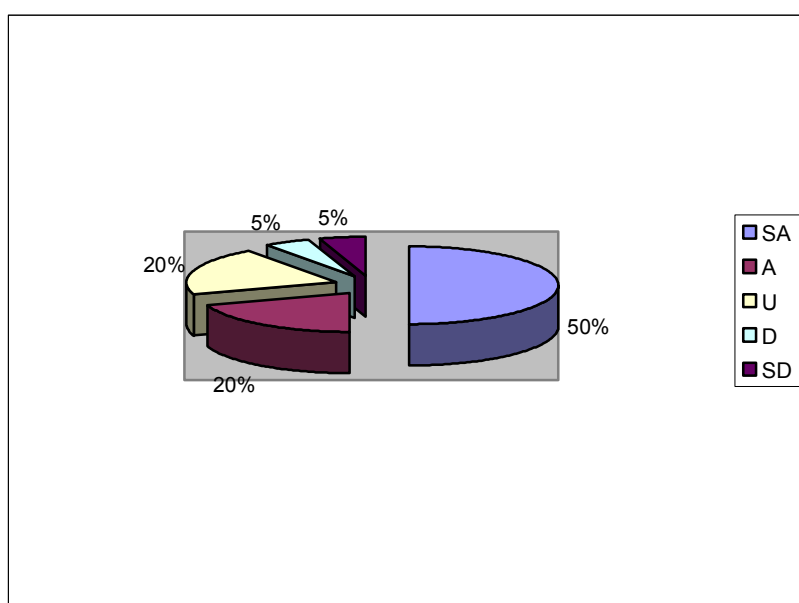
Question 7(b) asserted that information for use in valuation models could not be obtained without due cost and effort. 50% of the respondents strongly agreed and 20% agreed to give an overall acceptance of the assertion of 70%. 20% were unsure and 5% disagreed.

The ease with which one can obtain information for the inputs to a valuation model is a critical factor in a valuation exercise. Its importance comes from the need to reduce the transaction costs of a valuation exercise to make the cost-benefit balance worth the exercise. In Mozambique, one of the obstacles to the fair valuation of financial instruments using mathematical techniques is the fact that information for use in the computations is not easy to access. This may result in inconsistencies in the valuations done by different companies as some companies may use substitutes and estimates thereby reducing the reliability of the fair values.

6.3.7 Volatility and fair valuation

Most developing economies are faced with volatile economic conditions which manifest themselves through the macro-economic indicators and consequently earnings and dividends of companies operating in the economies. This part of the research gathered evidence from respondents on their assessment of volatility of the Mozambican economy.

Figure 6.16: Question 8 (a) - *The use of fair values will result in volatile earnings and equity.* The aim of the question was to confirm whether the respondents were of the opinion that the use of fair values would result in volatile earnings and equity of banks. The results are presented in Figure 6.16 below

Figure 6.16
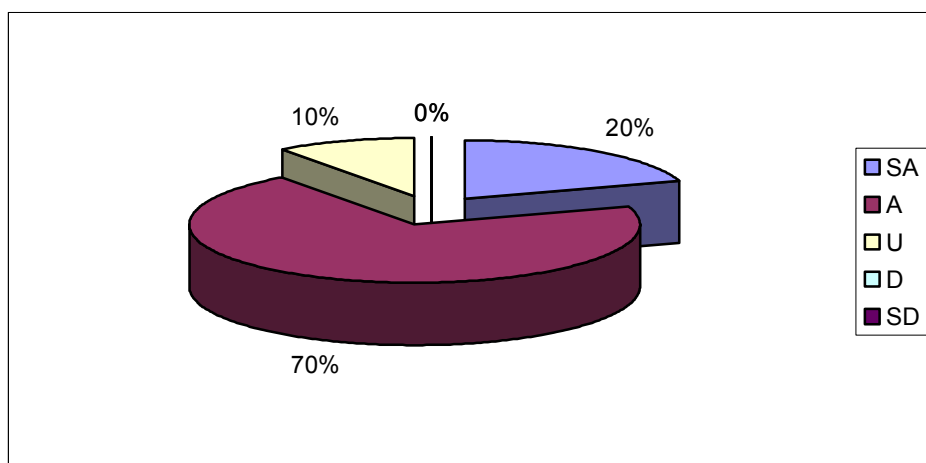
The results show that 20% strongly agreed and 70% agreed to give an overwhelming support of 90%. This reflects the sentiments noted in chapter 2 section 2.5.3 where some commentators expressed the concern that the adoption of fair values for financial instruments would make bank earnings and equity more volatile.

