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Derivative Hedge: Is It a Shot to Financial Distress? : A Case of Companies on the Zimbabwe Stock Exchange

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Abstract:

The study mainly sought to determine the extent of the use of derivative hedges by companies listed on the Zimbabwe Stock Exchange, and to find out whether there is a relationship between the use of derivative hedge and ability of a company to lower probability of financial distress as propounded by Smith and Stultz (1985). Literature was reviewed to position the study and identify the gap. A survey method was used to collect data. The target population was comprised of 63 companies listed on the Zimbabwe Stock Exchange (ZSE) as at 6 April 2017. A sample of 20 companies was drawn from three strata (listed banks, listed insurance companies and listed non-financial companies). Data gathered by way of a questionnaire and interviews was analysed using SPSS and Microsoft Excel. It was found out that despite the absence of an organised derivative exchange market in Zimbabwe, a significant percentage (68.7%) of companies listed on the Zimbabwe Stock Exchange use derivatives (mostly over the counter derivatives and derivatives sourced off-shore) as a hedging technique. The statistical tests (Pearson's Correlation) that measure the relationship between variables revealed that there is a negative relationship between a company's probability of financial distress (as measured by Altman's Z Score) and use of derivatives for hedging purposes. In other words, it was found out that an increase in the use of derivative hedges can lead to a decrease in the probability of financial distress. Conversely, it means that the more a company uses derivatives for hedging, the more its chances of meeting its promises to creditors. The existing laws and regulations in Zimbabwe are viewed as detrimental to derivative hedging and trading, especially to the banking and insurance companies. The study concluded that gearing up the use of derivatives for hedging can only be possible if an organised derivative exchange market is established pari passu with the ideal supporting infrastructure components such as clearing houses and automated trading systems in an adequately regulated, but not prohibitive environment guided by seasoned players.

Keywords: Derivative hedge, financial distress, derivative, organized derivative exchange, financial well-being

1. Introduction

The chapter gives a background to the study before delving into the statement of the problem, the research objectives, the research questions as well as significance of the study. Delimitations of the study, assumptions of the study and ethical considerations of the study are some of the things dealt with in this chapter.

1.1. Background of the Study

Many companies in Zimbabwe have been failing and closing operations due to the failure to overcome economic and operational risks affecting their survival. The Business Daily News of 19 March 2014 quoted the Zimbabwe Congress of Trade Unions as having said that over 9000 people lost jobs in 2013 alone following the closure of 75 companies.

The Zimbabwe Independent newspaper of 7 July 2016 also quoted the Zimbabwe Congress of Trade Unions secretary general as saying that 148 companies from three sectors, namely, the construction, clothing and motoring sectors had closed as of that date.

Financial theory propounded by Smith and Stulz (1985) says that derivatives can be used to hedge against risk. In fact, Stulz (1996) emphasised that hedging causes an increase in the value of the firm and lowers probability of financial distress and costs associated with bankruptcy. Corollary to the foregoing, with the knowledge that derivatives can be used to hedge against risks, the financial distress causing the seemingly unabated company closures characterizing the country left the researcher baffled as to why the affected companies have not been hedging to at least lower the risks affecting their

operations. In fact, Sill (1997) buttressed this line of thinking when he said that the job of allocating risks can be made easier and less costly to firms and investors through the use of derivatives. The same author went on to argue that derivatives, if used for hedging by firms or individuals, can act as insurance to guard against unwanted and unfortunate future happenings.

The researcher noted that a number of studies with regards to the use of derivatives were carried out in the past, for example, Shleeva (2014) studied 47 United States of America oil and gas firms to find the relationship between hedging and risk of financial distress, but studies specifically looking at Zimbabwean companies are very limited. For example, Chikoko (2015) researched to gather information on whether derivatives could be useful in resuscitating the economy. Another study by Njanike(2015) looked at the importance of an organized derivative market for the well-being of the economy.

However, to the best of the researcher's knowledge, no study has particularly looked at the relationship between the usage of derivatives to hedge and freedom from financial distress for Zimbabwe Stock Exchange listed companies. Corollary to the foregoing, the researcher was prompted to find out whether the derivatives such as futures, forwards, options and swaps are being used to hedge against risks that are causing financial distress and eventual company closures in Zimbabwe. If they are used, then why those derivatives are failing to lower financial distress of firms- are they effective for that purpose in the first place?

1.2. Statement of the Problem

With the theoretical knowledge that derivatives can be used to hedge against risks and to lower probability of financial distress as propounded by Smith and Stulz (1985) and subsequently buttressed and acquiesced to by Stulz (1996) and Judge (2002) respectively, - the financial distresses that eventually lead to the seemingly unabated company closures in Zimbabwe left the researcher baffled as to why the affected companies have not been naturally hedging against the risks affecting their operations.

In fact, the researcher reasoned that, if the financial theory is true and derivative hedges are being used in Zimbabwe, then why is it that, contrary to the theory, many companies in Zimbabwe are experiencing financial distress when they can simply hedge to at least lower the probability of financial distress? Are derivative hedges effective for that purpose in the first place? Is the theory correct anyway? The study therefore, besides seeking to find out the relationship between financial well-being of a company and the use of derivatives to hedge, also sought to establish the extent to which companies in Zimbabwe use derivatives such as futures, forwards, options and swaps to hedge against risks that put companies in financial distress in Zimbabwe.

1.3. Research Objectives

The study sought to:

1.3.1. Main Aim

To establish the extent of the use of derivative hedges by companies listed on the Zimbabwe Stock Exchange, and to find out whether there is a relationship between the use of derivative hedge and ability of a company to lower probability of financial distress.

1.3.2. Sub-Objectives

- Establish the extent to which companies in Zimbabwe are using derivatives to hedge against risks that affect their operational viability and survival.
- Find out the relationship between financial well-being of a company and the use of derivatives to hedge.
- Determine the practicability and applicability of the use of derivatives to avert downside risks that are causing financial distress in companies in Zimbabwe.
- Find out the regulatory requirements necessary to promote use of derivatives as a hedge to lower probability of financial distress in firms.
- Come up with recommendations pertaining to the use of derivatives as a way of reducing risks that are causing financial distress in companies in Zimbabwe.

1.4. Research Questions

1.4.1. Main Question

To what extent are derivatives such as futures, forwards, options and swaps being used to hedge against risks that are causing financial distress and eventual company closures in Zimbabwe. If they are used, then why are those derivative hedges failing to lower financial distress of firms as financial theory seems to suggest- are they effective for that purpose in the first place?

1.4.2. Sub-Questions

- Are companies in Zimbabwe using derivatives to hedge against risks that affect their operations, and if so which ones?
- Is there a relationship between financial well-being of companies and usage of derivatives for hedging against risks?

- Do the existing financial market systems and structures in Zimbabwe support the use of derivatives by companies as a method of hedging against risks?
- What regulatory framework is needed to facilitate the use of derivatives as a hedge to lower probability of financial distress in companies in Zimbabwe?
- What advice can be proffered to companies operating in Zimbabwe regarding the use of derivatives for hedging against risks that are causing financial distress in companies?

1.5. Significance of the Study

- The study can assist companies in Zimbabwe by building up information on the practicability and applicability of derivatives as a method of hedging against risks that are causing financial distress in companies.
- The information gathered by the research also added to the existing information on the use of derivatives to hedge against risks in general.
- The government can also become informed on how best it should craft policies and aid creation of supporting infrastructure and markets that enable companies to hedge against risks causing financial distress.

1.6. Ethical considerations

The researcher considered the following ethical issues: -

- The respondents who participated in the study did so voluntarily having been made aware of the purpose of the study and the use to which the gathered information would be put.
- The researcher will use information gained in this study for academic purposes only.
- Permission to interview employees was also sought from companies that were part of the sample of the study.
- For the purpose of maintaining confidentiality, the information provided by the respondents was presented in a manner that protect their confidentiality and anonymity.
- Avoiding bias- Kumar (2011) describes bias as an intentional effort by the researcher to hide findings of the study or to falsify the truth. The researcher was not biased in the collection, analysis and presentation of data.

1.7. Assumptions

The research was based on the following assumptions: -

- That the sample selected was representative of the population under study.
- The feedback by the respondents was unbiased.
- All relevant and or concerned parties would cooperate fully.
- The study would be objective in data collection, analysis and representation.
- Uncontrollable variables would be equally distributed over the study sample.

1.8. Scope (delimitation) of the study

- The period to be covered in the study is between January 2006 to December 2016.
- The target population is made up of financial executives of companies that are operating in Zimbabwe as well as bankers and financial regulators in Zimbabwe.
- A sample drawn from the target population would represent the characteristics of the entire population under study.
- The study was only looking at the use of derivatives by companies in Zimbabwe to hedge against risks affecting their operations

1.9. Definition of Terms

| | |
|----------------------|--|
| Financial distress | <ul style="list-style-type: none"> • A condition whereby a company fails to honour its Promises to creditors or settles its debts with difficulty |
| Financial well-being | <ul style="list-style-type: none"> • A condition whereby a company can pay its present. And future financial obligations and is able to withstand financial shocks while meeting future goals |
| Derivative | <ul style="list-style-type: none"> • Is a financial contract with no independent direct value of its own, but whose price and value are dependent on the performance of an underlying asset. |
| Derivative hedge | <ul style="list-style-type: none"> • The use of derivatives to hedge some risks- to avoid Negative or unexpected events resulting from market volatility. |

Table 1

1.10. Abbreviations

| | |
|-----|-----------------------------|
| ATS | Automated Trading System |
| ZSE | Zimbabwe Stock Exchange |
| OTC | Over The Counter |
| ETD | Exchange Traded Derivatives |
| JSE | Johannesburg Stock Exchange |

Table 2

1.11. Summary

The chapter mainly looked at the background to the study before delving into the statement of the problem, the research objectives, the research questions as well as significance of the study. Delimitations of the study, assumptions of the study and ethical considerations of the study are some of the things dealt with in this chapter

2. Literature Review

2.1. Introduction

The researcher provided in this chapter, a theoretical basis for the study by way of reviewing what other researchers in the area have done- thereby situating the study. A summary of the chapter is also included at the end of the chapter.

2.2. Overview of Derivatives

Kanyau (2009) described a derivative as financial instrument that derive its value from other instruments such as currency exchange, interest rates, assets or indexes.

Heckinger and Mengle (2013) described derivatives as: -

Financial instruments that transfer risks from one party to another. They are called derivatives because they derive their value from the value of something else- an underlying right or interest (commodities, equities, bonds and loans, and or group of assets).

According to Heckinger and Mengle (2013) cited above, underlying rights could be in the form of: -

- Commodities and equities- which things are characterised by price risks
- Bonds and loans- which entail interest rate risk, credit risk and currency risk.
- Group of assets- these could be commodity indexes, equity, credit or even the spread between two benchmark commodity prices.

The same authors went on to reveal that derivatives could be used for hedging and for speculation. However, this study will only look at the use of derivatives to hedge.

2.1.1. Use of Derivatives for Hedging- Theoretical Review

Financial theory propounded by Smith and Stulz (1985) says that derivatives can be used to hedge against risk and reduce financial distress. In fact, Stulz (1996) emphasised that hedging causes an increase in the value of the firm and lowers probability of financial distress and costs associated with bankruptcy. This is in sharpest contradiction to Miller and Modiglian's theory proposed in 1958 which suggested that derivatives were not relevant for hedging to reduce risk of a firm.

In support of Smith and Stulz (1985), Judge (2002) highlighted that theoretical discussions pertaining to reasons why companies hedge has confirmed that the firm's probability of experiencing financial distress can be lowered if a firm hedge.

In the same vein, pertaining to the importance of derivatives, Bonga et-al (2015) noted that one important function of the derivative markets is reallocation of risk- that is, taking risk from those that do not like it to those that have an appetite for it. The same authors went on to argue that effective management of exposures to external influences on which businesses do not have control is made easy by derivatives.

2.1.2. Use of Derivatives for Hedging- Empirical Studies

Upper and Valli (2016) are of the opinion that since economies and financial markets of the emerging market economies are more susceptible to volatility than those of advanced economies, it follows then that people should expect hedging markets in emerging economies to be much more developed.

To further buttress their argument, Upper and Valli (2016) gave the example of the Brazilian derivative market which they said grew large owing to the instability in the economy. According to them, the instability was characterised by inflation and volatile real interest rates- which things created high demand for instruments to manage interest rate risk and inflation risk.

If one is to agree with Upper and Valli's viewpoints, then it means that given the economic turbulences and instability that prevailed in the years past and are persisting in Zimbabwe, hedging markets should also be seen to be more developed in tandem with high demand for instruments that manage risk- thus increasing the use thereof.

Globally however, studies are showing that the derivative markets in emerging markets remain small as compared to those in advanced economies (Mihaljek and Packer 2016). In an interesting development, Upper and Valli (2016) seem to point out to the fact that the participation of a country's central bank is instrumental in the development and quick growth of the derivative markets in emerging markets. They gave the example of the Brazilian central bank that spurred the development and growth of the derivative market by selling US dollar futures through state owned commercial banks.

In coherence with the financial theory propounded by Smith and Stulz (1985), Upper and Valli (2016) argued that the Brazilian derivative market has been instrumental in the prevention of more serious financial distress or credit crunch-more specifically the East Asia financial crisis of 1997, the Argentine default of 2001, the Russian debt crisis of 1998, the Great financial crisis (2007-2009) as well as the Brazilian fiscal and political crisis of 2015. In fact, the authors are of the view that the high level of development and depth of the derivative market aided in absorbing financial distress shocks.

Mihaljek and Packer (2016) observed that emerging markets tend to use Over the Counter derivatives more than they use exchange traded derivatives. In furtherance of the same observation, Mihaljek and Packer (2016), Over the Counter (OTC) derivatives are relatively more important in emerging markets than in advanced economies.

Lourde and Trevino (2005) supports the observation by Mihaljek and Packer (2016) vis-à-vis the fact that over the counter market is bigger than exchange traded derivative market. In fact, Lourde and Trevino (2005) argued that about half of derivatives turnover in emerging markets occurs over the counter compared to one third in advanced economies. In the same vein, Upper and Valli (2016) also noted that Over the counter trading in emerging markets exceeded exchange-based trading by a factor of three.

In terms of actual instruments being traded, Mihaljek and Packer (2016) observed that foreign currency exchange derivative instruments similar to those found in advanced economies were being traded in the Over the Counter derivative markets of emerging markets. The same authors also noted that there is marked growth of market share for emerging economies' currencies in the foreign exchange derivatives markets globally.

Mihaljek and Packer (2016) observed that mostly, when it comes to trading of currency derivatives, trading is done 'offshore'-outside the country's monetary authority jurisdiction.

Corollary to the above, with Zimbabwe trying to establish itself as a force to reckon in the global financial market system, one would expect the characteristics of its derivative markets to be akin to those of the emerging markets alluded to above- that is to say, trading in derivatives to be dominated by over the counter instruments and or offshore traded currency derivatives.

Concerning Zimbabwe, Bonga et al (2015) argued that regardless of the fact that Zimbabwe Stock Exchange is among the oldest and largest in Africa, there is no trading of derivative securities in the Zimbabwean financial market. Their study was seeking to examine the importance and suitability of derivatives in Zimbabwe to strengthen the financial sector. Their study concluded that the absence of the derivative sector was the link that was missing for economic growth to happen.

However, contrary to the notion of Bonga et al (2015) that there is no trading of derivatives in the Zimbabwean financial markets, Econet Wireless in its Annual Report 2016 revealed the fact that the group's financial liabilities included derivative financial instruments. In fact, Econet Wireless's Policy Notes to the Consolidated Financial Statements for the year ended 29 February 2016 included the following: -

The Group's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts, financial guarantee contracts and derivative financial instruments.

