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INFLATION - A STUDY OF ITS EFFECTS, AND THE ACCOUNTING AND MANAGEMENT RESPONSES DEVELOPED BY AMERICAN COMPANIES IN THE PERIOD 1985 TO 1987

DAVID J BENATAR

JOHANNESBURG 1991

INFLATION - A STUDY OF ITS EFFECTS, AND THE ACCOUNTING AND MANAGEMENT RESPONSES DEVELOPED BY AMERICAN COMPANIES IN THE PERIOD 1985 TO 1987

DAVID J BENATAR

A DISSERTATION SUBMITTED TO THE FACULTY OF COMMERCE, UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG, IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF COMMERCE

JOHANNESBURG 1991

ABSTRACT

INFLATION - A STUDY OF ITS EFFECTS, AND THE ACCOUNTING AND MANAGEMENT RESPONSES DEVELOPED BY AMERICAN COMPANIES IN THE PERIOD 1985 TO 1987

BENATAR, David J, B.Com (Rhodes) CA (SA)

This study examines some of the history of the phenomenon of inflation, and its effects on business operations and financial results. It reviews the traditional accounting methodologies to account for the effects of inflation and their strengths and weaknesses. It further examines attitudes and accounting and management responses developed by large American companies in their attempt to manage the effects of inflation in their businesses in the period 1985 to 1987. These American companies were required to apply two of the most common inflation accounting methodologies in their annual financial statements in the period 1979 through 1984.

A questionnaire was sent to this population of American companies. The aim of the questionnaire was twofold. Firstly, to broadly determine the accounting practices, if any, used by these companies in accounting for the effects of inflation. Secondly, to determine whether or not these methods of accounting for inflation, in their opinion, produced information that was useful to management. The responses to the questionnaires indicated that a number of companies made price-level adjustments to historical information: ranging from simple adjustments to integrated inflation accounting systems. The responses also indicated a greater level of support for price level adjustments based on specific price changes.

Case studies were performed on three American companies that had developed integrated accounting and management responses to inflation. The case studies revealed that the greatest benefits from inflation accounting were derived when it was built into the internal management information systems and corporate culture, as opposed to being used in an annual exercise for disclosure in the financial statements. The major benefits of this internal methodology were perceived by the management of the case study companies to be:

- focusing on the balance sheet as opposed to the income statement;
- concentrating on cash flows;
- strong working capital and asset management.

These are common-sense, general management principles, which gain increasing importance as the inflation rate rises. Current Cost Accounting was perceived as provided accounting information which assisted the case study management teams in making better-informed management decisions.

In order to determine whether or not the experience of American companies applies to companies in South Africa, similarities and differences between America (in the period 1985 to 1987) and South Africa (in 1990) are discussed. The similarities included such factors as the internal and accounting control systems, and the rates of inflation.

DECLARATION

I declare that this dissertation is my own, unaided work. It is being submitted for the degree of Master of Commerce in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University, nor has it been prepared under the aegis or with the assistance of any other body or organisation or person outside the University of the Witwatersrand, Johannesburg.

DAVID J BENATAR

K G DILTON (Prof)
Supervisor

2nd day of December 1991.

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DAVID J BENATAR

K C DILTON-HILL
Supervisor.

2nd day of December 1991.

CONTENTS PAGE

LIST OF TABLES AND GRAPHS vii

KEY TO ABBREVIATION ix

PREFACE xi

CHAPTER ONE – INTRODUCTION

1.1 An overview of inflation 1

1.2 Why was this project undertaken? 2

1.3 Research questions 10

1.4 Justification for performing research in the USA 11

1.5 Research methods 14

1.6 Research findings 16

1.7 Overview of the remaining chapters 17

CHAPTER TWO – LITERATURE SURVEY

2.1 Introduction 18

2.2 Concepts in accounting for inflation 33

2.3 Review of different inflation accounting methodologies 36

2.4 Review of international inflation accounting practices 49

CHAPTER TWO – LITERATURE SURVEY (continued) PAGE

2.5 Review of South African inflation accounting practices 56

2.6 A figured comparison of HCA, CCA and CPP 63

2.7 Equating inflation accounting with cash flow 83

2.8 Update to the Literature Survey, 1987 through 1991 95

2.9 Parallels and dissimilarities between the circumstances in the United States (1985 through 1987) and South Africa (1991) 99

CHAPTER THREE – RESEARCH METHODOLOGY

3.1 Introduction 112

3.2 Development of the research questions 112

3.3 Research methodology approach 118

CHAPTER FOUR – RESEARCH FINDINGS AND DISCUSSION OF RESULTS

4.1 Summary of responses by questionnaire question 136

4.2 Relating questionnaire responses to the research questions 150

4.3 Case studies 170

- American Standard 172
- FMC Corporation 186
- Bergen Brunswig Drug Company 200

PAGE

4.4 Relating case studies to the research questions 210

CHAPTER FIVE - CONCLUSION

5.1 The timing of the project and the validity of the research data 218

5.2 Major conclusions derived from research findings 218

5.3 A summary of how the research findings answered the research questions 221

5.4 Parallels and dissimilarities between circumstances in the United States of America and South Africa 230

5.5 Areas for possible further research 230

BIBLIOGRAPHY 233

APPENDICES

APPENDIX ONE:
"Inflation Accounting - An International Survey"
D J Benatar and R A Fryer, Accountancy SA April 1986

APPENDIX TWO:
"Inflation Accounting - The Link between CCA and Cash Flows"
D J Benatar and R A Fryer, Accountancy SA April 1987

APPENDIX THREE:
A letter from the Financial Accounting Standards Board enclosing the FASB statement no. 33 mailing list

APPENDIX FOUR:
A fold out summary of the questionnaire and the research questions

LIST OF TABLES AND GRAPHS PAGE

1.1 Table of some of the major causes of inflation 2

2.1 Graph of the United Kingdom inflation rate 1676 through 1982 22

2.2 Graph of the South African inflation rate 1900 through 1982 23

2.3 A summary of international inflation accounting methodologies 47/48

2.4 Table of international inflation rates for the years 1985 through 1989 55

2.5 A summary of certain South African inflation accounting practices in 1985. 60/61

2.6 Table to show the effects of inflation on reported earnings (losses) per share of South African companies - 1985 62

2.7 Graph of American and South African inflation rates as measured by the CPI in the period 1975 through 1989 105

2.8 Graph of American and South African interest rates as measured by the prime bank overdraft rate in the period 1975 through 1989 106

PAGE

2.9 Graph of American inflation and interest rates in the period 1975 through 1989 107

2.10 Graph of South African inflation and interest rates in the period 1975 through 1989 108

3.1 Correlation of research areas and the questionnaire 123

3.2 Correlation of the research questions and the questionnaire questions 124

KEY TO ABBREVIATIONS

AFS	Annual financial statements
APC	Accounting Practices Committee
AS	American Standard Inc
BBDC	Bergen Brunswig Drug Company Inc
CC	Current cost
CCA	Current cost accounting
CFROI	Cash flow return on investment
COSA	Cost of sales adjustment
CPI	Consumer price index
CPP	Constant purchasing power accounting
DA	Depreciation adjustment
ED	Exposure draft
FA	Fixed assets
FMC	FMC Corporation
GA	Gearing adjustment
GL	General ledger

KEY TO ABBREVIATIONS (continued)

GNP	Gross national product
HC	Historical cost
HCA	Historical cost accounting
IA	Inflation accounting
IASC	International Accounting Standards Committee
MIS	Management information system
MWCA	Monetary working capital adjustment
NBV	Net book value
PAD	Provision for accumulated depreciation
PBT	Profit before taxation
RE	Retained earnings
ROCE	Return on capital employed
RONA	Return on net assets

PREFACE

BACKGROUND

The research into the project began in March 1985. At this time, inflation had already been at relatively high levels in South Africa for some time, and its effects were having serious effects on the economy. What began as an investigation into the effects of inflation on the operations and results of companies, (for the Deloitte Haskins & Sells (DH&S) Technical and Research Division), became this dissertation into the effects of inflation and how its effects could be best accounted for.

The author was seconded to DH&S in Dallas from October 1985 through March 1987. Research and work on the initial thesis drafts was continued until December 1989 and the dissertation was completed in 1991.

Although there is some time differential from the time the research data was gathered in the USA culminating in March 1987, it is submitted that the research findings and conclusions are still valid. The major support for this contention is that the rates of inflation in the USA and in SA have not changed in any large measure from the time the data was gathered to the time that the thesis was completed. It is further submitted that the parallels that existed between the situation in SA today, as analysed in more detail in Section 4.6 of the research findings, provide further support for the validity of the data and the findings and conclusions. It is considered that these contentions are valid, even though the research and the related findings are "frozen" in the period 1985 through 1987.

A number of observations in the dissertation are based on the author's personal experience in the USA, which included eighteen months of auditing American companies, performing the case studies, discussions with US auditors, accountants and businessmen, and a wide range of readings.

Publications

The research also led to the publication of two articles in the local professional press. These are included as Appendix One "Inflation Accounting - An International Survey" and Appendix Two "Inflation Accounting - The Link Between CCA and Cash Flows" published in the April 1986 and April 1987 issues of Accountancy SA, respectively.

Interviews and assistance

Several world authorities on inflation accounting were interviewed. These interviews were not structured on a formal basis to produce research findings, but were rather intended to discuss the individuals' views and theories on inflation accounting (IA) and its effects, and to discuss the proposed approach to this thesis. The individuals consulted were:

- Professor Stephen Zeff - Rice University, Houston
- Professor Edward Bell - Rice University, Houston
- Doctor Adolf Enthoven - University of Texas at Dallas
- Professor Hein Redelinghuys - University of Port Elizabeth.

In addition, much assistance and advice was received from :

- Professor Mike Pratt - University of the Witwatersrand
- Professor Kevin Dilton-Hill - University of the Witwatersrand
- Professor Rob Jackson - Rhodes University
- Rob A Fryer - National Technical Partner - DH&S
- Chris F Wells - National Technical Partner - DH&S
- Anita Clifton - National Librarian - DH&S.

Deloitte Haskins & Sells

In preparing the "International Summary of Accounting Practices" developed to counter the effects of inflation, a country by country summary of accounting statements was developed.

The co-operation of international Deloitte Haskins & Sells offices in verifying the accuracy of these summaries is much appreciated.

A figured comparison

The concept of making a figured comparison between historical cost accounting (HCA), CCA and CPP was developed from an unsubmitted thesis prepared by S Farber. The CCA methodology was based on generally accepted accounting practice per Statement AC 201 and the CPP methodology was based on general CPP methodology with the structure adopted from Stickler and Huchins (1975).

Case studies

I would like to thank the management of the case study companies for allowing me to visit their companies and for the time, information and access to their staff and operations that they made available to me.

The Financial Accounting Standards Board

I would like to thank the Financial Accounting Standards Board (FASB), and in particular Messrs J Leisenring and B Willis, for making the FASB mailing list for FASB Statement No. 33 available to me.

It is not normally the FASB's policy to make such information available, but they decided that the information (i.e. the companies complying with the disclosure requirements in terms of size, and their addresses) could all be obtained from public sources. Obtaining this information from public sources would have been an extremely difficult task given the length and nature of my stay in the USA, so I am extremely grateful to the FASB for their assistance. The covering letter for the mailing list is presented in Appendix Three.

And finally, my great thanks to Wendy-Anne Robinson and Val Burke whose consumate typing and editing skills were a constant source of support.

CHAPTER ONE - INTRODUCTION, OVERVIEW AND SUMMARY OF FINDINGS

This chapter starts by identifying the nature of inflation and its impact in South Africa, and its debilitating effect on businesses. Questions addressed by this research are identified as is the unique population of large businesses with experience in applying inflation accounting principles. Thereafter the research methods are described and a summary of the research methods is presented. The chapter concludes with an overview of the remaining chapters of the dissertation.

1.1 AN OVERVIEW OF INFLATION

Inflation can be described as a progressive increase in the general level of prices, or conversely it is a general debasement in the purchasing power of money. This means that goods and services will cost more, or conversely, the same amount of money will buy you less goods and services than before. The Report of the Committee of Enquiry into the Tax Structure in the Republic of South Africa (the Margo Commission) (Republic of South Africa, 1987) broadly described inflation as tax on shareholders' capital, an appropriate description of the erosion of the purchasing power of shareholders' funds.