Figure 6.17: Question 8 (b) - *Profit and dividends of most companies in Mozambique are significantly volatile and this make it difficult to estimate future movements in the earnings and dividends.* The aim of the question was to confirm the theoretical research findings noted in chapter 3 section 3.3.2.2 with respect to CDM shares and assess if this applied to most companies in Mozambique in general. Figure 6.17 summaries the results.
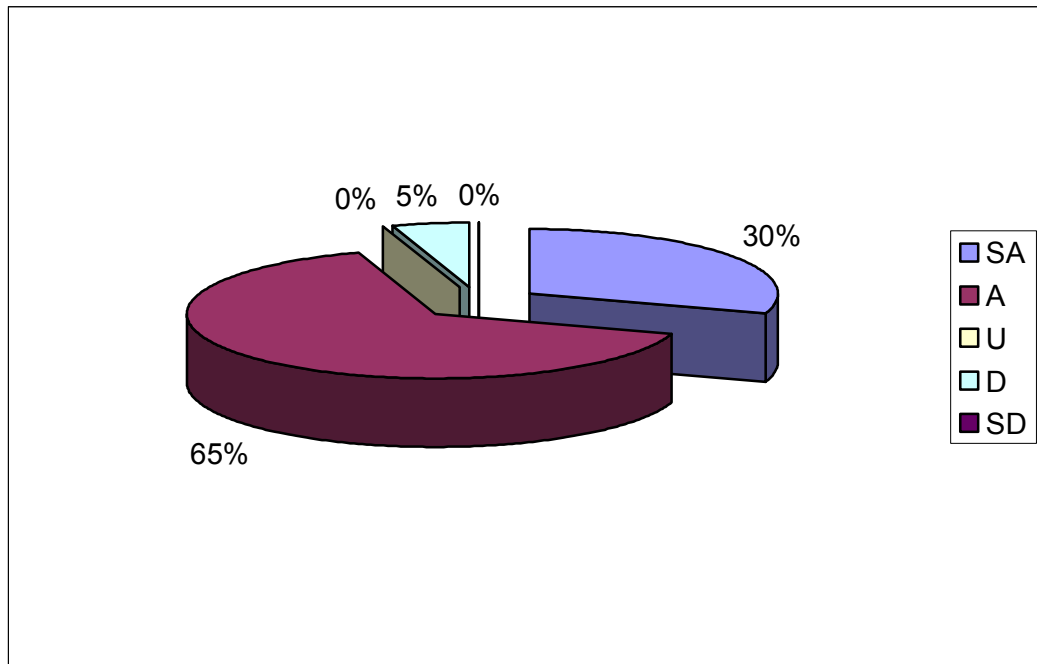
Figure 6.17
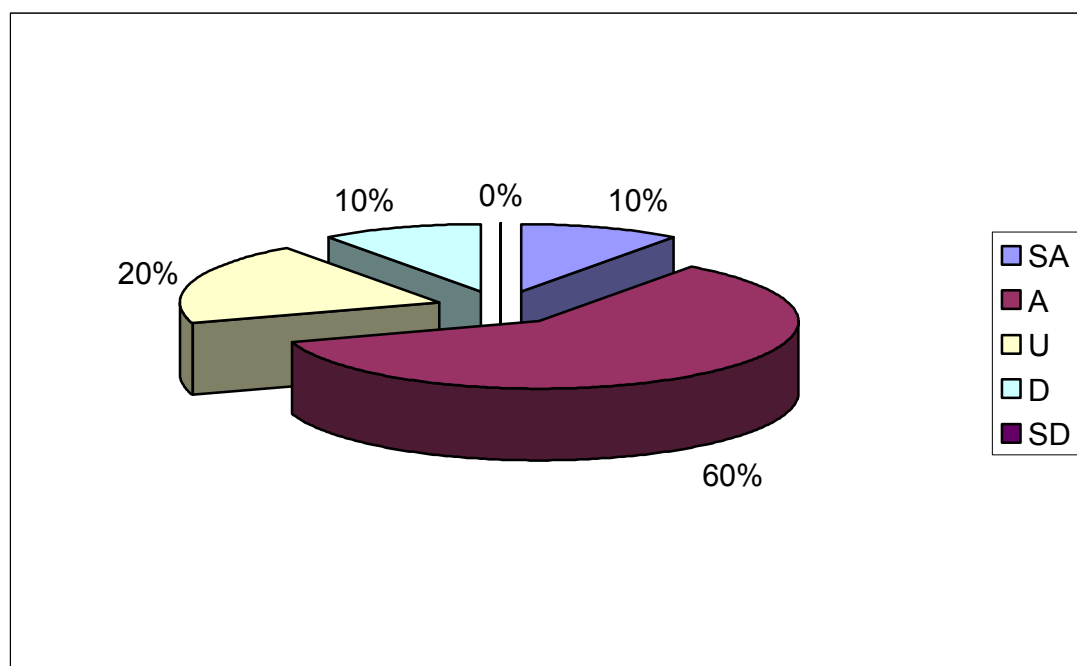
The results showed that 10% strongly agreed and 60% agreed with the assertion that profits earned and dividends paid by most Mozambican companies were significantly volatile making it difficult to estimate future earnings and dividends. This gave an overall acceptance of 70%. 20% were unsure and 10% disagreed.

As confirmed by the majority of the respondents, the volatility of profits and dividends for entities in Mozambique creates impediments in valuation of financial instruments when using discounted cash flows and dividends growth models in estimating the fair value of a company.

Figure 6.18: Question 8 (c) - *The main economic indicators (Maibor, interest on treasury bills and monetary authority bills and inflation rate) have been significantly volatile in the last 5 years.* The aim of the question was to confirm if the theoretical research findings noted in chapter 3 section 3.4.4.2 were also shared by finance professionals in Mozambique. The results are summarised in Figure 6.18.

Figure 6.18

As shown in Figure 6.18, 30% strongly agreed and 65% agreed to give overwhelming support of 95% to the researcher's findings. 5% also supported the view that it was difficult to reliably estimate the future movements of these indicators.

The results confirm that, using historical data for the main economic indicators of Maibor, Inflation, TB rates and MABs rates the economic indicators were significantly volatile over the long term. This high volatility presented challenges to the estimation of expected future cash flows of bonds indexed to them if mathematical models such as present value techniques are used to estimate fair value.

Figure 6.19: Question 8 (d*) - It is difficult to reliably estimate the future rates (e.g. for the next 10 years) of Maibor, interest rate on treasury bills, monetary authority bills and inflation rate owing to the unstable movements in the last five years.* The aim of this question was to obtain the opinions on whether it is difficult to reliably estimate future rates of interest based on the main economic indicators. Figure 6.19 presents the results.

Figure 6.19
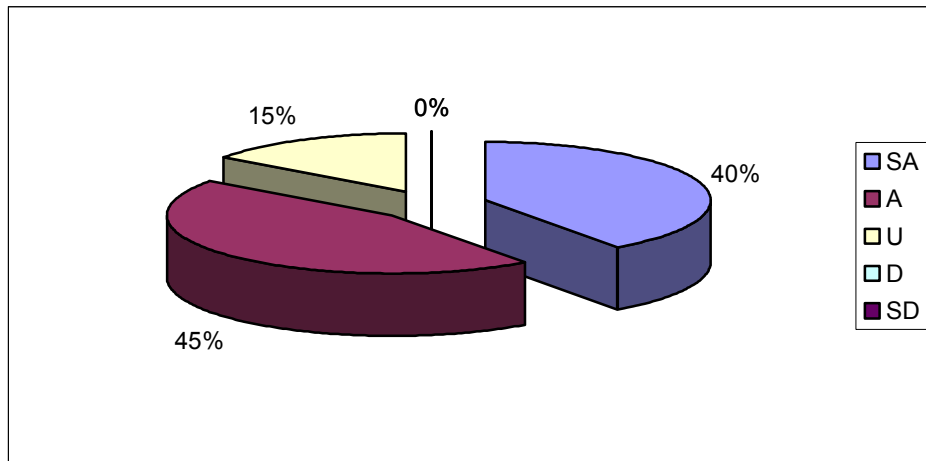
The results presented above show that 40% strongly agreed that it very difficult to reliably estimate future movements and 45% agreed. 15% were unsure. The 85% overwhelming agreement is in line with the volatility of the base indices noted in chapter 3 section 3.4.4.