Similarly, in its Annual Report 2015, Fidelity Life Assurance of Zimbabwe Limited highlighted the group's use of what it categorized as 'In the Money derivatives'. All this is pointing to the current use of derivatives by companies in Zimbabwe.

Barclays Bank of Zimbabwe Limited's financial results for the year ended 30 June 2016 disclosed separate line items for derivative financial assets and derivative financial liabilities in compliance with IFRS 7. The same bank further revealed in its Notes to the Financial Statements for the year then ended, the fact that it uses cross-currency swaps to hedge against foreign currency risks (for assets and deposit balances held that are denominated in foreign currencies). The banking institution also disclosed that it also uses forward exchange contracts for hedging against foreign currency risk.

The study by Bonga et al (2015) indicated that the primary users of derivatives are financial institutions such as banks, insurance companies, and investment managers, but they also acknowledged significant use of derivatives by non-financial firms. Another study by Mihaljek and Packer (2016) observed that in Chile, corporate end users get foreign exchange hedging from pension funds. The study also found out that whereas pension funds supply derivative contracts with short maturities, banks supplied most of the foreign exchange contracts for maturities of one year and above.

Bonga et al (2015) shockingly pointed out that the only stock exchange that offers derivatives in Africa was the Johannesburg Stock Exchange. Really? So, if there is no exchange market for derivatives in Zimbabwe, does that stand to reason that there is no trading of derivatives securities in the Zimbabwean financial markets as the author seem to be insinuating here above? Contrariwise, as is being suggested by the financial statements of the companies highlighted here above, there could be trading in derivatives by companies in Zimbabwe- over the counter. Again, Zimbabwean companies could still trade in Exchange Traded Derivatives (ETDs) accessed from other exchanges outside Zimbabwe.

Chagwiza (2013) argued that the liquidity challenges that were causing some banks and other non-financial institutions to close operations would have been eased, if not averted, if the Zimbabwe Stock Exchange had introduced the derivative market. In fact, he is concurring with Bonga et al (2015), not only on the fact that there is no trading of

derivatives in the financial markets in Zimbabwe, but also on the ability of derivatives to promote economic stability. Chagwiza (ibid) even went on to call liquidity derivatives, "liquidity risk shifting devices"

2.1.3. Perception of Investors on Derivative Hedges

Chui (2015) observed that derivatives have been linked to the troubles that rocked the global financial markets in the years past. The author also observed how derivatives have often been associated with bankruptcy giving examples of such high-profile failures like the Lehman Brothers and American International Group (AIG).

However, Chui (2015) was quick to note that proper use of derivatives in a prudently supervised derivatives market brings huge economic benefits.

Just like Chui (2015), Ravichandran (2008) alluded to the fact that capital markets are generally viewed as risky by investors in India. In the same study Ravichandran (2008) also found out that besides the negative perception, most investors felt that dealing in derivatives was also being hampered by the margin amounts charged, which amounts they felt were too much on the high side and prohibitive.

However, the same author was also quick to mention the good appetite for capital market instruments, especially derivatives, by the young investors. In fact, Ravichandran (2008) went on to stress the fact that derivatives have of late been blamed for massive financial losses experienced by many companies' world over.

In another study by the Accounting and Business Research Journal (2014) it was revealed that market players felt that there was lack of adequate disclosure in the annual financial statements vis-à-vis derivative financial instruments.

In fact, the Accounting and Business Research Journal (2014) examined the usefulness of information disclosed in the annual reports about derivative financial instruments. The study found out that information disclosed in annual financial statements as prescribed by IFRS 7 is sometimes too generic such that it does not give an actual picture of companies' off-balance sheet risk and risk management practices.

Chalmers and Godfrey (2000); Ernst & Young (2008); Papa and Peters (2011), (2013) and Roulstone (1999) cited in the Accounting and Business Research Journal (2014) agreed on the fact that despite widespread use and importance attached to derivative financial instruments by many corporations, disclosure of information relating to period end balances, within period balances as well as risk management practices has been a cause for concern. In fact, the way financial derivatives are being disclosed does not improve the understanding thereof. Here the authors are implying that derivative instruments are by their very nature viewed by the market players as complex to understand, and thus if they are not succinctly disclosed in a manner which eases understanding, users would become more confused and fail to use the information.

2.2. Derivative Types

Derivatives represent indirect claims on real or financial underlying assets. In fact, Kasilingam (2014) said that a derivative has no independent value- its value in its entirety is derived from the value of an underlying asset.

Sill (1997) highlighted the fact that derivatives can be classified in a number of ways as follows:

2.2.1. Swaps

For this contract two counterparties agree to use a pre-determined formula for future exchange of cash flows. The delivery of one currency against another forms the basis of currency swaps. Kasilingam (2014) observed that interest rate swaps and currency swaps are two basic types of swaps. Thus, there are interest rate swaps (IR Swaps), foreign currency exchange swaps (FX Swaps) and cross-currency interest rate swap (CIRS).

Like forwards, swaps are not standardized (in terms of location of settlement, date and month of delivery, asset quantity and quality) and thus traded not on organized derivative exchanges, but over the counter (Chui 2015)

2.2.2. Forward Contract

This is a contract where two parties agree- one party to supply and the other party to receive delivery of an underlying asset at a specific agreed time and price. Both parties have obligations to perform (Chui 2015).

Kasilingam (2014) highlighted the fact that the similarity between swaps and forwards is that like swaps, forward contracts are not standardized and thus traded over the counter-not on the organized derivative exchange. This stands to reason that each contract is designed uniquely, custom designed vis-à-vis contract size, date of expiration, quality and type of asset. According to Chui (2015) settlement of a forward contract is by delivery of asset on the date of expiration.

2.2.3. Futures Contracts

Sill (1997) observed that futures contracts are similar to forward contracts in that two parties agree -one party to sell a specified asset and the other party to buy the specified asset at a stipulated time in future at a forward price. However, contrary to forward contracts, futures contracts are traded on organized derivative exchanges with assurance pertaining to fulfilment of contracts being given by the exchanges. According to Kasilingam (2014) with futures contracts there is no direct contact between the seller and the buyer- the clearing house is the medium.

Another distinctive feature of futures contract is a deposit (referred to as margin) with the broker by parties to a futures contract. The deposit is akin to a collateral security to cater for risk of failure (Chui 2015).

Four types of futures contracts were identified as by Kasilingam (2014) as follows: -

- Futures on commodities such as gold and grains
- Futures on stock indexes
- Futures on interest bearing instruments such as treasury bonds, notes and bills
- Futures on currencies

2.2.3.1. Foreign Currency Exchange Futures (FX futures)

Here the parties agree to deliver and take delivery of a quantity of foreign currency specified to be delivered at a fixed date in the future. The contracts are standardized (in terms of location of settlement, date and month of delivery, asset quantity and quality) and thus traded on the organized derivative exchange market (Kasilingam 2014)

2.2.3.2. Interest Rate Futures

Chui (2015) noted that more than half of the world's entire futures market is made up of interest rate futures- that is to say treasury bills, treasury notes and municipal bonds.

2.2.3.3. Stock Index Futures

According to Chui (ibid), with stock index futures, the underlying asset becomes a specific equity index. Like foreign currency futures, stock index futures are settled in cash.

2.2.3.4. Stock Futures

These futures contracts are negotiated on individual stocks

2.2.4. Options

In an option contract the buyer (holder) is given the right, but not an obligation, to buy or sell an agreed quantity of a specific asset within a stipulated and agreed time period (Sill 1997).

Unlike in futures and forwards, the option contract only gives a right to a buyer (holder), but it does not give an obligation, to purchase or sell a security at a later date at a specified price. Options can be traded both over the counter and organised exchanges. Broadly there are two option types; namely the call and put options. However, like futures, there are also different types of options such as: -

- Foreign exchange rate options
- Interest rate options, and,
- Securities options

| Underlying | Contract Types | | | | |
|-------------------------|--|---|--|-----------------------------------|--|
| | Exchange traded Futures | Exchange traded Options | Over the Counter(OTC) Swaps | Over the Counter(OTC) Forward | Over the Counter(OT) Option |
| <u>Equity</u> | DJIA Index future Single stock future | Option on DJIA index future Single share option | Equity swap | Back to back Repurchase agreement | Stock option Warrant Turbo warrant |
| <u>Interest rate</u> | Eurodollar future -Euribor future | Option on Eurodollar future Option on Euribor future | Interest rate swaps | Forward rate agreement | Interest rate cap and floor Swaption Basis swap Bond option |
| <u>Credit</u> | Bond future | Option on bond future | Credit default swap Total return swap | Repurchase agreement | Credit default option |
| <u>Foreign Exchange</u> | Currency future | Option on currency future | Currency swap | Currency forward | Currency option |
| <u>Commodity</u> | WTI crude oil futures | Weather derivatives | Commodity swaps | Iron ore forward contract | Gold option |

Table 3: Diagrammatic Summary of the Types of and Forms of Derivatives (Kasilingam 2014)

Source: Adapted from Bonga Et Al (2015) Journal of Economics and Finance

2.3. Types of Derivatives Being Traded by Companies in Zimbabwe

It looks like literature on the types of derivatives that are currently being traded by companies in Zimbabwe is quite limited, but a study carried out by Njanike (2015) found out that most fund managers and analysts that participated in his study indicated that they would prefer to trade in call options, swaps and forwards on an organized derivative exchange market. In his study, Njanike (2015) mentioned the fact that the Reserve Bank of Zimbabwe closed all derivative trading desks in 2003.

Although in the findings of Njanike (2015)'s study it is not clear as to whether the said fund managers and analysts somehow continued (after 2003) to trade in any derivatives over the counter (since we are yet to have an organized derivative market), Econet Wireless in its Annual Report 2016 revealed the fact that the group's financial liabilities included derivative financial instruments. In fact, Econet Wireless's Policy Notes to the Consolidated Financial Statements for the year ended 29 February 2016 included the following; -

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Similarly, in its Annual Report 2015, Fidelity Life Assurance of Zimbabwe Limited highlighted the group's use of what it categorized as 'In the Money derivatives'. All this is pointing to the current use of derivatives by companies in Zimbabwe.

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2.4. Financial Distress

Wang and Senbet (2012) described financial distress as a situation whereby a firm breaks its promises to creditors, or where the company honours its promises to creditors with difficulty. The authors clarified that financial distress is directly linked to a firm's leverage decision.

Wang and Senbet (2012) also made a distinction between financial distress and economic distress- of which the latter arises from inefficiencies in the operation of a firm. Thus, according to them (Wang and Senbet 2012), an all equity firm can only be economically distressed, but will never be financially distressed. This stands to reason that bankruptcy is a cost that is divorced from economic distress, but married to financial distress. The bankruptcy costs could be direct or indirect, for example costs of hiring advisors such as lawyers, tax accountants and trustees, and costs associated with reorganization processes.

A firm can try to resolve financial distress through debt restructuring (renegotiating terms with its creditors for modification thereof). It can also sell some of its assets to fund investments projects with positive net present value or to pay off part of the debt ((Wang and Senbet 2012)

As highlighted above, the financial theory propounded by Smith and Stulz (1985) says that derivatives can be used to hedge against risk. In fact, Stulz (1996) actually emphasised that hedging causes an increase in the value of the firm and lowers probability of financial distress and costs associated with bankruptcy.

In coherence with the financial theory propounded by Smith and Stulz (1985), Upper and Valli (2016) argued that the Brazilian derivative market has been instrumental in the prevention of more serious financial distress or credit crunch- more specifically the East Asia financial crisis of 1997, the Argentine default of 2001, the Russian debt crisis of 1998, the Great financial crisis (2007-2009) as well as the Brazilian fiscal and political crisis of 2015. In fact, the authors are of the view that the high level of development and depth of the derivative market aided in absorbing financial distress shocks.

2.5. Prediction of Financial Distress

Ko et al (2015) observed that there are a number of ways of predicting financial distress such as statistical models, neural computing and inductive learning systems.

Regarding statistical models Ko et al (2015) highlighted the fact that researchers first used univariate models, but later on multivariate models became more popular. According to the same authors, the first researcher to predict failing and non-failing companies using a multivariate statistical model was Altman in 1968.

Neural Computing is a method that uses artificial neurons (AN) intricately connected into a computer system. On the other hand, the Inductive Learning System make use of decision trees to classify and assign attributes and values to objects (Ko et al 2015)

This study used both univariate and multivariate statistical models for prediction of financial distress in the sampled companies. In fact, this study used the accounting-based model of predicting financial distress in firms that was promulgated by Altman in 1986. It is detailed below: -

The Z Score Model

The model is based on Multiple Discriminant Analysis (MDA) where the function is as outlined hereunder: -

$$Z = V_1 X_1 + V_2 X_2 + \dots + V_n X_n$$

The Z value is the single discriminant score that is created by the individual variable values, and is then used to classify the firms, where V_1, V_2, \dots, V_n are discriminant coefficients and X_1, X_2, \dots, X_n are the independent variables representing different financial ratios (Altman 1996).

In 1993 Altman modified the model by using different factors, but same variables as follows: -

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

Where

- X_1 = Working Capital/Total Assets
- X_2 = Retained Earnings/Total Assets
- X_3 = Earnings Before Interest and Tax/Total Assets
- X_4 = Market Value of Equity/Book Value of Total Liabilities
- X_5 = Sales/Total Assets

To interpret the score, Altman (1968) postulated that if a firm's Z Score is within the interval of 1.81 to 2.99, that firm should be treated with caution, as it is unsafe (grey area). The author went on to say that where a firm has a Z Score that is below 1.81, the company should be considered to be bankrupt and probability of default will be very high.

However, solvency and financial wellbeing of a company is seen in companies with a Z Score that is greater than 2.99.

This study calculated the Z Scores of the companies in the sample and juxtaposed the same with data about usage of derivative hedges by the said companies (collected by the questionnaire) to establish relationship between usage of derivative hedges and ability of a firm to lower probability of financial distress.

2.6. Infrastructure Needed to Facilitate Trading in Derivatives

Kanyau (2009) named the following as necessary for facilitating trade in derivatives: -

- Clearing houses
- Licensing requirements
- Registration and reports
- Collateral requirements

The Euro Central Bank (2009) observed that regardless of the fact that Over the Counter (OTC) derivatives are mostly traded, cleared and settled bilaterally, concerns have intensified vis-a- vis the need to develop post- trading infrastructure for the OTC derivatives. The required infrastructure includes clearing and settlement infrastructure.

The Euro Central Bank (2009) paper also noted that lack of OTC derivative market infrastructures affected proper management of counterparty risk as it would be very difficult to get information about the risk related to the OTC derivative and the distribution of that risk in the financial market. The foregoing prompts the researcher to think that if at all companies in Zimbabwe are trading in derivatives over the counter to hedge against risks, how informed are they about risk related to these Over the Counter derivatives? Euro Central Bank (2009) paper then went on to stress the point that financial stability could be greatly disturbed by even the slightest malfunctioning of post-trading infrastructures for OTC derivatives.

Although, the Euro Central Bank paper looked mainly at OTC derivatives, the important point here is the fact that to ensure market stability and effective hedging of risks, there should be proper supporting post-trading infrastructure.

Heckinger and Mengle (2013) buttressed the need for supporting infrastructure when they pointed out that a clearing house- also referred to as a central counterparty (CCP), is one of the most important financial market infrastructure. They outlined three roles that it plays as follows:

- It acts as middlemen, that is to say, for derivative transactions submitted by its members, it acts as buyer for the selling members and seller for the buying members
- It assumes credit risk of transactions that it clears- thereby acting as a guarantor
- Its existence enables multi-lateral netting of transactions.