Increases in prices can be broken into two components, namely increases in the general level of prices and increases in the prices of specific goods. Two major methods have been developed to account for the effects of increasing prices. Current Cost Accounting (CCA) which addresses specific price increases. Constant Purchasing Power Accounting (CPP) which is based on the use of general price increases.

Inflation developed as a world-wide problem in the 20th Century and only emerged as a distinct phenomenon after the First World War.

Up until this time, prices were subject to short-term variations caused by fluctuations in supply and demand, and the Historic Cost basis of accounting was relevant. Since the First World War and the German Weimar Republic, inflation has become a spectre that has risen to haunt all countries, from developed industrial nations through to developing economies. The image of German citizens using wheelbarrows to carry their virtually worthless currency is one that still plagues us today. From that time, the apparition of inflation has re-emerged. Countries such as Brazil, Argentina, Chile, Mexico and Israel have been badly affected with their inflation rates soaring into triple figures (the so-called problem of hyper-inflation).

The causes of, and contributors to, the sustained levels of inflation have continued to multiply as circumstances have changed. The table below highlights some of the causes of inflation in recent times. A multitude of theories have been developed to try to explain the causes of inflation. These causes do not necessarily stand alone, and may impact and affect each other.

TABLE 1.1 SOME OF THE MAJOR CAUSES OF INFLATION

Acute shortages of goods with excessive demand
Excessive increases in the money supply
The general availability of credit
Sociological developments with the emergence of developed countries in the West, with increases in prices being intensified by increases in salaries and wages (and demand), without corresponding increases in productivity
Excess Government spending
The huge hikes in fuel prices, particularly oil
Governments' commitment to rapid economic growth and full employment

1.2 WHY WAS THIS PROJECT UNDERTAKEN?

Inflation has remained at high levels for a protracted period in South Africa. Yet, despite general acknowledgement of the insidious effects of inflation, the accounting profession and businesses have been unable to devise acceptable methods of accounting for the effects of inflation. The overriding purpose of this research is to determine the experience and attitudes of large corporations in the United States of America which implemented inflation accounting from 1979 to 1984 in terms of the requirements of their regulatory authorities. Their experiences, in a business environment similar in important aspects to South Africa today, can provide useful direction for South Africa to develop a meaningful response to the reporting issues posed by inflation.

1.2.1 Some of the major adverse effects of inflation

Inflation has an insidious effect on an economy and its participants, the government, companies and individuals at all levels. It is not something that can be avoided, and its effects are often difficult to minimise due to the structure and nature of the operations and activities of these various parties.

It can be argued that the major effect of inflation on individuals is the general decline in the purchasing power of money, which erodes the value of money. The individual is faced with the problem of his after-tax salary purchasing ever decreasing amounts of goods and services. If tax brackets remain constant, then even this after-tax amount becomes proportionately less through the process of the so called "bracket creep".

This means that even though one's salary or wage may be increased just to keep pace with the increase in inflation, then one will have to pay greater tax, and have less after-tax money for personal use. A bitter sweet pictorial representation of this process is presented on the following page. Salary and wage increases will only maintain the individual's standard of living if they at least equal the rate of increase in inflation. These salary and wage increases may often be linked to the Consumer Price Index (CPI) but the price increases experienced by many individuals may often vary widely from the official CPI.

Companies find that cost of sales and depreciation do not retain sufficient funds to replace assets consumed in the course of business. This is caused by the fact that depreciation calculated under the HCA concept does not recognise that the replacement cost of these assets consumed is greater than the cost recorded in the books of account. A second adverse effect of inflation is that comparability between time periods, operations and other companies is adversely affected because inflation may affect different companies in different ways. Measurement of performance is also affected as current results are matched with the increasingly outdated historical cost (HC) of fixed assets.

The government is faced with expenditures overrunning budgets due to increasing prices. There may be many side effects, such as increasing direct and indirect taxes, exchange rate and balance of payments effects, a lack of real growth in the economy and increases in input costs of production not being matched by proportionate increases in productivity.

Inflation in motion

I wonder what it feels like to push a trolley?



1983



1984



1985



1986



1987



1988

Sanlam Unit Trusts

1.2.2 The ongoing relatively high inflation rates in SA and the continued existence of the causes of inflation

Inflation rates in SA have been at high levels for a protracted period of time particularly when compared to the rates of inflation in other industrialised nations. (Please refer to Table 2.2 for a comparison of inflation rates of various countries.) This problem is complicated because it does not appear that the causes of increasing prices are being addressed adequately. (This may be evidenced by graph 2.10 comparing South African inflation and interest rates, which shows that a consistent policy of real interest rates has not been maintained, despite the continued existence of inflation.) The official inflation rate in SA, as measured by the CPI, has been at relatively high levels for a number of years, as illustrated by graph 2.2 showing the South African inflation rate from 1900 through 1982. The period of time that inflation has been at high rates is of concern as there is an ongoing cumulative negative effect on the SA currency and the economy. This effect is intensified because the inflation rate has generally been at higher levels than the rates experienced by SA's major trading partners for an extended period of time. The cumulative effect has had a major impact on all sectors of the economy, as described in section 1.2.1 above.

This situation is exacerbated by the composition of the CPI (the official measurement device of inflation) which is based on a basket of goods consumed by the "average" person. However, due to the third world nature of the country, this CPI is not necessarily a true reflection of the inflation rates experienced by companies. In fact, if all the factors affecting prices applicable to a specific company are considered, then the true inflation rate experienced by that company may be substantially higher than the CPI.

If this is so, then the effects of inflation on that company are intensified. Factors which worsen this situation include import tariffs and surcharges, a weakening exchange rate (if the company imports goods), costs of evading sanctions and trade restrictions, and price increases applicable to specific assets. The concern about the continued high levels of inflation and the ongoing debasement of the currency may be intensified because it appears that the economic and political factors contributing to these sustained high levels of inflation have not been adequately addressed by the appropriate authorities. The country is therefore faced with the prospect of continued high inflation rates and there is a need for greater research into the effects of price level increases on the quality of information used by management in controlling their businesses. If high inflation rates are to be a continuing feature of the economy, there should be a methodology to account for its harmful effects.

1.2.3 Lack of direction from the regulatory bodies

The relevant financial regulatory bodies in SA have not been able to reduce the inflation rate to single figures, or to bring it into line with the rates being experienced by SA's major trading partners. The official policy in the past often appeared to be to downplay the effects of inflation, but there has been increasing public awareness of its harmful effects and the related lack of productivity. Problems in this area have been compounded by the fact that the authorities tend to comment, if at all, on the CPI and do not address the rates of price increases experienced by individual companies or industry sectors.

The regulatory bodies governing accounting practices in SA have also been guilty of not getting to grips with the accounting implications and methodology for reporting the effects of increasing prices. Whilst inflation has remained at high levels, the profession has made tentative steps to develop accounting guidelines, none of which have been mandatory. Even the most recent exposure draft (ED) "ED 77 - Disclosure of Current Value Information in Financial Statements" issued by the Institute of Chartered Accountants, is unlikely to be issued as an accounting statement. In addition, there appears to be a lack of emphasis on education in this area. Everyone agrees that inflation is a problem, but there is no concerted effort to really emphasise the dangers of inflation or to account for its harmful effects.

1.2.4 Lack of action by SA companies

It appears that the management of SA companies consider that inflation is a problem affecting their operations. However, in the absence of a mandatory statement of accounting practices, these companies have not applied inflation accounting principles in their annual financial statements, let alone in their management accounts. These comments are drawn from a review of listed company annual financial statements performed in Section 2.5 of this dissertation. All companies tend to account for inflation in some practical manner, (perhaps just in budgets and forecasts, or perhaps in a more intuitive manner in making pricing decisions), but in general, no formal accounting practices are applied, and management are not accountable to their boards and shareholders for their performance in (inflation adjusted) real terms.

1.2.5 The objectives of operating a company

The objectives of a company in business are manifold. The traditional view is that a company should provide an acceptable rate of return on funds invested in the business by the shareholders. However, a company's public responsibilities have increased, perhaps led by developments in the USA and may include repaying outside providers of finance, at least maintaining, if not expanding, the operating capacity of the entity and remaining in business, maintaining employment levels, providing salaries and wages in accordance with its respective employment codes, and accurately measuring performance and profits. (This excludes the wider social issues such as social responsibility and environmental protection programmes.) The general body of literature as addressed in Chapter Two tended to indicate that price-level adjusted data might assist a company's management in better achieving the corporation's goals.

1.2.6 The objectives of financial reporting

The major objective of financial reporting is arguably to provide information on a company's activities so that users of that data can make informed decisions. The information system should be structured so that it provides information that can best assist management to achieve corporate objectives. It is traditionally held that financial reporting should produce information that is objective, relevant, verifiable and comparable. It is submitted that in times of rising prices, Historical Cost Accounting (HCA) does not satisfy these objectives, but worst of all, does not provide USEFUL information to its users.

In conclusion it can be argued that inflation remains an issue which needs to be addressed in financial reports in order to eliminate its disturbing effects. For this reason there is good cause for conducting further research into the effects of increasing prices on historical data and research into the alternate methodologies applicable in times of increasing prices.

1.3 RESEARCH QUESTIONS

The above points and the literature survey led to a number of questions which required research:

Is inflation perceived as a problem in managing operations?

What are the major effects of inflation on the operations and results of companies?

Which is the most effective method of accounting for the effects of inflation?

What methods, if any, are used by companies in accounting for the effects of increasing prices?

Based on their experience of applying IA methods in practice, did management consider that meaningful information was being produced?

Could these IA methods be applied to produce useful information that would assist in the decision making of the users of financial information?

To provide a structure which could assist in researching and possibly providing answers to these questions, the approaches described in Section 1.4 below were adopted.

The study addresses how American companies accounted for inflation and examines a number of their perceptions and attitudes towards inflation and its effects. The following section explains why the research was performed based on the American experience. As a corollary to the project, some broad similarities between the USA and SA are examined to determine whether the research findings have any applicability to the SA situation. This does not constitute a major conclusion of the dissertation, but is rather in the nature of a post-script to the dissertation.

1.4 JUSTIFICATION FOR PERFORMING RESEARCH IN THE UNITED STATES

Corporate American experience in applying CCA and CPP

Application of the Statement of Financial Accounting Standards (FAS) 33 had been mandatory for certain American companies for the period 1979 through 1984, and the practical experience of applying CCA and CPP in annual financial statements (AFS) was still fresh in the minds of the financial and accounting community. There was therefore a unique base of IA experience and knowledge available for research. At the time the questionnaire was mailed, there were some 1,700 companies that fell within this net. These preparers of AFS therefore had experience in the practical problems in computing and preparing the data, commenting on the effects of inflation as measured by both methods, and were therefore in a good position to assess the usefulness of IA adjusted date produced by both methods.

Similar inflation rates

Inflation accounting in the USA only became mandatory after the inflation rates had been at relatively high levels for a number of years. Concern about inflation appears to be minimal when the rate remains below 10%, and is virtually non-existent when it is below 5%. Once the rate reaches double figures, then inflation becomes a much publicised problem. The American and SA inflation rates are shown in graph 2.7. It can be seen that the general trend of rates was broadly similar. American rates peaked over a five year period from 1977 through 1982, whilst the SA rates peaked over a six year period from 1980 through 1986. Both countries' rates began to increase from 1986, but the SA rates grew faster than the American rates.

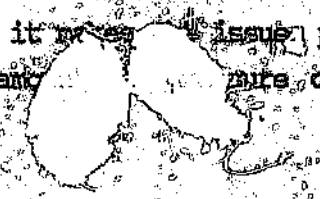
Proximity of the USA to hyper-inflationary economies

Although American inflation rates never reached hyperinflationary levels, a number of countries were being adversely affected by the effects of hyperinflation. These included a neighbour of America, countries where the USA conducted business, countries where American companies had substantial investments and countries where the USA supplied aid. Examples of these countries included Mexico, Brazil, Argentina and Israel. This led weight to the volume and urgency of the research into inflation conducted in the USA.

More advanced accounting research and financial and academic press

The American accounting profession had conducted a great amount of research into IA before FAS 33 became mandatory in 1979, and subsequently. This was enhanced by the relative sophistication of a number of the American institutions performing accounting based research, (eg universities, research foundations, accounting firms, the Financial Accounting Statements Board (FASB) etc).