This makes it difficult to apply mathematical valuation models such as discounted cash flow analysis which relies on reliable estimates of future movements in interest rates and other economic indicators.

6.3.8   Valuation models

Figure 6.20: Question 9 (a) - *It is difficult to obtain reliable fair values of ordinary shares, bonds and treasury bills using present value based techniques because of the volatility of the main economic indicators.* The aim of this question was to confirm whether the respondents considered the volatility of economic indicators to be an obstacle to determining reliable fair values of financial instruments. Figure 6.20 summaries the results.

Figure 6.20
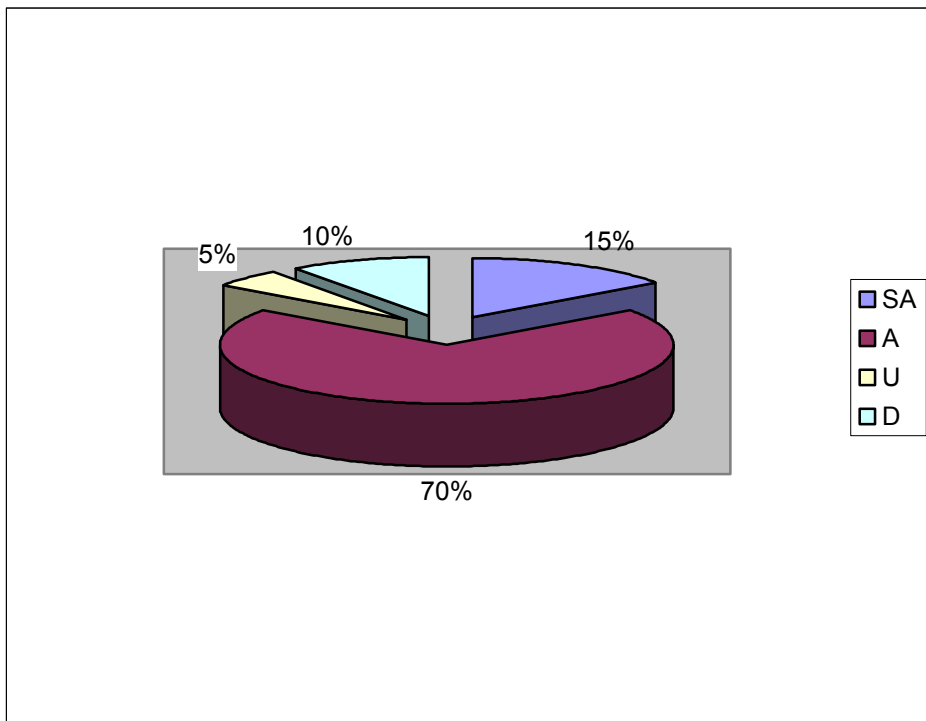
Figure 6.20 below shows that 10% strongly agreed and 70% agreed that it is difficult to obtain reliable fair values using mathematical techniques because of the volatility of the main economic indices. 5% were unsure and 10% disagreed.

The use of valuation models such as present value based techniques is primarily driven by the ability to reliably measure future expected cash flows and estimating reliably the yield to maturity of the financial instruments. In Mozambique, the high volatility of the economic indicators makes it difficult to obtain reliable fair values because the range of estimates of the economic indicators is significantly wide.

Figure 6.21: Question 9(b) - *The use of valuation models such as present values to obtain fair values is open to abuse by management because they can manipulate the assumptions to the valuation models to obtain desired results.* The question sought to establish if the respondents generally accepted the use of mathematical models in measuring fair values and if they thought fair value based models were open to abuse by management to achieve targeted results through manipulation of inputs to the valuation models. Figure 6.21 below presents the results.

Figure 6.21
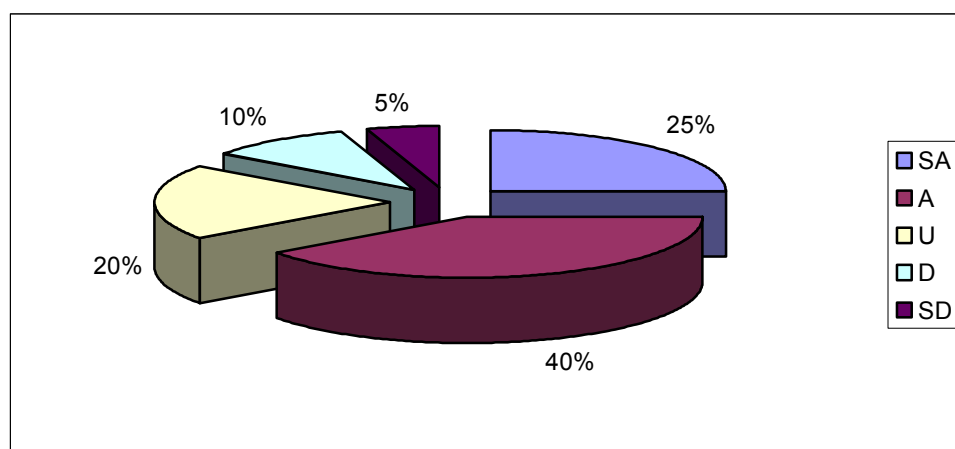
The results showed that 25% strongly agreed and 40% agreed. This means that a total of 65% consider it a fact that management are at liberty to misstate the fair value by manipulating assumptions to the valuation models to achieve intended results. The questionnaire proves that the concern that calculated fair values are open to manipulation by management is indeed a real concern in developing economies such as Mozambique where active markets do not exists and entities would need to rely on calculated fair values.