Another important aspect of the required infrastructure that Alonso et al (2014) highlighted is technology and processes. The authors argued that technological processes are important for aiding the valuation, pricing and management of risk and margins. Technology, they argued, is also handy in trade execution, collateral management as well as clearing.

Alonso et al (2014) support Heckinger and Mengle (2013) on the idea that setting up of the right infrastructure is key to promote derivative trading, especially over the counter (OTC) derivatives. They singled out the need for synchronised trading platforms as well as real time data feeds and reference systems. The need for an electronic trading system that support many traders was also emphasised by Njanike (2015). In the same line of thinking, Upper and Valli (2016) emphasized the advantage of having good infrastructure when they pointed out that post-trade integrated clearing house frameworks have removed the need for Brazilian dealers to provide guarantees.

In fact, Upper and Valli (2016) further noted that owing to the development of good infrastructure in Brazil, dealers no longer have to take counterparty and market risks on their own balance sheets, but are rather using exchanges.

The big question then will be whether in Zimbabwe we have such infrastructure? The only solace seems to come from the installation of the Automated Trading System (ATS) on the Zimbabwe Stock Exchange on 6 July 2015- effectively replacing the manual trading system that had been in existence since 1896. The Newsday newspaper of 7 July 2015 described it a first step towards transformation of capital markets to measure up to international standards- effectively creating enabling infrastructure.

2.7. Regulatory Framework That Facilitate the Use of Derivatives to Hedge against Risks

Adelegan (2009) revealed that to be able to reap full benefits from derivatives, there is need for formulation of tight regulations such as those used by insurance and pension funds on asset allocation. These regulations, the same author argued, prevent excessive risk taking and misuse of derivatives- which things can lead to a financial crisis characterized by capital outflows and high volatility.

Thus; Adelegan (2009) revealed that in terms of regulation of the derivative market in neighboring South Africa, The Financial Services Board of South Africa (FSB) established under Section 2 of the Financial Services Board Act 1990, supervises the activities of non-bank financial institutions.

For the same country (South Africa), the Capital Markets Department of the Financial Services Board (FSB) is responsible for the supervision of licensed exchanges, central securities depositories and clearing houses. On the other hand, the clearing of transactions in derivatives traded on the Johannesburg Stock Exchange (JSE) is done by the SAFEX Clearing Company (Adelegan 2009).

Buttressing the same view point, the Hong Kong Exchanges and Clearing Limited spelt out on its website on 31 October 2013 that its smooth functioning was largely due to the nature and structure of its regulatory framework. Its Securities and Futures Commission administers laws which govern securities and futures markets in the whole land of Hong Kong to facilitate development of these markets. In fact, the existence of the Securities and Futures Commission is aimed at: -

- Maintaining fairness, transparency, competitiveness and efficiency of the futures and securities industry.
- Minimising crime and misconduct to protect investors and players in the securities and futures industry
- Ensuring that the public has an understanding of the operations and functions of the futures and securities industry.

The importance of a Commission was also emphasised by Kasilingam (2014) who noted that in most countries futures markets are regulated by Commissions set up for that purpose. The author went on to say that these Commissions have the duty to approve new futures contracts and nodding to the novation of existing contracts.

According to Greenberger (2010), the effects of absence or lack of proper regulation in the derivative market can best be demonstrated by what ensued in the United States of America after the deregulation of swaps by the promulgation of the Commodity Futures Modernization Act (CFMA) of 2000.

The Commodity Futures Modernization Act effectively removed all forms of regulation from the Over the Counter (OTC) derivative transactions, especially the Credit Default Swaps (CDS). Thus, there was no one anymore who was effectively monitoring capital adequacy requirements, regulation of intermediaries and bars on fraud among other things (Greenberger 2010)

To summarize the lack of regulation Greenberger (2010) had this to say,

In sum, what was then estimated to be this multi-trillion-dollar OTC derivatives market was removed from almost all pertinent federal and state enforcement to which trading markets had been subject since the New Deal, as well as a central premise of common law of contracts...

What then followed was so devastating. The now unregulated multi-trillion dollar Over the Counter (OTC) Credit Default Swaps triggered the mortgage and the credit crises that inevitably led to the financial crisis in 2008. This 2008 financial crisis rudely awakened regulatory authorities pertaining to the immediate need for legislation that regulate Over the Counter Derivatives (Greenberger 2010).

The demise of the Lehman Brothers could also have been fuelled by the fact that Lehman was a counterparty of over 930 000 over the counter (OTC) derivatives which were certainly not regulated (Greenberger 2010).

Still emphasizing the need for regulation in the derivative market Stavrakeva (2013) is of the opinion that although some countries did put in place regulations to regulate the derivative market, such regulations are not adequate and or clear enough because companies continue incur losses. The author pointed to the example of JP Morgan's US\$2 billion loss resulting from Credit Default Swaps in 2012.

However, in the same study, Stavrakeva (2013) alluded to the fact that there is need for regulators to strike a balance between adequate regulation and over-regulation. The author observes that over-regulation could dampen the appetite to use derivatives for hedging and improvement of risk sharing by companies.

Thus, in the same purview, coming to Zimbabwe, it is apparent that in order for companies to successfully use derivatives to reduce risks of financial distress and or failure, tight regulations enforced by a Commission need to be put in place. In fact, Njanike (2015) is of the conviction that legislation that enable the establishment of the market should be put in place first. Njanike (ibid) went on to say that lack of proper regulation is thought by some quarters of the society to have largely contributed to the collapse of Barbican Bank- a Zimbabwean bank that was trading in call options before it was placed under curatorship.

In the same line of argument Chikoko (2010) buttressed the need for enactment of relevant legislation and supervisory bodies for the government of derivative markets in Zimbabwe. In fact, the same author feels that the issuing of guidelines to be followed by banks that deals substantially in derivatives could lead to increased effectiveness of derivatives.

However, whereas the foregoing seems to stress the need to pass enabling laws and form supervisory organs that guide the trading of derivatives Chikoko (2010) observed that some existing government regulations are a hindrance to the trading of derivatives. The author mentioned specific examples of the Grain Marketing Board controlling the prices of agricultural grain commodities and Fidelity Printers controlling the price of gold. Thus, Chikoko (ibid) see a liberalized market as important for the trading of financial derivatives.

Ravicharan (2008) observed that the international community is calling for harmonization and regulation of the derivatives markets to curtail risk to investors and economies world-wide. The author however, noted that the idea of increasing legislation as a way of boosting regulation did not receive support from all global stakeholders.

Chui (2015) is of the notion that derivatives bring and encourage financial innovation and market ability to withstand turbulences, provided that policy makers adequately supervise the derivative transactions by enacting laws and rules that prevent too much risk taking by players in the market.

In the same line of thinking, Alonso et al (2014) observed that the 2008 financial turmoil brought with it the need for higher capital requirements in the over the counter derivatives market. They went on to argue that regulators and market players responded to the financial turmoil by calling for greater transparency and high standards of business ethics and conduct.

Thus, corollary to the foregoing, it stands to reason that regulation alone without high standards of business ethics would not suffice in ensuring a vibrant derivatives exchange in Zimbabwe.

2.8. Technical Knowledge and Experience of Managers in the Use of Derivatives

According to Financetrain (2017), a successful derivative trader should be mathematically oriented- with strong quantitative skills and strong will to use algorithms daily. This inevitably points to a person with a degree in maths, statistics, or finance. The Herald of 30 April 2012 alluded to the fact that due to the complex nature of derivatives, there is need for a strong base in simulation and financial modelling and financial engineering expertise when trading them.

However, besides being mathematically oriented, Financetra in (2017) also noted that real derivatives trading experience is indispensable to give the would-be trader an understanding of real-life derivatives trading and lifestyle. Corollary to the foregoing, internship with investment banks and organisations dealing in derivatives is of paramount importance.

Beattie (2014) supported the fact that people with degrees in hard sciences, mathematics and engineering are what financial firms recruiting for trading positions would be looking for. So, in view of the foregoing, it means that managers of companies listed on the Zimbabwe Stock Exchange should not only have qualifications in hard sciences, but should also have what Financetra in (2017) called "real-life derivatives trading experience".

Beattie (2014) went on to identify skills that a person trading in derivatives should have and highlighted the following: -

- Analytical skills- for quick analysis of data and ability to recognize trends in the market.
- Research skills- a healthy thirst for information enables traders to be on top of information, so as to engender quick reaction ahead of the market (Beattie *ibid*)
- Focus-ability to select only that information that is affecting one's trade is as important as specialising in a particular security or specific sector (Beattie 2014)
- Recording keeping and Control-Improvement usually is a result of testing and subsequently tweaking one's strategies. This makes record keeping and control key skills for derivatives trading (Beattie 2014).

Buttressing the same line of thinking, Chui (2015) noted the lack of knowledge and information about derivatives and thus consequently encouraged policy makers to ensure the flow of data in increased quantity and quality to improve the understanding of derivative markets by stakeholders.

Similarly, Base and Brahmhatt (2012) observed that there was generally lack of awareness among investors vis-à-vis hedge funds despite the fact that derivatives have been traded for more than a decade on organised exchanges. However, Ravichandran (2008) is of the conviction that the limited knowledge about derivatives- (a common shortcoming in young investors who have a strong appetite for the instruments in the capital market) is usually complemented by advice from brokers and friends.

Alonso et al (2014) believe that grooming middle managers is important in ensuring smooth trading of derivatives. In fact, their argument is that luring new high potential junior blood into companies' collection of derivative products experts and specialists would at least help in mitigating what they called 'key-man risk'-as it deepens the bench of future leaders.

Pertaining to the establishment of a derivatives exchange market in Zimbabwe, Chikoko (2010) observed that Zimbabwe has not many people that are best qualified and experienced to see the smooth take-off of the derivative market. In fact, the author bemoaned the departure of some of the pioneers of derivatives in Zimbabwe- the likes of Mthuli Ncube, founder of Barbican Bank, whose experience could become handy. The author went on to highlight the need for managers to possess sufficient professional training in finance and asset pricing models as well as risk management.

Echoing the same sentiments, the Securities Commission of Zimbabwe issued out a discussion draft on its website on 1 April 2010 in which it proposed the setting up of what it termed the Financial Services Institute of Zimbabwe. In the introductory passages of the draft, the Securities Commission of Zimbabwe alluded to the fact that a knowledge and training gap was noted in the personnel participating in the Zimbabwean financial markets such as brokers, dealers, custodians and back office personnel. The Commission went on to argue that it sought to fill the gap that is noted even in university graduates by setting up the proposed Financial Services Institute of Zimbabwe.

In fact, in the discussion draft that appeared on its website on 1 April 2010, the Securities Commission of Zimbabwe bemoaned the lack of formal training and locally set and acceptable minimum qualifications for financial market players such as brokers, dealers and custodians. What the Commission also highlighted in that document is the fact that those who have any specific qualification to talk about have basic foundational certificates acquired in South Africa and other countries.

In line with the above, the Securities Commission of Zimbabwe revealed that it felt that the lack of the relevant skills set was preventing development and growth of competitive securities markets in Zimbabwe. Having unqualified

personnel means failure to develop or resistance to development of new products needed in the market (Securities Commission of Zimbabwe 2010).

The foregoing is an indication that for derivative hedges to be fully utilized, and for the Zimbabwean capital market itself to develop, the market players themselves need to have proper knowledge and training.

In a study carried out by Trevino (2005) it was revealed that a developing economy can successfully establish a derivative exchange market by entering into agreements with established exchanges from developed economies whereby the personnel from the developing country would get necessary training. In the study, the author pointed out that the development of derivative markets in Eastern Europe in the 1990s had been largely due to involvement of the two largest Chicago exchanges (Chicago Mercantile Exchange and Chicago Board of Trade) which contributed by way of offering to train and educate personnel as well as provision of technical information.

In fact, Trevino (2005) noted that the involvement of the Chicago based exchanges in Eastern Europe followed memorandums of understanding signed by the leaders of the exchanges with Hungary and Russia. The question is, could this the way to go to facilitate the development of a derivative exchange in Zimbabwe? It could possibly help if the country would simply bridge the knowledge gap by having personnel trained by established exchanges.

As if to stress that it is the way to go, Trevino (2005) also noted the fact that to facilitate the establishment of financial derivatives exchange in China, the China Foreign Exchange Trading System signed a memorandum of understanding with the Chicago Mercantile Exchange.

The development of an organized derivative exchange can be done easily when an emerging economy starts by introducing trade in basic instruments before moving on gradually to more complex contracts with aid of training from established exchanges from developed economies.

2.9. Summary of Chapter

The researcher provided in this chapter, a theoretical basis for the study by way of reviewing what other researchers in the area have done- thereby situating the study.

3. Research Methodology

3.1. Introduction

This chapter looked at the research design used in the study, the target population, sampling, sample size, data collection and data analysis. The chapter ended with a summary to the chapter.

3.2. Research Design

Kothari (2004) described a research design as a blueprint that enables the researcher to collect, measure and analyse data. Kumar (2011) buttressed Kothari's view point when he pointed out that explaining how the researcher will get answers to his or her research questions is the primary function of a research. Kumar (2011) further noted that the appropriateness of a research design is measured by the degree to which it enables the researcher to get valid findings comparisons as well as conclusions. The research is mainly descriptive in nature.

The study made use of the survey method to collect data. According to Pennsylvania State University (2017) the method is relatively quick and inexpensive. Surveys allow the study to reach as many participants as possible and thus increasing the accuracy of the sample from which conclusions are drawn (Pennsylvania State University 2017).

Blackstone (2017) also buttressed the idea that surveys are relatively cheaper than other methods when it comes to data gathering.

In view of the foregoing, the descriptive survey research method was found to be ideal for the study since the research sought to conduct fact finding enquiries to produce credible results whilst keeping costs of doing the study low.

Kothari (2004) wrote to say that surveys and different kinds of fact-finding enquiries are part of the descriptive research - the purpose of which is to describe the state of affairs. In agreement with Kothari, Yin (2009) wrote to say that a survey method is best suited for the who, what, where, how many and how much questions.

In view of the foregoing, the study was both qualitative and quantitative.

3.2. Target Population

The Zimbabwe Stock Exchange website (2017) revealed that there were 63 companies listed thereon as at 6 April 2017. In view of that the target population was comprised of the 63 companies that are listed on the Zimbabwe stock exchange. The population was selected because the researcher judged that the elements of the population were the most active participants when it comes to trading of derivatives. The researcher's judgement is supported by Bonga et al (2015) who indicated that the primary users of derivatives are financial institutions such as banks, insurance companies, and investment managers, but they also acknowledged significant use of derivatives by non-financial firms.

3.3. Sampling

3.3.1. Purposive Sampling

Purposive Sampling is a sampling technique used when a researcher is seeking specific predefined groups. In this study, the researcher felt that rich and wide information about the use of derivatives in Zimbabwe could be best extracted

from companies listed on the Zimbabwe Stock Exchange since they are likely to be the most active participants in the trade of derivatives. Thus, its main advantage is that of enabling quick reach of the target sample.

3.3.2. Stratified Random Sampling

This is a sampling technique that separates population into stratas. The researcher would then go on to randomly pick elements of the sample from each stratum. Samuels (2015) laid it bare by saying that population is divided into different groups and a sample is drawn randomly from those groups.

Corollary to the foregoing, for this study, the researcher grouped the listed companies mentioned above into three groups, that is, the listed banks, listed insurance companies and listed non-financial companies. A sample of 20 companies was then drawn randomly from the three groups. The number 20 is above 30% of the total population, which according to Saunders et al (2009) would result in a sampling distribution for the mean that closely resembles a normal distribution.