In addition, the academic press is more advanced than in SA. Far more research into the topic has been performed and a lot of the debate was aired through the financial and academic press. This was also a feature of the research in the UK, where an ongoing war of words was waged between the proponents of CCA and CPP. This public debate is healthy because it stimulates research and brings the major issues to the attention of the profession, business people and members of the general public. The American financial press is far more diligent in its role as a disseminator of information. Both the American and SA systems are based on the concept of regulation by disclosure, but the volume and quality of disclosure, as well as the sense of public accountability is far higher in the USA. A useful result of the level of disclosure and debate in the USA is that it raises the issue public knowledge, and thereby creates a greater amount of pressure on the government to remedy the situation.



A number of American companies applied CCA as their primary accounting method

Literature from the UK indicated that there were companies that used IA internally to varying degrees. In addition, some research was performed by American academics on NV Phillips in the Netherlands, (Endthoven 1982). It was therefore anticipated that the responses to the questionnaires would indicate a number of American companies that used CCA as their primary method of internal reporting. This anticipation was enhanced by the mandatory nature of FAS 33 and by the fact that substitutes for full CCA were accepted and applied in the USA for both accounting and taxation purposes, including fixed asset (FA) revaluations and the last-in-first-out (LIFO) method of stock valuation.

Similarities between the USA and SA

It was considered that there were a number of similarities between American and SA conditions and the way in which inflation impacted on the operations and results of companies. These similarities are discussed in more detail in section 2.9. As noted earlier, the American and SA situations are compared and contrasted, and tentative conclusions are drawn about the applicability of IA in SA, based on the results of the research carried out in the USA.

1.5 RESEARCH METHODS

Detailed literature survey

A review of the literature was performed, and the key matters which impacted the research were summarised. In addition figured examples comparing and contrasting CCA and CPP were derived to demonstrate the methodology and results of the two methods under one specific set of assumptions. The link between CCA and cash flow was also investigated. The results of the survey of this literature raised a number of research questions which it is submitted required further attention.

Questionnaire to American companies

FAS 33 made reporting on CCA and CPP mandatory in annual financial statements for specified companies for a five year period from 1979 to 1984, inclusive. These companies therefore had experience in applying both methods, and were able to compare the results of the two methods at first hand. The FAS 33 mailing list was obtained from the FASB, and this was used as the population for the questionnaire.

The population was surveyed to test both the respondents' practical experience in applying the two methods, and to judge the attitude of the respondents when comparing the results and usefulness of the two methods.

Case studies of American companies

The questionnaire responses identified a number of American companies that applied CCA as their primary internal accounting method. Detailed case studies were performed on three of these companies:

American-Standard
FMC Corporation
Bergen Brunswig Drug Company.

These case studies were performed with several objectives in mind. A major objective was to determine that these companies would agree with the research questions. Another objective was to distill the management philosophies, attitudes and the key operating procedures that made IA an effective and useful tool for management as an internal accounting mechanism. It is considered that this adds credence to the research findings from the research questions, because it shows an orderly, logical operating and philosophical structure that provides meaningful, internally generated information for users of that information ie. the research questions were further answered by what companies were actually doing in practice, to support the "opinion" questionnaire responses.

1.6 RESEARCH FINDINGS

The literature survey resulted in certain research questions being posed, which were initially addressed by the questionnaires. The responses to the questionnaires generated the following broad set of answers to the research questions.

- Inflation is a problem

- Inflation should be accounted for internally if the inflation rate is at least above 8% (but no clear threshhold rate was established).

- Most companies use some form of inflation adjusted information internally: the uses range from informal and intuitive approaches to formal IA systems

- CCA provides more meaningful information to management than CPP

- Specific indices are preferable to general indices

- Cash flow information is useful, and there is a link between CCA and future cash flows

The case studies, performed on those companies using a range of IA as their primary accounting method, had two broad results.

Firstly, the research into the companies supported the results generated by the questionnaire responses. Secondly, the case study companies demonstrated that CCA provided meaningful internal information to management irrespective of the inflation rate. Even in times of low inflation rates, use of CCA resulted in increased productivity and above average real performance by focusing management attention on asset and working capital management, and cash flows. The conclusions which are drawn from the research findings are applicable to the USA. A number of parallels between the USA (at the time of the research) and South Africa are presented and tentative conclusions are drawn as to the applicability of the findings to the South African situation.

1.7 OVERVIEW OF THE REMAINING CHAPTERS

The remaining chapters in this dissertation are as follows:

- Chapter 2 establishes the current state of inflation accounting: the methodologies and their application in South Africa and major industrial relations. This chapter also discusses the similarities between South Africa now and the United States when inflation accounting was mandatory for large listed corporations.

- Chapter 3 discusses the research methodology employed in this dissertation.

- Chapter 4 analyses the responses to the questionnaire and sets out the circumstances of the companies selected as case studies.

- Chapter 5 summarises the research findings from the questionnaire and the case studies and identifies areas for further research.

CHAPTER TWO - LITERATURE SURVEY

SECTION 2.1 - INTRODUCTION

2.1.1 What Is Inflation, its development and causes

The Chambers 20th Century Dictionary defines inflation as "a progressive increase in the general level of prices" and as "an undue increase in quantity of money in proportion to buying power". Another, perhaps better, way of looking at inflation is to see it as a general debasement in the purchasing power of money, and Whittington (1983,p4) calls it "A decline in the purchasing power of money, due to an increase in the general level of prices". Therefore goods and services cost more, or conversely, the same amount of money will buy you less goods and services than before.

Inflation can be split into two components, general increases in prices and specific price increases. Miller has said (quoted in Maw, 1983,p6) that the relationship between these two increases is "analogous to tracing the movement of a swarm of bees. The relative movements of the individual bees in the swarm are very irregular; nevertheless the movement of the swarm as a whole is well defined". Whittington (1983,p4) also noted that a change in specific prices can be analysed into two components, namely the general increase due to changes in purchasing power, and the change in price of a specific commodity in relation to other commodities. Inflation has been one of the troublesome phenomena of the 20th Century. An examination of graph 2.1 "Graph of the UK inflation rate : 1676 through 1982" illustrates how inflation has only become a problem in the in the UK in the 20th Century.

This graph of annual average British inflation rates shows how two principles were established:

1. True supply and demand economic theory - the general level of prices remained reasonably constant, with short-term variations caused by fluctuations in supply and demand. It is interesting to note that this resulted in short-term price decreases as well as price increases.

2. The historic cost basis of accounting - this was relevant up until the First World War, as costs fluctuated within reasonable limits. The general level of prices remained constant, with specific prices altering in relation to supply and demand.

From the First World War, inflation emerged as a distinct and constant phenomenon. This is illustrated by the abovementioned graph 2.1 and graph 2.2 showing the average annual inflation rate of the South African Rand in the 20th Century. Countries such as Brazil, Argentina, Chile, Mexico and Israel have been even worse hit, with inflation rates soaring into triple figures.

There are numerous causes of inflation. These causes do not necessarily stand alone, and may impact and affect each other. The major causes include:

1. Acute shortages of goods with excessive demand, the position being exacerbated by black market trading. This is a feature of wartime conditions.

2. Excessive increases in the money supply. Too much money in the economy leads to a general debasement in the value of money. A classic example was wartime Germany, where so much money was printed it became almost worthless.

3. The general availability of credit which complements the money supply problem. This situation increases demand and allows people to spend money they do not have and live beyond their means.

4. Sociological developments with the emergence of developed countries in the West. In terms of the Maslow-type hierarchy of needs, people no longer need to satisfy basic desires, but can focus on higher wants and desires. Expectations of wealth, luxury and social class contribute to inflation, and may result in a "cost-push" effect on prices, caused by ever-increasing salaries and wages and expectations of increased salaries and wages.

5. Excess Government spending and price fixing above the inflation rate. This has been seen in America, and in SA, particularly with the Control Boards.

6. The huge hikes in fuel prices, particu[illegible] oil. This was mainly caused by OPEC quadrupling oil [illegible] in 1973, and the second major oil price shock in 1979, coinciding with the Iranian revolution.

7. The commitment of g[illegible]rnments to rapid economic growth and full employment. [illegible] is often a feature of developing third world economies.

8. Price increases may be used by companies to cover a number of sins, (overpayment of labour, lack of productivity, overstocking, poor credit control and debt management, etc.).

9. The evolution of sophisticated banking systems and high levels of government expenditure has increased the capacity and the incentive for governments to inflate currency. Whittington (1983,p60).

GRAPH 2.1

GRAPH OF THE UNITED KINGDOM INFLATION RATE 1676 THROUGH 1982

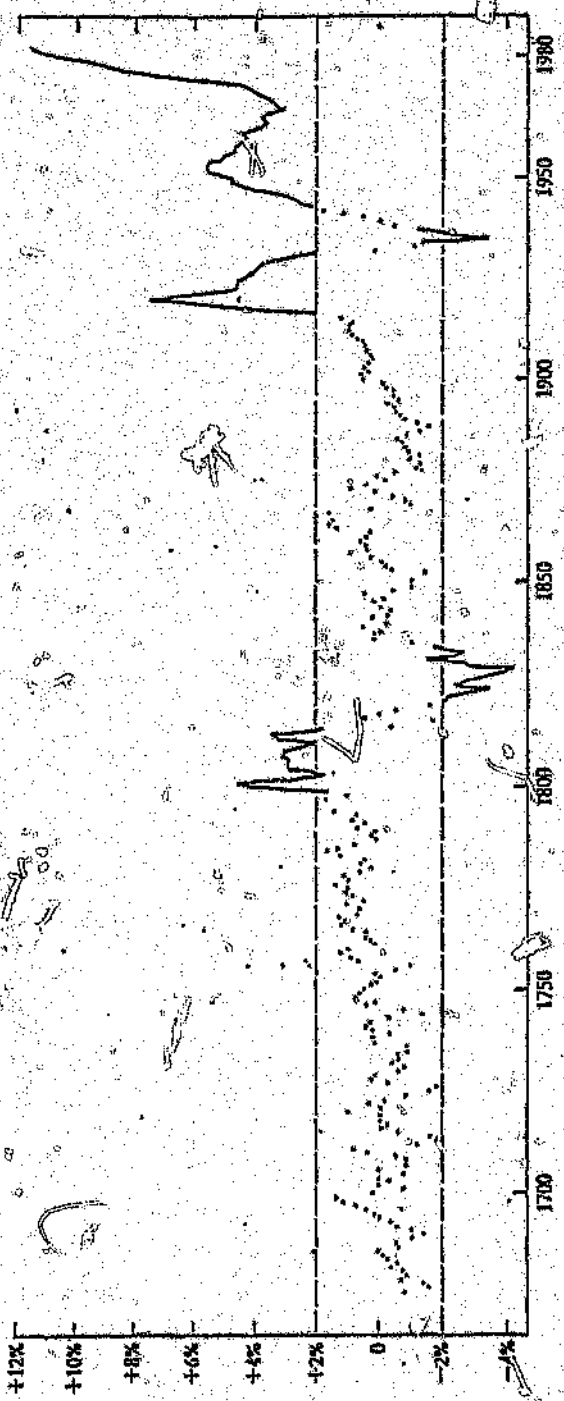
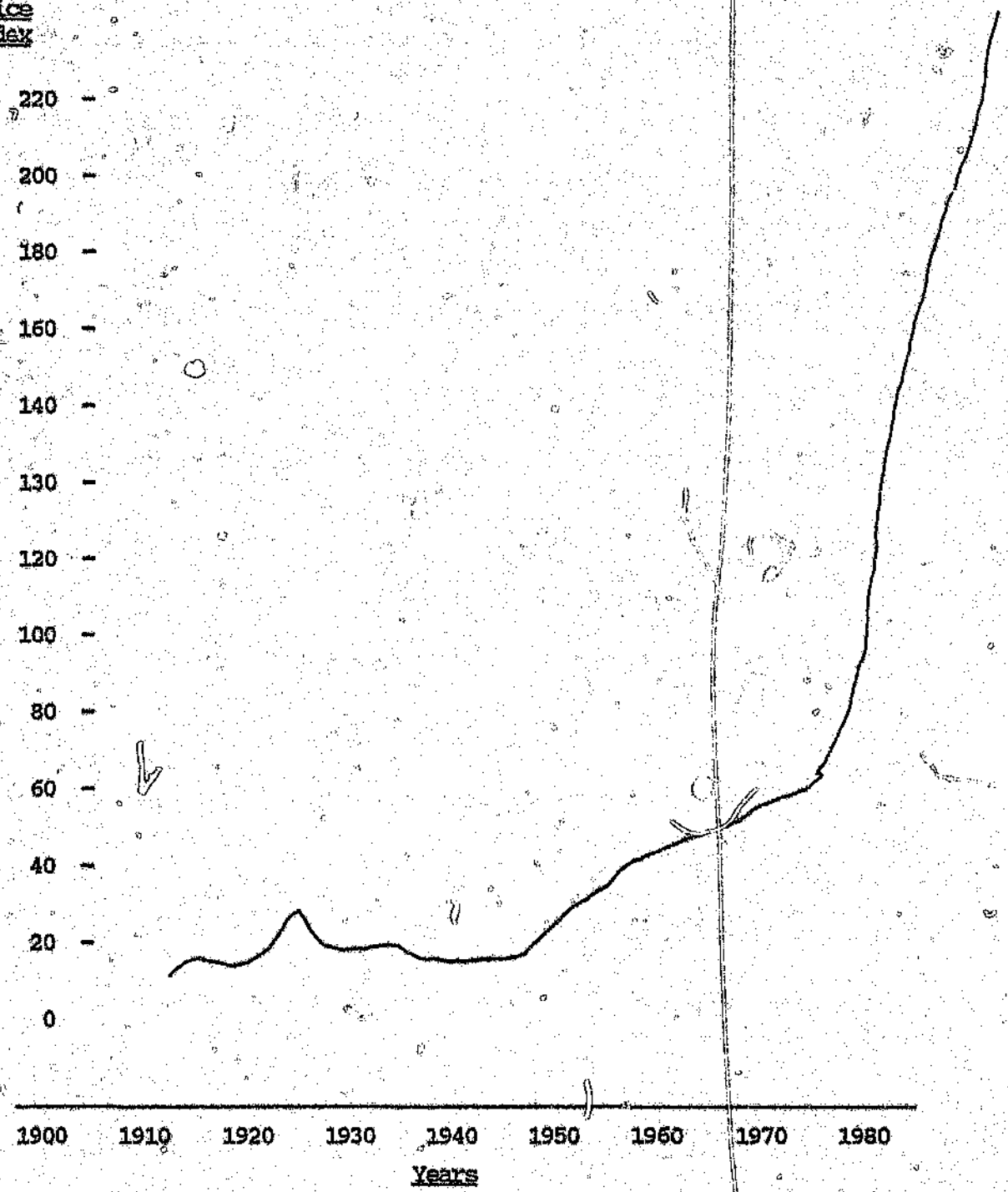


