

TOPIC

WORKING CAPITAL MANAGEMENT IN

HYPER-INFLATIONARY ECONOMIES:

A CASE OF ZIMBABWE

BY

PROTASE TICHAFU SANANGURAI ZINGWIRO

(Student Number 202526525)

Submitted in partial fulfilment of the requirements of the degree of

MASTER OF BUSINESS ADMINISTRATION

Graduate School of Business, Faculty of Management

UNIVERSITY OF KWA-ZULU NATAL

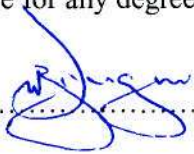
Supervisor: Mr. M. Kohler

Date: March 2006

DECLARATION

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

Signed:



Date 16 March 2006

ACKNOWLEDGEMENTS

I express my sincere gratitude to all who contributed to the full realisation of this research study. Special mention goes to Mr. M. Kohler who supervised this dissertation.

I would also like to express my gratitude to all the people who contributed by responding to my questionnaires, those who made time available for interviews, and my wife and family, who parted with their precious time to allow me to put this research work together.

ABSTRACT

The challenge to virtually all businesses is to ensure viability in increasingly changing operating environments. This challenge becomes more pronounced when the operating environment is one that rapidly deteriorates to a level where survival becomes the focal point. A hyperinflationary environment is one such environment which renders some common business processes and models death traps which can lead to insolvency.

Under hyperinflationary environments, working capital management becomes of paramount importance to the survival of business operations. This dissertation attempts to highlight the key characteristics of a hyperinflationary environment which, if not closely managed, can lead to the demise of a business no matter how good its strategic plans or technological assets may be. In order to highlight these key elements, this dissertation covers a review of hyperinflation aspects and their impact on working capital management components. This impact is further analysed through extraction of financial performances of various companies to establish validity of these aspects and how best they can be managed. In addition, a survey is conducted through the administration of a questionnaire to establish the impact on the various working capital components.

This dissertation ends by suggesting an adjustment to the working capital management model to suit business operations in hyperinflationary environments. The result is not an attempt to create new models or theories but in essence, a confirmation of the need for flexible management that timeously adapts to the changing environment.

TABLE OF CONTENTS

	Page
Chapter 1	
1.1 Introduction	1
1.2 Background information	1
1.3 Problem Statement	4
1.4 Objectives of the Research	5
1.5 Assumptions of the Research	6
1.6 Significance of the Research	6
1.7 Scope of the Research	6
1.8 Limitations of the Research	7
1.9 Outline of the dissertation	7
Chapter 2	
Literature Review	
2.1 Introduction	8
2.2 What is Working Capital Management?	8
2.3 Significance of Working Capital Management	10
2.4 Hyperinflation Impact on Working Capital Management	11
2.5 Chapter Conclusion	24
Chapter 3	
Research Methodology	
3.1 Introduction	25
3.2 Research Design and Justification	25
3.3 Population	26
3.4 Sampling	26
3.5 Sample Selection	28
3.6 Research Instruments	29
3.7 Types of Data	31
3.8 Data Processing, Analysis and Presentation	32
3.9 Chapter Conclusion	32
Chapter 4	
Research Findings and Discussions	
4.1 Introduction	33
4.2 Findings based on secondary information drawn from other research work	33
4.3 Findings drawn from analysis of company financial statements	41
4.4 Findings drawn from responses to the questionnaire	48
4.5 Summary of research findings	54
4.6 Chapter Conclusion	56

Chapter 5**Conclusions and Recommendations**

5.1	Introduction	57
5.2	Discussion of research findings	57
5.3	Conclusions	60
5.4	Recommendations	61
5.5	Suggested future studies	62
	Appendices	63
	Bibliography	69

LIST OF TABLES AND FIGURES

LIST OF TABLES

Table	Title	Page
Table 4.1	- Sub – Sector Growth	34
Table 4.2	- Sales and Output Trends	35
Table 4.3	- Investment Outlay	37
Table 4.4	- Economic Factor	37
Table 4.5	- Financial Information Extracted From Annual Financial Results of selected Companies Listed on The Zimbabwe Stock Exchange	42
Table 4.6	- Stock Period Cover Sought	49

LIST OF FIGURES

Figure	Title	Page
Figure 1.1	- Year On Year Inflation	3
Figure 1.2	- Real GDP For Regional Economies	4
Figure 2.1	- A Typical Working Capital Cycle and Other Cash Flows	10
Figure 2.2	- Interest Rates vs Inflation	12
Figure 2.3	- Debtor Trade Off	18
Figure 4.1	- Manufacturing Production Trends	33
Figure 4.2	- Savings and Investment Ratios	36
Figure 4.3	- Capacity Utilisation Rate	38
Figure 4.4	- Capacity Use In 2003	39
Figure 4.5	- Business Confidence Index	39
Figure 4.6	- Turnover/PBIT Trends Based on Mean Values	45
Figure 4.7	- Trends of Debtors/Creditors and Stock Turnover Days	46
Figure 4.8	- High Stock Holding Policy	49
Figure 4.9	- Usage of Debt To Finance Stock Purchases	50
Figure 4.10	- Companies Offering Credit Terms	50
Figure 4.11	- Comparison Of Credit Given/Granted	51
Figure 4.12	- Cash Sales	51
Figure 4.13	- Operating Capacity Levels	52
Figure 5.1	- Proposed Working Capital Cycle Under Hyperinflation	61

LIST OF ACRONYMS

CCC	-	Cash Conversion Cycle
CPI	-	Consumer Price Index
CSO	-	Central Statistical Office
ESAP	-	Economic Structural Adjustment Programme
GDP	-	Gross Domestic Product
IMF	-	International Monetary Fund
LIBOR	-	London Interbank Offered Rate
NCD	-	Negotiable Certificate of Deposit
n.d	-	Not Dated
PBIT	-	Profit Before Interest and Tax
RBZ	-	Reserve Bank of Zimbabwe
US	-	United States
Z\$	-	Zimbabwe Dollar

CHAPTER 1

Overview of the Research

1.1 Introduction

This chapter serves to introduce the research and the setting under which the research is carried out. It also outlines the form the research will take.

1.2 Background Information

Zimbabwe's failed Socialist Ideology and Economic Decay

Zimbabwe is a country that availed its independence on 18 April 1980. This came about through a protracted liberation struggle, which was closely supported by Mozambique, Zambia, China and Russia among other African states. As a result of this support from Eastern block countries, themselves Communist societies, Zimbabwe followed socialist ideologies in the 1980s. However, these ideals failed and Zimbabwe adopted capitalist policies and in 1990, embarked on an Economic Structural Adjustment Programme, under the guidance of the International Monetary Fund. These adjustment programmes were, however, implemented half heartedly by the government as they failed to achieve the targeted goals largely due to slack implementation.

Zimbabwe Financial Holdings Limited Economic Review (1996:1) reports that, apart from the intermittent droughts, failure to meet most targets was also due to short-term policies, usually enunciated in the national budget speeches, which bore little or no resemblance to the medium term programmes. For example, while the Economic Structural Adjustment Programme (ESAP) projected real economic growth to average 5% per annum during the five years to 1995, budget allocations towards capital expenditure continued to decline in real terms. The report also highlights that

government failed to reduce its budget deficit. During ESAP, the budget deficit averaged 10% of GDP as measured against a target of 5% by the 1994/1995 fiscal year. The reduction in the budget deficit was expected to result from two initiatives. Firstly, revenues were forecast to increase through an efficient collection of taxes, and the introduction of cost recovery measures. It is pertinent to note that most budget speeches since 1990 referred to the need to improve on tax collection but with limited success. Secondly, recurrent expenditure was expected to decline through a phased elimination of subsidies, reduction in civil service wage bill arising from a 25% cut in the civil service, and general expenditure restraint. Moreover, public enterprises were to be allowed to operate on commercial lines. Implementation of these policies during ESAP were very slow resulting in frequent expenditure overruns by most ministries. In an effort to dampen inflation in the face of fiscal imbalances, monetary policy remained tight, leading to high interest rates for much of the ESAP period.

Following the suspension of the US\$176 million IMF stand-by arrangement facility in August 1998, all the economic fundamentals took a steep slide. The year on year rate of inflation, as measured by the changes in the consumer price index, rose from 29% in August 1998 to 55.2% by June 1999. To try to control the inflationary pressures, the RBZ continued to implement contractionary monetary policies that saw the replacement of the rediscount rates with the Bank Rate in December 1998. The move was designed to influence money market rates more directly. As inflation continued to rise, the RBZ raised the Bank Rate from 39.5% in January 1999 to 46% by June 1999. Such high interest rates continued to negatively affect the economy. It became increasingly difficult for the productive sectors to generate projects with rates of return exceeding the high interest rates. The country's socio-political environment was further characterised by the following:

- The balance of payments position continued to deteriorate with exports failing to grow;
- Persistent decline in prices of gold and other base metals worsened the situation;
- The capital account did not perform well as a result of the suspension of the IMF stand-by facility;
- New foreign direct investment was not forthcoming;
- With regard to portfolio investment, foreigners were net sellers. Statistics indicate that within the first four months of 1999, capital receipts on a cash basis,

amounted to US\$15 million whilst capital payments totalled US\$33 million (Zimbabwe Financial Holdings Limited Economic Review , 1999 : 1);

- The credit rating declined due to continued macroeconomic instability;
- Zimbabwe assumed a lead role in the Democratic Republic of Congo war against rebels who sought to remove the government of President L. Kabila. This further strained resources; and
- A poorly organised land reform programme, largely viewed as a political survival strategy by the ruling Zanu (PF) party, was embarked on in 2000 further deteriorating the situation. This was coupled with complete disregard for the rule of law.

Zimbabwe's economic situation deteriorated further notably in 2003 with GDP contracting by 14%. Notwithstanding the partial devaluation of the currency in February 2003, the Zimbabwe Dollar remained overvalued for the duration of 2003, which resulted in a booming parallel foreign currency exchange market. This, coupled with the negative real interest rates, increased speculative trading on the parallel market along with the equity and real estate markets. Accordingly, this continued to fuel the inflation rate, which accelerated to peak at 622.8% in January 2004 (Global Credit Rating Company, 2004). Figures 1.1 and 1.2 below show the inflation trend and the impact of the above analysis on the country's performance compared to regional countries respectively.

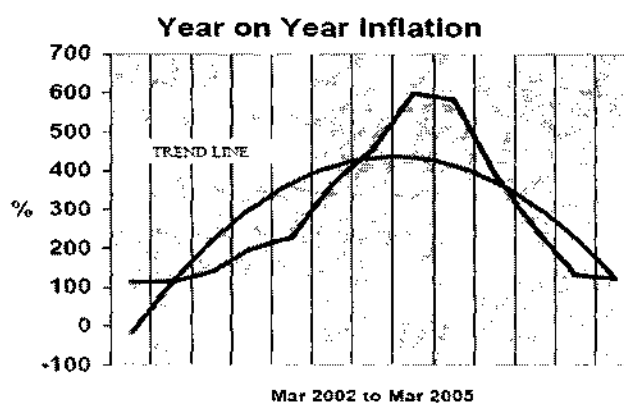
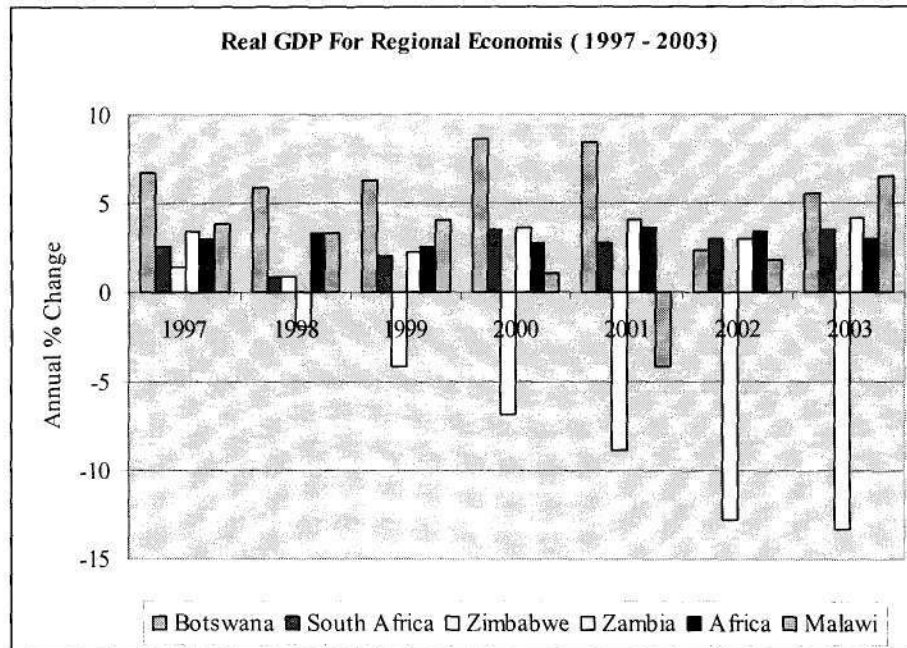


Figure 1.1. Source: Reserve Bank of Zimbabwe (2005a), *Inflation Drivers In Zimbabwe Supplement 1 of 4 To The 1st Quarter 2005 Monetary Policy Review*, pp3.

Figure 1.2



Source: Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*, pp 5.

“The IMF Article IV 2004 Mission report estimates that a cumulative 30% of GDP has been shed since 1999, due to the pursuit of inconsistent monetary and fiscal policies. On the regional performance (as Figure 1.2 depicts) Zimbabwe’s economic performance has remained sluggish whilst that of its SADC counterparts, has remained positive.” (Intermarket Research , 2004:5)

1.3 Problem Statement

The research aims at resolving the question “how best can companies manage working capital in a hyperinflationary economy?” This question is based on the Zimbabwean economy and focuses specifically on the manufacturing sector.

Any economy can be affected by hyperinflation which means that the companies trading in such an economy must adapt to the hyperinflationary environment or die.

With high inflation comes high interest rates which directly affect the short term funding cost of any borrowing company. This impacts on debt levels, interest payable and ultimately cash flow. Because of the interest cost, debtors payment period becomes of consequence and stock levels critical.

1.4 Objectives of the Research

The main objectives of the research are to:

- i. Evaluate the impact of high inflation on company operations particularly with respect to their working capital management.
- ii. To establish how the hyperinflation environment impacts on company operations particularly in the manufacturing sector.
- iii. To determine how companies, in a hyperinflationary environment, can manage their working capital through the close management of the cash conversion cycle.

Pre Study Questions

The following questions will need to be considered:

- To what extent does working capital management enhance the value of a business?
- A number of companies have either recorded losses or collapsed due to poor working capital management, how can this be avoided more so in a hyperinflationary environment?
- What is the impact of interest rates and exchange rates on working capital management in a hyperinflationary environment?
- What are the benefits of using short term funding products and their perils in a hyperinflationary environment?