3.4. Sample Size

The sample consisted of 5 listed insurance companies (all insurance companies separately listed on the Zimbabwe Stock Exchange), 5 listed banks (all banks listed on the Zimbabwe Stock Exchange) and 10 listed non-financial companies randomly selected. Proportional sampling (use of the same sampling fraction in each stratum) could have been used, but the study used disproportional stratified sampling (using different sampling fractions in different strata) in order to reduce the standard error in the strata.

In fact, this is in concurrence with Visser et al (2009) who argued that disproportional stratified sampling is ideal for reduction of the standard error in a stratum especially where the standard deviation is expected to be high. Again, Saunders et al (2009) advised that where a population in a category is less than 30, one should normally collect data from all cases in the category.

The sample size constitutes more than 30% of the total population and thus representative enough according to Saunders et al (2009).

3.5. Data Collection

The study used both primary and secondary data.

3.5.1. Primary Data

According to Kothari (2004) collection of primary data can be done either by way of an experiment or through a survey. However, due to the fact that the study used a survey, the following data collection methods were used for the study:

3.5.2. Research Instruments

3.5.2.1. Questionnaires

This is the most extensively used method in economic and business surveys. Questionnaire is made up of printed or typed questions arranged in a certain order and sent to respondents (Kothari, 2004). For this study, a questionnaire was administered to treasurers, traders, and or chief finance officers of companies in the selected sample.

The questionnaire used in this study has five sections. The first section mainly looks at demographics whilst the second section is concerned with usage of derivatives to hedge.

The third section of the questionnaire looks at financial distress in companies and the use of derivatives to keep financial distress at bay. The fourth section, on the other hand, is mainly concerned with the practicability and applicability of use of derivatives in Zimbabwe vis-à-vis infrastructure, technical knowledge and skills.

The last section of the questionnaire consists of questions pertaining to the regulatory framework that should be in place to facilitate derivative hedging in Zimbabwe.

3.5.2.2. Interviews

Where the researcher was lucky to meet traders, treasurers and or chief finance officers face to face, he also took the opportunity to ask some pre-designed questions whilst seeking clarity on some issues highlighted in company documents and or publications.

The advantages of using this method according to Yin (2009) are that interviews are insightful- they provide perceived causal inferences and explanations. Again, unlike questionnaires, questions can be rephrased and explained until the respondent gets the right question for which the answer would be needed. The researcher also felt that the method would provide an opportunity to read non-verbal communication unlike other methods.

However, there could be response bias and or reflexivity-where the interviewee says what the interviewer wants to hear (Yin 2009).

- A telephone was also used to get information where possible. Kothari (ibid) believes that although it is not widely used, it is ideal for industrial surveys, especially when there is limited time for the completion of the survey.

Given the limited time that was available to the researcher, this method was found to be ideal for the purposes of conducting this study.

3.5.3. Secondary Data

3.5.3.1. Documentary Evidence

Data was also collected from a variety of documents such as journals, text books, published financial statements, memoranda, agendas, minutes of meetings, written reports and other administrative documents. The usefulness of documents was highlighted by Yin (2009) who said that documents corroborate and augment evidence from other sources.

In view of the foregoing, documentary evidence was helpful in verifying information in questionnaires, personal and telephone interviews.

3.6. Data Analysis

The gathered data was analysed using spread sheets to produce tables, graphs trend lines. SPSS software was also used to analyse the data so as to extract meaning there from. Narrative discussions were also used to draw conclusions from some of the data gathered.

This study used both univariate and multivariate statistical models for prediction of financial distress in the sampled companies. In fact, this study used the accounting based model of predicting financial distress in firms that was promulgated by Altman in 1986. It is detailed below: -

The Z Score Model

The model is based on Multiple Discriminant Analysis (MDA) where the function is as outlined hereunder: -

$$Z = V_1X_1 + V_2X_2 + \dots + V_nX_n$$

The Z value is the single discriminant score that is created by the individual variable values, and is then used to classify the firms, where V_1, V_2, \dots, V_n are discriminant coefficients and X_1, X_2, \dots, X_n are the independent variables representing different financial ratios (Altman 1996).

In 1993 Altman modified the model by using different factors, but same variables as follows: -

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

Where

X_1 = Working Capital/Total Assets

X_2 = Retained Earnings/Total Assets

X_3 = Earnings Before Interest and Tax/Total Assets

X_4 = Market Value of Equity/Book Value of Total Liabilities

X_5 = Sales/Total Assets

To interpret the score, Altman (1968) postulated that if a firm's Z Score is within the interval of 1.81 to 2.99, that firm should be treated with caution, as it is unsafe (grey area). The author went on to say that where a firm has a Z Score that is below 1.81, the company should be considered to be bankrupt and probability of default will be very high.

However, solvency and financial wellbeing of a company is seen in companies with a Z Score that is greater than 2.99.

This study calculated the Z Scores of the companies in the sample and juxtaposed the same with data about usage of derivative hedges by the said companies (collected by the questionnaire) to establish relationship between usage of derivative hedges and ability of a firm to lower probability of financial distress.

3.7. Ethical Considerations

The researcher considered the following ethical issues: -

- The respondents participated in the study voluntarily having been made aware of the purpose of the study and the use to which the gathered information would be put.
- The researcher will use information gained in this study for academic purposes only.
- Permission to interview employees will also be sought from companies that will be part of the sample of the study.
- For the purpose of maintaining confidentiality, the information provided by the respondents was presented in a manner that protects their confidentiality and anonymity.
- Avoiding bias- Kumar (2011) describes bias as an intentional effort by the researcher to hide findings of the study or to falsify the truth. The researcher tried not to be biased.

3.8. Assumptions

The research was based on the following assumptions: -

- That the sample selected was representative of the population under study.
- The feedback by the respondents would be unbiased.
- All relevant and or concerned parties would cooperate fully.
- The study would be objective in data collection, analysis and representation.
- Uncontrollable variables would be equally distributed over the study sample.

3.9. Scope (Delimitation) of the Study

- The period covered in the study is between January 2006 to December 2016.
- The target population was made up of financial executives of companies that are operating in Zimbabwe as well as bankers and financial regulators in Zimbabwe.

- A sample drawn from the target population was taken to represent the characteristics of the entire population under study.
- The study was only looking at the use of derivatives by companies in Zimbabwe to hedge against risks affecting their operations.

3.10. Summary

This chapter looked at the research design used in the study, the target population, sampling, sample size, data collection, data analysis, ethical considerations and delimitation of the study.

4. Data Analysis and Findings

4.1. Introduction

In this chapter, the data collected from the distributed questionnaires (see Appendix, interviews and from documents and publications was analysed, presented, interpreted and the findings were presented. The chapter ended with a summary to the chapter.

4.2. Demographics

For this study, a questionnaire was send out to twenty (20) respondents who consisted of banks listed on the Zimbabwe Stock Exchange, insurance companies listed on the Zimbabwe Stock Exchange as well as companies listed on the Zimbabwe Stock Exchange as non-financial companies. Out of the those twenty (20) questionnaires, sixteen (16) responded to the questionnaire.

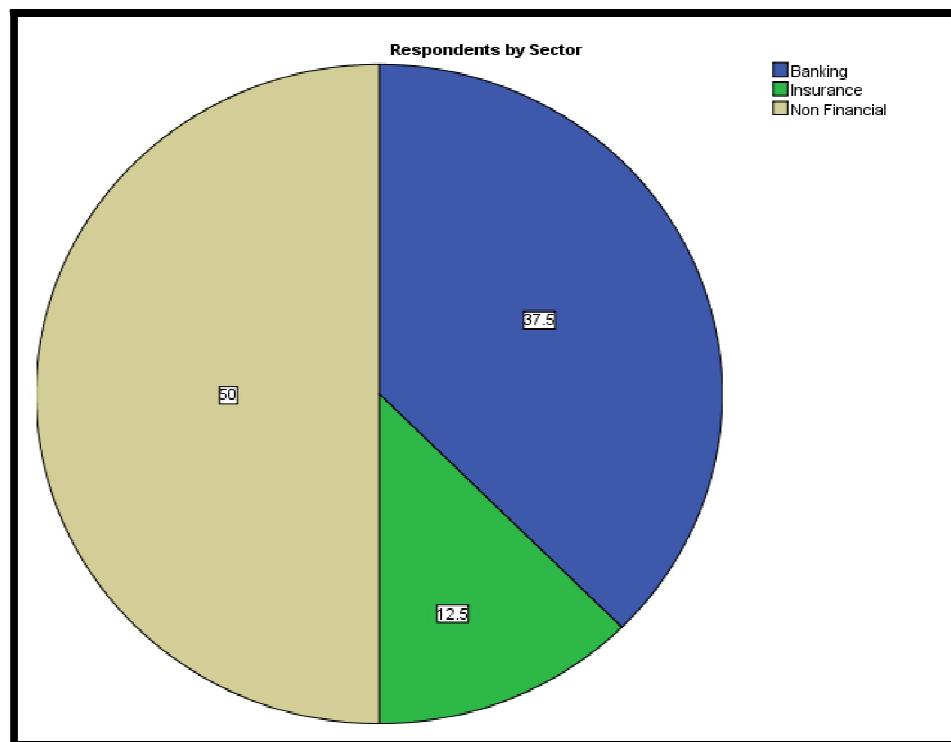


Figure 1: Pie Chart Showing Respondents by Sector
Source: Questionnaire

From Figure 1 above, it can be seen that 50% of the respondents are listed on the Zimbabwe Stock Exchange as belonging to the non- financial sector, 37.5% of the respondents are listed on the Zimbabwe Stock Exchange as belonging to the banking sector and 12.5% of those respondents are listed as belonging to the insurance sector.

4. 2. Is Derivative Hedges Part of Your Risk Management Strategies?

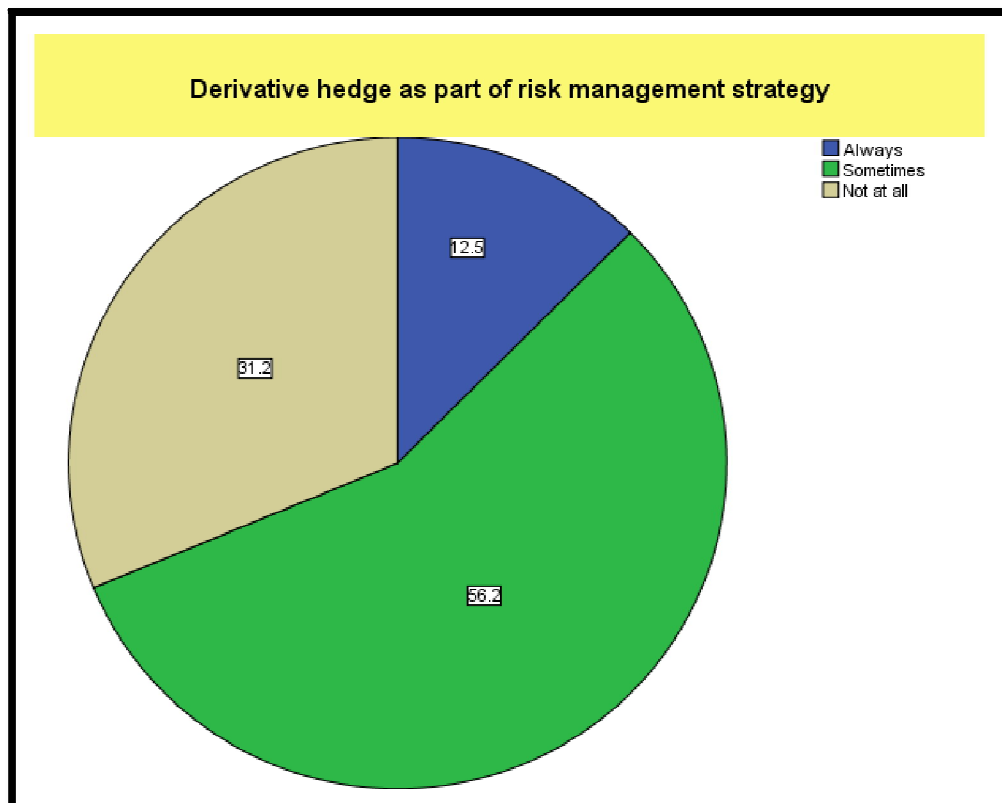


Figure 2: Use of Derivative Hedge as Part of Risk Management Strategy
Source: Questionnaire

Figure 2 above shows that 56.2% of the respondents sometimes use derivatives to hedge against risks. 12.5% of the respondents said that they are consistent and always use derivatives for hedging against risks. On the other hand, 31.2% of the respondents indicated that they do not at all use derivative hedges as part of their risk management strategies.

The results from the distributed questionnaire are showing that more than half of the respondents to that questionnaire are using derivatives over the counter to hedge against risks that affect their operations. The findings agree with Mihaljek and Packer (2016) who stated that emerging markets tend to use over the counter derivatives more than they use exchange traded derivatives. The findings are also confirming documentary evidence in the form of published financial results that were reviewed in chapter 2 of this study. In fact, as highlighted in that chapter (chapter 2), companies such as Fidelity Life Assurance of Zimbabwe, Econet Wireless and Barclays Bank of Zimbabwe revealed their use of derivative hedges in their annual reports.

However, the findings are in sharpest contradiction with the arguments of Bonga et al (2015) who observed that regardless of the fact that Zimbabwe Stock Exchange is among the oldest and largest in Africa, there is no trading of derivative securities in the Zimbabwean financial market.

The puzzling part however, is the fact that data gathered by way of interviews revealed that players in the financial capital markets in Zimbabwe (particularly those in the banking and insurance sectors) have no explicit greenlight from the Reserve Bank of Zimbabwe to deal in derivatives. So, then how are they doing it? The answer to that question could be a confirmation of the observation made by Mihaljek and Packer (2016) who concluded that in emerging countries, trading of currency derivatives is done "offshore"- outside the country's monetary authority jurisdiction. It seems as though there is lack of proper regulatory framework that would make RBZ feel at ease to give explicit greenlight to derivative hedging and trading.

Corollary to the above, the most possible reason why many companies in Zimbabwe continue to face financial distress is that only a few of them use derivative hedges consistently due the fact that access to the derivative instruments is limited both by absence of an organized derivative exchange in the country and the prohibitive laws that are in existence, especially in the banking and insurance sectors.

The interviews also revealed that the younger treasurers, traders and chief financial officers really feel that the regulatory authorities should put up proper infrastructure and regulatory framework that would permit them to hedge using derivatives as much as they would like. This is in concurrence with Ravichandran (2008) who observed that there is a good appetite for capital market instruments, especially derivatives, by the young investors.