Fig. 1.2 Annual average inflation rates over fifteen-year periods, 1676–1982 U.K.

Sources:
1661–1814 Schumpeter-Gilboy, 1800–44 Rousseaux, both taken from B. R. Mitchell (with Phyllis Deane), *Abstract of British Historical Statistics*, Cambridge University Press, 1971, pp. 468–72.
1870–1965 from C. H. Feinstein, *Statistical Tables of National Income, Expenditure and Output of the UK 1855–1965*, Cambridge University Press, 1972, Table 61, pp. T132–3
1951–82 from Retail Price Index (average for calendar years).

This startling graph was taken from Professor D R Middelton's book "On a Cloth Untrue"

GRAPH 2.2
GRAPH OF THE SOUTH AFRICAN CONSUMER PRICE INDEX (INFLATION RATE) 1900 THROUGH 1982 (1975 = 100)



In conclusion, it may be submitted that inflation, or increasing prices, developed from a variety of factors and has taken on a troublesome persona, and has arisen as a problem facing businesses and therefore accounting in the 20th Century.

2.1.2 Concepts of Income

In studing the effects of changing prices and IA, it is necessary to have an understanding of the basic concepts of income. There are several concepts, depending on which discipline is making the definition. Some of the major concepts are discussed below.

The economic concept of income

The best known economic concept of income is that developed by Hicks and is known as the Consumption Concept of Income. For convenience, extracts from this famous definition have been quoted from Whittington (1983,p31).

"The most widely quoted economist's definition of income is that of Hicks (1946) who offers three definitions:

(1) 'Income No.1 is .. the maximum amount which can be spent during a period if there is to be an expectation of maintaining intact the capital value of prospective receipts (in money terms).'

(2) 'Income No.2 ... (is) ... the maximum amount the individual can spend this week, and still expect to be able to spend the same amount in each ensuing week.'

(3) 'Income No.3 must be defined as the maximum amount of money which the individual can spend this week, and still expect to be able to spend the same amount in real terms in each ensuing week.'

Hammans et al (1977,p7), summarises and quotes Hicks (1939), p.172) as follows:

"... the purpose of income calculation in practical affairs is to give people an indication of the amount which they can consume without impoverishing themselves." and

"... it would seem that we ought to define a man's income as the maximum value he can consume ... and still expect to be as well off at the end .... as he was at the beginning. Thus, where a person saves, he plans to be better off in the future; when he lives beyond his income, he plans to be worse off. Remembering that the practical purpose of income is to serve as a guide for prudent conduct, I think it is fairly clear that this is what the central meaning must be."

Consumable income, as defined above, is the amount that can be distributed during a period so that the capital value of the owner's interest at the end of the period is equal to that at the beginning. The actual distribution can occur at any moment during the period, or at the beginning or end of that period. This is so because this concept of income relies on perfect foresight. At any point, whether during the period or at its opening or close, the capital value of the owner's interest can be determined by discounting known future benefits at a known rate.

In addition, economists tend to define the value of assets in terms of the present value of the discounted future profits or cash flows (earnings streams). This is seen as interest earned on the capital value of the entity at the beginning of the period.

This economic concept of income is presented in some detail because it has a general level of acceptance of being a sensible definition. It provides a sound basis for progressing to the nominalistic and substantialistic concepts of income, which provide a base for CPP and CCA respectively and are addressed in the following sections.

The nominalistic concept of income

Accountants have sought to maintain equity by matching HC income and expenses, and by using the HC of assets. Hamman et al (1977,p2) note that this is a nominalistic approach, which is represented by a "Money-Goods-Money" cycle. This concept includes the CPP approach because it recognises the necessity of maintaining the real capital value of the investment. It is sometimes referred to as the accounting concept of income. The major criticisms of this approach are similar to those levelled at HCA in times of rising prices because it fails to recognise changes in the values of assets and of changes in the purchasing power of money and therefore does not recognise true distributable income. The accounting concept of income is based on four fundamental principles (prudence, matching, consistency and going concern) but it ignores the principle of valuation.

The substantialistic concept of income

This recognises that the assets of the undertaking have to be maintained, and incorporates the development of the replacement value approach developed in the Netherlands.

Redelinghuys, (1977,p4) notes that this is a "Goods-Money-Goods" approach, where profits can only be recognised once assets have been maintained. This concept incorporates the CCA approach because it recognises that profits depend on the replacement of assets consumed in the course of business.

2.1.3 Historical Cost Accounting

This is a method suited to recording data factually and objectively in times of stable prices and accounting is done in a monetary unit, regardless of the changes in the purchasing power of that monetary unit. Historic revenues and expenses are matched and there is no major price impact on asset valuation. It allows comparibility between companies. Taxation is entrenched in the historical cost system and this can be a problem where "fiscal drag" from price increases results in higher taxation payments without necessarily increasing volumes of units sold. Some of the shortcomings of HCA in times of rising prices have been highlighted in the examples in the previous section and some additional problems are detailed below:

- HCA is objective, but this objectivity is distorted by the accrual and allocation system. (A defense is that cash accounting is objective, and HCA is simply cash accounting which has been smoothed out by the accrual system. This defense can also be applied to CPP, and particularly to CCA, which it is felt provides the closest approximation of future cash flows, of the three methods.)

- It also does not allow comparability between periods due to changes in the value of money over time.

This concept is similar to treating different time periods as different countries, and the differences in the value of money arises as a kind of "exchange rate" difference.

- It does not recognise holding gains on net monetary liabilities or the loss incurred in holding net monetary assets. As the purchasing power of money changes so it is more or less profitable to hold net monetary assets or liabilities.

- It ignores the real (and sacrifice or replacement) values of assets. HCA records the values of assets at their original costs. The longer the lives of these assets, and the greater the rate of increase in prices, the larger the discrepancy between asset costs and their "real" values.

- The most serious problem is that HC profits may be overstated if the company is attempting to maintain its operating capacity. HCA does not provide the mechanism to measure what income can be distributed in times of rising prices. Therefore dividends declared may result in insufficient funds being retained to replace operating assets; that is, the dividends are being paid out of capital, thereby reducing the company's operating base and its longer term ability to continue in business.

In conclusion, it appears that HCA has some deficiencies in times of increasing prices.

2.1.4 The Effect of Inflation on Financial Reporting

A major purpose of financial reporting (both in external annual financial statements, and internal management accounts) is to provide meaningful information to the various users, to assist them in the decision-making process. The basis of financial reporting is historical cost accounting (HCA), whereby a transaction is recorded at its actual cost. (HCA is addressed in the above section.) It is easy to apply and is factual however, the basis of HCA becomes questionable in times of inflation when prices are not stable. HCA records an event objectively and factually, but it does not take the going concern and operating capacity principles into account in times of increasing prices.

This can be illustrated by the following simple examples:

EXAMPLE ONE

A piece of machinery originally cost R 100 000. This machine is depreciated over its useful life on the HC basis. At the end of its useful life, an amount of R100 000 (less any residual value) will be retained through the income statement by way of depreciation. However the machine may now cost, say, R250 000 to replace. Therefore to maintain its existing operating capacity the company must find an additional R150 000 to finance the replacement plant. This is an example of how any increase in a specific value affects a single fixed asset.

EXAMPLE TWO

Stock		R
Original cost of stock		100
Stock sold for cash		150
Historical cost profit		50
Replacement cost of stock items		130
	R	
Cash available to replace stock: received	150	
Less tax 50% x R50	(25)	
Less paid out as dividend (assuming three times dividend cover)	(8)	
	117	
Add portion of general price increase funded by current liabilities	3	120
Extra amount needed to replace stock		10

Note a CPP gearing type adjustment would result in a gearing adjustment of R3 and a net shortfall of R10 (which is theoretically correct). However, in practice, on CCA principles and cash flows, R13 is actually required to replace the stock consumed.

This example highlights the effect of specific price increases on inventories, on operating results and cash flows, and also illustrates how the use of CPP may produce different results and conclusions.

EXAMPLE THREE

Sales	X1 R		X2 R		X3 R		X4 R		X5 R
Consumer Price Index	100	(+ 0%)	100	(+ 5%)	105	(+10%)	116	(+15%)	133
Annual sales	100	(+10%)	110	(+10%)	121	(+10%)	133	(+10%)	146
Inflation adjusted sales	100		110		115		115		110
Real annual growth			10		5		-		(5)
Inflation			-		6		12		18

NOTES:

1. Annual sales are compounded at 10% per annum.

2. The rate of increases in prices, the CPI, increases from less than that of the sales annual increase (in the year X1) to a greater rate of increase (in the year X5) to illustrate the effects of inflation on reported results. The relationship between the rate of increase of prices and sales is detailed below:

in X2 where there is zero inflation, all of the sales increase is a real increase, and the company has increased its market share by 10%.

in X3 where prices rise by 5% only around half of the sales increase is an increase in volume, and the balance represents the inflation of prices.

in X4 where the rate of increase of the CPI equals the rate of increase in sales, it can be seen that there is no increase in the physical volume of goods sold and the whole increase in sales is due to inflation.

in X5 where the rate of price increases exceeds the increase in sales the insidious effects of inflation can be observed. Sales have increased by 10%, from R133 to R146. However, the general price index has risen by 15%. In real terms, this means that sales volumes have actually fallen, and the company is worse off (with a decrease in actual market share), even though HC sales show an increase.

This example illustrates that the company's increase in sales should at least match the inflation rate, just to maintain the existing physical level of sales, (all other aspects being equal).