1.5 Assumptions of the Research

It is assumed that:

- i. Respondents have provided accurate information;
- ii. The study is objective in data collection and interpretation; and
- iii. The sample chosen is representative of the manufacturing sector.

1.6 Significance of the Research

The ability of any company to manage its working capital particularly under adverse conditions is a critical element of success and is key to survival. Its importance can therefore not be underestimated. The study is therefore invaluable as it aims to determine the pitfalls in working capital management for companies in hyperinflationary environments.

Findings of this study will be valuable to business managers and treasurers who are faced with the task of maintaining the company liquidity and operational performance during adverse times. It will assist managers in Zimbabwe and in other countries which may be experiencing hyperinflation and will highlight the areas which need close management.

Research findings may also be used by academics, economists, corporate and emerging business aspirants.

1.7 Scope of the Study

The scope of this study is limited to manufacturing companies in Zimbabwe. Most of the companies have branches countrywide such that the scope of the study is deemed to be reflective of the country's position. Respondents are drawn from various listed and unlisted business units. As such, the study is expected to reflect a balanced view of the manufacturing sector. The study focuses on the period 2000 to 2004.

1.8 Limitations of the Study

- i. The research could not be extended to cover all the economic sectors due to time limitations. However, given that the manufacturing sector is a key sector of the economy, which strongly interlinks with other economic sectors, conclusions drawn from its analysis tend to be reflective of the economy as a whole.
- ii. Some companies may not be willing to fully divulge their strategies with respect to working capital management which may have an impact on the results generated by the study. In order to mitigate this possible challenge, analysis of selected working capital aspects based on published financial statements of some manufacturing companies will be included. It is hoped that this will assist in mitigating the challenge.

1.9 Outline of the Dissertation

- | | |
|-----------|---|
| Chapter 2 | Reviews the available literature on working capital management, cash conversion cycle and its components, and hyperinflation. Findings of previous studies are taken into account. The aim of the theoretical review is to demonstrate a clear and sound basis of the study and to show the importance and necessity of the research topic. |
| Chapter 3 | Covers the methodology of the study. Justification of the methods and instruments used are detailed in this chapter. |
| Chapter 4 | Details the results of the study and an analysis of the results is carried out using statistical tools. Study findings are discussed. |
| Chapter 5 | This will focus on the conclusions and recommendations arising from the study. Areas of further research are outlined. |

CHAPTER 2

Literature Review

2.1 Introduction

This chapter reviews previous work on hyperinflation, working capital management and the impact of hyperinflation on companies operating in such environments. It aims to give leads critical to the areas to be investigated through secondary information and questionnaires from which research deductions will be made.

2.2 What is Working Capital Management?

Most companies realize the importance of managing their day to day working capital requirements. Not all, however, manage their working capital well enough to keep the company out of hard-core borrowings or investments that erode capital. We hear of companies collapsing and/or posting huge losses because of a position that they would have taken using debt, stock positions and fall out on debt restructuring among others.

The general accepted position is that working capital is current assets minus current liabilities. Working capital measures how much in liquid assets a company has available to build its business. The number can be positive or negative, depending on how much debt the company is carrying. In general, companies that have a lot of working capital will be more successful since they can expand and improve their operations. Companies with negative working capital may lack the funds necessary for growth also called net current assets or current capital (Pike and Neale, 2003).

Working capital is therefore:-

$$\begin{array}{l} \text{WORKING} \\ \text{CAPITAL} = \end{array} \quad \begin{array}{l} \text{Current Assets} \\ || \\ \text{stock} + \text{debtors} + \text{cash} \end{array} \quad - \text{Current liabilities}$$

According to Pike and Neale (2003), working capital management, also known as short-term financial management, refers to the financing, investment and control of net current assets within policy guidelines. Current assets are those assets which can be converted into cash within a year comprising cash, marketable securities, debtors and stock. Current liabilities are short-term obligations payable within a year and comprise creditors, accrued wages and taxes. Net current assets refers to the difference between current assets and current liabilities.

Modes of Working Capital Strategies

As detailed in most literature in finance, Weinraub and Visscher (1998) point out that “high risk, high return working capital investment and financing strategies are referred to as aggressive; lower risk and return strategies are referred to as moderate or matching; still lower risk return is called conservative.” They further highlight that whilst these forms of working capital strategies are useful when discussing general working capital principles and risk/return concepts, little data is available on the specific working capital policies that are used by various industries.

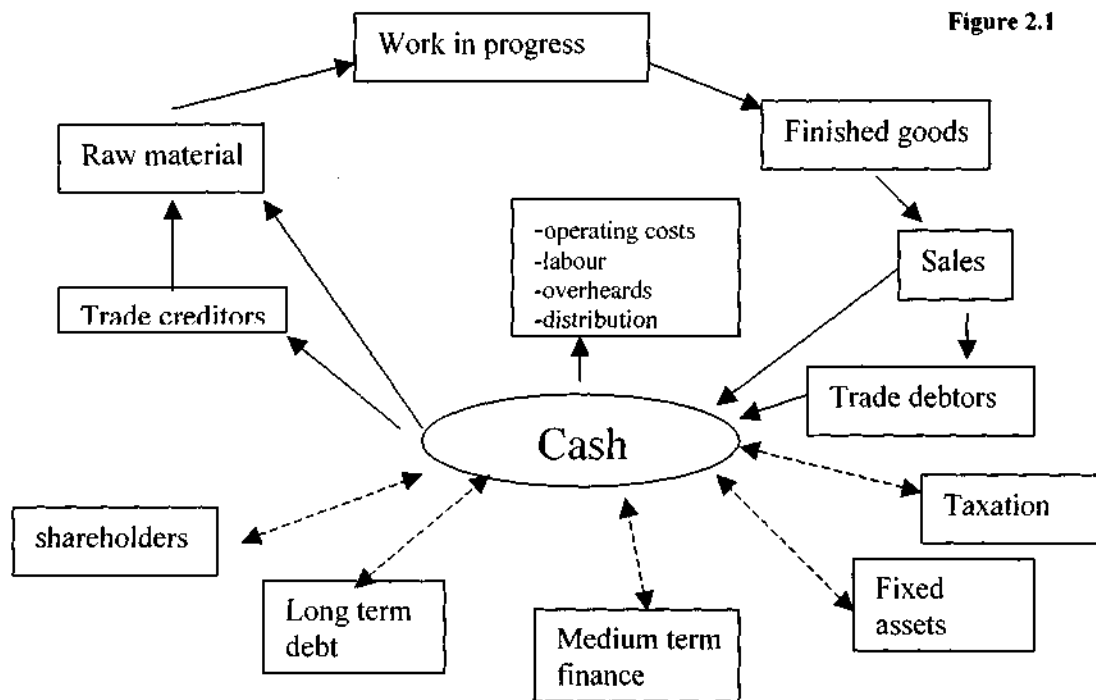
Weinraub and Visscher (1998) point out that “much of the recent working capital literature focuses on special subsets of business with Ferconio and Lane (1991), Kincaid (1993) and Chu, Zollinger, Kelly and Saywell (n.d) all having looked at the health industry. Belt and Smith (1991) investigated Australian companies; Kim, Rowland and Kim (1992) investigated Japanese manufacturers in the United States and Burns and Walker (1991) studied small businesses.” Weinraub and Visscher (1998) themselves studied differences in aggressive and conservative working capital policies whilst Deloof (1997) studied effects of working capital management on Belgian companies. Manuel et. al (1996) studied corporate returns and cash conversion cycles.

A point worthy of note from the foregoing is that most available literature as reflected above has focused on industries in stable economic environments with little being found on working capital management specifically on companies in hyperinflation environments. Most literature on hyperinflationary economies focuses on challenges faced by the countries at a macro levels, particularly on what led to the hyperinflation

and the measures taken to stabilise or turn around the affected economies. Not much was found on the impact of hyperinflation at micro levels, that is, at company levels.

A Typical Working Capital Cycle And other Cash Flows

Figure 2.1



Source: Arnold, G. (2002) *Corporate Financial Management*, (2nd Edition), Prentice Hall, pp 569.

----- Other cash flows
 ————— Working Capital Management Cycle

2.3 Significance of Working Capital Management

Poor working capital management can lead to the cessation of trading, whilst poor long term investments and financing decision making may only have a temporary adverse effect on the value of the firm (Arnold, 2002). Day to day management of the firm’s short-term assets and liabilities plays an important role in the success of the firm. According to Jose et. al (1996), “firms with glowing long term prospects and healthy bottom lines do not remain solvent without good liquidity management.”

2.4 Hyperinflation Impact on Working Capital Management

2.4.1 Hyperinflation

The term "hyperinflation" refers to a rapid, large increase in price levels. Production falls and prices rise. The rise in prices destroys the purchasing power of wages and government revenues, and governments tend to respond to this by printing money to replace the lost revenues. This marks the beginning of a vicious circle. Each increase in the quantity of money in circulation brings about a further inflation of prices, reducing the purchasing power of incomes and revenues, and leading to more printing of money. In the extreme, the monetary system simply collapses. This is the way that hyperinflations happen: by a self-reinforcing vicious cycle of printing money, leading to inflation, leading to printing money, and so on. This is one reason why inflation is feared. There is always the concern that even a little inflation this year will lead to more next year, and so on (Hawkins, 2005).

International Accounting Standard 29 describes four signs that an economy may be in hyperinflation:

- i. The general population prefers to keep its wealth in non-monetary assets or in a relatively stable foreign currency. Amounts of local currency held are immediately invested to maintain purchasing power.
- ii. The general population regards monetary amounts not in terms of the local currency but in terms of a relatively stable foreign currency. Prices may be quoted in that currency.
- iii. Sales and purchases on credit take place at prices that compensate for the expected loss of purchasing power during the credit period, even if the period is short.
- iv. Interest rates, wages and prices are linked to a price index; and the cumulative inflation rate over three years approaches, or exceeds 100% (Internet 1).

Internet 1 outlines hyperinflation as “inflation which is ‘out of control’, a condition in which prices increase rapidly as a currency loses its value.” Lepetyuk (2002) in his analysis of hyperinflation in Ukraine concurs with the above definition and defines hyperinflation as ‘ a period of rapid inflation which leaves a country’s currency virtually worthless’. Some numerical definitions of hyperinflation include:

- Extremely high inflation, usually more than 50% per month (Cagan, 1956).
- An unusually rapid rate of monetary inflation, when prices rise more than 100% per year.
- When cumulative inflation rate over three years approaches or exceeds 100% (International Financial Reporting Standards).

According to the Global Credit Rating Company (2004) the average inflation rate in Zimbabwe, as measured by the all items Consumer Price Index, accelerated to a very high 385% in 2003 compared to 133% in 2002. Figure 2.2 below shows the trend of interest rates and inflation rates between 1997 and February 2005.

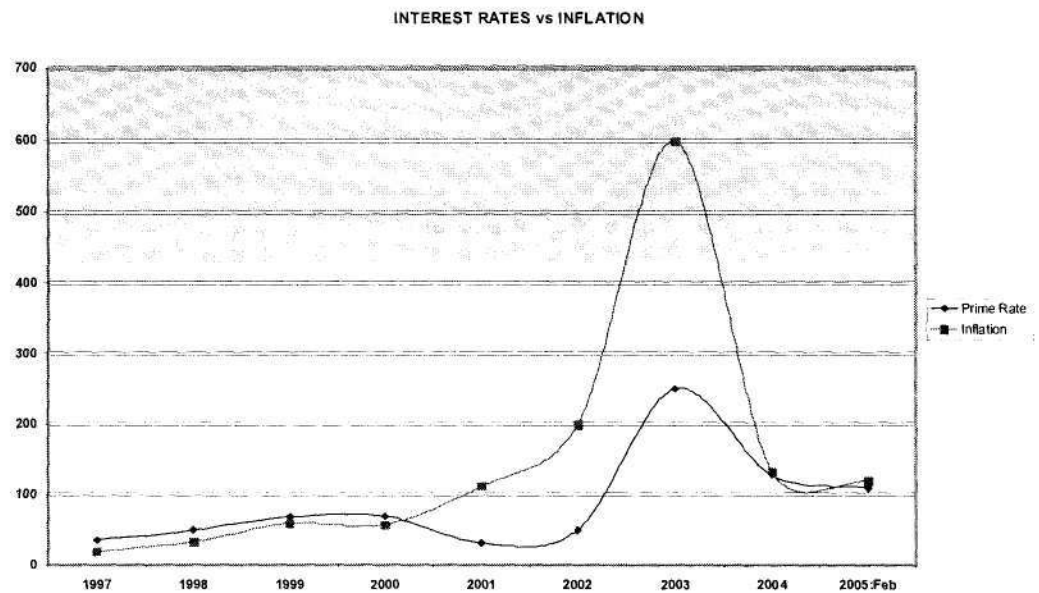


Figure 2.2 Source: Hawkins, T. (2005) *Zimbabwe Economic Update April 2005*.

As evidenced by the rates in Figure 2.2 and the foregoing literature on hyperinflation, Zimbabwe's economy went into hyperinflation in the period under review in this study. In addition:

- The sale of properties (real estate), in foreign currency surged in 2003; and
- The parallel foreign currency exchange market was largely driven by people and companies taking positions in foreign currency.

2.4.2 Impact on Interest Rates and Money Supply

Wang (1999:7) points out that in Georgia, "between March 1993 and August 1994, currency in circulation and domestic currency broad money (M2) increased by more than 152 and 130 fold respectively. Behind this development was an explosive growth in the Georgian Central Bank's domestic lending directly and indirectly to government with former state commercial banks receiving credit at zero interest rates." This directly encouraged money supply, with low and zero interest rates encouraging borrowing, and as a result fuelled price increases and in short, inflation. According to the Global Credit Rating Company (2004:10), "growth in domestic credit to both the private and public sectors was the primary reason for the rapid increase in money supply during 2003. The increase in credit to the private sector was due to the negative real interest rates which increased speculative trading on the equity and real estate markets. By September 2003, Zimbabwe's total domestic credit amounted to Z\$2.1 trillion, representing an annual growth rate of 380%, and rose further to Z\$3.1 trillion by December 2003 compared to Z\$281 billion in December 2002. This growth in credit, particularly to the private sector, largely underpinned credit expansion and inflation growth in 2003." This, in line with empirical studies shows that interest rates must be increased under a hyperinflationary environment as a remedy.

When inflation threatens, the objective of monetary policy is to reduce the rate of spending. This is achieved by selling bonds, increasing the discount rate or increasing the reserve requirement (Schiller, 2000). The traditional approach

to stabilisation places central emphasis on controlling the money supply (Cagan,1956).