4.3. Which Derivatives Do You Use?

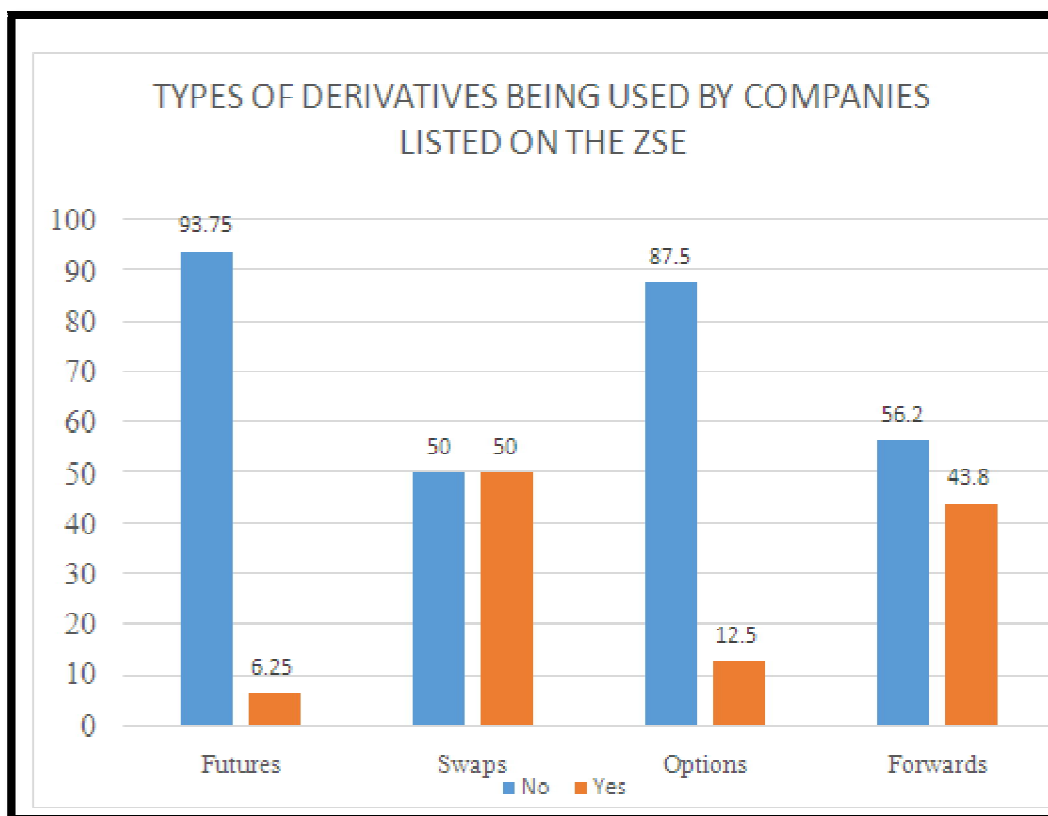


Figure 3: Types of Derivatives Being Used by Companies Listed on the ZSE
Source: Questionnaire

Figure 3 above shows that swaps are relatively the most popular derivative hedging instrument among companies that are listed on the Zimbabwe Stock Exchange- with 50% of the respondents acknowledging their use thereof. The second most used derivative hedging instruments are the forwards with 43,8%, followed by options and futures with 12,5% and 6,25% respectively. The absence of an organised derivative exchange market in Zimbabwe is the most probable reason why over the counter derivatives such as swaps and forwards are the most used derivatives by companies listed on the ZSE.

The fact that swaps and forwards are the dominant derivatives used by companies listed on the Zimbabwe Stock Exchange to hedge, make the results to be in concurrence with the findings of Mihaljek and Packer (2016) who observed that emerging markets tend to use Over the Counter derivatives more than they use exchange traded derivatives. The findings are also in agreement with Lourde and Trevino (2005) who argued that about half of derivatives turnover in emerging markets occurs over the counter compared to one third in advanced economies.

The findings from the administered questionnaire are also corroborating documentary evidence in the reviewed literature in Chapter 2, wherein Barclays Bank of Zimbabwe revealed in its Notes to the Financial Statements for the year ended 30 June 2016, the fact that it uses cross-currency swaps to hedge against foreign currency risks (for assets and deposit balances held that are denominated in foreign currencies). The banking institution also disclosed that it also uses forward exchange contracts for hedging against foreign currency risk.

4.3.1. What Kind of Risks Will You Be Hedging Against?

| | Interest Risk | Commodity Risk | Credit Risk | Currency Risk | Equity Risk | Volume Risk | Volatility Risk |
|------------|---------------|----------------|-------------|---------------|-------------|-------------|-----------------|
| Percentage | 50% | 18.75% | 31% | 50 | 0 | 0 | 0 |

Table 4: Kinds of Risks Hedged against using Derivatives by Companies Listed on the ZSE
Source: Questionnaire

Table 7 above is indicative of the fact that 50% of the respondents to the questionnaire use derivatives to hedge against interest rate risk and currency risk. 31% of the respondents indicated their use of derivatives to hedge against credit risk. These results are echoing the sentiments of Mihaljek and Packer (2016) who carried out a study in Chile and noted that most corporate end users of derivatives use foreign exchange hedging instruments- of which pension funds supply derivative contracts with short maturities whilst banks supplied most of the foreign exchange contracts for maturities of one year and above.

Coming closer home, the results are also confirming the reviewed literature in chapter 2 wherein some banks listed on the Zimbabwe Stock Exchange (see also Appendix E) revealed in their annual results that they mostly use cross currency swaps and forward exchange contracts to hedge against foreign currency risks (for assets and deposit balances held that are denominated in foreign currencies). Thus, foreign currency risk and interest rate risk are the most feared risks for companies listed on the Zimbabwe Stock Exchange.

4.4. Is There A Relationship between Financial Well-Being of Companies and Usage of Derivatives for Hedging?

This study calculated the Z Scores of the companies in the sample (see appendix B) and juxtaposed the same with data about usage of derivative hedges by the said companies (collected by the questionnaire) to establish relationship between usage of derivative hedges and ability of a firm to lower probability of financial distress. Thus, the data was coded and correlated using SPSS and the results are displayed in Table 5 below.

| | | Derivative hedge as part of risk management strategy | Z Score measuring financial distress |
|--|---------------------|---|---|
| Derivative hedge as part of risk management strategy | Pearson Correlation | 1 | -.137 |
| | Sig. (2-tailed) | | .640 |
| | N | 16 | 14 |
| Z Score measuring financial distress | Pearson Correlation | -.137 | 1 |
| | Sig. (2-tailed) | .640 | |
| | N | 14 | 14 |

Table 5: Correlations: Use of Derivative Hedge and Z Score
Source: SPSS Output After Analysing Data from the Questionnaire

Table 5 above shows a Pearson's Correlation (r) of -0.137 . This means that there is a negative relationship between the two variables- that is to say, an increase in one variable result in a decrease in the other variable. Corollary to the foregoing, the study found out that there is a relationship between use of derivatives to hedge and ability of a company to lower probability of financial distress. In fact, the results show that an increase in the use of derivative hedges can lead to a decrease in the probability of financial distress. These results are strengthening the financial theory propounded by Smith and Stulz (1985) which says that derivatives can be used to hedge against risk of financial distress. In fact, Stulz (1996) emphasised that hedging causes an increase in the value of the firm and lowers probability of financial distress and costs associated with bankruptcy.

In fact, the results are also backing Sill (1997) who buttressed the line of thinking of Smith and Stulz (1985) when he said that the job of allocating risks can be made easier and less costly to firms and investors through the use of derivatives. The same author went on to argue that derivatives, if used for hedging by firms or individuals, can act as insurance to guard against unwanted and unfortunate future happenings.

The weak negative relationship (-0.137) however, could be because of the lack of consistency in the use of derivative hedges since only 12.5% of the respondents indicated that they are consistent in their use of derivatives. The other 56.2% only said they sometimes use derivatives for hedging. Thus, if the derivative hedges had been used consistently by companies listed on the Zimbabwe Stock Exchange in a well-regulated and organised market, a strong negative relationship would have been obtained and companies would have significantly lowered the probability of financial distress.

| | | Derivative hedge as part of risk management strategy | Ability to meet promises to creditors |
|--|---------------------|---|--|
| Derivative hedge as part of risk management strategy | Pearson Correlation | 1 | .585* |
| | Sig. (2-tailed) | | .017 |
| | N | 16 | 16 |
| Ability to meet promises to creditors | Pearson Correlation | .585* | 1 |
| | Sig. (2-tailed) | .017 | |
| | N | 16 | 16 |

Table 6: Use of Derivative Hedge and Ability to Meet Promises to Creditors
*. Correlation is Significant at the 0.05 Level (2-Tailed)

Source: SPSS Output after Analysing Data Gathered by Questionnaire

The responses to question 2 under use of derivatives (see Appendix A: where companies were asked to indicate whether they use derivatives to hedge or not) were coded and juxtaposed with responses to question 1 under financial distress –(where companies were asked about their trends in terms of meeting promises to creditors). The coded responses were then correlated using SPSS.

Table 6 above shows that there is a positive relationship between the use of derivative hedge as a risk management strategy and ability of a firm to meet promises to creditors. In other words, it means that the more a company uses derivatives to hedge, the more it increases its ability to meet promises to its creditors, effectively lowering

probability of financial distress- and vice versa. The Pearson Correlation is strong (0.585). Thus, the results in Table 6 are buttressing the results in Table 5 above.

These results are in coherence with Upper and Valli (2016) who argued that derivative hedging can be instrumental in preventing more serious financial distress. In fact, they argued that the Brazilian derivative market has been instrumental in the prevention of more serious financial distress or credit crunch- more specifically the East Asia financial crisis of 1997, the Argentine default of 2001, the Russian debt crisis of 1998, the Great Financial Crisis (2007-2009) as well as the Brazilian fiscal and political crisis of 2015.

In view of the above, the findings overall seem to support the financial theory propounded by Smith and Stulz (1985) which says that derivatives can be used to hedge against risk and to lower probability of financial distress.

From what is highlighted above, it stands therefore to reason that the question as to why a sizeable number of companies operating in Zimbabwe continue to experience financial distress could be best answered by the fact that a very small portion of the companies (12.5%) use derivative hedges in a consistent manner- thereby getting the full benefits from the derivative hedges, possibly due to the restrictions imposed by the regulatory authority (Reserve Bank of Zimbabwe).

4.5. Which Hedging Techniques Did You Put in Place to Lower Probability of Financial Distress and or to Avoid Adverse Financial Ratios?

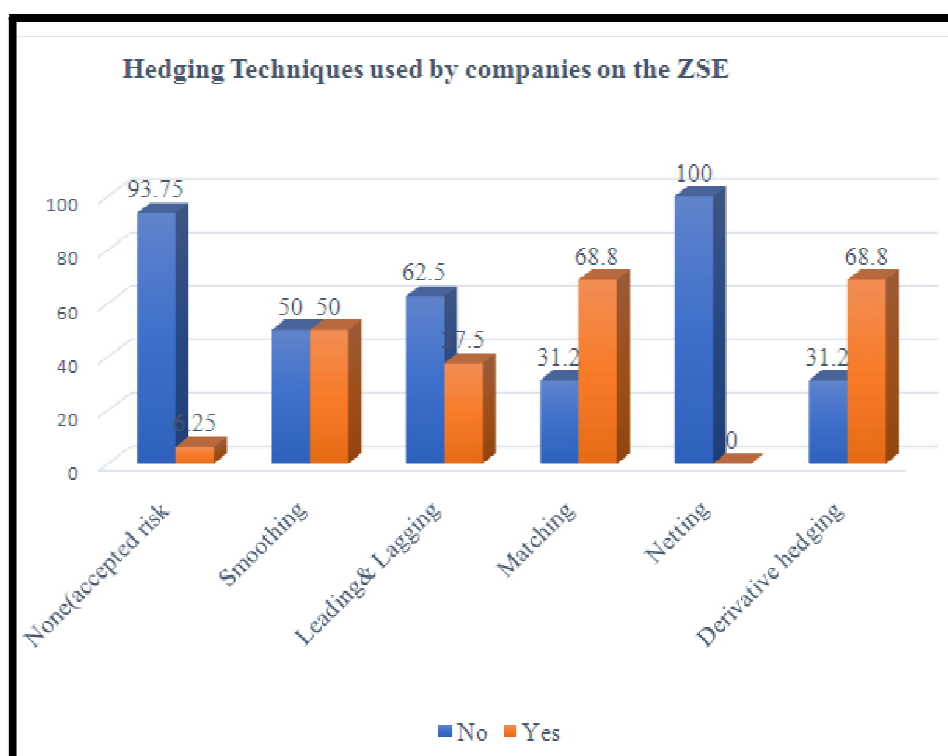


Figure 4: Hedging Techniques Used by Companies on the ZSE
Source: Questionnaire

The analysed data in Figure 4 above show that about 68.8% of the respondents use matching to hedge against risks affecting their operations. The same percentage (68.8%) also indicated that they use derivative hedges. The other popular hedging technique is smoothing- with 50% of the respondents to the questionnaire indicating the use thereof. This is followed by leading and lagging with 7.5% of the respondents having indicated that they use the technique for hedging against risk.

None of the respondents indicated the use of netting as a hedging technique. On the other hand, about 6.25% of the respondents just accepted the risk- they did nothing to hedge against the risks affecting the viability of their operations.

The statistics above seem to support the data gathered by way of interviews which pointed out to the fact that if there be an organized derivative market in Zimbabwe that is well regulated and strengthened by an enabling legal framework many companies would want to use derivatives to hedge. The interviewees opined that the current laws and regulations are prohibitive and are barring them from utilising derivative hedges. In fact, their argument is that whereas a regulatory legal framework instils confidence in capital market players and enables the market to absorb shocks in times of financial crises, there is need to strike a balance between regulation and over-regulation. They pointed out that over-regulation has the same detrimental effects to derivative hedging that lack of regulation has on derivative hedging and trading.

4.6.1. Practicability and Applicability of the Use of Derivatives to Avert Downside Risks That Are Causing Financial Distress in Companies In Zimbabwe

Pertaining to whether the Zimbabwean financial capital markets do have what it takes in terms infrastructure and technical knowledge to facilitate proper organized derivative trading to hedge and lower probability of financial distress, the following results were obtained:

4.6.2. What is Your Take on the Notion That the Establishment of an Organized Derivative Exchange Market will Markedly Increase the Use of Derivatives to Hedge and Lower Probability of Financial Distress?

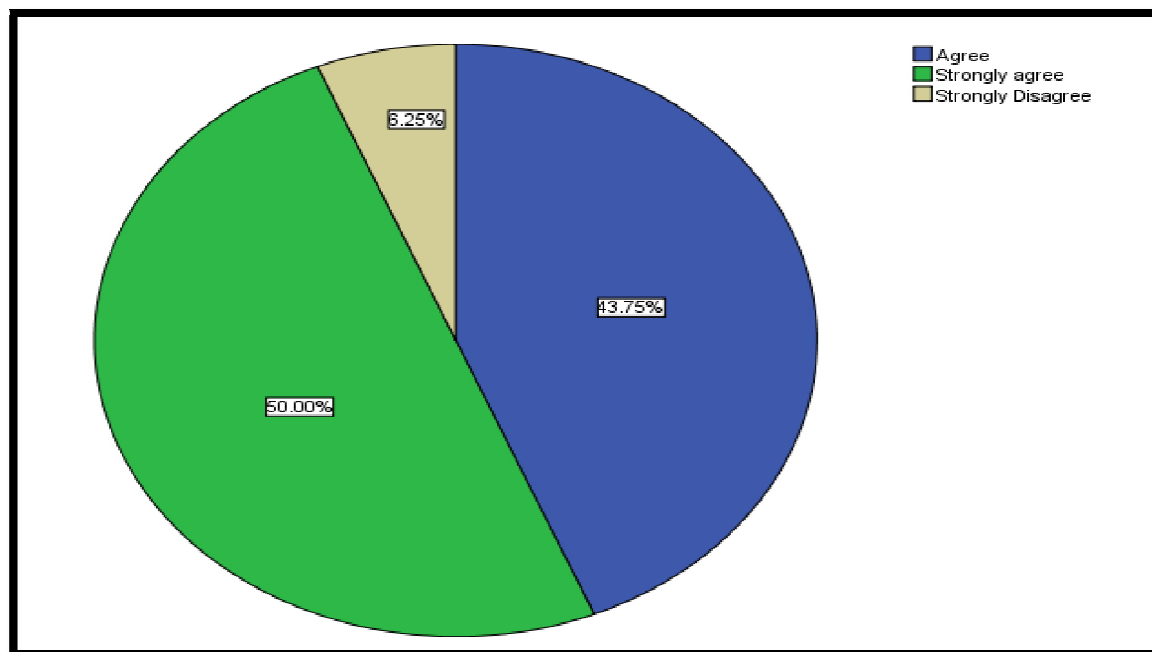


Figure 1: Establishment of Derivative Exchange will markedly Increase use of Derivatives to Hedge
Source: Questionnaire

In line with the data presented in Figure 5 above, the study found out that 50% of the respondents to the questionnaire strongly agree to the notion that the establishment of an organized derivative exchange market would act as a catalyst for increasing derivative hedging. 43,75% of the respondents indicated that they were just in agreement with the notion that establishment of a derivative exchange market would spur the level of derivative hedging for companies listed on the Zimbabwe Stock Exchange. The findings of this study are in tandem with the findings of Chagwiza (2013) who argued that the liquidity challenges that were causing some banks and other non-financial institutions to close operations would have been eased, if not averted, if the Zimbabwe Stock Exchange had introduced the derivative market. In fact, he is concurring with Bonga et al (2015) on the ability of derivative exchange market to promote economic stability.