6.3.9   Comparability of information

Comparability of information is one of the important characteristics of accounting information according to the Framework (IASB, 2004:para. 39) which concedes that "users must also be able to compare the financial statements of different entities in order to evaluate their relative financial position, performance and changes in financial position".

Figure 6.22: Question 10: (a) - *It is difficult to compare fair values of similar financial instruments between different entities if the fair values have been obtained by using modelling techniques such as present values since management can manipulate the assumptions used in calculating the fair values*. This was asked to find out if respondents considered fair value information obtained through valuation models to be difficult to compare between entities. The results are as presented in Figure 6.22.

Figure 6.22
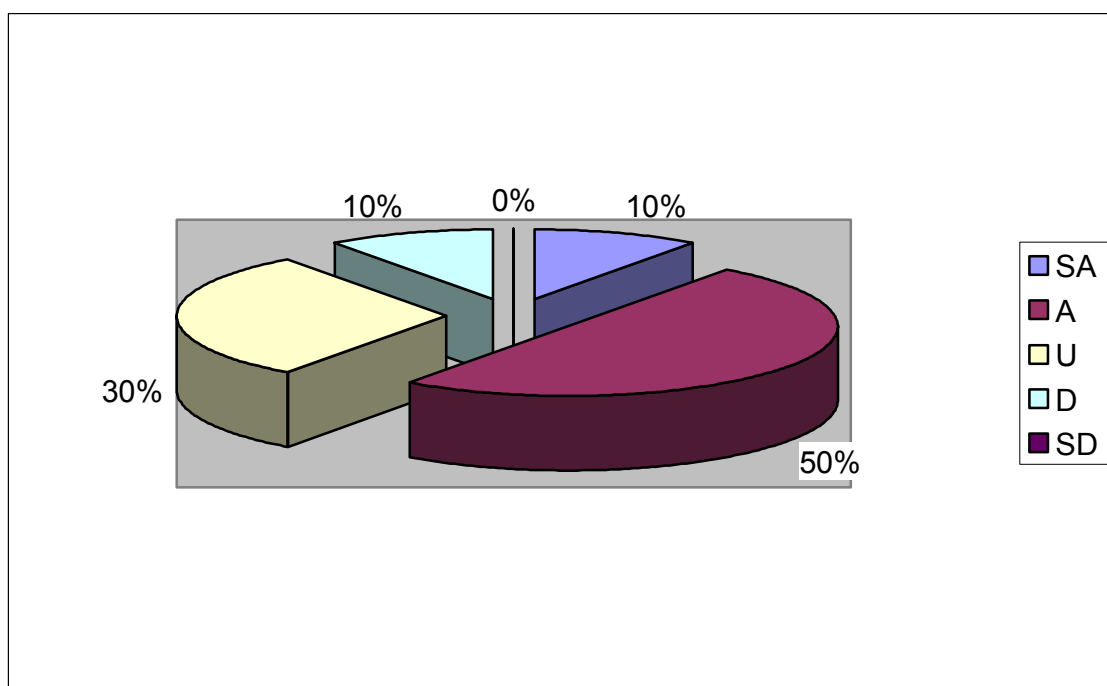
The results show that 10% strongly agree and 50% agree to give an overall acceptance of 60% that calculated fair values are difficult to compare between entities. 30% were unsure and 10% disagreed. The potential difficulty in comparing calculated fair values is one of the major issues facing developing countries like Mozambique because of the possible wide variability of calculated fair values and the potential to manipulate the results of the process by management. Currently, there are many models for calculating fair values of financial instruments. This diversity of models means that the results of the valuation exercises will not be uniform. The assumptions that are used as inputs to the valuation models are also not uniform and hence open to manipulation.

Figure 6.23: Question 10(b) - *Values based on an active stock exchange are more comparable between companies because they are not subjective and not open to manipulation by management.* This was asked to find out if respondents considered fair value information obtained through an active stock market to be more comparable between entities than calculated fair values as ask in the preceding question. Figure 6.23 is a summary of the results.

Figure 6.23
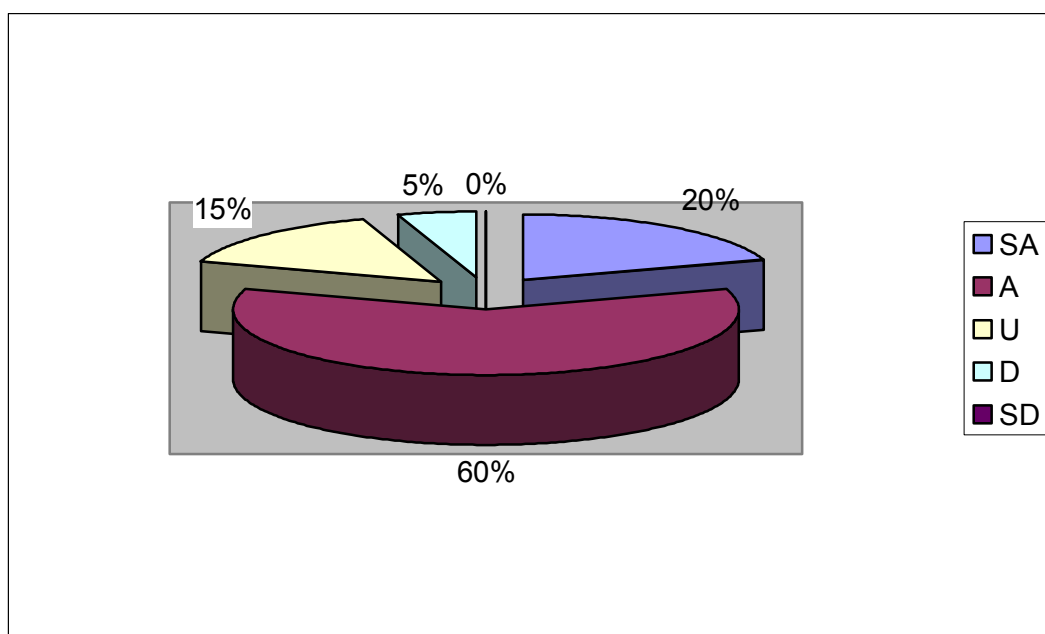
The results show that 20% of the respondents strongly agree and 60% agree that market based fair values are more comparable between different entities. The overall acceptance rate is a notable 80% which is significant. Consequently, developing countries like Mozambique face a significant challenge in obtaining comparable fair values of financial instruments between different entities because of their reliance on calculated fair values instead of market related fair values.