The Global Credit Rating Company (2004), shows that interest rates in Zimbabwe were kept low during the period of high inflation growth as shown in Figure 2.2. It was only in December 2003 that the RBZ undertook to reduce inflation. Accordingly, in line with the RBZ's primary target of reducing inflation, it ceased providing overnight facilities to the financial institutions suspected of speculative dealings with regards to "assets accumulation", with these banks forced to borrow on the inter-bank market, where interest rates increased to 900% per annum. The market eased significantly in January 2004 after RBZ offered temporary liquidity support to banks that were experiencing settlement difficulties as a result of the liquidity shortages (Global Credit Rating Company, 2004 : 9).

Mills (1996:82) points out that "generally accepted theory supports the conclusion that the rate of interest should move in the same direction as the expected rate of inflation. A pure quantity theory of money approach would argue for an almost exact movement." Thus, inflation impact on interest rates would be to force the interest rates to surge upwards as monetary authorities try to control money supply.

2.4.3 Impact on Exchange Rates

In 1922, Germans began to get out of Marks into real goods which included diamonds, works of art and real estate. In the Argentine hyperinflation, the austral decreased in value to the point where the rich did not keep any of their money in the native currency (Martin and Martin, 1999).

The Georgian experience shows that when the "supply of the foreign currency dried up in the Tbilisi Interbank currency exchange (TICEX) and foreign exchange reserves of the Central Bank dried up, the local currency depreciated almost simultaneously with every increase in the Central Bank credit. When

the Central Bank tried to restrict the operation of the TICEX to cash transactions only in the second quarter of 1994, a non-cash exchange rate emerged outside the TICEX which was more depreciated than the cash exchange rate” (Wang, 1999:8).

Most studies on the inflation impact on interest rates and exchange rates tend to centre on economies where financial markets are well developed. Piontkivsky (2001), in his analysis points out that Morgadini and Mueller (1999: 21) say that dollarisation is “often driven also by the lack or thinness of markets for medium or long term securities denominated in the domestic currency” and in order to reduce dollarisation it is necessary “to pursue a deepening of financial assets by lengthening the maturity of domestic securities, especially government bonds”. Piontkivsky (2001) points out that this idea is presented most precisely by Savastano (1996: 226) who concludes that “The relative importance of foreign currency as an inflation hedge will be inversely related to the economy’s level of financial development. An economy with a well developed financial market is, in principle, capable of adapting rapidly to a high inflation environment by offering a rich set of fairly liquid, high yield instruments denominated in domestic currency (near monies) that preserve the real value of the public’s portfolio. In contrast, a ‘financially repressed’ economy undergoing high inflation generally offers domestic residents few options other than to seek protection in foreign currency denominated instruments.”

The Global Credit Rating Company (2004: 9) says “the Zimbabwe government which had persistently fixed the exchange rate over the preceding years, fixed the Z\$/US\$ exchange rate in February 2003 at US\$1:Z\$824 excluding government transactions that remained at US\$1:Z\$55 since October 2001. However, given the inflation rate differential between Zimbabwe and its trading partners, the Zimbabwe Dollar remained overvalued leading to a highly active parallel exchange market where currency traded at US\$1:Z\$5950 in December 2003. A number of banks actively traded on this market and facilitated transactions for their clients.” Sachs (1995) condemns the idea of fixing exchange rates when he says “permanently fixed exchange

rates have almost always provoked a serious crises, whether in West Africa, Liberia, Panama or more recently Argentina... They are an invitation to chronic overvaluation, banking crises, and often both together.”

The tendency of most people and businesses under hyperinflation can therefore be outlined as one that encourages the holding of money and investment positions in stable currencies thereby giving rise to parallel exchange markets. This also pushes up the exchange rate as the demand in foreign currency outstrips supply.

2.4.4 Impact on Stock (Inventory)

Most literature on working capital management assumes operations in stable environments without highlighting the influences of hyperinflation on inventory levels of companies. However, as reported by Martin and Martin (1999), when hyperinflation hit Argentina, “workers demanded to be paid, so that they could stand in grocery lines with what little money they had and buy all the food they possibly could. Everything in the stores was sold; the shelves were completely empty. The owners had to restock during the night for the next day.....the store owners had less wealth than they did when they sold the products. The money gained from the previous day’s sales was not enough to buy the amount of food it would take to restock the shelves. They were losing money! A few more days into this horrendous hyperinflation , and the stores closed completely.” This observation leads to point out the importance of stock in the business cycle. Kolev (n.d) points out that Blinder and Maccini (1991), Fitzgerald (1997), Ramey and West (1997) and many others conclude that changes in inventory investments account for notable movements in GDP. He further points out that in some recessions, the change of inventory investments is even larger than the change in real output making Blinder conclude that “ business cycles are, to a surprisingly large degree, inventory cycles” (Blinder (1990) pp vii) quoted by Kelov (n.d)). This clearly points out the importance of inventory in the business cycles, more so in the cash conversion cycles of manufacturing companies without which the cycle

would not be complete. Having noted its importance, it is also important to assess the acquisition of inventory and the pricing of finished goods to ensure adequate restocking levels.

For business operations to proceed, it is imperative that stocks be held at optimum levels to facilitate production. Ordinarily, there are costs in holding insufficient stocks and costs in holding too much stock. Holding stock at levels less than what is needed to support sales will cost the firm business. Similarly, holding too much stock will cost the business in storage, insurance expenses and forgone liquidity during the period. However, in high inflation economies, not only are the inventories required for optimum production cycles but, as pointed out by Keynes (1919), “if prices are continually rising, every trader who has purchased for stock or owns property and plant inevitably makes profits.” As a result companies seek ways of financing as much stock as they can hold more so given that in hyperinflationary environments, cash rapidly loses its value. As a result, the use of models such as the economic order quantity becomes of little use under such conditions.

Whilst the objective of this study is not to devise models on sale prices of finished goods under hyperinflationary environments, it is worth noting that the sale of finished goods has to be made at prices that allow the company to restock having achieved the necessary margins.

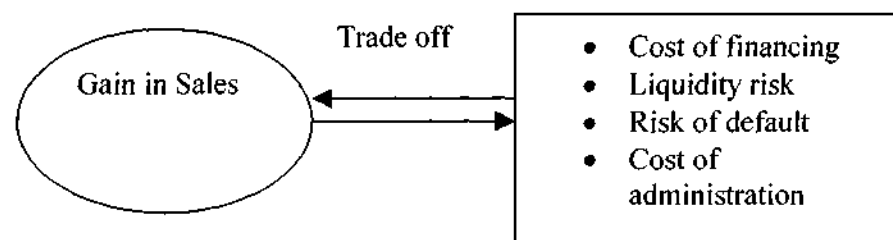
2.4.5 Impact on Debtors and Creditors

Many authors have pointed out, as equally highlighted by Sennholz (2005), that “inflation covertly transfers income and wealth from creditors to debtors. It dispossesses creditors of a significant portion of their savings and enriches debtors in the process.” Balbach (1997) points out that “a rise in the anticipated future rate of inflation causes (1) a rise in the nominal rate of interest and a fall in the real rate, which changes the relative prices of monetary and non-monetary assets, and (2) a rise in the measured price level of real goods and services, which lowers real money balances for a given

level of nominal balances. This set of adjustments can result in a transfer of wealth from net monetary creditors to net monetary debtors.”

According to Pike and Nealle (2003 :467), “trade debtors represent the currently unpaid element of credit sales. While the extension of credit is accepted practice in most industries, credit is essentially an unproductive asset (unless it generates additional business) which both ties up scarce financial resources and is exposed to the risk of default, particularly when the credit period taken by the customers is quite lengthy.” Arnold (2000 : 520) concurs and outlines a debtor trade off where incremental returns from granting credit are to be compared with incremental costs. That is:

Figure 2.3 Debtor Trade-Off



Source: Arnold, G. (2002) *Corporate Financial Management*, (2nd Edition), Prentice Hall, pp 520.

A closer look at the above trade off elements is made below.

Gain in Sales: According to Schiller (2000 : 131) “during inflationary periods, time horizons are shortened as people attempt to spend money before it loses further value. Debtors gain and creditors lose when price levels rise.” Internet 2 concurs and highlights that rapidly rising prices undermine money’s role as a store of value, so that people try to spend it on real goods or services as quickly as possible. This creates the notion that sales, under periods of high inflation, will not require credit sales to incentivise them. Companies will opt to hold stock as opposed to cash and will buy irregardless of credit availability.

Finance Cost: As established in section 2.4.2 above, interest rates tend to rise significantly in periods of hyperinflation resulting in sharp increases in financing costs. This tends to force companies to reduce levels of credit granted in a bid to reduce financing costs.

Liquidity Risk: Liquidity means that a company has ready cash or access to cash. It may be liquid because it holds cash directly or it holds assets that can be easily converted to cash. However, cash holding results in low returns and penalises the company as it has a low contribution to stakeholder value (Saunders, 1997). Under hyperinflationary environments, companies will therefore convert cash to assets and hold as little of cash as possible thereby increasing the risk of not having sufficient cash resources on due dates of loans and creditor payments.

Default Risk: During periods of high inflation, companies and individuals convert their cash holdings to assets which may have a negative impact on their liquidity, and thus increases default risk by debtors. According to Stulz and Lang (1994), trade creditors may exhibit a “contagion effect” in which a bankruptcy in a given industry reduces trade creditors’ willingness to extend credit to other firms, thus putting these firms in distress as well. A company’s debtors can thus be put in distress by other companies’ withdrawal of credit. Given that creditors will be on the losing end during times of high inflation (Schiller, 2000), withdrawal of credit will be high.

As previously alluded to in section 2.4.2 above, interest rate levels increase under high inflation environments. Under such conditions, financial institutions find funds to finance their lending decisions more expensive and recognise that high

interest rates are correlated with high credit risk in general (Saunders, 1997). Financial institutions will therefore tighten their lending policies and make credit more difficult to find, thereby fuelling default risk by companies which are not able to successfully negotiate adequate credit facilities.

Administration Cost: Given that the cost of financing is high under a period of high inflation as interest rates rise, liquidity risk will also rise coupled with default risk. As a result, administration costs of granting credit will be high.

According to Arnold (2000), the debtor trade off has to justify the need to grant credit. Given that sales under a high inflation environment are self generating, credit granting and the risks associated with it are not attractive to business. As a result, companies should endeavour to significantly reduce or completely eliminate credit sales under a hyperinflationary environment.

2.4.6 Impact on Cash Holdings and Demand for Money

According to Baum et. al (2005), “recent research such as Okzan and Okzan (2004) has emphasised the importance of firm specific characteristics as determinants of a firm’s cash-holding behaviour.” However, the environment in which a company operates is an equally important determinant of their demand for liquidity. Baum et. al (2005) points out that March 2001 Business Week reported: “So with the economy stalling and fears of recession rising, executives are becoming more concerned about protecting the cash they have got. ‘People are more conservative than they were a year ago,’ says Charles G. Ward III, co-head of investment banking at Credit Suisse First Boston. ‘CEOs and CFOs are making sure they have bank lines and cash, and they want to make sure capital expenditures don’t outstrip their cash raising capability.’ Adds Richard H. Brown, CEO of technology services giant Electronic Data Systems Corp. ‘Cash is king now.’ ” According to Baum et. al (2005), “this quotation suggests that managers, finding it difficult to gauge their firm’s future cash flows in a context of increasing macroeconomic

uncertainty, may decide to implement similar cash management policies, placing a premium on liquidity. Conversely, macroeconomic stability provides managers with the ability to forecast their firm's future cash flows more accurately while giving them the latitude to behave more idiosyncratically." Thus, the economic environment is a critical determinant of the cash holding decision.

Ventura (2000) points out that "the relationship between inflation and the demand for money has been investigated extensively and several studies have focused on money demand during periods of hyperinflation. One of the most famous is Cagan's 1956 study of the inflation circumstances in European countries, post World War II. Economic theory maintains that an individual's demand for real money balances depends on variables such as wealth in real terms, real income and the expected return on each asset that holds his wealth (on average the nominal interest rate). Cagan finds that in times of hyperinflation, because the fluctuation of prices is so extreme, the rate of inflation becomes the most important determinant. In general, in the countries Cagan studied, the demand for real money balances tended to decline as inflation rates increased."

Ventura (2000), in his model analysis of the Peruvian hyperinflation, draws results that are consistent with earlier studies of the demands for money during times of high inflation. His analysis shows that the inflation rate was related negatively to the demand for money. That is, as inflation rose, money demand fell. As inflation increases, the cost of holding money increases.

2.4.7 Impact on Cash Conversion Cycle

The cash conversion cycle (CCC) is an integral part of working capital management and focuses on the length of time between the company's cash outlay on inputs and the receipt of money from sale of goods. Thus the cash conversion cycle is used as a comprehensive measure of working capital management. According to Jose et. al (1996 : 34), "the cash conversion cycle is a dynamic measure of ongoing liquidity management introduced by Gitman

(1974) and subsequently enhanced by Gitman and Sachdeva (1982).” It is simply:

$$\text{CCC} = \text{Stock Conversion Period} + \text{Debtor Conversion period} - \text{Credit period granted by suppliers}$$

After observing the length of time money is invested in working capital, the management of a company are likely to think of ways of shortening the cash conversion cycle as long as it does not excessively damage operations (Arnold, 2000). This is in view of the fact that a business can be viewed as a process of converting cash to assets and back to cash.

Various studies have been carried out with respect to cash conversion cycles. Shin and Soenen (1998) investigate the relationship between cash conversion cycle and profitability for a sample of listed American companies in the period 1975 to 1994. They find a negative relationship which indicates that finance managers can create value by reducing the cash conversion cycle. Jose et. al (1996) show in their study that more aggressive liquidity management (lower cash conversion cycle) is associated with higher profitability for several industries including natural resources, manufacturing, service, retail/wholesale and professional services. They further point out that for these industries, there is a statistically significant inverse relationship between cash conversion cycle and profitability and the relationship is not driven by size. In further support of the findings relating to the reduction of the cash conversion cycle, Deloof (n.d) finds a significant negative relation between gross operating income and the number of days debtors, stocks and creditors of Belgian companies. The results again suggest that reducing the number of days of debtors and stocks to a manageable minimum creates value for the company’s shareholders.

2.4.8 Impact of Short Term Debt

According to Mills (1996), the loanable funds theory asserts that under inflationary conditions the demand for money should increase as the rate of transaction processing increases coupled with precautionary demand, whilst on the other hand, supply decreases as surplus spending units reduce their surplus balances, resulting in an increase in the cost of money. Borrowing rates are usually set as a fixed spread over a reference rate such as the London Interbank Offered Rate (LIBOR) or the lending bank's prime rate.

In hyperinflationary environments where interest rates will be rapidly increasing as monetary authorities try to control money supply, the cost of borrowing will be increasing rapidly as lending rates rise. Given Zimbabwe's case where most banks quoted lending rates above 300% per annum in much of 2003, the impact of borrowing at such rates would have resulted in interest payable equating the capital within 120 days (assuming no intermediate repayments). With banks fully aware of the 'in duplum' rule under which interest on unpaid loans ceases to accrue on any amount of capital outstanding once the interest equates the capital, lending by banks would be tightened as chances of planned defaults would inevitably increase.