The findings from the questionnaire are echoing the views of people interviewed for this study. In fact, the interviewees concurred with the fact that for companies to be able to fully exploit the benefits of derivative hedging and lower the probability of financial distress, there is need for the establishment of an organized derivative exchange. This development, they opined, would enable the listed companies access, not only to over the counter derivatives and "off shore" instruments, but also to those instruments that are traded on the organized derivative exchanges.

The results are also in sync with Upper and Valli (2016) who noted that the development of exchanges facilitates and eases the job of dealers because when using exchanges, they will not need to take counterparty and market risks on their own balance sheets.

Although, 6.25% of the respondents to the questionnaire strongly disagree with the notion that establishment of a derivative exchange market would spur the level of derivative hedging and trading, it is apparent that the majority of companies listed on the Zimbabwe Stock Exchange cannot wait to see the establishment of a derivative exchange market.

4.6.3. Which Other Supporting Infrastructure Components Do You Think If Acquired, Adopted or Implemented, Would Immediately Cause an Increase in the Use Of Derivatives by Companies to Hedge?

The study found out that supporting infrastructure components such as clearing houses, automated exchange trading system, licensing systems and compliance enforcement apparatus are indispensable and have to be put up pari passu with an organized derivative exchange to engender unlimited increase in derivative hedging in Zimbabwe, which thing would increase the ability of companies to keep financial distress at bay.

In fact, Figure 6 below shows that 87.5 % of the respondents to the questionnaire are of the view that clearing houses and automated trading systems are part of the vital supporting infrastructure components that complement an organized derivative exchange without which there will be limited increase in derivative hedging activities. To buttress

that 68.8% of the respondents stressed the need for compliance and enforcement systems whilst 62.5% of those respondents pointed to the importance of a reliable licensing system.

The results are in sync with Kanyau (2009) who said that smooth flow of derivative trading activities can be facilitated by establishment of clearing houses, formulation of clear licensing requirements as well as collateral requirements.

In the same purview, the Euro Central Bank (2009) observed that regardless of the fact that Over the Counter (OTC) derivatives are mostly traded, cleared and settled bilaterally, concerns have intensified vis-a- vis the need to develop post- trading infrastructure for the OTC derivatives. The required infrastructure includes clearing and settlement infrastructure.

Euro Central Bank (2009) paper then went on to stress the point that financial stability could be greatly disturbed by even the slightest malfunctioning of post-trading infrastructures for OTC derivatives.

In view of the foregoing, it stands to reason that for there to be meaningful increase in the use of derivative hedges without disturbing financial stability, post-trading infrastructure such as clearing houses should be in place and should be well functioning.

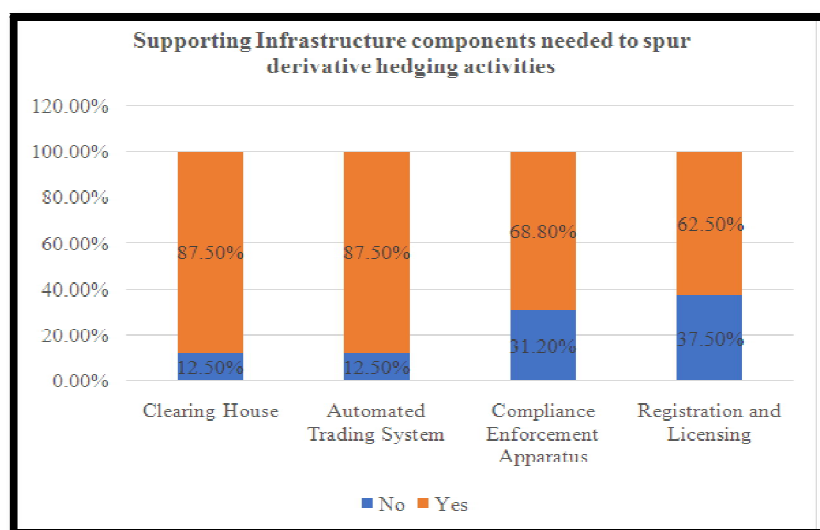


Figure 6: Supporting Infrastructure Components Needed to Spur Derivative Hedging
Source: Questionnaire

4.6.4. What is Your Take on the Statement That Decision Makers in My Organisation Have Technical Knowledge Pertaining to the Use of Derivatives as a Method of Hedging?

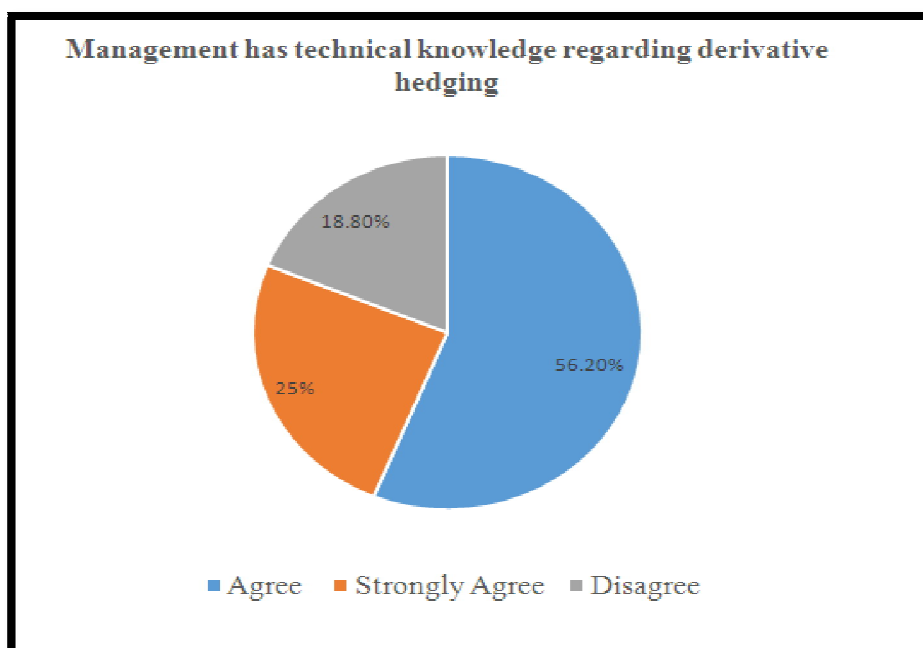


Figure 7: Management Has Technical Knowledge Regarding Derivative Hedging
Source: Questionnaire

The Statistics displayed in Figure 7 above are showing that 56.2% of the respondents to the questionnaire are in agreement with the fact that the current crop of management in companies that are listed on the Zimbabwe Stock Exchange have the technical knowledge sufficing to be able to participate in a fully- fledged organized derivative exchange market for hedging purposes. 25% of the respondents strongly agree that the Zimbabwean capital financial market has technically trained managers with knowledge to participate in organised derivative exchange markets for hedging purposes. Although 18.8% of the respondents do not think that the current crop of managers leading companies that are listed on the Zimbabwe Stock Exchange have enough technical knowledge to be able to participate in a fully-fledged derivative exchange market for hedging purposes, the majority, as shown here above, think that they are qualified.

The above results are consistent with interviews held with some of the traders, dealers and chief finance officers who pointed out that with their advanced degrees in mathematics, finance and other hard sciences they were very much qualified to deal with derivatives, especially for hedging purposes. Their argument seems to support Beattie (2014) who pointed out that people with degrees in hard sciences, mathematics and financial engineering are what financial firms recruiting for trading positions would be looking for.

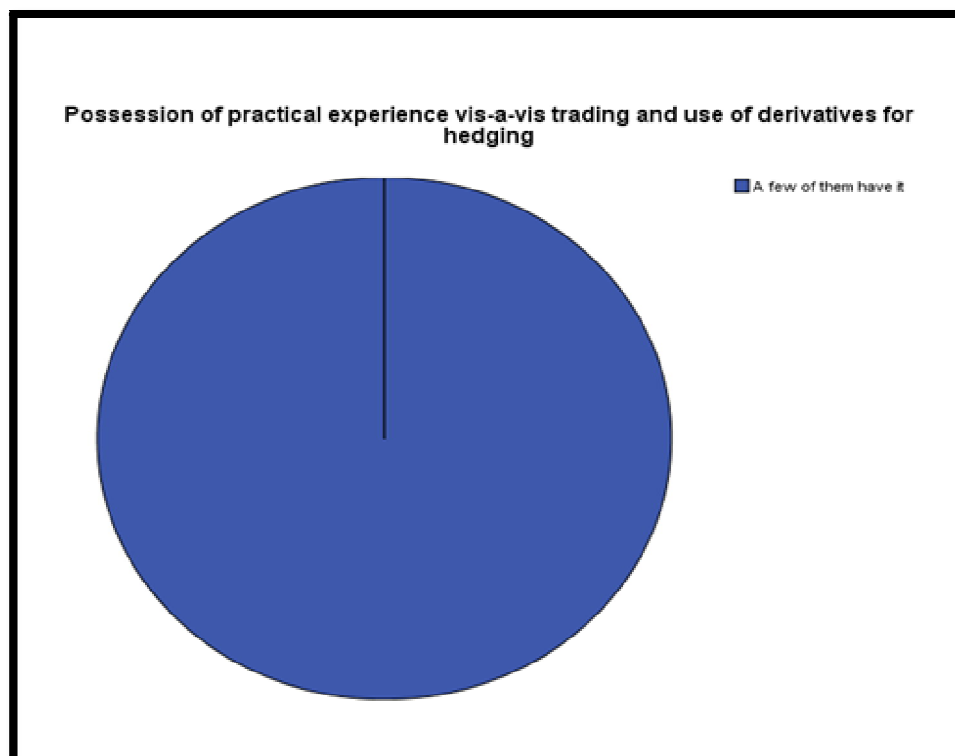
Contrary to the results however, Chikoko (2010) observed that Zimbabwe has not many people that are best qualified and experienced to see the smooth take -off of the derivative market. In fact, the author bemoaned the departure of some of the pioneers of derivatives in Zimbabwe- the likes of Mthuli Ncube, founder of Barbican Bank, whose experience could become handy.

The results also contradict Chui (2015) who noted the lack of knowledge and information about derivatives and thus consequently encouraged policy makers to ensure the flow of data in increased quantity and quality to improve the understanding of derivative markets by stakeholders.

Similarly, Base and Brahmbhatt (2012) observed that there was generally lack of awareness among investors vis-à-vis hedge funds despite the fact that derivatives have been traded for more than a decade on organised exchanges.

Possibly, those who lack knowledge as is pointed out by Chikoko (2010), Chui (2015) and Base and Brahmbhatt (2012) above, are not the financial specialists like those who were interviewed and those who responded to the questionnaire for this study, but the generality of the investing public.

4.6.5. What is Your Opinion on the Statement That Decision Makers in Zimbabwean Companies Have Practical Experience Vis-À-Vis Trading And Use of Derivatives for Hedging?



*Figure 8: Possession of Practical Experience by Management Vis-À-Vis Trading and Use of Derivatives for Hedging
Source: Questionnaire*

Figure 8 above shows that all the respondents to the questionnaire are of the opinion that only a few of the managers in companies that are listed on the Zimbabwe Stock Exchange have practical experience regarding derivative hedging and trading on the organized exchange market. This is despite the fact that here above, the majority of the same respondents indicated that the Zimbabwean capital financial market has technically trained managers with knowledge to participate in organised derivative exchange markets for hedging purposes if ever one would be established. This is in sync with Chikoko (2010) who observed that Zimbabwe has not many people that are best qualified and experienced to see the

smooth take -off of the derivative market. In fact, the author bemoaned the departure of some of the pioneers of derivatives in Zimbabwe- the likes of Mthuli Ncube, founder of Barbican Bank, whose experience could become handy.

The findings also concur with Financetra in (2017) who noted that besides being mathematically oriented, real derivatives trading experience is indispensable- to give the would- be trader an understanding of real- life derivatives trading and lifestyle.

In the same line of thinking, Alonso et al (2014) believe that grooming middle managers is important in ensuring smooth trading of derivatives. In fact, their argument is that luring new high potential junior blood into companies' collection of derivative products experts and specialists would at least help in mitigating what they called 'key-man risk'-as it deepens the bench of future experienced leaders.

Thus, considering the above, it stands to reason that although there might be a large number of people who are financially and mathematically oriented in Zimbabwe, only a few of those have real- life experience pertaining to derivative hedging and trading.

4.7. What Aspects of the Regulatory Framework Do You Think Need to be Put in Place, Improved or Revamped in Order to Facilitate the Use of Derivatives as a Hedge to Lower Probability of Financial Distress in Companies in Zimbabwe?

| Response | Membership Requirements | Trading Rules | Clearing Rules |
|----------|-------------------------|---------------|----------------|
| No | 68.8% | 6.2% | 12.5% |
| Yes | 31.2% | 93.8% | 87.5% |
| Total | 100% | 100% | 100% |

Table 7: Regulatory Framework That Facilitate the Use of Derivatives to Hedge against Risks

Source: Questionnaire

Pertaining to the regulatory framework that should be in existence to facilitate the use of derivatives, 93.8% of the respondents to the questionnaire indicated that clearly defined and strong enforced trading rules should be crafted to engender transparency and boost confidence in players- which thing would increase derivative hedging activities. In the same purview, 87% of the respondents were of the view that clearing rules are important in facilitating derivative trading in an organised exchange market. The findings are supporting the views of Adelegan (2009) who revealed that, to be able to reap full benefits from derivatives, there is need for formulation of tight regulations such as those used by insurance and pension funds on asset allocation. These regulations, the same author argued, prevent excessive risk taking and misuse of derivatives- which things can lead to a financial crisis characterised by capital outflows and high volatility.

However, only 31.2% of the respondents were of the view that clear membership requirements are important to aid derivative trading on the organised exchange that, as shown here above, they wish to see operating in the near future. The emphasis stressed by respondents on the need for strong regulations and rules governing participation of players in the proposed derivative exchange market is serving to confirm the sentiments of Greenberger (2010) who argued that the lack of regulation in the multi-trillion -dollar over the counter Credit Default Swaps in America triggered the mortgage and the credit crises that inevitably led to the financial crisis in 2008.

Corollary to the foregoing, what is then intriguing and rather confusing is that although the majority of the respondents stressed the importance of having clear and strong rules and regulations to govern the activities of players in the much-desired organized derivative exchange, as shown in Figure 9 below, 87.5% the respondents to the questionnaire indicated that they felt that current rules and laws governing the capital financial markets in Zimbabwe are detrimental to derivative hedging and trading.

The explanation that the researcher got from the interviews regarding the foregoing is that whereas there is need for clear and strong enforced regulations to govern the derivative exchange markets, there should always be a balance that should be struck between adequate regulation and over-regulation because whilst the former protects investors, the latter shoes away players from the market. Their viewpoint is concurring with Stavrakeva (2013) who opined that there is need for regulators to strike a balance between adequate regulation and over-regulation.