6.3.10   Relevance of information

The final set of questions concerned the relevance of historical values, fair values and calculated fair values. Figures 6.24, 6.25 and 6.26 show the results of the questionnaire for each question.

Figure 6.24: Question 11 (a) - *Historical cost based values of financial instruments in financial statements are no longer relevant for decision making by users because their market values may be significantly different from their recorded written down historical costs. Users are interested in the current realisable values of a company's financial instruments rather than a purchase cost that happened say 10 years ago.* The aim of the question was to investigate if respondents agreed with the assertion that historical cost based values are not relevant for decision making. The results are as presented in Figure 6.24.

Figure 6.24
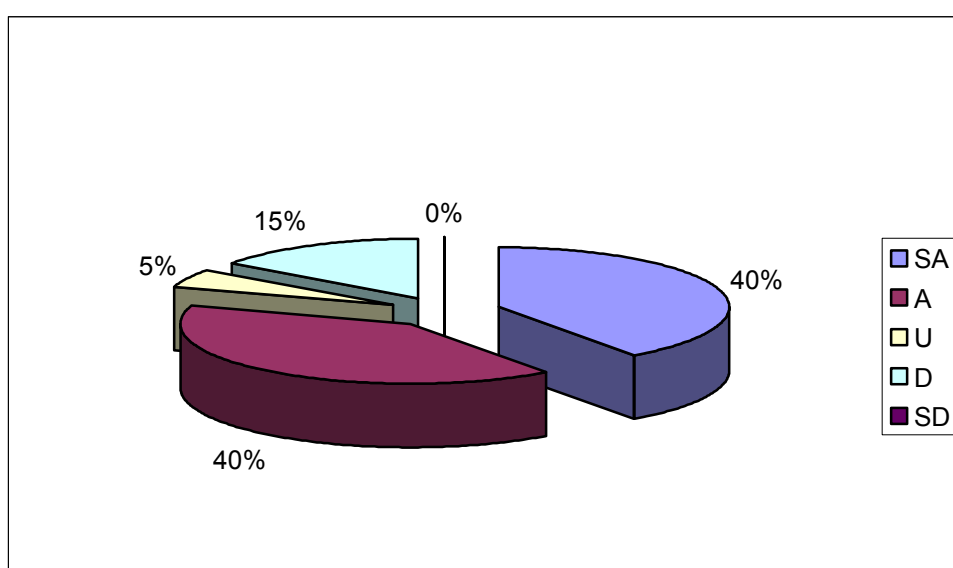
The results show that a majority of 80% of the respondents do not consider the historical cost values to be relevant for decision making by users. The 80% comprises 40% who are in strong agreement and 40% in agreement**.** 15% disagreed and 5% were unsure. This confirms the arguments noted in chapter 2 section 2.5.5 in which the move to fair values was partly driven by the perceived irrelevance of historical costs by some commentators. Developing countries may be facing a situation were they may produce some financial information which is considered irrelevant if they adopt the historical cost approach because of lack of active markets e.g. unquoted equity investments.

Figure 6.25: Question 11(b) - *Fair values of financial instruments are more relevant to users than historical cost values because they reflect the current values that can be obtained or paid by the bank if it were to go into dispose of its assets and liabilities at that time.* The aim of the question was to obtain the opinions of respondents regarding the superior relevance of fair values over historical cost figures. Figure 6.25 presents the results.

Figure 6.25
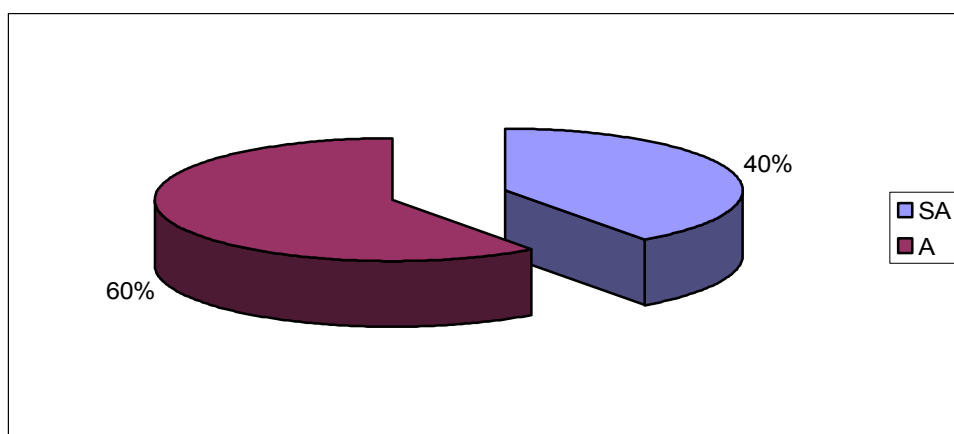
An overwhelming 100% of the respondents considered fair values to be superior to historical costs with 40% in strong agreement and 60% in agreement. With such overwhelming acceptance of fair values over historical cost values, developing countries face a challenge of producing financial statements that are widely accepted as relevant because of the difficulty of obtaining reliable fair values if active markets do not exist. Fair values capture the current information on financial instruments unlike historical cost figures which are not updated for the changes in the market conditions. The relevance of historical figures is a challenge in developing countries where the capital markets are significantly volatile. This high volatility means that there is an even greater need for current and up-to-date information on financial instruments in developing economies since the difference between historical cost figures and fair values rapidly becomes significant.

Figure 6.26: Question 11(c) - *Calculated fair values are not relevant to users because they are subjective and open to manipulation by management.* This last question was aimed at assessing the acceptability of calculated fair values as a substitute for market based fair values. Figure 6.26 is a summary of results.