According to Sen and Chattopadhyay (1995), "a simple rule for making a domestic loan decision by a bank is one that ensures that the loan rate exceeds the bank's cost of capital and the borrower's expected earnings exceed the terminal value of the loan. If the borrower's actual earnings fall short of the amount due, the bank may confiscate the collateral. It is important to the bank that the value of the collateral exceeds the value of the debt (ignoring the costs associated with a default). If the value of the collateral falls below that of the loan, a rational borrower may decide to forgo the collateral and voluntarily default on the higher value loan." Based on the foregoing, such loans would lead companies with lean shareholders' equity to face insolvency as a result of high interest bearing debt. However, despite the foregoing, banks in Zimbabwe continued to aggressively lend in 2003 as lending rates remained negative in real terms which encouraged speculative trading (Global Credit

Rating Company, 2004). There were, however, casualties as some companies were forced into liquidation due to high interest bearing debt. A case in point is that of a Zimbabwe Stock Exchange listed company, The Cotton Company of Zimbabwe Limited, which in its annual report for the year ended 31 March 2005 shows a profit from operations of Z\$70.9 billion. This profit was, however, eroded by interest payable of Z\$190.5 billion resulting in a loss before tax of Z\$119.5 billion. The company ended up with negative shareholders equity of Z\$31.2 billion as result of the impact of interest payable on the business. The company's chairman points out in his statement that "interest payable...was a consequence of high interest rates prevailing throughout the year under review...This interest bill was the largest cost element after crop purchasing and it drastically reduced net earnings." Whilst the company did not go into liquidation because of a strong asset base and government support, some companies were forced to restructure or divest as a result of poor debt management.

It follows that borrowings have to be curtailed under such conditions to avoid erosion of capital.

2.5 Chapter Conclusion

This chapter has discussed views from existing literature on hyperinflation, its impact on interest rates, exchange rates and on key working capital components, namely stocks, debtors, creditors and cash. Short term borrowings were looked at as they are a vital source of funding.

The following chapter on research methodology looks at how best the research process can be carried out. The elements drawn from the literature review coupled with the methods identified in the following chapter will influence the structure of the questionnaire and the research analysis. It is anticipated that this will link the literature review, research methodology and the analysis of findings so as to achieve credible results.

CHAPTER 3

Research Methodology

3.1 Introduction

This chapter presents an outline of the methods employed in obtaining a clear industry sentiment of working capital management . It outlines the various methods employed including a discussion of population sampling techniques, research instruments, data collection, data presentation and analysis.

3.2 Research Design and Justification

Rose (in Ghauri et al (1995:1)) says “Facts do not simply lie around waiting to be picked up. Facts must be carved out of the continuous web of ongoing reality, must be observed within a specified frame of reference, must be measured with precision, must be observed where they can be related to other relevant facts. All of this needs methods.” Bless and Higson-Smith (1995) define research as “seeking through methodological processes to add to one’s own body of knowledge and hopefully to add to that of others, by the discovery of non-trivial facts and insights”. Research is therefore a methodical process and should be planned.

Quantitative techniques will mostly be used in this study such that this chapter will largely focus on such techniques. Quantitative techniques involve measuring variables and comparing groups on those variables, or examining the strength of the relationship between two variables (Wegner, 1993).

The qualitative approach uses more subjective methods and often involves the use of interviews and focus groups (Holstein and Gubrium, 1995). Tanur (1992) argues that the qualitative approach lacks objectivity.

3.3 Population

Ghuri et al (1995: 144), point out that “a unit is a concrete or abstract object or a situation of interest to the research. Research results are always intended to be valid for some collection of units called a population. The population size is the number of units in the whole population.” The researcher’s interest will be in the population. According to Fraenkel and Wallen (1996), the population includes all individuals the research has interest in obtaining information on for the purposes of the study. Defining the population is therefore important as it helps the researcher in selecting a sample of study. The population for this study comprises manufacturing companies in Zimbabwe.

3.4 Sampling

Saunders et al (2003) points out that sampling allows one to look at a subgroup rather than all elements of the population. Ghauri et al (1995) argues that selecting a sample is a way of saving time spent on a project by examining the sample instead of the entire group. A sample therefore allows one to determine the characteristics of a population within acceptable limits.

According to Saunders et al (2003), sampling methods can be divided into Probability and Non Probability sampling. The methods are analysed below:

3.4.1 Non Probability (Random) Sampling

Below are non probability sampling methods:

Convenience Sampling

Ghuri et al (1995:74) says that “in a convenience sample, units that we find convenient for some reason are selected.” It is not representative of a target population as the sample units are made up of only those that can be easily accessed (Converse and Pressor, 1986). Saunders et al (2003) states that “although this technique of sampling is widely used, it is prone to bias and influences beyond your control, as the cases appear in the sample because of

the ease of obtaining them.” However, where the population is homogenous, the results can be accurate (Sudman et al, 1996).

Quota Sampling

Saunders et al (2003: 172) says “quota sampling is entirely non random and is normally used for interview surveys. It is based on the premise that your sample will represent the population as the variability in your sample for various quota variables is the same as that in the population.” Internet 3 states that quota sampling is a convenience sample and the researcher makes an effort to achieve a preferred distribution of units. Quota sampling can be considered preferable to other forms of non-probability sampling as it compels the researcher to include members of different sub populations (Fowler, 1984).

Judgemental Sampling

According to Saunders et al (2003), this form of sampling allows the researcher to select specific cases within a population that through the researcher’s judgement are believed to meet the intended objective. This technique is, however, subject to the researcher’s biases (Beimer et al, 1991). Biases come in as the researcher will have preconceived views of the samples and if these are incorrect, the sample will result in misleading study results.

3.4.2 Probability (Random) Sampling

In probability sampling, the sample is considered to be representative of the population as the selection of the sample components is random (Leedy, 1992). Below is a summary of probability sampling methods:

Simple Random Sampling

According to Wegner (1993), every item in the population has an equal chance of being selected. Random number tables or a computer can be used in the selection (Saunders et al, 2003).

Systematic Sampling

Saunders et al (2003:163) says “systematic sampling involves selecting the sample at regular intervals from the population”. Holstein and Gubrium (1995) point out that under this sampling method, elements are selected from the population at uniform intervals measured in time, order or space. As a result of the systematic approach, the method does not give each element in the sample an equal chance of being selected.

Cluster Sampling

Internet 3 points out that this method involves dividing the population into clusters before sampling . The clusters or discreet groups are then randomly selected for sampling. This method tends to be used when the population is large and spread over a large geographical area (Keogh, 1991).

Stratified Sampling

This method divides the population into strata based on selected attributes (Saunders et al, 2003). The elements in each strata are relatively homogeneous. Ghauri et al (1995: 78) points out that “the idea of stratified sampling is to ensure that every part of the population, that is every stratum, gets a better representation”.

3.5 Sample Selection

Ghauri et al (1995:74) says “in a non-probability sample, the probability that a particular unit will be included in the sample is unknown. In a probability sample, all units have known but not necessarily equal probabilities of being included... Non-probability samples are easy to draw, but they may give misleading results if they, in spite of our judgement, happen to be unrepresentative of the population. The major draw back of non-probability samples is that such samples give no basis for evaluating the size of the sampling variation or the error of estimation. If possible, we should therefore use a probability sample”.

Having analysed the various sampling methods outlined in section 3.4 above and the above statement, probability sampling methods are used in this study as they are deemed to provide results which are more representative of the population.

In this study the population consist of manufacturing companies in Zimbabwe. Simple random sampling was used to select the companies for purposes of distributing the questionnaires and selection of interview candidates.

3.6 Research Instruments

In selecting research instruments, validity and objectivity of the instruments was considered. Fraenkel and Wallen (1996) define a reliable instrument as one that gives consistent results. Research instruments are summarised below:

3.6.1 Questionnaires

In this research, the questionnaire (Appendix 2) was used as the primary data collection instrument as it was applicable to the research design. According to Fraenkel and Wallen (1996), questionnaires are advantageous in that they can be administered to large numbers of people at the same time. Internet 4 points out that questionnaires are an inexpensive way of collecting data.

3.6.1.1 Pre-Survey Contact

Saunders et al (2003: 31) says that where email is used, the researcher should “contact the recipients by email and advise them to expect a questionnaire”. Schaefer and Dillman (1998) point out that people who receive questionnaires without prior notification are less likely to respond. In this study, pre-survey notification was given to all respondents telephonically and through emails.

3.6.2 Personal Interviews

Interviews are personal when the interviewer asks questions face to face with the respondent (Keogh, 1999). They have the advantage that the respondent can see, feel and/or taste the product and can give in depth information on a

subject. According to Internet 5, they are more expensive than other methods and tend to be time consuming.

3.6.3 Telephone Interviews

According to Internet 5, telephone interviews are the fastest method of collecting information, particularly where the population is large. Typical advantages of telephone interviews are as follows:

- The process of contacting the respondent is fast.
- Longer and more detailed answers can be obtained compared to mail surveys.
- Telephone interviews can be completed much faster.

Telephonic interviews were not used in this study as they were not appropriate for the sample being studied. Company representatives tend to be too busy to spend time attending to such interviews.

3.6.4 Mail Surveys

In mail surveys, the researcher sends out the questionnaire to intended respondents by mail and encloses a return envelop (Pedhauzer and Schmelkin, 1991). The respondent will complete the questionnaire and mail it back to the researcher. Internet 5 points out that mail surveys are cost effective and suitable for large sample sizes. Internet 5 also points out that the main disadvantage of this method is the inability to probe respondents for more information. This study did not use postal surveys as they also tend to have slow response rates (Shadish et al, 2002).

3.6.6 Computer Interviews

In this method, respondents enter their responses directly into a computer. The computers can be placed at accessible points such as supermarkets or malls (Irwin, 1999). This method was not used in this study as it was not suitable for the target group.

3.6.7 E-mail Surveys

According to Internet 5, e-mail survey is the most cost effective and fastest method of distributing questionnaires. Soft copies of the questionnaires are sent to respondents with a cover letter that explains the purpose of the questionnaire and the anticipated response period (Saunders et al, 2003). Confidentiality assurances are also given with respect to the information provided by the respondents.

Advantages of e-mail surveys are as follows:

- E-mail surveys are fast and cheap to send out.
- A lot of companies and individuals have e-mail facilities.
- Delivery of responses tends to be fast as well.

All the questionnaires in this study were sent out by e-mail as the method is fast and cost effective. The bulk of the responses, 86% were received by e-mail.

3.7 Types of Data

3.7.1 Secondary Data

This is data that has already been collected by other people. It can be quantitative and/or qualitative. (Saunders et al, 2003). According to Ghauri et al (1995) and Zikmund (1991), advantages and disadvantages of secondary data are as follows:

Advantages:

- It is cheap and easy to find.
- It can provide suggestions on methods to use.
- It can be used for comparison.

Disadvantages

- The data may not be relevant to the current study.
- The accuracy of the data cannot be verified.
- The data may be out dated.

In this study, secondary data drawn from a previous study was used in the research analysis. Also, data from the Central Statistical Office and the Reserve Bank of Zimbabwe was used.

3.7.2 Primary Data

According to Internet 6, “a market researcher gathers data for the purpose of solving a concrete problem of market research”. Primary data is therefore collected for a specific study. The information is crucial to the research project as it specifically addresses issues of interest to the study area (Bless and Higson-Smith, 1995). According to Ghauri et. al. (1995), the most common methods of primary data collection are surveys and questionnaires. In this study, primary data was obtained from questionnaires and interviews.

3.8 Data Processing. Analysis and Presentation

Responses from all questionnaires were analysed using Excel. In data analysis and presentation, statistical principles such as mean and percentages were used. Tables, charts and graphs were used in presentation of the research findings.

3.9 Chapter Conclusion

This chapter has discussed the research methodology used in this study and the reasons behind the use of the selected methods. An overview of the types of data used was given together with an outline of the data processing. Analysis of the various data and the results are presented in the next chapter.

CHAPTER 4

Research Findings and Discussion

4.1 Introduction

This chapter presents the research findings of the study and discussion of the findings. These findings and discussions are the basis on which conclusions and recommendations are made. The findings are divided into three sections:

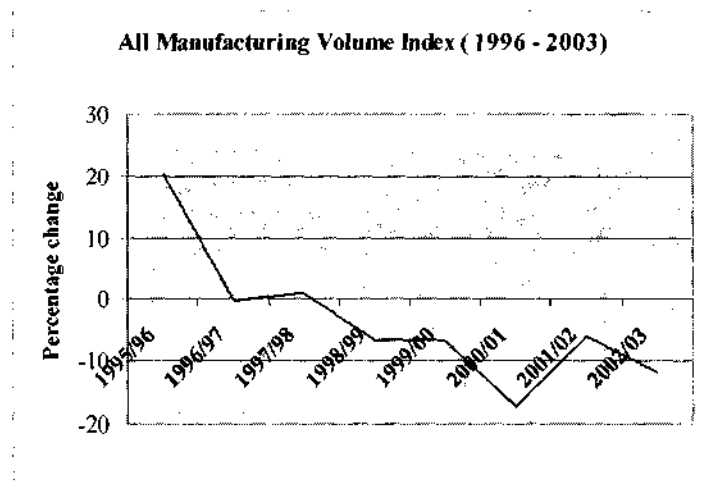
- i. Findings based on secondary information drawn from recent research;
- ii. Findings drawn from analysis of company financial statements; and
- iii. Findings drawn from analysis of responses to questionnaires.

4.2 FINDINGS BASED ON SECONDARY INFORMATION DRAWN FROM OTHER RESEARCH WORK

This section draws information from recent research and aims at showing the impact of the deteriorating hyperinflation environment on the manufacturing sector.

4.2.1 Manufacturing Production Trends

Figure 4.1



Source: Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*.

“Macroeconomic instability largely compromised manufacturing sector performance over the years, with its contribution to GDP falling from 24.1% in 1991 to 14.5% in 1999. As the business-operating environment has deteriorated unabated over the years, manufacturing output has tended to trend downwards as depicted under Figure 4.1. Using Central Statistical Office figures (using 1990 as base year), the volume of manufactured output peaked at 108.2% in 1996, and beyond this period trended downwards shedding a cumulative 25.5% over the period to 2003. Output tumbled on a more accelerated note from 2002 to 2003, recording a negative growth of 11.8% (to 64%) in comparison to a negative growth of 5.8% recorded over the period, 2001 to 2002” (Intermarket Research , 2004).