The above three examples illustrate some of the shortcomings of reporting under HCA when prices are increasing. The physical volume of sales has actually dropped and the company has sold less units than it did in the prior period but this fact has been masked by the increase in prices. Management may not even be aware that the situation is deteriorating and could therefore compound their problems. In an extreme case, thinking that sales are increasing, budgets and sales forecasts could be based on the incorrect assumption of increasing sales volumes. To cater for this, management could buy more stock, expand the sales staff and so on, which in a time of decreasing sales volumes, will lead to overstocking, an excessive overhead structure, and will greatly increase the risk of a cash flow crisis in the business.

HCA reports a factual, objective position but it does not take the OPERATING CAPACITY of the entity into account in times of rising prices (which is illustrated by the above three examples).

The objectives of a company in business are manifold and some of the more important objectives are detailed below. These objectives were ascertained from the review of listed companies' annual financial statements during the research into section 2.4. These include providing a reasonable return on shareholders' funds, repaying and servicing debt, and to remain in business by maintaining or expanding the operating capacity. Corporations also desire to accurately measure performance and profits, to maintain employment levels and comply with their employment codes.

The major objective of financial reporting is to provide information on a company's activities so that users of that data can make informed decisions. The management information system (MIS) should be structured so that it provides information that can best assist management to achieve the corporate objectives. It might be argued that financial reporting should produce information that is objective, relevant, verifiable and comparable. HCA, in times of increasing prices, does not necessarily cater for these objectives and may not provide useful information to its users. To overcome this, a number of methods of accounting for both general and specific price increases have been devised. These methods are discussed in the following section.

This section has summarised certain operating objectives of companies and certain financial objectives for MIS. The examples illustrate that HCA may result in the production of misleading information in relation to operating results, asset values and cash flows in times of increasing prices. This section reinforces the conclusion raised in Section 2.1.1 that inflation is indeed a problem. As a second conclusion, it reveals that the use of HCA for internal accounting purposes may not be completely relevant in times of increasing prices, and that this problem of inflation should be accounted for in the internal accounting and information systems. Although these two conclusions have been recognised, this study did not conclude at what threshhold inflation rate these issues should be recognised and accounted for internally (although the problem was addressed by research question one). It is submitted that this question is an issue meriting further research.

SECTION 2.2 - CONCEPTS IN ACCOUNTING FOR INFLATION

There are two broad concepts used in accounting for inflation being the proprietary and entity concepts. Certain hybrid methods which incorporate elements of both concepts have also been developed.

The Proprietary Concept

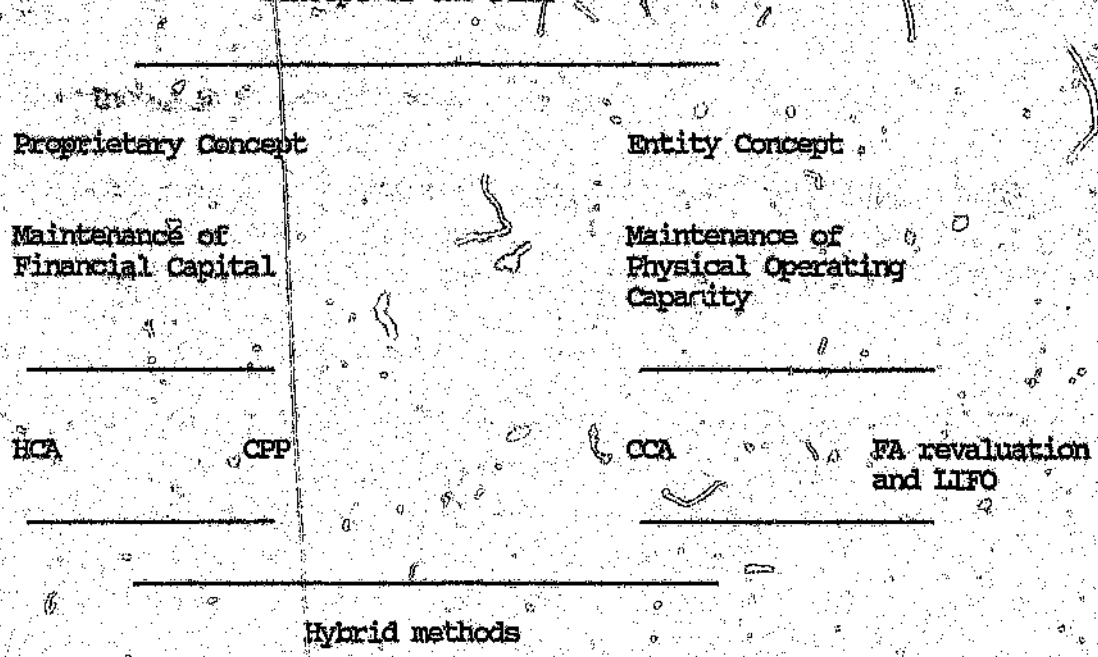
The company is regarded as an investment of the equity shareholders, and capital is therefore maintained by preserving the shareholders' initial monetary investment in the enterprise. Whittington (1983,p.9) defines it as follows: "This (proprietary concept) views the business as a financial fund administered by management for the benefit of the proprietors, who provide the finance. On this view, the objective of the business is not to maintain its productive capacity, but to maximise the wealth of the proprietors, and a profit is an increase in the wealth of the proprietors." Two accounting methodologies fall under this concept, namely HCA (which maintains the historical cost of the capital invested on a nominal basis), and CPP (which maintains the constant purchasing power of the shareholders' funds invested).

The Entity Concept

The company is seen as a separate entity and maintenance of capital is aimed at maintaining the physical operating capacity of the entity.

The accounting methodologies which fall under this concept are CCA (which maintains the productive capacity of the entity by ensuring that sufficient funds are maintained to replace the operating assets), fixed asset revaluations and the LIFO method of valuing stock. (These last two methods can be used as a substitute for CCA as their results may approximate the results generated by the use of components of CCA). The entity concept is rooted in the replacement value theory developed in the Netherlands. Hammans et al (1977) acknowledge Theodore Limperg as the original architect of this theory. The two basic concepts to his theory were that assets are financed by equity, therefore price increase gains are not income, and that income must be determined so productive capacity is maintained, without recourse to additional capital (equity or borrowings).

H J van de Schroeff continued Limperg's work and introduced the concept of a gearing adjustment whereby cognisance was taken of the effect of price changes in the net monetary asset or liability position of companies. Maw (1983,p7) presents this diagrammatic summary of the concepts and methodologies (which has been slightly amended for the purposes of this discussion).



The Hybrid Approach

Some methodologies have been developed which incorporate elements of both concepts, and include the "Current cost/constant dollar" method, which combines CCA and CPP by accounting for general and specific price changes.

2.3 REVIEW OF DIFFERENT INFLATION ACCOUNTING METHODOLOGIES

2.3.1 Current Cost Accounting

One fundamental assumption must exist before CCA can be applied: assets consumed in the course of business will be replaced. This is intrinsic to the entity concept where the operating capacity of an operation is preserved.

Income Statement Effects

CCA methodology incorporates three adjustments which impact the income statement and determine the current cost operating profit, and these are:

- The Cost of Sales Adjustment (COSA) which accounts for the cost of stock at the value to the business at the time of consumption;

- The Depreciation Adjustment (DA) which is based on the replacement costs of fixed assets consumed in the course of business; and the

- The Monetary Working Capital Adjustment (MWCA) which accounts for losses or gains on financing operations through holding net monetary working capital assets or liabilities (and is largely driven by accounts receivable and accounts payable).

A fourth adjustment, the Gearing Adjustment (GA) may reduce the above adjustments to reflect the holding gains of financing operations through a net monetary liability position, (or may show the cost of holding net monetary assets).

Balance sheet effects

The major impact of CCA on the balance sheet is generally the revaluation of fixed assets, particularly plant and equipment and land and buildings. This is caused because these assets are normally relatively large in numerical terms and because they may have been owned by the company for long periods of time. These fixed assets are therefore shown at realistic amounts and give a better indication of the intrinsic value of the business. Stocks are also shown at their CC, but the impact is generally lessened by the fact that inventories tend to turn over on a regular basis, and their cost is therefore closer to their real value. The double entry accounting system results in the creation of a current cost reserve which shows the difference between the original HC of assets and their net CC.

Benefits of CCA

Firstly, a benefit of CCA can be seen in the income statement, where there is a better matching of current costs (the amount the firm would have to pay currently to obtain the good or services) against current revenues, and true management performance can be measured by eliminating holding or inflationary gains. Generally CCA is a better performance measure, via return on capital employed. Capital is stated at net current values and CC income is a better reflection of performance in times of increasing prices. This measure shows how well management has controlled the "real" assets of the undertaking in an inflationary environment.

A fourth benefit of CCA is related to asset values, which may often result in conceptual and practical support for CCA. This is because CCA uses the specific price increases that are relevant to an operation, and does not assume that the CPI is a generally relevant measure. In practice, the specific price increases applicable to an entity may be very different from the rate of price increases reflected by the CPI.

Disadvantages of CCA

Inflation represents an increase in the general level of prices. CCA accounts for specific price movements, and ignores the general price trends. This may also lead to a lack of comparability between years because no adjustment is made for general price increases.

As prices increase, the value of stock on hand increases. Holding gains are eliminated by the COSA which may disguise good management purchasing activities. (A figured example is examined in Section 2.4). Although CCA has the advantage of using specific cost indices, there may be some practical difficulties in physically revaluing assets and there is an element of subjectivity involved in the selection of indices and replacement costs.

A disproportionately high tax charge is reflected in the income statement, as tax is levied on historical cost profits (and Revenue authorities are not generally sympathetic to the adoption of inflation adjusted figures. This is caused both by the fact that the accounting profession and companies do not apply a mandatory IA methodology and because the bracket creep and increase in company tax revenue induced by inflation is welcomed by a Fiscus that is not noted for controlled government expenditures.

This may result in a lower reported profit figure, which may cause the price of listed shares to decrease. (Of the major IA methods, CCA may often have the largest adverse impact on reported profits). Another disadvantage of CCA is that the costs of preparing CC information are perceived to be high. However, this is generally a once off cost, and once a methodology is in place, the ongoing costs should not be substantial.

2.3.2 Methods approximating components of CCA methodology

Certain accounting practices may be applied whose results approximate the results of applying components of the CCA adjustments. These may be practical to apply due to the composition of a company's assets or its existing accounting practices. Certain of the more popular "substitute" practices are addressed below.

Fixed asset revaluations

A capital intensive company may elect to only revalue fixed assets, thereby approximating the effect of the DA in its MIS. This has the benefit that fixed assets are reflected at their true values on the balance sheet and this results in a more realistic charge to the income statement via the depreciation expense. This is an efficient means of withholding sufficient funds to replace assets at higher replacement costs, and results in a more realistic matching of revenues with the costs of producing those revenues. However, AC202 "Accounting for Fixed Asset Revaluations" admits that fixed asset revaluations are only a "partial response" to the effects of changing prices. There are two disadvantages which highlight this. Firstly, backlog depreciation and the effects of financial gearing are not accounted for.

Secondly unless assets are revalued regularly, their values may not be realistic. Therefore AC202 recommends that revaluations should be made more frequently in times of rising prices, with indices applied in the intervening periods.

Last-in first-out (LIFO)

A company with large inventory holdings and a high inventory turnover may use LIFO as a substitute for the COSA. This has the benefit that a more current cost of sales is charged to the income statement than from applying HCA, resulting in a better matching of costs with current revenue. It also better maintains the company's operating capacity.

The use of LIFO as an approximation for the COSA has several disadvantages. As with fixed asset revaluations, LIFO is only a "partial response" to changing prices (but it should be noted that a partial response is better than no response at all). On the income statement, LIFO does not reflect a true current cost although it may often present a reasonable approximation, and if LIFO stock levels are eroded, meaningless costs may be charged to the income statement. LIFO stocks on the balance sheet are undervalued because they are valued at the oldest prices. A serious disadvantage is that LIFO, as with certain other methods falling under the entity maintenance concept, is not allowed for taxation purposes (in South Africa).

Replacement value accounting

This accounting practice reflects specific price level movements as indicated by changes in the replacement cost of particular assets.

It gives a more accurate depreciation adjustment thereby better maintaining the operating capacity of the company, but the costs of implementing this method can outweigh the benefits.