Figure 6.26
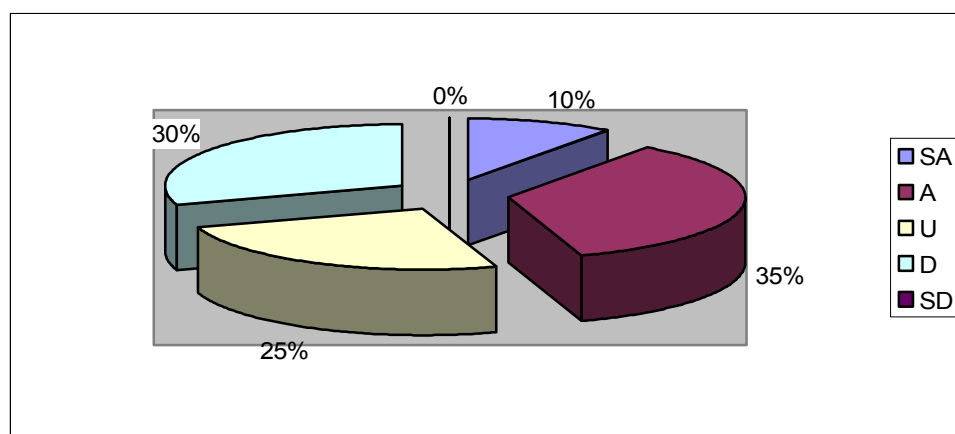
The results show a split preference for calculated fair values. 10% strongly agreed with that calculated fair values were not relevant and 35% agreed. This gave an overall agreement of 45%. However 25% were unsure and a significant 30% disagreed. The results show that while calculated fair values are a perfect substitute for market based fair values, users consider them to be a reasonable alternative to market based fair values. As a result, developing countries with no active markets for financial instruments should at least try to obtain fair values using mathematical models to provide users with reasonable approximations of an active market.

6.4   SUMMARY AND CONCLUSION

The findings of the questionnaire largely confirm the concerns over the use of fair values noted in chapter 2 and the theoretical findings noted in chapter 3. The MSE was confirmed as inactive and that the shares of CDM are not actively traded. The respondents also confirmed that MSE was not adequately active to provide fair values for bonds and equity shares. The respondents also confirmed that the secondary market for treasury bills is

very thin and that it is not easy to find willing buyers and willing sellers readily and regularly.

As noted in chapter 3, the respondents agreed that there were no credit rating agencies in Mozambique and that this made it difficult to value bonds issued by different entities. The empirical research also noted that the main economic indicators used as indices in the pricing of bonds were volatile even in the short-term. The challenges of plotting reliable yield curves noted to be the few issues of bonds and volatility of reference indices among other factors.

The research also noted that historical costs are no longer preferred and there is increased preference for fair values especially market determined fair values. In developing economies, increased public awareness of the functions and activities of the public stock markets could help stimulate market activity and consequently liquidity of those markets.

The next chapter concludes on the dissertation and makes recommendations on alternative fair value measurements.

CHAPTER 7

SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 INTRODUCTION

The implementation of International Accounting Standard 32 "Financial Instruments: Disclosure and Presentation" (IAS 32), International Accounting Standard 39 "Financial Instruments: Recognition and Measurement" (IAS 39) and International Financial Reporting Standard 7 "Financial Instruments: Disclosures" (IFRS 7) has been met with mixed reactions and as was noted in this dissertation, it is difficult to determine reliable fair values of certain financial instruments in developing countries such as Mozambique. Unlike the first world countries such as the USA and the United Kingdom which have active and advanced capital markets such as the New York Stock Exchange and the London Stock Exchange respectively, a majority of African countries and similar developing countries are characterised by either non-existent stock markets or very thinly traded stock markets. As a result, African countries face different obstacles in implementing the three international accounting standards. The majority of these obstacles seem to emanate from the fact that there are no active capital markets in these countries.

This chapter re-visits the research problem statement and hypothesis noted in chapter 1 and summarises the research findings from the literature review and empirical evidence obtained. A conclusion is drawn from the research results. Recommendations on the alternative solutions and suggestions to the problem statement are then considered. The chapter ends with a consideration of areas for further research.

7.2 SUMMARY OF RESEARCH

7.2.1 Revisiting the problem statement and hypothesis

Chapter 1 established the problem statement as:

To investigate the obstacles to determining the fair values of financial instruments in Mozambique. The obstacles will be investigated with reference to the IASB's IAS 32, IAS 39 and IFRS 7.

The hypothesis that was formulated from the problem statement was:

It is difficult to determine reliable fair values of financial instruments in Mozambique.

7.2.2 Literature review

Chapter 2 investigated the various possible meanings of the concept of a fair value. Theoretical research was done from the definitions of fair value by the IASB, FASB, ASB, the Canadian Accounting Standards Board and other writers on the concept of fair value. The definition of fair value was split into its various components which were analysed and compared among the various definitions of fair value noted from the literature review. The conclusion was that a fair value is a market value and the IASB and the FASB take the view that it is an exit price. A deep and liquid market was considered to be an important factor in the determination of a true fair value and the parties transacting in a fair value transaction should not be related parties. The application of the fair value concept becomes difficult to apply in Mozambique because there is no deep and liquid market for financial instruments.

The chapter also discussed the issues to the use of the fair value concept in external financial reporting. The volatility of reported earnings and regulatory capital in the case of banks were notably a major cause for concern. Some writers also questioned the reliability and relevance of fair values especially in developing economies where there are no active markets for financial instruments. In such cases, companies would have to use

mathematical techniques to determine the fair values of financial instruments. The extent to which such calculated fair values are comparable between entities was raised as another area of significant debate. Added to these issues, the chapter also noted that the move towards fair value accounting was necessitated by the apparent short-comings of historical cost accounting where, for example, some financial instruments such as derivatives exposed companies to significant risks and yet remained off-balance sheet under the historical cost convention. The fair value concept is also favoured by some because it affords the opportunity to compare financial statements of different entities unlike historical costing where the dates of acquisition of financial instruments are maintained in the financial statements until the financial instrument is derecognised. In Mozambique, historical costing accounting may continue to be used, e.g. for equity investments because of the absence of active markets.