TABLE 4.1 Sub - sector (% Growth Rates)	2000	2001	2002	2003
Food stuffs	-12.8	-1.2	-10.1	-25.6
Drinking and Tobacco	18.5	-38.4	-11.9	0.3
Textiles	-16.6	-47	27.9	-35.2
Clothing and Footwear	-3.9	-8.2	-2.3	-3.7
Wood and Furniture	-18.9	-4.7	-6.5	-20.8
Printing and Publishing	-20.6	-18.2	13.7	-11.9
Chemical and Petroleum	-29.3	-20.2	30.5	-14.0
Non – Metallic minerals	-2.9	-2.8	-21.6	-29.8
Metals and Metal Products	0.1	7.6	-26.2	-0.6
Transport Equipment	-22.5	-33.8	15.7	-6.3
Other Manufactured Goods	-24.2	-4.1	2.9	-35.9
All Manufactured	-6.6	-17.4	-5.8	-11.8

Source: Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*.

“Virtually all-manufacturing sub sectors maintained a negative growth, which became more accelerated and pronounced from 2000 onwards. The year 2003, recorded the most significant slide in manufactured output. The most significant declines in output in 2003 (as depicted in Table 4.1) were recorded in transport and equipment (-35.9%), clothing and footwear (-35.2%), non-metallic metals minerals, (-29.8%), wood and furniture (-20.8%), and chemicals and petroleum sub sector (-14%). A marginal positive gain of 0.3% was recorded in the drinking and tobacco sub sector” (Intermarket Research , 2004).

4.2.2 Sales and Output trends

TABLE 4.2 Sales and Output Trend for Surveyed firms	Annual Sales volume Growth %	Annual Output Growth %
2000	-5.5	-0.6
2001	6.1	-3.2
2002	0.5	-5.2
2003	-6.5	-6.6

Source: Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*.

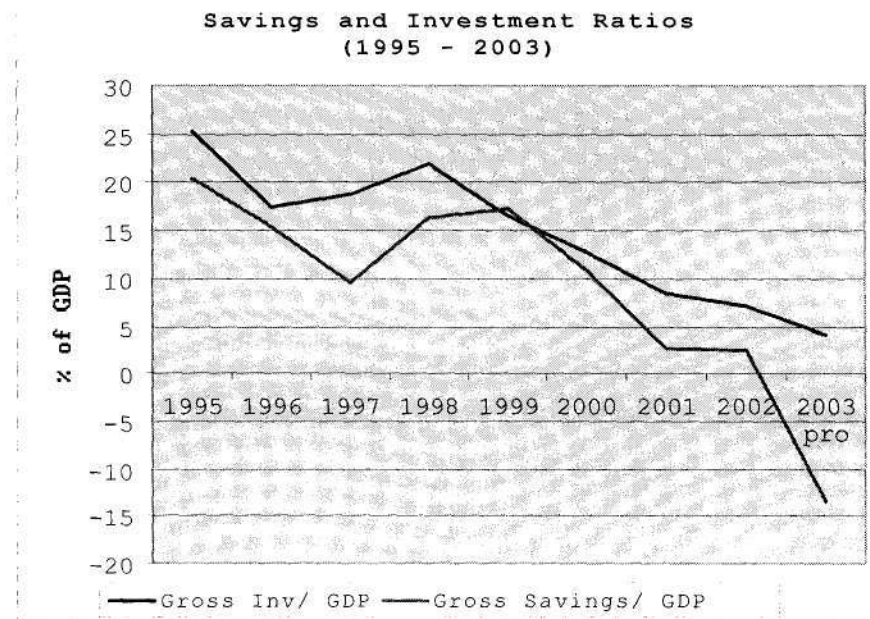
“The sales volumes became constrained by the deteriorating economic environment in 2003, culminating in a 7.3 percentage point shrinkage in 2003. This is a pointer to continuous capacity use shrinkage in the manufacturing sector as confirmed later on observations generated on capacity utilization.” (Intermarket Research , 2004)

“The trend that emerges on turnover is that the entire manufacturing sub sector made efforts towards covering inflation or more than hedged against inflation in a bid to minimize erosion of margins. Apparently, the output trend confirms that despite this phenomenal increase in turnover, output was instead declining. During the period 2000 to 2003 volumes have continuously shrunk by a cumulative 9.2%, whilst at the same time sales volumes have declined by a cumulative 5.2% during the same period. The trend confirms persistent erosion of disposable incomes and hence effective demand as sales volumes have dipped. The slump in output, also mirrors the earlier trends, depicted on the aggregate data, and is typical of a distressed economic situation, where the real sector continues to shed weight. It can also be deduced that the high turnover, against a significant decline in volumes (both produces and sold), is a confirmation of aggressive inflation linked pricing strategy, a major threat to price stability in the short to medium term. The same factors could count for the hyper – inflationary environment that characterized the year 2003”. (Intermarket Research , 2004).

4.2.3 Investment Trends

“Economic growth hinges on the level of aggregate investment, with the most industrialized economies, and recently the East Asian Miracle being explained by the investment capacities of between 18 to 25% of GDP. For such investment capacities to be achieved there is need for economic stability, which allows predictability in casting planning horizons into the future. Such an environment is characterized by sound macroeconomic policies, which are largely credible to anchor business/investor confidence and a stable interest rate regime, so as to allow the determination of opportunity cost for capital in the medium to long term. Zimbabwe has largely experienced a downturn in both investment and savings owing to weakening economic fundamentals, which have largely eroded the capacity to save and the need to invest (owing to tumbling domestic business confidence). Gross savings have thus declined significantly from a peak of 20.5% of GDP in 1995, at the peak of economic reforms, to projected levels of -13.4% for 2003, whilst investment has also taken a similar knock dropping from 25.3% of GDP in 1995 to projections of 4.2% of GDP in 2003, a clear compromise on industrialization” (Intermarket Research , 2004).

Figure 4.2



Source: Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*.

“The scenario depicted by Figure 4.2 is that of running down savings (or erosion of investment capacity) rather than that of accumulation, (yet savings are a key requirement to take the economy out of the current economic recession)”. (Intermarket Research , 2004)

TABLE 4.3 Investment Outlay (% of Total Investment Expenses)	2000	2001	2002	2003
Plant and machinery %	60.6	50.8	39.7	39.7
Buildings %	14.2	12.1	24.4	7.7
Motor vehicles %	25.1	32.5	41.5	54.5
Research and Development %	7.9	9.3	27.7	23.9

Source: Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*.

“The survey rated the impact of these key policy variables on a scale of 1-5 judging whether the policies had a very weak (a weight of 1), weak (2), neutral (3), strong (4), or very strong (5), impact on the business. On an aggregate basis, the manufacturing sector rated the respective impacts as follows:

Table 4.4 Economic Factor	Very Weak	Weak	Neutral	Strong	Very Strong
Interest rates				4	
Fixed Exchange rate				4	
Inflation					5

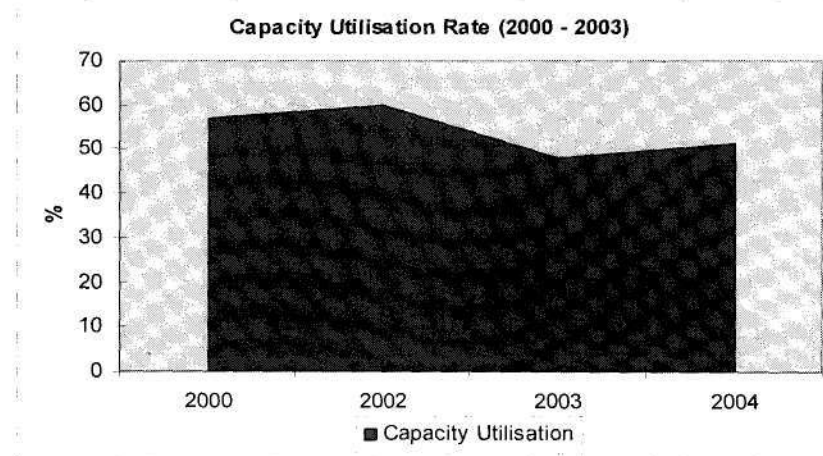
Source: Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*.

The survey results indicate that the impact of interest rates on production in 2003 was strong, whilst that of a fixed exchange rate was quite strong (negative), and inflation was even stronger in affecting production decisions. The statistic for the interest rate impact is likely due to the heavy cost pressures on the bottom line debt costs shouldered in the third quarter of 2003, and into early 2004 due to the dramatic swing in short term inter-bank interest rates to 900%.” (Intermarket Research , 2004).

4.2.4 Capacity Use

“The preliminary survey results indicate a reduction in capacity use in the manufacturing sector from 60% in 2002 to 51.1% in 2003. Indications of recovery of capacity use to 59.2% have been given for 2004, on the basis of developments this far.

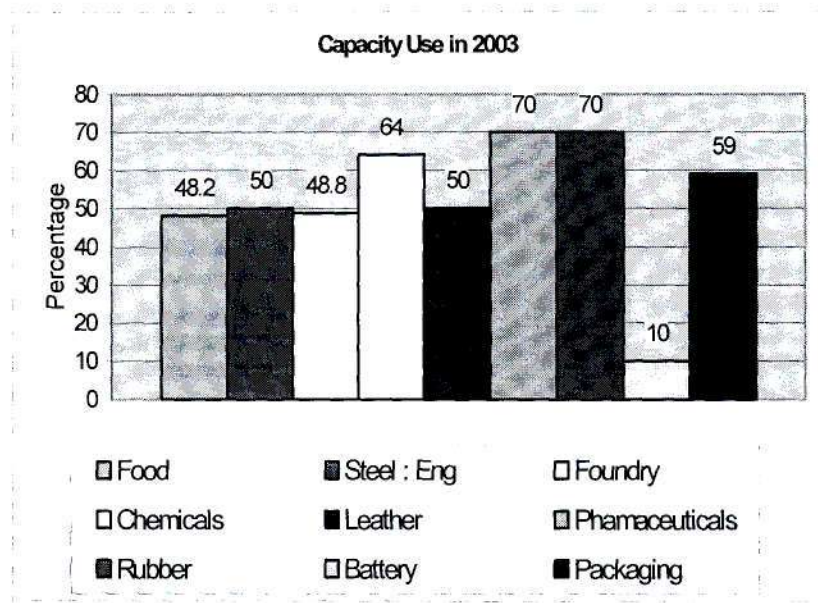
Figure 4.3



Source: Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*.

The slump in capacity use is reflective of the pressures the sector has had to bear over the last 5 years where output has remained weak and domestic production increasingly become costly” (Intermarket Research , 2004).

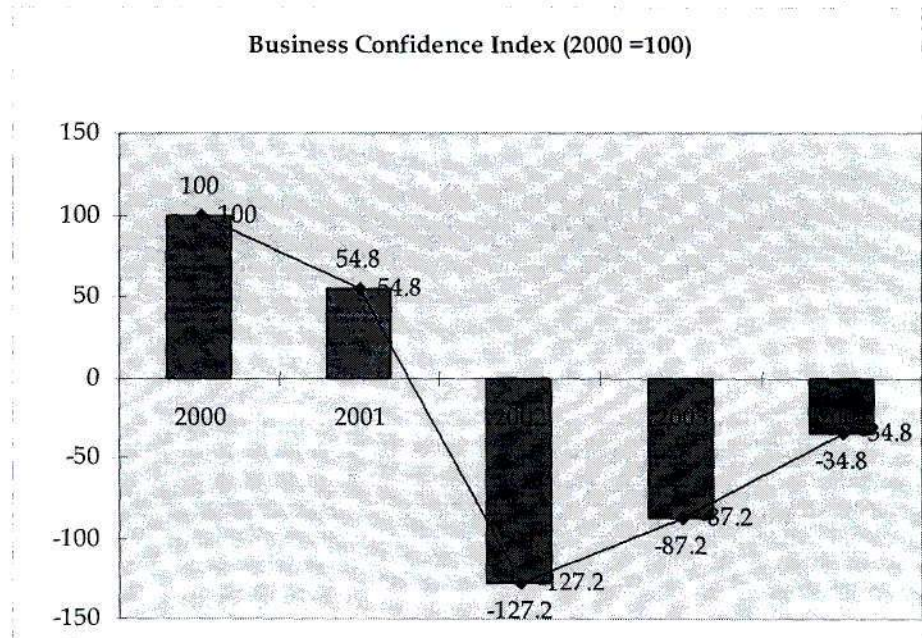
Figure 4.4



Source: Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*.

4.2.5 Business Confidence Index

Figure 4.5



Source: Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*.

4.2.6 Summary Of Findings Based On Secondary Information Drawn From Research Work by Intermarket Research as outlined from Page 33 to Page 39 of this Research Work

- i. Manufacturing volumes were on the decline due to unfavourable economic conditions.
- ii. All industry sectors were experiencing negative growth.
- iii. Investment was low and declining, a situation that is not supportive of future growth. Investment figures show an increase in motor vehicle investments, a situation which reveals that companies tended to invest in assets which quickly appreciate in value but were not industry specific. Such investments appreciate in value whilst at the same time providing easy exit from industry , an element typical of confidence deterioration.
- iv. The negative impact of high interest rates was strong , whilst that of the fixed exchange was even stronger. Inflation had the biggest negative impact on all sectors.
- v. Because of all the above pressures, capacity utilisation declined.

Overall this section has shown the challenges faced by manufacturing companies during the period under investigation. The following section investigates how, under the conditions outlined in this section, companies performed in the period 2000 to 2004 and the trends in performance.

4.3 FINDINGS DRAWN FROM ANALYSIS OF COMPANY FINANCIAL STATEMENTS

4.3.1 Aim

The aim of this section is to achieve an insight on how companies, based on annual financial results, performed in respect of management of working capital elements under the existing conditions largely outlined in the previous section. Particular attention is given to the following aspects:

- i. Turnover and Profit Before Interest and Tax (“PBIT”): This aims at establishing the impact of inflation on turnover and ultimately profitability. The aim is to establish the trend so as to arrive to a conclusion.
- ii. Debtors Days: The aim is to establish what the trend in debtors days was like and determine the impact on cash conversion cycle.
- iii. Creditors Days: The aim is to establish the trend in creditors days and the impact on cash conversion cycle.
- iv. Stock Turnover Days: The aim is to establish the trend in stock turnover days and determine the impact on cash conversion cycle.

4.3.2 Method Employed

In portfolio management, Reilly and Brown (2003 : 244) highlight that up to 90% of the maximum benefit of diversification is achieved within portfolios of 12 to 18 stocks. Internet 8 points out that a minimum diversified portfolio consists of between ten and twenty stocks. Based on this argument, a random selection of ten companies listed on the Zimbabwe Stock Exchange was made from which financial information was drawn.

Turnover and Profit Before Interest and Tax figures were drawn from each company for each financial year as detailed in Table 4.5 below. In addition, debtors days, creditors days and stock turnover days were calculated for each company for each financial year as shown in Table 4.5. Table 4.5 also shows mean values for turnover, profit before interest and tax, debtors days, creditors days and stock turnover days. Using the mean values, Figures 4.6 and 4.7 were derived using Excel.