2.3.3 Constant Purchasing Power Accounting (CPP)

The broad theory of CPP is that HC financial data contains real and inflationary profits. CPP removes the inflationary effect by restating HC accounts to reflect changes in the purchasing power of money, generally based on a broad or general measure, such as the Consumer Price Index. CPP recognises that one cannot meaningfully compare sets of figures from different periods in times of rising prices. Due to the change in value of money the same monetary unit, at different periods, is something like a foreign currency, the exchange rate of which is fluctuating. The monetary unit must therefore be converted to the "current currency" at the balance sheet date before meaningful analysis can be made. Due to its nature, CPP is most often applicable to countries experiencing hyper-inflation, where there are not material differences between specific and general price increases, due to the large increases in all prices.

Methodology of applying CPP

- A suitable general price level index is selected that reflects changes in general purchasing power. (In theory, all enterprises in the same economy should use the same index.)

- All balance sheet items are classified as monetary or non-monetary items. Monetary items are not restated.

If non-monetary assets are carried at current values, (e.g. net realisable or market values) they are not restated. If non-monetary items have been revalued, they are restated from the valuation date.

- The current and prior year HC balance sheets are converted to year end rands. (The prior year conversion can be done in two stages, firstly converting to rands of purchasing power at the beginning of the period, and secondly to restate these balances to rands of purchasing power at the end of the year.) The difference between the converted opening and closing equity balances, (after dividends and the introduction of new capital) is the net profit or loss for the year, measured in year end rands, (Hamman et al (1977,p18)).

- The current year income statement is converted to year end rands and all items are restated in terms of the year end measuring unit. The IS will include an adjustment for the general purchasing power gain or loss on net monetary items.

- In the first year of application, non-monetary items and elements of owners' equity (excluding retained earnings) are restated, to arrive at the restated retained earnings balance.

- Comparative figures should be restated in terms of the current year year-end monetary measuring unit.

Benefits

CPP can be universally applied by a relatively simple set of techniques, and provides useful information to management, shareholders, creditors and other users of the adjusted financial data. Results are meaningful to shareholders, because income (and therefore dividends) is determined based on the CPI. The CPI is based on a general basket of goods, which the "average" shareholder will spend his returns on. (This may be less relevant in SA than in more developed nations.) In addition, CPP can be used if general price levels increase or decrease and the method actually accounts for inflation, i.e. the increase in the general level of prices. Another benefit is that accounting disclosure is simplified because CPP uses the same format as the HC accounts. It maintains the objectivity of the HC base as no new assumptions are introduced. Its objectivity is enhanced by a focus on historical events (because it does not make future assumptions as CCA does).

In the income statement, monetary units are comparable over time, and comparability between time periods and companies is achieved. Costs and revenues are matched in monetary units of constant purchasing power. On the balance sheet, CPP effectively quantifies the effects of holding net monetary items in inflationary times. The use of CPP does not prevent the use of asset revaluations.

Disadvantages

A major general criticism of CPP is that it maintains the nominal value of shareholders' equity, rather than the operating capacity of the entity.

It is generally a modification of the HC nominalistic approach which means that CPP does not provide relevant information in respect of likely future cash flows because it does not account for asset replacement. Another major concern in the UK, (manifested in the Sandilands Report) was that CPP would add to the inflationary cycle by linking accounts to the increase in general prices, and this in turn might lead to indexation of taxes, wages and other contracts and transactions. It is also considered that the use of a general index is arbitrary and potentially misleading and CPP does not recognise the specific price changes to which all businesses are subject.

True current values of assets on the balance sheet are not given, (only to the extent that the CPI relates to the actual price increases). A further balance sheet problem is that classification of monetary items and equity can be difficult (e.g. deferred taxation balances, preference shares, deferred income). Each item of stock should be separately valued. In practice however, stock items could be allocated into groups and average turnover ratios applied. Hamman et al (1977,p29) note that there are additional costs in preparing CPP data and restating prior year comparatives and Hamman et al (1977,p29) continue, "The authors have found an intense resistance from spokesmen for the business community to GPP (CPP) or any other form of inflation accounting, if its application would result in an increase in net income compared to the conventional figure. Apparently they fear pressure from organised labour, and from shareholders for higher dividends." This is interesting because it was written in 1977, but it is relevant today and applies equally to CCA.

2.3.4 Current Cost/Constant Dollar Method

The general methodology of this approach is that non-monetary items are stated at their current cost in the balance sheet. This increase in current costs is transferred to a "Current Cost Reserve". Gains or losses on holding net monetary items are transferred to the income statement. This method has been championed by Bell P (1982) and Edwards et al (1979) in the United States. This method has a major benefit in that it complies with the maintenance of physical capital (CCA) and financial capital (CPP), by combining the two aspects of price increases, general and specific price changes. Therefore the information produced is more useful than the other methods by themselves. However, this method suffers from certain disadvantages applicable to CCA and CCP in that it is a departure from HC accounting, it is subjective and tax is still levied on HC profits. The method may be expensive to implement but its most telling criticism is that it is perceived as very complex and confusing which may cause users to favour a less complex and expensive method like CCA. It may be perceived to mix two different methodologies (CCA and CPP) and to mix two different ideologies (maintenance of operating capacity and maintenance of the purchasing power of shareholders' funds).

2.3.5 A general comment

IA authorities generally contend that none of the above methods are wrong. HC is deficient in times of increasing prices, and all methods above may provide some meaningful information to management if prices increase. There are problems both in the capital maintenance and proprietary concepts, however the method adopted must address the needs of the users based on their specific circumstances.

In conclusion, section 2.1.3 noted certain deficiencies of HCA in times of increasing prices and this section has illustrated various methodologies, benefits and disadvantages of the two major methods (CCA and CPP) representing the entity and proprietary concepts of companies, respectively, as well as certain other methods. The two major areas requiring further research in this section appear to be whether CCA or CPP produce meaningful information and whether the results generated from using specific indices in CCA produce better management information than using general indices in CPP (given the differences in methodologies, benefits and disadvantages of each of the major IA methods). The need for such further research as indicated by this section is enhanced by Section 2.6 which contains a figured comparison of applying HCA, CPP and CCA on a consistent basis.

TABLE 2.3 A SUMMARY OF INTERNATIONAL INFLATION ACCOUNTING METHODOLOGIES

P = Profession
L = Law

	COUNTRY	PRONOUNCEMENT	BASIS OF ACCOUNTING	REQUIREMENTS
1.	United States	FASB33 (P) Sept. 1979 amended by Statement No. 82 Nov. 1984	CCA	1.1 Mandatory compliance by public companies with specified minimum asset levels. 1.2 Supplements primary accounts. 1.3 CPP 1.3.1 Income adjusted for general inflation. 1.3.2 Purchasing power gain or loss on net monetary items. 1.3.3 CPP reporting was mandatory in FASB33. However Statement No. 82 deleted the requirement for mandatory CPP disclosure. 1.4 CCA 1.4.1 Income on current cost basis, (DA, COSA, HOCA) (OA prohibited.) 1.4.2 Current cost of inventory, property, plant and equipment. 1.4.3 Movements in current costs of non-monetary assets. 1.5 A five-year summary of selected financial data.
2.	Canada	Section 4510 of Canadian Institute of Chartered Accountants Handbook Jan. 1983 (P)	CCA	2.1 Mandatory compliance by listed companies with specified minimum asset level. 2.2 Supplements HC accounts. 2.3 Minimum disclosure 2.3.1 Income on current cost basis (COSA + DA). 2.3.2 Financing (gearing adjustment). 2.3.3 Current cost of fixed assets, stock and net assets. 2.3.4 Gain in purchasing power due to net monetary liabilities. 2.3.5 The [illegible] increase of current costs of fixed assets and stock due to increase of specific costs over general prices. 2.4 Implemented as a five-year experiment in providing supplementary information.
3.	United Kingdom	SSAP16 March 1980 ED35 July 1984 (P)	CCA	3.1 SSAP16 requires mandatory compliance 3.2 Supplements HC accounts. 3.3 Income on current cost basis (DA, COSA, HOCA, CA) 3.4 Balance sheet - shows assets at written down current cost. 3.5 The ASC has now dropped the mandatory requirement of SSAP16.
4.	Australia	Statement of Auditing Practice 1 November 1983 (P)	CCA	4.1 Voluntary compliance. 4.2 Supplements main accounts but does not preclude current cost accounting being used for the main accounts. 4.3 Income Statement 4.3.1 Reconciliation between CC and HC income, showing the CCA adjustments. 4.3.2 Disclosure by way of note of CCA entity net profit and gain/loss on loan capital. 4.4 Balance Sheet 4.4.1 Written down current costs of assets. 4.5 CCA Statement of change in shareholders' equity - disclosure of material movement in capital, CC reserve, gain on loan capital reserve, retained earnings and any other reserve. 4.6 A brief interpretation of the significance of the entity's CCA information should be given.
5.	New Zealand	CCA1 March 1982 (P)	CCA	5.1 Mandatory compliance. 5.2 Supplementary current cost accounts. 5.3 CCA includes DA, COSA, HOCA and CA. 5.4 Other methods of inflation accounting are permitted, if minimum disclosure requirements are met.
6.	France	-	-	6.1 There is no requirement to account for inflation. 6.2 Accounting for inflation is permitted but there are no formalised requirements. 6.3 An inflation accounting study group, "Ordre Les Experts Comptables" was established in 1981, but has not produced a formal statement.

TABLE 2: A SUMMARY OF INTERNATIONAL INFLATION ACCOUNTING METHODOLOGIES

P = Proclamation
L = Law

	COUNTRY	PRONOUNCEMENT	BASIS OF ACCOUNTING	REQUIREMENTS
1.	United States	FAS33 (P) Sept. 1979 amended by Statement No. 82 Nov. 1984	CCA	1.1 Mandatory compliance by public companies with specified minimum asset levels. 1.2 Supplemental primary statements. 1.3 CPP 1.3.1 Income adjusted for general inflation. 1.3.2 Purchasing power gain or loss on net monetary items. 1.3.3 CPP reporting was mandatory in FAS33, however Statement No. 82 deleted the requirement for mandatory CPP disclosure. 1.4 CCA 1.4.1 Income on current cost basis. (CA, CCSA, MCSA) (GA prohibited.) 1.4.2 Current cost of inventory, property, plant and equipment. 1.4.3 Movements in current costs of non-monetary assets. 1.5 A five-year summary of selected financial data.
2.	Canada	Section 4510 of Canadian Institute of Chartered Accountants Handbook Jan. 1983 (P)	CCA	2.1 Mandatory compliance by listed companies with specified minimum asset level. 2.2 Supplements HC accounts. 2.3 Minimum disclosure 2.3.1 Income on current cost basis (CCSA & CA). 2.3.2 Financing (gearing adjustment). 2.3.3 Current cost of fixed assets, stock and net monetary. 2.3.4 Gain in purchasing power due to net monetary liabilities. 2.3.5 The written allowance of current costs of PP&E assets and stock due to increase of specific costs over general prices. 2.4 Implemented as 5 year experiment in providing supplementary information.
3.	United Kingdom	SSAP16 March 1980 ED35 Jul, 1984 (P)	CCA	3.1 SSAP16 requires mandatory compliance 3.2 Supplements HC accounts. 3.3 Income on current cost basis (CA, CCSA, MCSA, GA) 3.4 Balance sheet to show assets at written down current cost. 3.5 The ASC has now dropped the mandatory requirement of SSAP16.
4.	Australia	Statement of Auditing Practice 1 November 1983 (P)	CCA	4.1 Voluntary compliance. 4.2 Supplements main accounts but does not preclude current cost accounting being used for the main accounts. 4.3 Income Statement 4.3.1 Reconciliation between CC and HC profit, showing the CCA adjustments. 4.3.2 Disclosure by way of note of CCA entity net profit and gain/loss on loan capital. 4.4 Balance Sheet 4.4.1 Written down current costs of assets. 4.5 CCA Statement of change in shareholders' equity - disclosure of material movements in capital, CC reserve, gain on loan capital reserve, retained earnings and any other reserve. 4.6 A brief interpretation of the significance of the entity's CCA information should be given.
5.	New Zealand	CCAI March 1982 (P)	CCA	5.1 Mandatory compliance. 5.2 Supplementary current cost accounts. 5.3 CCA include CA, CCSA, MCSA and GA. 5.4 Other methods of inflation accounting are permitted, if minimum disclosure requirements are met.
6.	France	"	"	6.1 There is no requirement to account for inflation. 6.2 Accounting for inflation is permitted but there are no formalised requirements. 6.3 An Inflation Accounting study group, 'Centre des Experts Comptables' was established in 1981, but has not produced a formal statement.