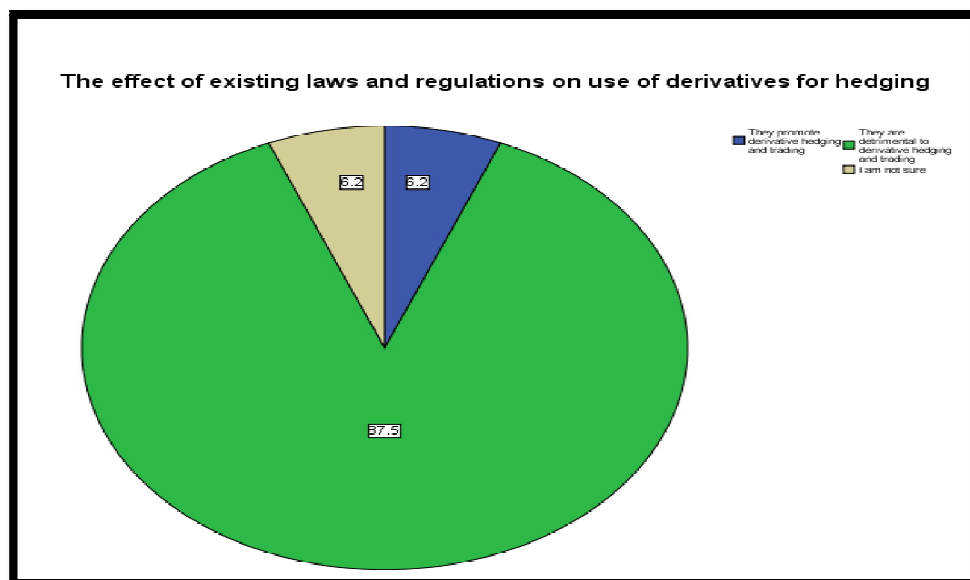


Figure 9: What Do You Think About the Existing Laws and Regulations Pertaining to the Use of Derivatives to Hedge
Source: Questionnaire

4.8. Chapter Summary

In this chapter, the gathered data was analysed using SPSS and Microsoft Excel. It was then presented in the form of tables, graphs and narrative discussions. The findings of the study were also presented in this chapter.

5. Conclusion and Recommendations

5.1. Introduction

In this chapter, some conclusions were drawn from the findings presented in chapter 4 and where possible the study also made some recommendations. The chapter ended with a chapter summary.

5.2. Summary of Findings

- It was found out that despite the absence of an organised derivative exchange market in Zimbabwe, a significant percentage (68.7%) of companies listed on the Zimbabwe Stock Exchange use derivatives as a hedging technique. However, of those that are using derivatives to hedge, only 12.5% indicated their complete allegiance to the hedging technique- saying that they are consistent and are always using derivatives as a hedging technique. The other 56.2% only indicated that they sometimes (but not always) use derivatives.
- Consistent with characteristics of most emerging or developing markets, the study also found out that companies listed on the ZSE mostly used over the counter derivatives -with swaps leading the pack (50%) followed by forwards (43.8%). Options and Swaps are also sourced 'off shore'- being used by 12.5% and 6.25% of the respondents respectively.
- It was also found out that companies listed on the Zimbabwe Stock Exchange mostly use derivatives to hedge against currency risk and interest rate risk.
- The statistical tests (Pearson's Correlation) that measure the relationship between variables revealed that there is a negative relationship between a company's probability of financial distress (as measured by Altman's Z Score) and use of derivatives for hedging purposes. In other words, it was found out that an increase in the use of derivative hedges can lead to a decrease in the probability of financial distress. Conversely, it means that the more a company uses derivatives for hedging, the more its chances of meeting its promises to creditors. This confirms the financial theory by Smith and Stultz (1985) who argued that derivatives can be used to hedge against risks to lower probability of financial distress.
- The study also revealed that the absence of an organized derivative exchange market and necessary supporting infrastructure such as clearing houses, automated trading systems and compliance enforcement apparatus is limiting companies listed on the ZSE with regards to the use of derivatives for hedging against risks.
- It was found out that although more than 80% of the chief finance officers, traders, dealers and treasurers of companies listed on the ZSE have technical qualifications sufficing to equip them with knowledge of derivative hedging, only a few of them have practical experience ('real-life derivative trading and lifestyle').
- Pertaining to laws and regulations that promote derivative hedging it was found out that whereas there is need for clear and strong enforced regulations to govern the derivative exchange markets, there should always be a balance that should be struck between adequate regulation and over-regulation because whilst the former protects investors, the latter shoes away players from the market. The existing laws and regulations in Zimbabwe are viewed as detrimental to derivative hedging and trading, especially to the banking and insurance companies.

5.3. Conclusion

- As long as an organized derivative exchange is not established, as is characteristic of many emerging markets, a significant number of companies listed on the Zimbabwe Stock Exchange will continue to use over the counter (OTC) derivatives such as swaps and forwards to hedge against risks and lower probability of financial distress. There will also be continued efforts by these companies to access the exchange traded portion of the derivatives that they use for hedging 'off shore' (outside the country's monetary authority jurisdiction).
- The benefits of the relationship that exist between derivative hedging and ability of a company to lower probability of financial distress as propounded by Smith and Stultz (1985) can only be fully exploited if companies are consistent in their use of derivatives as a hedging technique in a properly regulated market with explicit rules from the regulatory authority.
- If supporting infrastructure components such as clearing houses, automated exchange trading systems, licensing systems and compliance enforcement apparatus are not put in place *pari passu* with the proposed organised derivative exchange market, there will be limited future increase in derivative hedging activities of companies listed on the Zimbabwe Stock Exchange as their access to exchange traded derivatives would remain suppressed.
- Although the current crop of management in companies listed on the Zimbabwe Stock Exchange may have enough technical training *vis-à-vis* derivative hedging, the absence of an organized derivative exchange in Zimbabwe means that 'real-life derivatives trading experience' will remain a preserve of a few.
- Even though adequate regulation of capital financial markets is the most desirable thing, if proper balance is not maintained, the result would be a situation called over-regulation, which thing could dampen the spirits and interests of company treasurers, traders and chief finance officers in derivatives as a hedging technique.
- The study concluded that the possible reason why many companies in Zimbabwe continue to face financial distress is that only a few of them use derivative hedges consistently due the fact that access to the derivative instruments is limited both by absence of an organized derivative exchange in the country and the prohibitive laws that are in existence, especially in the banking and insurance sectors.
- Imposing a total suspension and or ban to derivative trading encourages non-disclosure or partial disclosure of derivative transactions, especially those solicited 'off shore' (outside the jurisdiction of the country's financial market regulators). This inevitably would act against the whole of the financial system of a country.

5.4. Recommendations

- The government of Zimbabwe should set up a derivative exchange commission that would work together with players in the capital financial market to establish an organized derivative exchange market, which thing would engender increased access and use of derivatives by companies for hedging purposes- the result of which would be reduction of probability of financial distress in companies.
- Individual companies in Zimbabwe should consider using derivatives as a hedging technique as there is a negative correlation between use of derivatives for hedging and ability of a company to lower probability of financial distress- an increase in the use of derivatives would result in a decrease in the probability of financial distress.
- Supporting infrastructure components such as clearing houses, automated exchange trading systems, licensing systems and compliance enforcement apparatus should be put in place *pari passu* with the proposed Zimbabwean organised derivative exchange market to enable the smooth take off as well as sustainability of the operations of the derivative exchange market.
- Capital financial market regulators should strive to maintain the delicate balance between adequate regulation and over-regulation as lack of the former can be devastating while the latter could dampen the spirits and interests of company treasurers, traders and chief financial officers in derivative hedging.
- To bridge the 'real- derivative trading experience' gap noted in this study, the government of Zimbabwe should consider following the examples Hungary, Russia and China whose derivative exchange markets became forces to reckon with in the 1990s after signing memorandums of understanding with established exchanges such as the Chicago Mercantile Exchange and the Chicago Board of Trade. This would see our personnel being trained whilst technical information is also passed on.

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Appendix

Questionnaire

Please Answer the Questions below by Putting a Tick in the Appropriate Box

| Section A: Demographics | | | |
|--|---|--|--|
| Q1 | Please indicate your position | 1= Treasurer 2= Trader 3= Chief Financial Officer 4= Other (specify)..... | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q2 | On the Zimbabwe stock exchange, your company is listed as belonging to which sector? | 1= Banking 2= Insurance 3= Non-Financial | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q3 | Indicate your age group | 1= 20-25 2= 26-35 3= 36-45 4= 46-55 5= 56 and above | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q4 | Indicate your gender | 1= Male 2= Female | <input type="checkbox"/> <input type="checkbox"/> |
| Use of Derivatives | | | |
| Q1 | Are you involved in capital market investment decisions of the organisation? | 1=Yes 2=No | <input type="checkbox"/> <input type="checkbox"/> |
| Q2 | Are derivative hedges part of your risk management strategies? | 1=always 2=sometimes 3=not at all | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q3 | If your answer to Q2 above is 1 or 2 which derivatives do you use? Multiple answers are allowed | 1=swaps 2=options 3=forwards 4=futures | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q5 | If your answer to Q2 above is 1 or 2 what kind of risks will you be hedging against? Multiple answers are allowed | 1=interest rate risk 2=commodity risk 3=credit risk 4=currency risk 5=equity risk 6=volume risk 7=volatility risk 8 =other (specify)..... | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Financial distress and derivative hedges | | | |
| Q1 | In terms of meeting promises to creditors, what can you say about your organization in the past 10 years? | 1=has been honouring promises to creditors with ease 2=has been honouring promises to creditors with difficulty 3= has been breaking its promises to creditors | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q2 | Which of the following happened in your organization in the past ten years? | 1=Debt restructuring 2=Selling of assets to generate cash 3=Infusion of new capital from outsiders 4=None of the above | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q3 | As part of your organisation's strategies to lower probability of financial distress and or to avoid adverse financial ratios, which hedging techniques did you put in place? Multiple answers are allowed | 1= None- (accepted risk) 2= Smoothing 3= Leading and lagging 4= Matching 5= Netting 6= Derivative hedging | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q4 | If your answer to Q3 above is or include 6 (derivative hedging), can you say that your company was able to put financial distress at bay? | 1= Yes 2= No 3= Not sure | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

| | | | |
|--|---|---|--|
| Q5 | Which of the following statements best describes how you generally feel about your financial situation? | 1=out of control all the time 2=out of control most of the time 3=fluctuates between being in and out of control. 4=in control most of the time 5= in control all the time | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Practicability and applicability of use of derivatives in Zimbabwe (Infrastructure, technical knowledge and skills) | | | |
| Q1 | What is your take on the notion that the establishment of an organized derivatives exchange market will markedly increase the use of derivatives to hedge and lower probability of financial distress in companies? | 1= agree 2= strongly agree 3=disagree 4= strongly disagree | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q2 | Which other supporting infrastructure components do you think if acquired, adopted or implemented, would immediately cause an increase in the use of derivatives by companies to hedge? Multiple responses are allowed | 1=clearing houses 2=automated exchange trading system 3=compliance enforcement apparatus 4=registration and licensing of brokers | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q3 | Decision makers in my organization have the technical knowledge pertaining to the use of derivatives as a method of hedging. What can you say about the above statement? | 1= I agree 2=I strongly agree 3=I disagree 4=I strongly disagree | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q4 | Decision makers in Zimbabwean companies have practical experience vis-à-vis trading and use of derivatives for hedging. What is your opinion on the above statement? | 1=none of them have it 2=a few of them have it 3=most of them have it 4=all of them have it | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Regulatory framework | | | |
| Q1 | What aspects of the regulatory framework do you think need to be put in place, improved or revamped in order to facilitate the use of derivatives as a hedge to lower probability of financial distress in companies operating in Zimbabwe? | 1=membership requirements 2=trading rules 3=clearing rules 4=other (specify)..... | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q2 | What do you think about the existing laws and regulations pertaining to use of derivatives to hedge | 1= they promote derivative hedging and trading. 2= they are detrimental to derivative hedging and trading. 3= I am not sure | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q3 | What advice do you want to proffer pertaining to the use of derivatives for hedging in Zimbabwe? | 1= Establishment of a derivatives exchange market by the government 2= Formulating an enabling regulatory framework 3= Entering into memoranda of understanding with established derivatives exchange to facilitate knowledge and practical skills transfer. 4= Other (Specify)..... Multiple responses are allowed | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Q2 | From your experience, what is your view about the theory that derivative hedges can lower possibility of financial distress in a company? | 1= agree 2= strongly agree 3= disagree 4= strongly disagree | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Table 8

Thank you for taking your time to answer these questions

| A | B | C | D | E | F | G | H |
|--------------|------------------|----------|----------|----------|----------|-------------|---|
| organization | X1 | X2 | X3 | X4 | X5 | Z SCORE | |
| 1 | 0.034536 | 0.016819 | -0.01555 | 0.098463 | 0.555428 | 0.62819063 | |
| 2 | 0.12364 | 0.277209 | 0.022749 | 0.84826 | 0.64158 | 1.762068298 | |
| 3 | 0.311027 | 0.687444 | 0.154918 | 3.040325 | 1.326082 | 4.997160433 | |
| 4 | 0.13773 | 0.273261 | 0.045088 | 1.551115 | 1.306353 | 2.933652592 | |
| 5 | 0.233764 | 0.605598 | 0.045088 | 2.102003 | 0.34164 | 2.879985021 | |
| 6 | -0.05534 | 0.513178 | 0.085106 | 1.237174 | 0.535539 | 2.210737416 | |
| 7 | 0.343735 | 0.168096 | 0.085758 | 0.283422 | 0.162603 | 1.263472291 | |
| 8 | 0.064731 | 0.370435 | -0.02575 | 1.206908 | 0.945287 | 2.180730244 | |
| 9 | 0.238277 | 0.244972 | -0.08595 | 1.485867 | 1.44416 | 2.680923064 | |
| 10 | 0.181658 | 0.222749 | 0.012516 | 1.380875 | 3.492228 | 4.891894909 | |
| 11 | 0.012259 | 0.089745 | 0.028285 | 0.191765 | 0.091894 | 0.44064529 | |
| 12 | 0.077601 | 0.090563 | 0.016974 | 1.146653 | 0.256467 | 1.220379595 | |
| 13 | -0.04624 | 0.059484 | 0.013063 | 0.195723 | 0.072051 | 0.260384243 | |
| 14 | 0.002128 | 0.105108 | 0.019352 | 0.243743 | 0.081183 | 0.440995039 | |
| 15 | DATA UNAVAILABLE | | | | | | |

Figure 10: Z score Calculations for Companies Listed on the ZSE

| | |
|--|--|
| <p>1.2 FINANCIAL LIABILITIES Initial recognition and measurement Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate.</p> <p>All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs. The Group's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts, financial guarantee contracts and derivative financial instruments.</p> <p>Subsequent measurement The measurement of financial liabilities depends on their classification, as described below:</p> <p>1.2.1 Loans and borrowings This is the category most relevant to the Group. After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortised cost using the EIR method. Gains and losses are recognised in profit</p> | <p>net amount is reported in the consolidated statement of financial position if there is a currently enforceable legal right to offset the recognised amounts and there is an intention to settle on a net basis or to realise the assets and settle the liabilities simultaneously.</p> <p>V CASH AND SHORT-TERM DEPOSITS Cash and short-term deposits in the statement of financial position comprise cash at banks and on hand and short-term deposits with a maturity of three months or less, which are subject to an insignificant risk of changes in value.</p> <p>For the purpose of the consolidated statement of cash flows, cash and cash equivalents consist of cash and short-term deposits, as defined above.</p> <p>W TREASURY SHARES Own equity instruments that are reacquired (treasury shares) are recognised at cost and deducted from equity.</p> <p>No gain or loss is recognised in profit or loss on the purchase, sale, issue or cancellation of the Group's own equity instruments. Any difference between the carrying</p> |
|--|--|

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Econet Wireless Zimbabwe Limited Integrated Annual Report 2016

Figure 11: Extract of Notes from Financial Statements of Econet Wireless Zimbabwe for the Year Ended 29 February 2016

2.13.1. Financial assets
 The Group classifies its financial assets into one of the categories discussed below, depending on the purpose for which the asset was acquired. The Group has not classified any of its financial assets as held to maturity.