Table 4.5

**Financial Information Extracted From Annual Financial Results of selected Companies
Listed on The Zimbabwe Stock Exchange.**

Company Results: 2000						
	Company	Turnover	PBIT	Debtors' Days	Creditors Days	Stock Turnover Days
		Z\$000s	Z\$000s			
1	African Distillers	877,065.00	126,086.00	51.00	30.00	98.00
2	Art Corporation	2,227,300.00	292,800.00	84.00	106.00	53.00
3	Astra Industries	4,632,326.00	668,474.00	14.00	11.00	16.00
4	CFI	5,676,956.00	389,870.00	41.00	44.00	41.00
5	Cairns Foods	1,376,489.00	279,080.00	38.00	35.00	65.00
6	Cottco	6,238,650.00	1,398,046.00	103.00	23.00	36.00
7	Colcom Foods	1,199,261.00	114,525.00	69.00	74.00	55.00
8	Natfoods	7,075,988.00	484,449.00	48.00	47.00	71.00
9	Seedco	1,188,802.00	248,851.00	51.00	48.00	63.00
10	ZSR	6,849,819.00	427,051.00	16.00	29.00	31.00
	Total	37,342,656.00	4,429,232.00	515.00	447.00	529.00
	Mean Values	3,734,265.60	442,923.20	51.50	44.70	52.90
Company Results: 2001						
	Company	Turnover	PBIT	Debtors' Days	Creditors Days	Stock Turnover Days
		Z\$000s	Z\$000s			
1	African Distillers	1,427,365.00	178,446.00	40.00	44.00	70.00
2	Art Corporation	4,493,300.00	958,400.00	133.00	107.00	74.00
3	Astra Industries	2,423,834.00	390,331.00	104.00	73.00	90.00
4	CFI	10,466,608.00	960,600.00	66.00	65.00	79.00
5	Cairns Foods	1,213,538.00	174,529.00	116.00	122.00	139.00
6	Cottco	7,821,632.00	1,120,732.00	82.00	25.00	48.00
7	Colcom Foods	2,418,250.00	388,994.00	35.00	36.00	42.00
8	Natfoods	12,757,203.00	1,806,789.00	57.00	47.00	75.00
9	Seedco	1,836,456.00	501,942.00	53.00	31.00	97.00
10	ZSR	7,910,678.00	504,169.00	20.00	42.00	41.00
	Total	52,768,864.00	6,984,932.00	706.00	592.00	755.00
	Mean Values	5,276,886.40	698,493.20	70.60	59.20	75.50

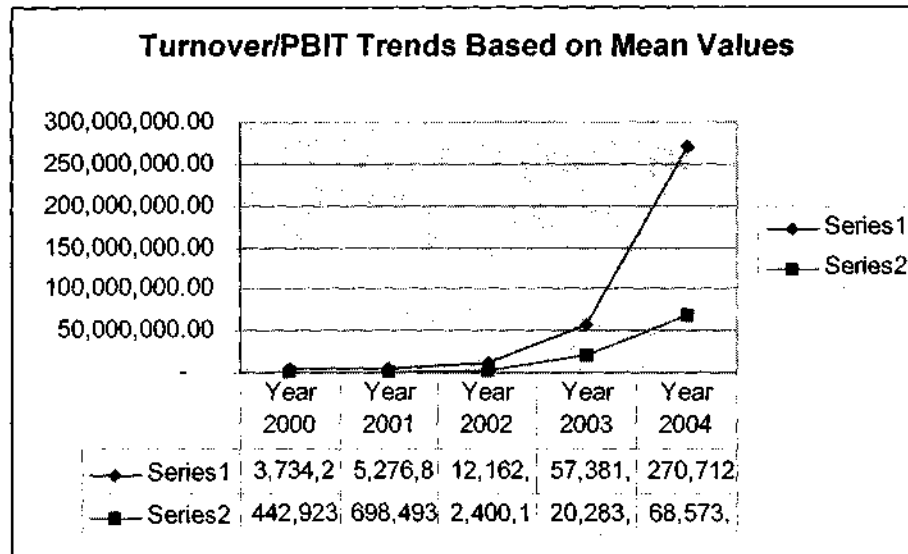
Table 4.5 continued

Company Results: 2002						
	Company	Turnover	PBIT	Debtors' Days	Creditors Days	Stock Turnover Days
		Z\$000s	Z\$000s			
1	African Distillers	4,314,533.00	1,045,087.00	35.00	36.00	81.00
2	Art Corporation	12,367,000.00	3,643,000.00	124.00	91.00	71.00
3	Astra Industries	7,574,263.00	2,369,068.00	83.00	65.00	107.00
4	CFI	26,156,000.00	4,140,000.00	56.00	46.00	75.00
5	Cairns Foods	5,539,000.00	1,518,000.00	76.00	55.00	97.00
6	Cottco	10,720,718.00	2,286,286.00	101.00	25.00	33.00
7	Colcom Foods	6,493,270.00	1,793,869.00	39.00	37.00	138.00
8	Natfoods	28,330,228.00	5,174,062.00	39.00	37.00	138.00
9	Seedco	3,852,613.00	1,288,336.00	79.00	45.00	118.00
10	ZSR	16,276,805.00	744,235.00	24.00	33.00	42.00
	Total	121,624,430.00	24,001,943.00	656.00	470.00	900.00
	Mean Values	12,162,443.00	2,400,194.30	65.60	47.00	90.00
Company Results: 2003						
	Company	Turnover	PBIT	Debtors' Days	Creditors Days	Stock Turnover Days
		Z\$000s	Z\$000s			
1	African Distillers	16,517,863.00	6,019,000.00	58.00	35.00	112.00
2	Art Corporation	82,146,000.00	32,338,000.00	163.00	113.00	99.00
3	Astra Industries	31,691,000.00	13,233,000.00	106.00	84.00	125.00
4	CFI	116,788,000.00	37,152,000.00	113.00	69.00	143.00
5	Cairns Foods	30,753,000.00	11,643,000.00	105.00	93.00	140.00
6	Cottco	17,835,814.00	10,093,027.00	207.00	89.00	20.00
7	Colcom Foods	44,362,620.00	24,446,435.00	61.00	39.00	136.00
8	Natfoods	174,526,000.00	58,143,000.00	53.00	22.00	122.00
9	Seedco	11,754,167.00	3,709,602.00	73.00	72.00	74.00
10	ZSR	47,438,622.00	6,060,772.00	27.00	46.00	64.00
	Total	573,813,086.00	202,837,836.00	966.00	662.00	1,035.00
	Mean Values	57,381,308.60	20,283,783.60	96.60	66.20	103.50

4.3.4 Analysis of Information Derived from Financials

4.3.4.1 Turnover and PBIT Trends

Figure 4.6



Series 1: Turnover
 Series 2: PBIT
 Values : Z\$000s

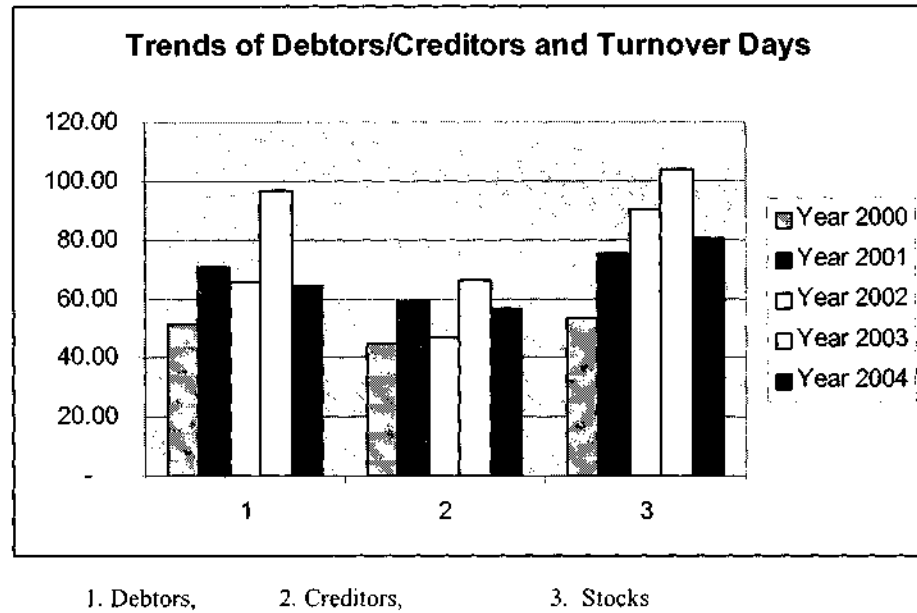
The trends shown in Figure 4.6 above are derived from the mean values of turnover and PBIT for selected companies over the period 2000 to 2004. The results suggest that :

- i. Between 2000 and 2002, the impact of inflation was not intense and costs were manageable. This is shown by a steady rise in the figures of both turnover and PBIT over the period. The gap between the two largely represents costs which were not undergoing significant increases.
- ii. The period between 2002 and 2004 saw inflation rising and peaking at 622.8% in January 2004 (see Figure 1.1). Turnover values surged as companies employed inflation pricing strategies. Costs increased in line with inflation increases as shown by the increasing gap between the turnover line and the PBIT line.

- iii. Based on the above graph, it can be seen that cost management became an important aspect in the management of businesses.

4.3.4.2 Trends in Debtors, Creditors and Stock Turnover Days

Figure 4.7



Source: Figure 4.7 above is derived from the mean values of debtors, creditors and stocks listed in Table 4.5

The days are calculated on the basis of mean values of stock/debtors/creditors values as at the balance sheet dates, divided by total turnover and multiplied by 365. This approach is adopted as the figures were readily available in the financial statements.

The trends in Figure 4.7 above show the following:

- i. Between 2000 and 2004, average debtors days increased with 2003 recording the highest increase. An analysis of the commentaries included in some of the financial statements reveals that most of the companies increased their export business to markets where credit terms range between 30 days and 90 days. The overall impact increased the debtors periods. Companies increased exports as a way

of increasing their access to foreign currency which was now in short supply.

- ii. The observed overall impact on the creditors days is an increase, however, this is lower than debtors days. This goes against the expectation that astute finance managers endeavour to pay creditors after receiving payment from debtors. A notable explanation for this is that, whilst most of the analysed companies sought to increase exports, their raw material supplies were largely sourced locally. Local suppliers were reducing their credit periods in light of the increasing inflationary pressures whilst average debtors of the analysed companies were high due to foreign debtor components which followed international trends in credit terms. Companies operating in hyperinflationary environments suffer in this regard as they find it difficult to reduce export credit terms especially where the terms follow accepted industry norms, whilst creditors at home will be reducing their credit periods.
- iii. Stock turnover days increased over the period from an average of approximately 55 days to over 100 days before reducing to an average of 80 days in 2004. This is largely attributed to the hyperinflationary environment which prompted all industry players to invest more in stock as opposed to holding money market investments and cash balances.

4.4 FINDINGS DRAWN FROM RESPONSES TO THE QUESTIONNAIRES

4.4.1 Method Employed

A questionnaire was drawn and issued following on from the research methods outlined in Chapter 3 of this study. The research methods employed comprised:

- i. The administration of a questionnaire; and
- ii. Conducting interviews largely based on questions in the questionnaire.

Responses

- i. Sixty four questionnaires were issued to various companies. The companies were randomly selected provided they were manufacturing companies. The distribution of the companies selected was as follows:

• Listed companies	-	9
• Large corporates	-	32
• Medium and Small Enterprises	-	23
Total Questionnaires sent out	-	<u>64</u>

A total of 48 responses to the questionnaires were received.

- iii. Three interviews were conducted with Art Corporation Limited, National Tyre Services Limited and Siltek Distribution Dynamics (Private) Limited. Art Corporation Limited and National Tyre Services Limited are listed companies whilst Siltek Distribution Dynamics (Private) Limited is a small manufacturing and distribution company.

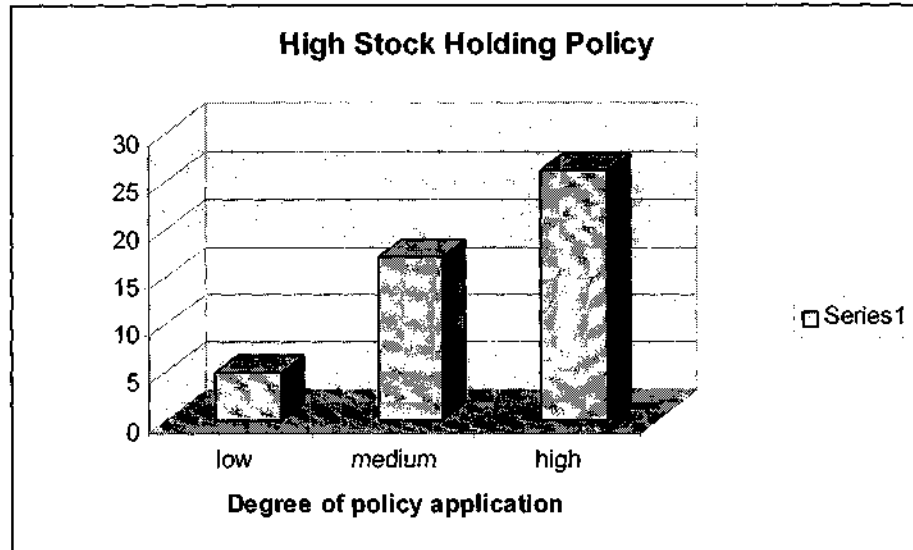
Overall, a total 51 responses were received (48 questionnaires and three interviews) out of a possible 67. This represents a response rate of 76 percent.

The responses have been analysed below:

4.4.2 Stock Holding and Finance

Stock Holding Policy

Figure 4.8



- 54% of respondents adopted a high stock holding policy with 33% pursuing a fairly high (medium) stock holding policy in light of the high inflationary environment.
- This was largely a response to the high inflationary environment resulting in avoidance of cash holding, hedging against foreign currency shortages and supply shortages.

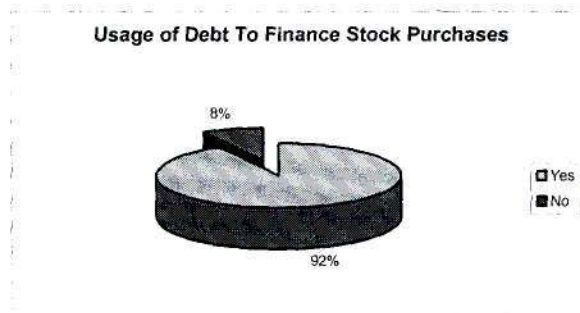
Stock Period Cover

Table 4.6: Stock Period Cover Sought	Number of Companies
One Week	1
Two weeks	2
Three Weeks	3
One Month	7
Two Months	10
Three Months	19
Above three Months	6

- From the table above, 72.9% of the companies sought to hold more than two months stock. A total of 52% sought to hold stock cover for periods of three months and above.
- Interviews revealed that some companies were comfortable holding stock cover positions for periods of up to five months as they expected the economic conditions to deteriorate.