TABLE 2.3 A SUMMARY OF INTERNATIONAL INFLATION ACCOUNTING METHODOLOGIES

P = Profession
L = Law

	COUNTRY	PRONOUNCEMENT	BASIS OF ACCOUNTING	REQUIREMENTS
7.	West Germany	HFA 2/75	-	7.1 Voluntary compliance. 7.2 Supplementary current cost information. 7.3 Recommends replacement value accounting, with DA, COSA and CA, although all other methods are permitted. 7.4 Disclosure - HC accounts should be adjusted to show the effect of inflation on fixed assets and inventories only, (limited to the proportion financed by shareholders' funds). The "Institut" believes entities need only disclose that part of the annual profit that should be retained to make up for any possible loss of substance.
8.	Netherlands	-	-	8.1 There are no formal requirements. 8.2 It has become GAAP to include current replacement value measurements in annual accounts. 8.3 HC, CC or a combination can be used (e.g. HC can be used in the balance sheet, while current cost values for related items are used in the income statement). 8.4 Dutch guidelines recommend accounting for specific rather than general price changes. 8.5 If CCA is adopted, the revaluation reserve should be shown separately under shareholders' equity.
9.	Italy	-	-	9.1 There are no rules governing the disclosure of the effects of changing prices.
10.	Japan	-	-	10.1 There are no rules governing the disclosure of the effects of changing prices. 10.2 In 1980, The Business Accounting Deliberation Council issued an opinion, indicating that no country had satisfactorily resolved the problems involved, and is continuing to investigate the matter.
11.	Brazil	LAW 6.404 (L)	CPP	11.1 Mandatory compliance by all companies. 11.2 CPP accounts form the only accounts. 11.3 COSA, MWCA and CA are not allowed. All permanent assets are adjusted by a Government index. 11.4 Dividends must be limited to inflation-adjusted profits, by law.
12.	Argentina	COMMERCIAL COMPANIES LAW NO. 19550 (L) RESOLUTION TECHNICA NO. 6 (P)	CPP	12.1 Mandatory to produce inflation-adjusted accounts. 12.2 CPP is recommended (Note - current values are accepted for most assets and liabilities, thus not requiring restatement for general wholesale price indices. 12.3 Produce only CPP adjusted accounts. HC figures are summarised in a footnote (professional recommendation) as they are still the basis for fiscal purposes. 12.4 Must produce DA, COSA and MWCA. (It is combined with MWCA as both are computed on the monetary position.)
13.	Chile	TAX LAW (L) T83, T813 (P)	CPP	13.1 Mandatory Compliance. 13.2 Only CPP AFS. 13.3 Must produce DA and COSA, but not allowed MWCA or CA, as a general price index adjustment is used. 13.4 Dividends are limited to inflation-adjusted profits by law 0531.
14.	Mexico	B7 (P)	CPP	14.1 Mandatory compliance. 14.2 CPP or replacement value accounting prescribed. 14.3 Must produce DA, COSA, MWCA, CA (The MWCA and CA are combined by the application of price level indices to average net monetary assets or liabilities). 14.4 Recommend that dividends are limited to inflation-adjusted profits.
15.	South Africa	AC201 (P)	CCA	15.1 Compliance voluntary. 15.2 Supplementary current cost information. 15.3 Recommends CC income statement (DA, COSA and CA). (Note - MWCA is implicitly included in the CA.)

TABLE 2.3 A SUMMARY OF INTERNATIONAL INFLATION ACCOUNTING METHODOLOGIES

P = Profession
L = Law

	COUNTRY	PRONOUNCEMENT	BASIS OF ACCOUNTING	REQUIREMENTS
7.	West Germany	EFA 2/75	–	7.1 Voluntary compliance. 7.2 Supplementary current cost information. 7.3 Recommends replacement value accounting, with DA, COSA and GA, although all other methods are permitted. 7.4 Disclosure – BC accounts should be adjusted to show the effect of inflation on fixed assets and inventories only. (Related to the proportion financed by shareholders' funds). The "Institut" believes entities need only disclose that part of the annual profit that should be retained to make up for any possible loss of substance.
8.	Netherlands	–	–	8.1 There are no formal requirements. 8.2 It has become usual to include current replacement value measurements in annual accounts. 8.3 HC, CC or a combination can be used (e.g. HC can be used in the balance sheet, while current cost values for related items are used in the income statement). 8.4 Dutch guidelines recommend accounting for specific rather than general price changes. 8.5 If CCA is adopted, the revaluation reserve should be shown separately under shareholders' equity.
9.	Italy	–	–	9.1 There are no rules governing the disclosure of the effects of changing prices.
10.	Japan	–	–	10.1 There are no rules governing the disclosure of the effects of changing prices. 10.2 In 1980, The Business Accounting Deliberation Council issued an opinion, indicating that no country had satisfactorily resolved the problems involved, and is continuing to investigate the matter.
11.	Brazil	LAW 6.404 (L)	CPP	11.1 Mandatory compliance by all companies. 11.2 CPP accounts form the only accounts. 11.3 COSA, HMCA and GA are not allowed. All permanent assets are adjusted by a Government index. 11.4 Dividends must be limited to inflation-adjusted profits, by law.
12.	Argentina	COMMERCIAL COMPANIES LAW NO. 19550 (L) RESOLUTION TECHNICA NO. 6 (P)	CPP	12.1 Mandatory to produce inflation-adjusted accounts. 12.2 CPP is recommended (Note – current values are accepted for most assets and liabilities, thus not requiring restatement for general wholesale price indices. 12.3 Produce only CPP adjusted accounts. HC figures are summarised in a footnote (professional recommendation) as they are still the basis for fiscal purposes. 12.4 Must produce DA, COSA and HMCA. (GA is combined with HMCA as both are computed on the monetary position.)
13.	Chile	TAX LAW (L) IAS, 1983 (P)	CPP	13.1 Mandatory compliance. 13.2 Only CPP APS. 13.3 Must produce DA and COSA, but not allowed HMCA or GA, as a general price index adjustment is used. 13.4 Dividends are limited to inflation-adjusted profits by law COSA.
14.	Mexico	NI (P)	CPP	14.1 Mandatory compliance. 14.2 CPP or replacement value accounting prescribed. 14.3 Must produce DA, COSA, HMCA, GA (The HMCA and GA are combined by the calculation of price level indices to average net monetary assets or liabilities.) 14.4 Recommend that dividends are limited to inflation-adjusted profits.
15.	South Africa	ACAST (P)	COSA	15.1 Compliance voluntary. 15.2 Supplementary current cost information. 15.3 Recommends CC income statement (DA, COSA and GA). (Note – HMCA is implicitly included in the GA.)

2.4 Review of International Inflation Accounting Practices

The International Accounting Standards Committee (IASC)

IAS6 "Accounting Responses to Changing Prices" was published in June 1977 and required disclosure of the inflation accounting method used, or disclosure that no such method had been used. It did not recommend or require any particular form of inflation accounting. This was followed by IAS15 "Information Reflecting the Effects of Changing Prices" effective from January 1983. It went further than IAS6 in that it stated some form of inflation accounting should be used by large companies. No method was recommended as "further experimentation is necessary". IAS15 required minimum levels of disclosure, and these are summarised below:

- The adjustments to, or the adjusted amounts of, depreciation and cost of sales.

- Adjustments to monetary items, including borrowings and equity (e.g. GA, MWCA or purchasing power adjustments).

- The overall effect on the results of adjustments made to reflect the effects of changing prices.

- Disclosure of the current costs of non-monetary assets if CCA is used.

- The procedures used, including the nature of indices used.

The IASC issued ED 31 "Financial Reporting in Hyperinflationary Economies" applied to the primary FS of companies operating in hyperinflationary environments. Under these conditions, money loses value so quickly that comparison of FS of different periods becomes meaningless, and FS are only useful if expressed in a constant year end monetary unit. The ED required that the BS and IS should be restated in terms of the measuring unit at the balance sheet date, the gain or loss on the net monetary position is included in income, and that prior year comparatives should be restated to the year end measuring unit. It also gave broad guidelines as to what may indicate a hyper-inflationary environment, and these guidelines are summarised below:

- the general population prefers to keep its wealth in non-monetary assets or in a relatively stable foreign currency;

- the general population regards monetary amounts not in terms of the local currency but in terms of a relatively stable foreign currency and prices may be quoted in that currency;

- sales and purchases on credit take place at prices that compensate for the interest lost during the credit period, even though the period may be short;

- interest rates, wages and prices are linked to a price index;

- the cumulative three year inflation rate approaches or exceeds 100%.

The European Economic Community

The EEC's Fourth Directive on Company Accounts, 1978, gave EEC countries the choice of using alternative methods to HCA. If such an alternative method was adopted for the main accounts, then historical cost information should also be given.

The General Position

Most countries do not require the use of inflation accounting, therefore the bulk of FS are prepared on the HC basis, and it is uncommon for companies to prepare inflation-adjusted accounts voluntarily. CPP is favoured in Latin America where very high inflation rates over prolonged periods have made CPP accounting a necessity. CCA is practised in the United Kingdom, Ireland and South Africa. The United States required disclosure to be made on both methods, and after preferring CCA over CPP has now dropped these mandatory requirements. The international situation is summarised below (Deloitte Haskins & Sells UK, 1983).

United Kingdom

ED 8 and SSAP 7 promoted CPP, but were superseded by the Sandilands Committee Report in September 1975, which favoured CCA. In November 1977 the Hyde Guidelines proposed a supplementary CC IS and a gearing adjustment, and ED 24 proposed a supplementary CC BS and the MWCA. In March 1980, SSAP 16 required supplementary CCA accounts for a three-year period. This mandatory requirement was withdrawn in June 1985 because there was great resistance to SSAP 16 and the London Stock Exchange noted that compliance with SSAP 16 dropped rapidly as the debate became more heated. (The proponents of CCA and CPP had a prolonged heated debate in the financial press about the merits of their respective methods.) In June 1985, compliance was below 20%.

ED 35 was ratified in July 1985, which had the effect of making inflation accounting non-mandatory, but kept CCA methodology in place. The ASC debated a new exposure draft where CCA and CPP would be allowed with a five-year inflation indexed summary of performance. It is hoped that this flexibility would encourage experimentation and eventually lead to a generally accepted accounting practice.

United States of America

The major development was FAS 33, issued in 1979, which made reporting on CCA and CPP mandatory for a five year period. In 1984, having evaluated responses to FAS 33, the mandatory requirement for CPP was dropped. In 1985, as inflation levels dropped, the mandatory requirement to report on CCA was also dropped. The majority of comments from public practice and commerce supported CCA over CPP because users found CCA data more useful. Users of AFS were confused by the two different methods and CCA was also perceived as being less complex. Application of one method, CCA, reduced the cost of compliance with GAAP. This attitude was probably strengthened by US tax legislation which allowed accelerated depreciation methods and the use of the LIFO method of stock valuation (these methods often approximating the results of applying CCA).

Canada

A survey of 1983 accounts showed that only 30% of a sample of just over 140 companies had complied with Section 4510. Resistance to IA was growing due to cost factors of implementation and the reduced levels of inflation.

Australia

Compliance with SAP1 was poor, with some companies discontinuing their previous practice of accounting for inflation. A strong view was that inflation accounting was unlikely to gain general acceptance until it was accepted for tax purposes. It should be noted that the Australian statement was very proactive in requiring commentary on the effects of inflation on the operation as measured by applying CCA and also required a number of reconciliations to disclose these effects.

New Zealand

By August 1984, only about 8% of the just over 200 limited companies on the New Zealand Stock Exchange had complied with CCA1. This general lack of support appears likely to continue.

Israel

Israel suffered triple-digit inflation from 1979 to 1985 but implemented a successful anti-inflation plan in 1985. Companies were required to disclose the effects of inflation by way of a note to the FS, but in 1985 CPP FS were made mandatory.

Europe and the Far East

There is very little inflation accounting because a number of the countries do not have any requirements to disclose the effects of changing prices, and in those countries that do, the compliance is voluntary. In many countries the AFS must conform to tax laws, where HCA principles are firmly entrenched (France, Germany, Belgium and Japan).