Chapter 3 specifically considered the obstacles to determining fair values in Mozambique. This was done through a literature review of the main types of financial instruments found in Mozambique, namely equity shares, government and corporate bonds, treasury bills and loan advances. The characteristics of these financial instruments were analysed and their trade on the MSE was also analysed with a view to making a conclusion on whether the Mozambican capital market was an active market. The MSE was noted to be an inactive market characterised by thin trading in both equity shares and bonds. The absence of credit rating agencies in Mozambique present a significant challenge in assigning credit risk and pricing financial instruments such as bonds. The research also concluded that significant volatility of the economic indicators such as treasury bills interest rates, inflation and Maibor made it difficult to determine fair values of financial instruments using financial modelling techniques. These issues make it difficult to determine reliable fair values in Mozambique and similar developing countries.

Chapter 4 considered the classification issues and the financial statement effects of measuring certain financial instruments in Mozambique at their fair values. It was noted that the financial statement effects of the financial instruments depend on the classification of the various financial instruments. The income statement is either increased or decreased if a financial instrument is classified as at fair value through profit or loss. The balance sheet is either increased or decreased if a financial instrument is classified as at fair value through profit or loss or an available-for-sale financial asset (AFS). Classification into the held-to- maturity (HTM) and loans and receivables (LR) categories does not have

financial statement effect because these financial instruments are measured at amortised cost subsequent to initial recognition. The statement of changes in equity is only affected by fair value increases of financial instruments that are classified as AFS unless the fair value increase reverses a previous revaluation loss that was accounted for through the profit or loss. In that case, the revaluation increase is accounted for in the profit or loss to the extent that it reverses such a revaluation loss. As a result of the inactive market for financial instruments in Mozambique such as equity investments and bonds means that it is difficult to classify them into categories such as held for trading since there is no ready market for these financial instruments.

7.2.3   Empirical research

Chapter 5 discussed the empirical research methodology that was going to be used to obtain empirical evidence to support or refute the research findings from the literature review noted in chapters 2, 3and 4. A type of non-probability sampling called purposive sampling was used due to the specialised nature of the empirical investigation and a subcategory of purposive sampling called expert sampling was used select the eventual sample. The population was defined as senior finance and treasury staff of banks and audit firms' employees with bank audit experience in the Mozambican market. The data collection method considered appropriate was the self-administered questionnaire approach. The research was limited by the fact that Mozambique has few accounting professionals with IFRS knowledge and the fact that there are no analysts and similar institutions to facilitate information gathering and analysis.

Chapter 6 summarised and analysed the responses from the sample selected for questioning. The respondents confirmed the issues to the use of fair values noted in chapter 2 and the theoretical findings noted in chapter 3. The respondents concurred that the MSE was not an active market for financial instruments and that the main economic indicators on which bonds are indexed, are significantly volatile, making it difficult to determine fair values of financial instruments in Mozambique. The majority of the respondents also questioned the reliability and relevance of fair values obtained by the use of modelling tools in Mozambique. The empirical research concluded that it is difficult to determine reliable fair values in Mozambique and the use of mathematical techniques is impeded by such factors as the significant volatility in the main economic indicators and

the absence of credit rating agencies to assist in assigning credit risk and tracing reliable yield curves.

7.3   CONCLUSION

The study's main objective was to investigate the obstacles to determining fair values of financial instruments in developing economies focussing on Mozambique as an example. The investigation was done through a literature review and an empirical research study. The literature review and empirical study highlighted the obstacles to determining the fair values of financial instruments in Mozambique and confirmed the hypothesis that it is difficult to determine reliable fair values of certain financial instruments in the country.

The study noted that the most preferred measure of fair value is a market determined value in an active market. In developing economies such as Mozambique, there are no active markets for financial instruments. Trade in financial instruments is very thin giving rise to values that cannot be classified as fair.

A study of the Mozambican capital market and empirical research from practitioners in Mozambique confirmed the hypothesis that it is difficult to obtain reliable fair values from the market for certain financial instruments in Mozambique because of the thin liquidity of the financial instruments markets. Practitioners in Mozambique consider fair values obtained by using financial models to be unreliable because of the volatility in macro-economic indicators such as inflation and interest rates in those markets. However, they consider fair value information to be of superior relevance to historical costs.

7.4 RECOMMENDATIONS

7.4.1 Use of CAPM to determine the discount rate to use in a valuation

The main obstacle to the determination of calculated fair values of corporate bonds, government bonds, treasury bills and similar securities in non-active markets is the appropriate choice of the discount rate or yield-to-maturity (YTM) as noted in chapter 3. Similarly, the major obstacle to obtaining reliable calculated fair values of equity financial instruments in developing economies is the problem of obtaining a reliable cost of equity percentage factor to use. This is because in non-active markets, similar instruments on which to base the discount rate are few and sometimes do not exist for the required period.

The capital asset pricing model (CAPM) can be used to resolve the problem of obtaining a reliable yield curve. When applied to equity shares, the concept of CAPM (CIMA, 2001:127) considers the expected return for a share to be equal to the risk-free rate plus a risk premium and can be summarised with the following equation:

Er = Rf + B(Rm-Rf), where
Er = expected return of equity
Rf = the risk-free rate
B = the beta factor of the equity (*which measures the responsiveness of the returns for a particular investments when compared to the average market return*)
Rm = the average market rate of return

7.4.2 Use of the adjusted risk-free rate

The risk-free rate can be used as the starting point in the search for the appropriate discount rate to use in a fair valuation of both corporate bonds and government bonds. The risk-free rate is the interest rate on government bonds. An entity would plot the risk-free yield curve using mathematical techniques such as interpolation and regression analysis for periods were there are no government bond issues. However, because corporate bonds carry an element of default risk, a risk premium rate would be added to

the risk-free yield curve to compensate investors for the extra risk. The factors that can be considered in the risk adjustment exercise can include gearing ratios of the target company, profitability and market share related statistics if they are available.