Usage of Debt to Finance Stock Purchases

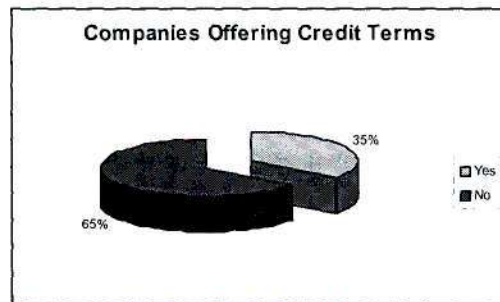
Figure 4.9



- 92% of the companies surveyed used debt to finance stock purchases.
- Despite the prevailing interest rates, stock purchases were therefore a critical element of business.

4.4.3 Debtors and Creditors

Figure 4.10



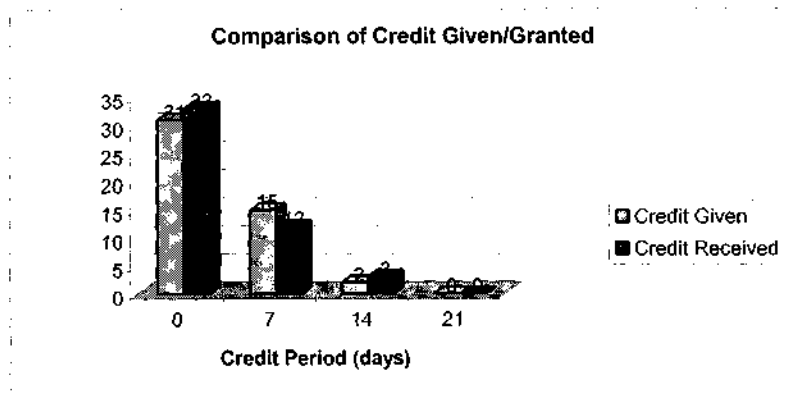
- There was a significant reduction in companies offering credit to their customers



T060018

- 65% of companies surveyed were not offering credit facilities. All companies offering credit had reduced credit periods as analysed below.

Figure 4.11



- The above graph shows that companies not granting credit were high (zero period). The bulk of those that were availing credit to their customers reduced the period to seven day periods. A minute number was still offering 14 days credit periods with no companies going beyond that period.
- Interviews revealed that credit was given to top rated customers only whose continued support was critical to operations.

4.4.4 Cash Sales

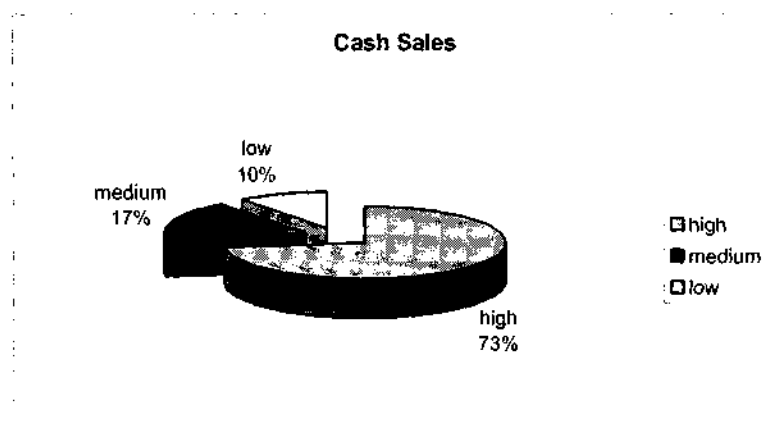


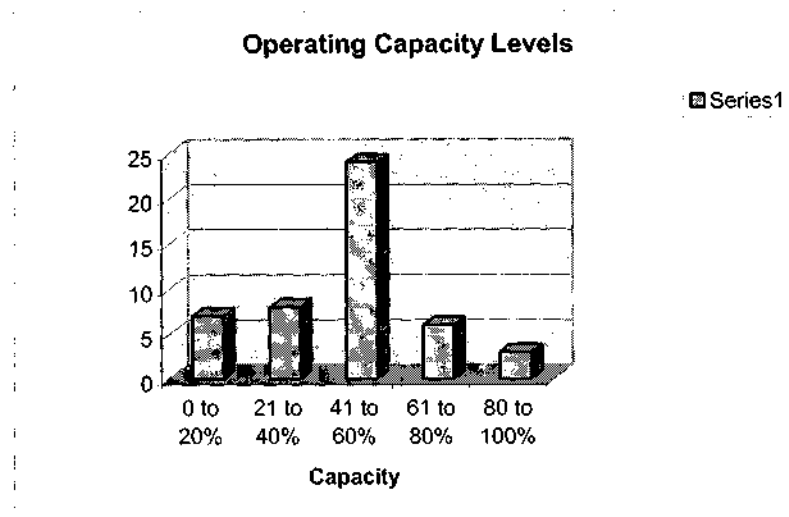
Figure 4.12

- As a result of the curtailment of credit, the results show that 73% of the sales made by the companies were on cash basis. This was a

desirable position as it would allow companies to use their money before it lost significant value.

4.4.5 Operating Capacity

Figure 4.13



- Operating capacity levels were low with 25 companies operating between 40% and 60% capacity. This represented the highest capacity utilisation level.

Investment

A total of 76% of the companies that responded to the questionnaire indicated that they had not made any capital investments in the period under review. Only 24% indicated having made some capital investment. Most respondents indicated that the environment was full of uncertainties and lacked the stability that would allow planning for long periods, and as such, had decided not to make long term investments. Most indicated that they were considering investing in stock and movable assets such as vehicles which could be easily disposed of should the need arise.

Responses From Open Ended Questions

- Respondents (86%) indicated that the impact of interest rates on their business was high as it limited the extent to which they could avail borrowings to finance their businesses, particularly stock purchases given the shortages of foreign currency. That notwithstanding, they confirmed that they still borrowed to finance operations as much as was reasonable.
- Respondents (85%) advised that they passed on the cost of borrowing in their pricing. The impact was therefore to increase prices.
- Respondents (74%) indicated that they passed on the cost of foreign currency purchased thereby pushing up their prices. Some confirmed that they availed of currency on the parallel market as it was the only way to enable their businesses to continue trading. The full cost was passed on plus an anticipated replacement margin.
- All respondents confirmed that inflation, foreign currency and interest rates were the main determinants of their pricing structures. Particular emphasis was given to inflation.

4.5 SUMMARY OF RESEARCH FINDINGS

4.5.1 A Collective Summary of Research Findings

As previously alluded to, research findings are divided into three sections as follows:

- i. Findings based on secondary information drawn from recent research;
- ii. Findings drawn from analysis of company financial statements; and
- iii. Findings drawn from analysis of the responses to the questionnaires.

A collective summary of the findings is detailed below:

- **Operating Environment:** Prior research and respondents to questionnaires show that the operating environment was characterised by :-
 - i. high inflation which peaked at 622.8% in January 2004;
 - ii. high interest rates;
 - iii. acute foreign currency shortages; and
 - iv. a thriving parallel exchange market.
- **Volume Sales:** Previous research shows that volume sales were constrained by the economic environment particularly in 2003. Output declined largely due to shortages of raw materials as a result of scarce foreign currency, reduced working capital finance as a result of high interest rates and reduced capital investment due to socio-political uncertainties. Respondents to questionnaires confirmed reducing operating capacity levels.
- **Turnover:** Despite decreased volume sales, companies made efforts to hedge against inflation in a bid to preserve margins resulting in a phenomenal increase in turnover figures. This is confirmed by the results from financial statements of listed companies which show a steep rise in turnover figures particularly between 2002 and 2004. Respondents to questionnaires confirm that they passed on costs

relating to high interest rates, foreign currency purchases on the parallel market and replacement pricing.

- **Investment:** Previous research shows a steep reduction in capital investment which was confirmed by respondents.
- **Capacity Usage:** Respondents show reduced capacity usage which is echoed in prior research. This is partly attributed to shortages of raw materials, foreign currency and high interest rates.
- **Stocks:** As a result of shortages and the high inflationary environment, companies opted to invest in stocks rather than to hold cash and near cash investments. From the analysis conducted in section 4.4.2, it is shown that most companies adopted high stock holding policies, with 72.9% of all respondents seeking to hold more than two months stock cover and 52% of all respondents seeking to hold stock cover for periods of three months or more.
- **Debtors and Creditors:** An analysis of financial statements from listed companies shows that debtors days generally exceeded creditor days. A further analysis showed that this position arose from the fact that most of the listed companies exported some of their products to markets where they offered credit for periods ranging between 30 days and 90 days. This stretched the debtors' days, more so given that local creditors were reducing credit periods due to high inflation. In addition, foreign creditors (for those who still had them) significantly reduced their terms with the majority demanding cash upfront due to Zimbabwe's high country risk status. Respondents show that locally, companies reduced credit periods granted and some totally abolished credit sales. 65% of companies surveyed were not offering credit sales by the end of the period under review. Those that offered credit had terms which ranged between 7 days and 14 days only.

- **Cash Sales:** Survey results show that 73% of the sales made by the companies were on cash basis. This is evidence of reduced credit terms.
- **Borrowings:** Respondents confirm that interest charges impacted negatively on their operations as it restricted their level of borrowings. However, 92% of the respondents confirmed using interest bearing debt to fund operations.
- **Business Confidence:** Business confidence levels were shown to be low as reflected in Figure 4.5.

4.6 Chapter Conclusion

This chapter has analysed and discussed the findings from prior research, information extracted by the researcher from financial statements of selected companies and information gathered from interviews and questionnaires. These results were summarised and the impact on companies was assessed. Based on these results, the next chapter, which concludes this research, draws conclusions from the results and makes recommendations based on the findings of the study.

CHAPTER 5

Conclusions And Recommendations

5.1 Introduction

This chapter concludes the study by looking at the outcomes of both the literature review and the research findings. A conclusion is then drawn from these findings which aims at addressing the problem statement outlined in Chapter 1.

5.2 Research Findings

5.2.1 Hyperinflation

The literature review revealed that signs of an economy in hyperinflation include the following:

- i. The general population prefers to keep its wealth in non-monetary assets or in a relatively stable foreign currency. Amounts of local currency held are immediately invested to maintain purchasing power.
- ii. The general population regards monetary amounts not in terms of the local currency but in terms of a relatively stable foreign currency. Prices may be quoted in that currency.
- iii. Sales and purchases on credit take place at prices that compensate for the expected loss of purchasing power during the credit period, even if the period is short.
- iv. Interest rates, wages and prices are linked to a price index; and the cumulative inflation rate over three years approaches, or exceeds 100%.

Zimbabwe's economy was shown to have fallen into hyperinflation as it met all the aspects above.

5.2.2 Cash Holdings

The literature review showed that cash balances in hyperinflationary environments lose value rapidly as their buying power is eroded. The analysis of various studies including economic theory showed that the inflation rate was related negatively to the demand for money. That is, as inflation rises, money demand falls. As inflation increases, the cost of holding money increases. As a result, in times of hyperinflation, time horizons are shortened as people attempt to spend money before it loses further value. This was confirmed by the research findings which showed that companies avoided cash holdings by investing in assets particularly stocks.

5.2.3 Interest Rates

Economic theory and various literature reviewed showed that when an economy is under going hyperinflation, monetary authorities will increase interest rates as a way of discouraging borrowings, with a view to reduce money supply which further fuels inflationary demand. The research showed that interest rates increased significantly confirming the findings of the literature review. However, some companies continued to borrow to fund stock purchases. Some companies which were over borrowed virtually liquidated as a result of the acute growth of interest charges on borrowed funds.

5.2.4 Exchange Rates

Under hyperinflationary environments, companies and individuals seek to make investments in stable currencies and transfer as much of their wealth into such currencies. This gives rise to a parallel exchange market where currency is sold at higher rates than the official exchange market, particularly where exchange rates are controlled. This impacts negatively on raw material supplies which are imported and those with imported components and results in increased product prices. The literature review showed that parallel exchange markets are typical of hyperinflationary economies and respondents to questionnaires confirmed having participated in such markets.

5.2.5 Stocks (Inventory)

The literature review revealed that during times of hyperinflation, as prices continually rise, every trader who has purchased for stock or owns property and plant inevitably makes profits. An analysis of company financials also showed increased stock holding positions by companies.

5.2.6 Debtors and Creditors

Credit granting was shown in both the literature review and the research results to be corrosive in terms of shareholder value and had to be curtailed. Most companies confirmed having stopped the granting of credit completely. It is only those who receive the credit that benefit, and as the literature review outlined, credit granting in a hyperinflationary environment transfers wealth from creditors to debtors. Some of the companies that offered credit, even for short periods, endeavoured to avoid losing value by charging interest at high rates which in some cases exceeded the bank rate.

5.2.7 Bank Borrowings

Whilst interest rates were high, it was shown that companies still borrowed to finance operations, particularly stock purchases. Financial institutions will, however, tighten availability of loan facilities due to high default risks. Notwithstanding the benefits of borrowing, it was also shown that the increasing interest rates result in a rapid growth in interest payable which can cripple the operations of a business if not managed well.

5.3 Conclusions

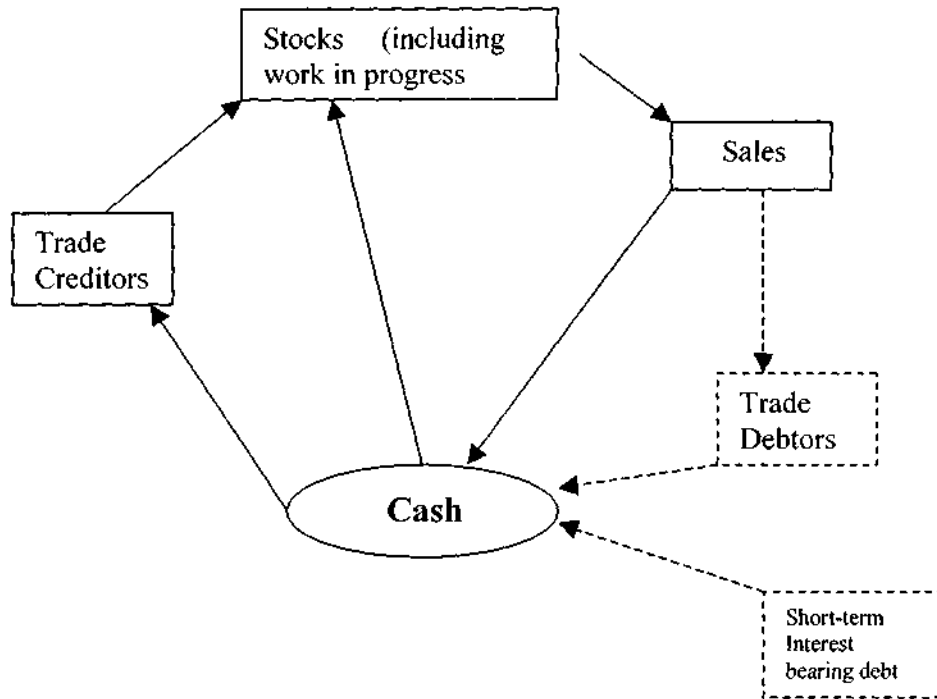
Given the foregoing, the following conclusions are arrived at:

- i. Under hyperinflationary environments, holding cash is a huge liability which erodes shareholder value.
- ii. Interest expense rises as interest rates rise. Borrowings should be avoided, however, where they are inevitably required, they should be kept to a manageable minimum. This is in view of the fact that the interest expense can easily erode profits and render the company insolvent.
- iii. Cash balances should be converted to assets. For manufacturing companies, these should be converted to stocks.
- iv. Credit granting should be abolished to preserve shareholder value and all transactions should be done on a cash basis.
- v. Where credit is granted, interest should be charged at rates that preserve value, provided that the management is comfortable that amounts owing including interest will be paid. Should there be doubt, credit facilities should not be granted.
- vi. Any credit received should be taken full advantage of as it allows transfer of value to the debtor.