2.13.2. Fair value through profit or loss
 This category comprises only in-the-money derivatives. They are carried in the statement of financial position at fair value with changes in fair value recognised in the statement of profit or loss in the other income or expense line. Other than derivative financial instruments which are not designated as hedging instruments and assets in disposal group, the Group has assets held for trading but does not voluntarily classify any financial assets as being at fair value through profit or loss.

2.13.3. Loans and receivables
 These assets are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. They arise principally through the provision of goods and services to customers (e.g. trade receivables), but also incorporate other types of contractual monetary assets. They are initially recognised at fair value plus transaction costs that are directly attributable to their acquisition or issue, and are subsequently carried at amortised cost using the effective interest rate method, less provision for impairment.

Impairment provisions are recognised when there is objective evidence (such as significant financial difficulties on the part of the counterparty or default or significant delay in payment) that the Group will be unable to collect all of the amounts due under the terms receivable, the amount of such a provision being the difference between the net carrying amount and the present value of the future expected cash flows associated with the impaired receivable.

FIDELITY LIFE ASSURANCE OF ZIMBABWE LIMITED AND ITS SUBSIDIARIES | ANNUAL REPORT 2015

Figure 12: Extract of Notes to the Financial Statements of Fidelity Life Assurance of Zimbabwe Limited: Annual Report 2015

| Statement of Financial Position as at 30 June 2016 | | 30.06.2016 | 30.06.2015 | 31.12.2015 |
|--|---------|----------------|----------------|----------------|
| Notes | US\$000 | US\$000 | US\$000 | US\$000 |
| Assets | | | | |
| Cash and bank balances | 13 | 139 170 | 79 287 | 75 629 |
| Derivative financial instruments | 14 | 3 | 20 | 45 |
| Available for sale investments | 15 | 32 929 | 30 275 | 32 054 |
| Loans and advances to banks | 16 | 5 109 | 663 | 4 275 |
| Loans and advances to customers | 17 | 126 534 | 125 315 | 141 071 |
| Held to maturity investments | 18 | - | 4 171 | - |
| Other assets | 19 | 6 523 | 30 446 | 5 088 |
| Property and equipment | 20 | 20 914 | 21 275 | 21 332 |
| Investment properties | 21 | 5 250 | 5 580 | 5 250 |
| Investment in joint venture | 22 | - | 14 652 | - |
| Non-current asset held for sale | 23 | 14 273 | - | 14 272 |
| Current tax assets | | 211 | 51 | 295 |
| Total assets | | 350 916 | 311 735 | 299 311 |
| Liabilities | | | | |
| Derivative financial instruments | 14 | 21 | 12 | 49 |
| Deposits from banks | 24 | 736 | 1 106 | 238 |
| Deposits from customers | 25 | 279 674 | 222 966 | 238 973 |
| Provisions | 26 | 1 594 | 1 819 | 1 585 |
| Other liabilities | 27 | 8 842 | 32 005 | 6 623 |
| Deferred tax liabilities | | 2 467 | 2 493 | 2 508 |
| Due to Group companies | 35 | 122 | 701 | 136 |
| Total liabilities | | 293 476 | 261 102 | 245 112 |
| Capital and reserves | | | | |
| Share capital | 28 | 215 | 215 | 215 |
| Share premium | 28 | 23 642 | 23 642 | 23 642 |
| Non-distributable reserve | | 7 785 | 7 785 | 7 785 |
| Available for sale reserve | | 260 | 58 | 357 |
| Revaluation reserve | | 3 550 | 3 077 | 3 609 |
| Share-based payment reserve | | 1 114 | 1 026 | 1 053 |
| Retained income | | 20 874 | 14 830 | 17 538 |
| Total equity | | 57 440 | 50 633 | 54 199 |

Cash and cash equivalents at the end of the period

13 138 295 76 143 73 452

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Figure 13: Extracts of Barclays Bank of Zimbabwe Limited's Financial Results as at 30 June 2016

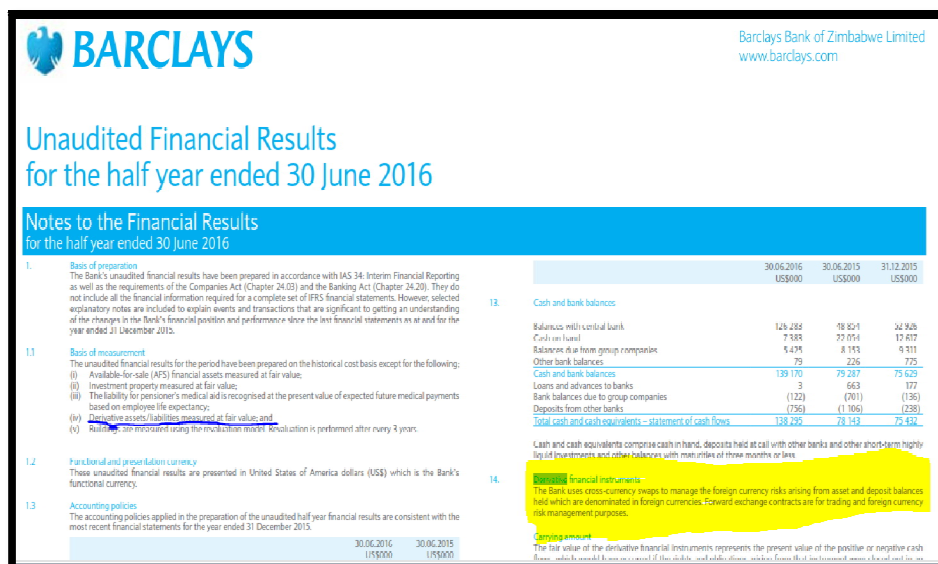


Figure 14

| Name | Symbol | Sector | Status | ISIN # | Year End | Founded | Listed |
|---|----------|-----------------------|-----------|------------------|-----------|---------|--------|
| African Distillers Limited | AFDS.zw | Beverages | Active | ZW 000 901 102 5 | June | 1944 | 1951 |
| African Sun Limited | ASUN.zw | Tourism | Active | ZW 000 901 208 0 | December | 1968 | 1990 |
| Amalgamated Regional Trading (ART) Holdings Limited | ARTD.zw | Paper and Packaging | Active | ZW000301DR35 | September | 1997 | 2002 |
| Ariston Holdings Limited | ARIS.zw | Agricultural | Active | ZW 000 901 104 1 | September | 1947 | 1948 |
| Axia Corporation Limited | AXIA.zw | Retail | Active | ZW000901 228 8 | June | 2016 | 2016 |
| Barclays Bank of Zimbabwe Limited | BARC.zw | Banking and Financial | Active | ZW 000 901 106 6 | December | 1912 | 1991 |
| Bindura Nickel Corporation Limited | BIND.zw | Mining | Active | ZW 000 901 165 2 | March | 1966 | 1971 |
| Border Timbers Limited | BRDR.zw | Agricultural | Active | ZW 000 901 108 2 | June | 1945 | 1959 |
| British American Tobacco Zimbabwe Limited | BAT.zw | Agricultural | Active | ZW 000 901 171 0 | December | 1960 | 1961 |
| Cafca Limited | CAFCA.zw | Engineering | Active | ZW 000 901 194 2 | September | 1947 | 1947 |
| CBZ Holdings Limited | CBZ.zw | Banking and Financial | Active | ZW 000 901 196 7 | December | 1980 | 1998 |
| CFI Holdings Limited | CFI.zw | Agri-industrial | Active | ZW 000 901 111 6 | September | 1908 | 1997 |
| Colcom Holdings Limited | COLC.zw | Food | Active | ZW 000 901 116 5 | June | 1944 | 1993 |
| Cottco Holdings Limited | COTT.zw | Agricultural | Suspended | ZW 000 901 220 5 | March | 1994 | 1997 |
| Dairibord Holdings Limited | DZL.zw | Food | Active | ZW 000 901 197 5 | December | 1952 | 1997 |
| Dawn Properties Limited | DAWN.zw | Property | Active | ZW 000901 223 9 | March | 2003 | 2003 |
| Delta Corporation Limited | DLTA.zw | Beverages | Active | ZW 000 901 119 9 | March | 1898 | 1946 |
| Econet Wireless Zimbabwe Limited | ECO.zw | Technology | Active | ZW 000 901 212 2 | February | 1998 | 1998 |
| Edgars Stores Limited | EDGR.zw | Retail | Active | ZW 000 901 123 1 | December | 1948 | 1974 |
| Falcon Gold Zimbabwe Limited | FALG.zw | Mining | Active | ZW 000 901 167 8 | September | 1991 | 1991 |
| FBC Holdings Limited | FBC.zw | Banking and Financial | Active | ZW 000 901 192 6 | December | 1997 | 2001 |

| Name | Symbol | Sector | Status | ISIN # | Year End | Founded | Listed |
|-------------------------------------|---------|------------------------------------|-----------|------------------|-----------|---------|--------|
| Fidelity Life Assurance Limited | FIDL.zw | Insurance | Active | ZW 000 901 187 6 | December | 1977 | 2003 |
| First Mutual Holdings Limited | FMHL.zw | Insurance | Active | ZW 000 901 219 7 | December | 1990 | 2003 |
| General Beltings Holdings Limited | GBH.zw | Industrial Holding | Active | ZW 000 901 204 9 | December | 1968 | 2002 |
| GetBucks Financial Services Limited | GBFS.zw | Banking and Financial | Active | ZW000901 227 0 | June | 2012 | 2016 |
| Hippo Valley Estates Limited | HIPO.zw | Agricultural | Active | ZW 000 901 127 2 | March | 1956 | 1964 |
| Hwange Colliery Company Limited | HCCL.zw | Mining | Active | ZW 000 901 193 4 | December | 1925 | 1953 |
| Innskor Africa Limited | INN.zw | Industrial Holding | Active | ZW 000 901 129 8 | June | 1968 | 1998 |
| Lafarge Cement Zimbabwe Limited | LACZ.zw | Building and Associated Industries | Active | ZW 000 901 205 6 | December | 1954 | 1983 |
| Mashonaland Holdings Limited | MASH.zw | Property | Active | ZW 000 901 134 8 | September | 1966 | 1969 |
| Masimba Holdings Limited | MSHL.zw | Building and Associated Industries | Active | ZW 000 901 217 1 | December | 1974 | 1974 |
| Medtech Holdings Limited | MMDZ.zw | Pharmaceuticals and Chemicals | Active | ZW 000 901 133 0 | December | 1997 | 2002 |
| Meikles Limited | MEIK.zw | Industrial Holding | Active | ZW 000 901 211 4 | March | 1937 | 1996 |
| Nampak Zimbabwe Limited | NPKZ.zw | Paper and Packaging | Active | ZW 000 901 221 3 | September | 1951 | 1952 |
| National Foods Holdings Limited | NTFD.zw | Agri-industrial | Active | ZW 000 901 137 1 | June | 1920 | 1970 |
| National Tyre Services Limited | NTS.zw | Industrial Holding | Active | ZW 000 901 139 7 | March | 1961 | 1969 |
| Nicoz Diamond Insurance Limited | NICO.zw | Insurance | Active | ZW 000 901 180 1 | December | 1981 | 2002 |
| NMBZ Holdings Limited | NMB.zw | Banking and Financial | Active | ZW 000 901 138 9 | December | 1992 | 1997 |
| OK Zimbabwe Limited | OKZ.zw | Retail | Active | ZW 000 901 178 5 | March | 1942 | 2001 |
| Old Mutual Plc | OML.zw | Insurance | Active | GB 00B 77J0862 | December | 1845 | 1999 |
| Padenga Holdings Limited | PHL.zw | Agricultural | Active | ZW 000 901 214 8 | December | 1965 | 2010 |
| Pearl Properties Limited | PEAR.zw | Property | Active | ZW 000 901 202 3 | December | 2006 | 2007 |
| PG Industries (Zimbabwe) Limited | PGIN.zw | Building and Associated Industries | Suspended | ZW 000 901 141 3 | December | 1948 | 1968 |
| Powerspeed Electrical Limited | PWS.zw | Engineering | Active | ZW 000 901 143 9 | September | 2000 | 2000 |
| Pretoria Portland Cement Limited | PPC.zw | Building and Associated Industries | Active | ZA E000 170049 | September | 1913 | 1947 |
| Proplastics Limited | PROL.zw | Industrial Holding | Active | ZW000 901 224 7 | December | 1965 | 2015 |
| Rainbow Tourism Group Limited | RTG.zw | Tourism | Active | ZW 000 901 147 0 | December | 1991 | 1999 |
| RioZim Limited | RIOZ.zw | Mining | Active | ZW 000 901 195 9 | December | 1956 | 1969 |
| Seed Co Limited | SEED.zw | Agricultural | Active | ZW 000 901 150 4 | March | 1940 | 1996 |
| Simbisa Brands Limited | SIM.zw | Food | Active | ZW 000 901 226 2 | June | 2015 | 2015 |
| starafricacorporation Limited | SACL.zw | Food | Active | ZW 000 901 199 1 | March | 1935 | 1947 |
| Truworhs Limited | TRUW.zw | Retail | Active | ZW 000 901 156 1 | July | 1957 | 1981 |
| TSL Limited | TSL.zw | Industrial Holding | Active | ZW 000 901 157 9 | October | 1957 | 1957 |

| Name | Symbol | Sector | Status | ISIN # | Year End | Founded | Listed |
|------------------------------------|-----------|------------------------------------|-----------|------------------|-----------|---------|--------|
| Turnall Holdings Limited | TURN.zw | Building and Associated Industries | Active | ZW 000 901 183 5 | December | 1943 | 2002 |
| Unifreight Africa Limited | UNIF.zw | Transport | Active | ZW 000 901 222 1 | December | 1994 | 2003 |
| Willdale Limited | WILD.zw | Building and Associated Industries | Active | ZW 000 901 185 0 | September | 1957 | 2003 |
| Willdale Preference Shares | WILDPF.zw | Building and Associated Industries | Active | ZW 000 701 PF 80 | September | 1957 | 2014 |
| ZB Financial Holdings Limited | ZBFH.zw | Banking and Financial | Active | ZW 000 901 200 7 | December | 1951 | 1967 |
| Zeco Holdings Limited | ZECO.zw | Engineering | Suspended | ZW 000 901 206 4 | December | 1964 | 2008 |
| Zimbabwe Newspapers (1980) Limited | ZIMP.zw | Printing and Publishing | Active | ZW 000 901 159 5 | December | 1927 | 1951 |
| Zimplot Holdings Limited | ZIMW.zw | Engineering | Active | ZW 000 901 218 9 | December | 1939 | 1951 |
| Zimre Holdings Limited | ZIMR.zw | Insurance | Active | ZW 000 901 161 1 | December | 1984 | 1999 |
| Zimre Property Investments Limited | ZPI.zw | Property | Active | ZW 000 901 201 5 | December | 2003 | 2007 |

Table 9: List of Companies Listed on the Zimbabwe Stock Exchange
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