7.4.3   Use of an entity's borrowing rate

An entity may use its incremental borrowing rate as its discount factor in a present value calculation. In a presentation on fair valuations, Ernst & Young (2007) suggested the use of an entity's incremental borrowing rate or other market borrowing rates in testing for impairment using the present value based techniques. The principle can be used as a starting point in developing economies since the borrowing rate represents an actual observable cost of capital for the entity. The article suggests that the borrowing rate would be adjusted for asset specific risks. Though the principle of using an entity's borrowing rate is not entirely accurate because entities finance their operations through equity and debt, it may be useful if used as a starting point and compared to other models such as CAPM for reasonableness.

7.4.4   Net asset values

The use of net asset based values follows the equity view that equity is a residual of the total assets after deducting the total liabilities. Variations of the view arise out of the existence of various possibilities of valuing the assets and liabilities. A company may maintain its assets and liabilities at written down historical cost based values or may revalue its assets and liabilities to market values. CIMA (2001:124) notes that asset values are more useful for valuations if an entity has a regular replacement and revaluation policy. Hence, an entity would need to revalue the assets and liabilities in its balance sheet and the net assets from the revalued amounts will comprise the total value of all the issued share capital.

AT Foulks Lynch (1999:72) notes that the total value of shares in issue can be calculated by subtracting the liabilities from the net realisable value of assets. However, a caution is included that this valuation basis "is relevant if the company is to be wound up, but is inappropriate for a going concern".

When compared to historical written down values of assets, revalued assets seem to be a more favourable option. Spremann and Gantenbein (2002:29) conclude that book values based on historical costs are of limited value though "they provide information about liquidation or abandonment option value of a firm as well as the adaptation value of a firm's net assets, which is important in financial distress". They consider the value to be complimentary and not completely irrelevant.

Therefore, net asset value based equity valuations based on revalued assets seems to be a reasonable compromise in developing countries where there are inactive markets.

7.4.5   Use of sovereign ratings

The concept of using similar quoted companies in the same market or country is well documented. In countries with active capital markets, unquoted financial instruments are priced with reference to similar quoted companies adjusted for specific risk factors of the unquoted equity. Lewis and Pendrill (1991:400) note that the price of unquoted shares can be obtained by looking at prices of shares of similar but quoted companies. In developing economies, such quoted companies to use as a basis for valuation do not exist. The whole capital market is inactive.

The concept of sovereign ratings is defined by Cantor & Packer (1995:1) as "the risk assessments by the credit rating agencies to the obligations of the central governments" and note that "sovereign ratings influence the ratings given to local municipalities, provincial governments, and private companies headquartered within the same country". Fitch (1998:2) also share the same thinking when they note that the sovereign rating assessment is important not merely for sovereign government, but for other issuers in the country such as banks, corporates and public sector entities. They note that a sovereign rating "forms the ceiling above which it is not possible for borrowers resident in the country to rise". The fact that sovereign credit ratings have an impact on private companies is also supported by Kräussl (2000:2) who notes that "sovereign credit ratings often serve as a ceiling for private sector ratings of any given country, which stretches their influence far beyond government securities".

Having noted that sovereign rating also affect private company ratings, countries with non-active markets may consider using sovereign rating comparisons with other countries which have active markets for determining the cost of capital of financial instruments in its economy (relative sovereign rating comparisons). Country risk premiums may be added to take into account sovereign rating differences using the published sovereign ratings as the starting point. Companies in similar industries but operating in different countries can use their respective country relative sovereign ratings for risk adjustments.

The country-risk concept can be applied to a number of financial instruments ranging from equity shares to corporate bonds and treasury bills.

7.4.6   Most recent transaction

In the absence of an active market, an entity may make use of a recent latest transaction value as the market value. IAS 39 (IASB, 2006:para. AG72) allows this and states that "When current bid and asking prices are unavailable, the price of the most recent transaction provides evidence of the current fair value as long as there has not been a significant change in economic circumstances since the time of the transaction". The obstacle to this concept is the determination of what period from the reporting date can be considered acceptable for a most recent transaction. In other words, what time period from reporting date can the latest transaction be considered stale for use at reporting date?

Examples can be drawn from other IASB statements. IAS 28 (IASB, 2004:para. IN12) requires that where the holding company and the associate have non-coterminous year-ends, they can be consolidated at different reporting dates provided that the difference must be no greater than three months. From this, it can be inferred that the three-month limit may represent a reasonable time frame in which to incorporate a latest transaction value.

7.5   AREAS OF FURTHER RESEARCH

Further research on the fair valuation of financial instruments is needed on the practical models to use for financial instruments in non-active markets. The use of uniform models

by various financial institutions will enhance comparability of the fair values disclosed and also reduce subjectivity in the calculation of the values. The use of the historical cost figures is undoubtedly no longer considered relevant and a return to cost based disclosures would be a step backwards. Fair value measurements are considered highly relevant subject to them being reliable.

Bearing in mind the fact that fair valuation models cost money to implement and sometimes may need external specialists, a cost-benefit research may be necessary to evaluate the cost impact on financial institutions in developing economies. The cost impact is necessary to help in the search for cost effective models of valuation for use in measuring fair values of financial instruments in developing countries where a significant number of financial instruments would have their fair values obtained by using mathematical models computations instead of fair values from the market.

APPENDIX A

QUESTIONNAIRE

APPENDIX B

RESPONDENTS LIST

Respondents list		
	Name	**Response**
1	Wallace Sikachitema	Yes
2	Agnelo Laice	Yes
3	Stan Chikakuda	Yes
4	Olga Fulane	Yes
5	Miguel Vasconcelos	Yes
6	Marcelino Almoco	Yes
7	Madeira Pires	Yes
8	David Dhliwayo	Yes
9	Rogers Dhliwayo	Yes
10	Abel Guaia-guaia	Yes
11	Oliver Mwanza	Yes
12	Gomez Neba	Yes
13	Chiza Jere	Yes
14	Abdul Jivane	Yes
15	Ananstacio- Inacio	Yes
16	Pedro Viagem	Yes
17	Manuel Masocha	Yes
18	Allan Lombard	Yes
19	Rosimina Patel	Yes
20	Celso Raposo	Yes
21	Nwokocha Chuma	No
22	Werna Pauw	No
	Total number questioned	22
	Total responses	20
	% Response rate	91%

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