In view of the foregoing, it is concluded that the cash conversion cycle of manufacturing companies under hyperinflationary environments should ideally eliminate the debtor stage to preserve value. The cycle should be as follows:

Figure 5.1

Proposed Working Capital Cycle In A Hyperinflationary Environment



----- Stages to be eliminated.

5.4 Recommendations

This study has looked at the operations of manufacturing companies in a hyperinflationary environment and recommends that companies operating in such an environment implement the findings outlined in section 5.3 above. It also recommends that companies avoid high borrowings due to high interest rates. In order to support the need by companies to avoid borrowings and conserve cash resources for working capital purposes, it is recommended that companies avoid dividend declarations under such environments. In addition, companies are strongly recommended to avoid credit sales and follow the cycle outlined in Figure 5.1 above.

5.5 Recommended Future Studies

Recommended future studies in the following areas will add value to the understanding of working capital management in hyperinflationary environments:

- i. Pricing structure/models that assist companies to preserve value in the course of trade.
- ii. Further research to prove that the management of the cash conversion cycle actually improves the return on investment for shareholders under hyperinflationary environments.

Covering Letter of Questionnaire

29 June 2005

**Protase Zingwiro
C/o 16th Floor
Old Mutual Centre
Corner Jason Moyo and 3rd Street
Harare**

Phone 701636/52

Cell 091924594

Dear Respondent

I am carrying out a study entitled “ Working Capital Management In Hyper-inflationary Economies: A Case of Zimbabwe”. This study is in fulfilment of a Master Of Business Administration Degree in Strategic Financial Management with the University of Natal , Durban. The research aims at outlining how best companies operating in high inflation economies can respond to challenges in their operating environment.

All answers given with respect to this questionnaire are treated as confidential and will be used for analysis purposes only. No reference will be made to a specific organisation , as such, the names of the respondents and their companies are not required.

Kindly complete the questionnaire and return it to the sender via e-mail or send a hard copy to the above address.

Thanking you in anticipation.

Protase Zingwiro

QUESTIONNAIRE

1. Which industry group does your company operate in?

- Mining []₁
- Agriculture []₂
- Construction and Engineering []₃
- Food, Retail and leisure []₄
- Paper & Packaging []₅
- Transport []₆
- Other []₇

2. How long have you been employed in the company?

- 0 to 2 years []₁
- 2 to 4 years []₂
- 4 to 5 years []₃
- above 5 years []₄

The following questions should be answered in relation to the operating period 1 January 2002 to 31 December 2004

3. To what level did your company pursue a high stock holding policy?

- Low []₁
- Medium []₂
- High []₃

4. What period cover in stock holding did your company hold or seek to hold?

- One Week []₁
- Two weeks []₂
- Three weeks []₃
- One Month []₄
- Two Months []₅
- Three Months []₆
- Above three months []₇

Why.....

5. Did your company borrow interest bearing debt to finance stock holding?

Yes]₁

No]₂

If yes, which of the following best represents the company's view towards the associated interest cost:

Not important as long as stock purchases were made]₁

Generally of concern but not enough to deter stock purchases]₂

Deterred stock purchases if it was considered high]₃

Borrowing was not an option for funding stocks]₄

If no, why did your company avoid borrowing to fund stock purchases?.....

.....
.....
.....

6. Did the company offer credit terms on sales during the period?

Yes]₁

No]₂

7. If your answer to question 6 is yes, what period was offered?

7 days]₁

14 days]₂

21 days]₃

30 days]₄

45 days]₅

60 days]₆

8. Did the company reduce the credit period offered during the period under review?

Yes]₁

No]₂

Reason.....
.....
.....

9. Did the company completely suspend credit sales?
- Yes []₁
- No []₂
10. How would you rate the company's cash sales during the period?
- 1 High []₁
- 2 Medium []₂
- 3 Low []₃
- 4 None at all []₄
11. At what rate did the company charge interest on credit sales?
- None at all []₁
- Rate was below bank rate []₂
- Rate was equal to company's cost of borrowing []₃
- Rate was above company's cost of borrowing []₄
- Comments.....

12. How would you classify your debtor book during the period?
- Listed entities only []₁
- Listed and large corporates only []₂
- Large corporates and Medium Enterprises []₃
- Mixed []₄
- None at all []₅
13. To what extent did your local suppliers avail credit to your company?
- None at all []₁
- 7 days []₂
- 14 days []₃
- 21 days []₄
- 30 days []₅
- above 30 days []₆
14. How many of your suppliers availed your company credit during the period?
- 0 to 20% []₁
- 21 to 40% []₂
- 41 to 60% []₃
- 61 to 80% []₄
- 81 to 100% []₅

15. How many completely stopped offering credit facilities to your company?

- 0 to 20% 1
- 21 to 40% 2
- 41 to 60% 3
- 61 to 80% 4
- 81 to 100% 5

16. Which category best describes your company's use of interest bearing debt during the period under review?

- High User 1
- Occasional User 2
- None User 3

17. Which borrowing instruments did the company use?

- Overdraft 1
- Lease finance 2
- Bankers Acceptances 3
- Long term debt 4
- None 5

18. At what capacity level was the company operating?

- 0 to 20% 1
- 21 to 40% 2
- 41 to 60% 3
- 61 to 80% 4
- 81 to 100% 5

19. Was the operating capacity level increasing or decreasing?

- Increasing 1
- Decreasing 2
- Stagnant 3

Why.....

20. Was any capital investment made during the period?

- Yes 1
- No 2

21. What was the impact of interest rates on your business during that period?

.....
.....
.....

22. How did interest rates affect your pricing structure?

.....
.....
.....

23. How did exchange rate affect your pricing structure?

.....
.....
.....

24. What were the main determinants of your pricing structure?

.....
.....
.....

25. Any other comments

.....
.....
.....
.....
.....

Thank very much for taking time to complete this form.

Bibliography

- Aaberge, R and Zhu, Y. (2001) *The Pattern of Household Savings During a Hyperinflation: The Case of Urban China in the late 1980s*, Review of Income and Wealth Series, 47(2), 181-202.
- Arnold, G. (2002) *Corporate Financial Management*, (2nd Edition), Prentice Hall.
- Balbach R, (1997) *Effects of Change In Inflationary Expectations*, Federal Reserve Bank of St Louis.
- Baum, C.F., Caglayan, M., Ozkan, N. and Talavera, O. (2005) *The Impact of Macroeconomic Uncertainty on Non-Financial Firm's Demand for Liquidity*.
- Biemer, P.P, Groves R. M, Lyberg L. E, Mathiowetz, N. A and Sudman S. (eds) (1991), *Measurement errors In Surveys*, New York, John Wiley and Sons
- Bless, C. and Higson-Smith (1995), *Fundamentals of Social Research*, Juta and Company Limited
- Cagan P, (1956) *The Monetary Dynamics of Hyperinflation in Studies in the Quantity Theory of Money*, Chicago University Press.
- Converse, J. M and Presser S. (1986) *Survey Questions, Handcrafting the Standardised Questionnaire: Quantitative Applications to the Social Sciences*, Newbury Park, Sage Publications
- Deloof, M. (n.d) *Does Working Capital Management Affect Profitability of Belgian Firms?*, Faculty of Applied Economics UFSIA-RUCA, University of Antwerp, Belgium.
- Duncan, S.C. and Duncan T.E. (1994) *Modelling Incomplete Longitudinal Substance Using Latent Growth Curve Methodology*, Multivariate Behavioural Research.
- Fowler, F. J. (Jr) (1984) *Survey Research Methods*, Beverley Hills , CA Sage
- Fraenkel J. R and Wallen N. E (1996), *How to Design and Evaluate Research in Education*, New York, MacGraw-Hill Inc.
- Ghuri P., Gronhaug, K., and Kristianslund I. (1995) *Research Methods In Business Studies: A Practical Guide* (1st Edition), Financial Times Prentice Hall.
- Global Credit Rating Company, (2004) *Zimbabwe Bank Bulletin*
- Groves, R. M, Biemer P. P., Lyberg L. E, Massey J. T, Nicholls W. L and Waksberg J. (1998) *Telephone Survey Methodology*, New York, John Wiley and Sons.
- Hawkins, T. (2005) *Zimbabwe Economic Update April 2005*.
- Holstein, J. A. and Gubrium, J. F (1995) *The Active Interview*, Sage Publications Limited.

- Intermarket Research, (2004) *Study On The State Of The Manufacturing Sector During 2003*.
- Irwin L. P. (1999) *Relating Statistics and Experimental Design*, Thousand Oaks, CA
- Jose, M. L., Lancaster, C. and Stevens, J. L. (1996) *Corporate Returns and Cash Conversion Cycles*, *Journal of Economics and Finance*, 20(1), 33-46.
- Keogh, E. (1999) *How to Conduct a Survey*, Statistics Department, University of Zimbabwe, Harare.
- Keynes J. M. (1919) *The Economic Consequences of the Peace*, www.mises.org/story/1846 , 235 - 248
- Kolev A, (n.d) *Inventory Investment and Financial Constraints*, *Journal of Economic Literature Classification Code: E22,E32*.
- Leedy, P. D (1992) *Practical Research Planning and Designing* (5th Edition), New York, MacMillan Publishing Company.
- Lepetyuk, V. (n.d) *Hyperinflation in Ukraine*.
- Manuel, L. J., Lancaster C., and Stevens J.L. (1996) *Corporate Returns and Cash Conversion Cycles*. *Journal of Economics and Finance*, 20 (1), 33 - 46.
- Martin, D., Martin,L. (1999) *Hyperinflation, Living in Argentina in the 1980s*, www.waltonfeed.com/peoples/lessons/martin.html
- Mills, G.T. (1996) *The Impact of Inflation on Capital Budgeting and Working Capital*, *Journal of Financial and Strategic Decisions*, 9(1),79-87.
- Pedhazur E. J and Schmelkin L.P. (1991) *Measurement, Design and Analysis: An Integrated Approach*, Lawrence Erlbaum and Associates.
- Piontkivsky, R.(2001) *Dollarisation and Undeveloped Capital (Financial) Markets In Transition Economies*, International Centre for Policy Studies, Kyiv, Ukraine and National University of Kiev-Mohyla Academy, Kyiv, Ukraine.
- Pike, R.and Neale, B.(2003) *Corporate Finance and Investment Decisions and Strategies* (4th Edition), Prentice Hall
- Reserve Bank of Zimbabwe (2005a), *Inflation Drivers In Zimbabwe Supplement 1 of 4 To The 1st Quarter 2005 Monetary Policy Review*.
- Sachs, J. D. (1995) *Alternative Approaches to Financial Crises in Emerging Markets*, Harvard Institute for International Development.
- Saunders, A. (1997) *Financial Institutions Management* (2nd Edition), Irwin Macgraw-Hill.
- Saunders, M., Lewis, P. and Thornhill, A. (2003), *Research Methods for Business Students* (3rd Edition), London, Prentice Hall.

Schiller, B.R. (2000) *The Economy Today* (8th Edition), MacGraw-Hill.

Schaefer, David R. and Don A. Dillman. (1998) *Development of a Standard E-mail Methodology: Results of an Experiment*, <http://survey.sesrc.wsu.edu/dillman/papers/E-mailppr.pdf>.

Sen, S and Chattopadhyay, M. K. (1995) *Bank Lending Rules for Managing Sovereign Risk*, *Journal of Economics and Finance*, 19(1), 93-108

Sennholz H. F. (2005) *The Many Evils of Inflation*, www.mises.org/story/1846,

Shadish, W. R, Cook, D.T. and Campbell D.T (2002) *Experimental and Quasi Experimental Designs for Generalised Casual Inference*, Boston, Houghton-Mifflin.

Shin, H. H., and Soenen, L. (1998) *Efficiency of Working Capital and Corporate Profitability*, *Financial Practice and Education*, 8(2),37-45.

Sudman, S., Bradburn, N. M. and Schwarz N. (1996) *Thinking about Answers. The Application of Cognitive Process to Survey Methodology*, San Francisco, Jossey-Base Publishers.

Tanur J. N (1992) *Questions about Questions. Inquiries Into Cognitive bases of Surveys*, New York, Russell Sage Foundation.

Ventura J. (2000) *Money Demand and Inflation In Peru, 1979 to 1991*, Bowling Green State University, Ohio, www.clevelandfed.org/research/com2000/1200.htm

Wang, J. (1999) *The Georgian Hyperinflation and Stabilisation*, International Monetary Fund Working Paper.

Wegner, T. (1993) *Applied Business Statistics*, University of Cape Town.

Weiraub H.J and Visscher S. (1998) *Industry Practice Relating to Aggressive Conservative Working Capital Policies*, *Journal of Financial and Strategic Decisions*, 11(2).

Zikmund W.D. (1991) *Business Research Methods*, The Dryden Press, Orlando, Florida

Zimbabwe Financial Holdings Limited Economic Review (1996)

Zimbabwe Financial Holdings Limited Economic Review (1999)

Zimbabwe Financial Holdings Limited Economic Review (2000)

Internet References

Internet 1 : www.investopedis.com

Internet 2 : www.answers.com

Internet 3 : www.cmh.edu/stats/definitions/quota.htm

Internet 4 : www.cc.gatech.edu/classes/cs6751_97_winter/Topics/quest-design/

Internet 5 : www.statpac.com/surveys/research-methods.htm

Internet 6 : www.coursework.info/i/63752.html

Internet 7 : www.bized.ac.uk/dataserv/extel/notes/deb-ex.htm

Internet 8 : www.sunlife.ca

Interviews

Interviewee 1: Mr Graham Malahleka , Group Commercial Executive of Art Corporation Limited.

Interviewee 2: Mr. Don McDevitt, Managing Director of National Tyre Services Zimbabwe Limited.

Interviewee 3: Mr Lucas Jangara, Group Finance Manager of Siltek Distribution Dynamics (Private) Limited.