Latin America

Very high inflation has become a way of life and inflation accounting is generally mandatory, with the inflation adjusted financial statements forming the main accounts. The whole way of life is geared around inflation, with most monetary items being indexed and linked to the inflation rate on a monthly, quarterly or annual basis. The methods employed are an economic and financial necessity. The difficulties of eradicating the causes of (hyper) inflation were illustrated by Argentina who introduced the Austral Plan, and Brazil who introduced the Cruzatto Plan. Both of these schemes were initially successful and then failed.

Argentina

FS were on CPP, with HC figures disclosed in the notes, (as HCA was still the basis for taxation).

Brazil

In January 1978, it was made mandatory to index permanent assets and shareholders' equity accounts with the CPI, and IS items were indexed on a periodic basis. CPP accounts were the main accounts and were accepted for tax purposes.

South Africa

AC 201 "Disclosure of the effects of changing prices on financial results" followed SSAP 16 in promoting a supplementary CC IS (but did not promote the MWCA). The lack of a mandatory statement resulted in low compliance.

TABLE 2.4

TABLE OF INTERNATIONAL INFLATION RATES FOR THE YEARS 1984 THROUGH 1989

Country	Consumer Price Index					
	1989	1988	1987	1986	1985	1984
Argentina	343	380	131	90	672	627
Australia	8	7	9	9	8	4
Brazil	974	682	365	145	220	197
Canada	5	4	4	4	4	4
Chile	20	15	20	20	31	-
France	3	3	3	3	6	8
Israel	21	16	20	48	407	374
Italy	6	5	5	6	9	11
Japan	1	1	0	1	2	2
Mexico	16	114	132	86	65	66
Netherlands	1	1	(1)	0	2	3
New Zealand	3	6	16	13	15	6
Nicaragua	10 205	920	1 225	618	220	-
Peru	643	1 722	86	78	164	-
Portugal	12	10	9	12	20	28
South Africa	15	13	16	19	16	12
Switzerland	2	2	1	1	3	3
UK	8	5	4	3	6	6
USA	5	4	4	2	4	4
West Germany	3	1	0	0	2	2

2.5 Review of South African Inflation Accounting Practices

AC 201 does not make IA mandatory, and paragraph .01 states "This guideline recommends disclosure of the major effects of price changes on the results of operations".

A detailed analysis of 24 sets of the listed AFS of South African companies was performed as part of this literature survey. A summary of the annual financial statements reviewed is provided in Table 2.3 "A summary of certain South African inflation accounting practices in 1985". This analysis showed that 16 companies applied some IA method (whether formal or informal) and 8 companies did not apply any method. (The sample was biased to cover companies that were known to apply some form of IA because very few listed companies applied any method of formalised IA in their AFS.) An analysis of the IA methods applied by the 16 companies is as follows:

AC 201	10
AC 201 + SSAP 16	3
LIFO and FA revaluations in main accounts	2
LIFO, FA revaluations and GA in main accounts	1
Total companies applying some form of IA	16

The reasons given by the eight companies for not applying IA were as follows:

No reasons given	5
IA not appropriate, due to the nature of fixed assets and stock	2
Dividend cover is sufficient	1
	8

Having examined the accounting practices of some listed companies, and some general objections to using IA, there are some broad areas applicable to the SA accounting environment that should be examined.

One of the main problems with IA in South Africa is that it is not recognised by the Fiscus, therefore companies obtain no tax benefit from applying LIFO or any other form of IA adjustment. It was fashionable to apply LIFO as an approximation for the COSA when LIFO was accepted for tax purposes. This provided companies with a convenient, built-in method for calculating an approximation of the COSA. However, once LIFO was disallowed for tax purposes, many companies reverted to FIFO, average cost, etc., and have not continued accounting for inflation via LIFO. A further problem with IA is that it may drastically lower reported profits. South African investors are not always sophisticated enough to recognise the true operating benefits of these reduced profits, and it is submitted that this may cause share prices to fall (please refer to Table 2.4). This contrasts with the use of LIFO in the USA, where studies have shown that when a company converts to LIFO, the share price rises because investors recognise the going concern and operating capacity benefits that accrue from the change.

As opposed to the above perceived problems with IA, there are certain perceived benefits. Large quasi Government institutions, utilities, etc., may often favour IA mainly via FA revaluations and the DA to maintain operating capacity and to reduce reported profits (because such public institutions may be sensitive to the perception of their profiting at the expense of members of the general public who use their services). This was a benefit of CCA raised in the US and UK financial press in the on-going IA debate, and another broad benefit of applying CCA is that the lower reported profits may reduce trade union pressure for wage increase demands as indicated by Scapens et al (1983,p23).

Table 2.3 indicates that a number of companies revalue fixed assets in their HC AFS, which recognises the fact that the HC of FA may often represent an unrealistic value. These comments and the research generated in preparing Table 2.3 lead into a summary of general reasons why the South African companies reviewed did not account for inflation:

- AC 201 is not mandatory.

- IA is not practical due to subjectivity involved in selecting indices, methods of revaluation, etc.

- IA is seen as very complicated and there is a certain amount of scepticism or uncertainty surrounding the gearing adjustment. In addition, users of FS do not appear to perceive the true benefits of IA, and perhaps this is an education problem.

- IA is not allowed for tax purposes.

- IA is only used in year-end AFS - it is not used in internal management reporting.

- It is possible management does not appreciate the true effects of inflation (e.g. reported sales may increase, while "real inflation-adjusted sales" may be falling).

In conclusion, the literature survey research into IA practices adopted by SA companies indicated that few SA companies applied any formal method of IA in their annual financial statements. This was supported by research findings produced in the UK (for example, Scapens et al, 1983) and in the USA. Previous sections of this chapter had concluded that inflation was a problem for both business and accounting practices, and raised the question of whether, given the effect of increasing prices on HC results, companies should not account for inflation internally. This leads to a potential area of research to determine whether companies do account for inflation internally in practice.

Company	Year-end	Cost of Sales Adjustment	Depreciation Adjustment	Monetary Working Capital Adjustment
1. Unico Holdings	31.12.84	+	+	+
2. Ellerine	6.83	–	–	–
3. Adcock Ingram	30. 9.84	+	+	+
4. Afrox	30. 9.84	+	+	+
5. Pretoria Portland Cement	30. 9.84	+	+	–
6. Futco	30. 6.84	+	+	–
7. Protea	30. 6.84	+	+	–
8. Seardel Investment Corporation	30. 6.84	+	+	–
9. Malbak	31. 3.84	+	+	–
10. SA Breweries	31. 3.84	+	+	–
11. Standard Brass, Iron & Steel Foundries	31.12.83	–	+	–
12. Chemserve	31.12.84	+	+	–

TABLE 2.5 A SUMMARY OF CERTAIN SOUTH AFRICAN INFLATION ACCOUNTING PRACTICES IN 1985

Gearing Adjustment	Current Cost Income Statement	Current Cost Balance Sheet	Other Comments
+	+	+	Prepared to comply with UK Holding Company.
–	–	–	Not prepared ∴ FA are not material, ∴ depreciation provided is adequate. Dividend cover 4 times – sufficient to meet expansion.
+	+	+	
+	+	+	FA are shown at current value in HC and CC accounts Therefore CC depreciation is provided in HC accounts)
–	+	+	1. An additional adjustment is provided: "Cost savings due to improvements in technology" 2. COSA is a credit – specific prices of cement fell during the year.
+	+	–	1. CCA are incorporated in the main accounts 2. COSA is calculated using LIFO on maintenance spares, fuel and oil. 3. A "Supplementary Group Income Statement" is prepared giving the income statement, (current and prior years) on – current cost basis – historical cost basis.
+	+	–	Prepared in accordance with AC201.
+	+	+	Prepared in accordance with AC201.
+	+	+	Prepared in accordance with AC201 & SSAP15
+	+	–	1. Prepared in accordance with AC201. 2. FA revaluations incorporated into HC main accounts.
+	+		1. Prepared in accordance with AC201. 2. No COSA because LIFO was used in HC accounts.
+	+		Prepared in accordance with AC201.

Company	Year-end	Cost of Sales Adjustment	Depreciation Adjustment	Monetary Working Capital Adjustment
1. Utico Holdings	31.12.84	+	+	+
2. Ellerine	30. 6.83	-	-	-
3. Adcock Ingram	30. 9.84	+	+	+
4. Afrox	30. 9.84	+	+	+
5. Pretoria Portland Cement	30. 9.84	+	+	-
6. Putco	30. 6.84	+	+	-
7. Protea	30. 6.84	+	+	-
8. Seardel Investment Corporation	30. 6.84	+	+	-
9. Malbak	31. 3.84	+	+	-
10. SA Breweries	31. 3.84	+	+	-
11. Standard Brass, Iron & Steel Foundries	31.12.83	-	+	-
12. Chemserve	31.12.84	+	+	-

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-	-	-	Not prepared '.' FA are material. '. depreciation provided is adequate. Dividend cover 4 times - sufficient to meet expansion.
+	+	+	
+	+	+	FA are shown at current value in HC and CC accounts Therefore CC depreciation is provided in HC accounts)
-	+	+	1. An additional adjustment is provided: "Cost savings due to improvements in technology" 2. COSA is a credit - specific prices of cement fell during the year.
+	+	-	1. CCA are incorporated in the main accounts 2. COSA is calculated using LIFO on maintenance spares, fuel and oil. 3. A "Supplementary Group Income Statement" is prepared giving the income statement, (current and prior years) on - current cost basis - historical cost basis.
+	+	-	Prepared in accordance with AC201.
+	+	+	Prepared in accordance with AC201.
+	+	+	Prepared in accordance with AC201 & SSAP16
+	+	-	1. Prepared in accordance with AC201. 2. FA revaluations incorporated into HC main accounts.
+	+	-	1. Prepared in accordance with AC201. 2. No COSA because LIFO was used in HC accounts.
+	+	-	Prepared in accordance with AC201.

TABLE 2.5 A SUMMARY OF CERTAIN SOUTH AFRICAN INFLATION ACCOUNTING PRACTICES IN 1985

Company	Year-end	Cost of Sales Adjustment	Depreciation Adjustment	Monetary Working Capital Adjustment	Gearing Adjustment	Current Cost Income Statement	Current Cost Balance Sheet	Other Comments
13. Anglo-Alpha	31.12.84	+	+	-	+	-	+	The COA (COSA, HA & MA) is shown as one figure, below the line. It is above ordinary dividends as "Current Cost Adjustment". Therefore supplementary CC IS is not prepared.
14. Dunlop	31.12.84	-	-	-	-	-	-	
	31.12.83	+	+	-	+	+	+	Per Guideline 4.003. No current cost accounts were prepared in 1984, and no reasons were given for this.
15. Sentrachem	31. 6.84	-	-	-	-	-	-	
16. Premier Holdings	31. 3.84	+	+	-	+	+	-	Prepared in accordance with AC201.
17. Hulett Aluminium	31. 3.84	+	+	-	-	-	-	
18. Pick 'n Pay	28. 2.85	-	-	-	-	-	-	A "Statement of the Effect of Inflation" in terms of Guideline 4.003 was prepared for 1983, but nothing was done for 1984 and 1985 and no reasons were given.
19. Nimlan & Lester Holdings	31.12.84	+	+	-	+	+	-	Prepared in accordance with AC201.
20. Standard Bank Investment Corporation	31.12.84	-	-	-	-	-	-	Presented CC ARS in 1982 per SSAP16. No reasons given for not re-presenting these.
21. Field Industries	31.12.84	-	-	-	-	-	-	Prepared in 1982 per Guideline 4.001, but not subsequently. No inflation accounting because not appropriate. No HA because mainly a trading company and LIFO is not appropriate to stock, as there was Large price fluctuations, due to technological improvements.
22. Brownin Holdings	31.12.84	-	-	-	-	-	-	
23. OK Bazaars	31. 3.84	+	+	-	-	-	-	No separate CC AFS. LIFO and depreciation on revalued fixed assets only used in HC AFS.

TABLE 2.5 A SUMMARY OF CERTAIN SOUTH AFRICAN INFLATION ACCOUNTING PRACTICES IN 1985

Company	Year-end	Cost of Sales Adjustment	Depreciation Adjustment	Monetary Working Capital Adjustment	Gearing Adjustment	Current Cost Income Statement	Current Cost Balance Sheet	Other Comments
13. Anglo-Alpha	31.12.84	+	+	-	+	-	-	The CCA (COSA, DA & GA) is shown as one figure, below the line. It is above ordinary dividends as "Current Cost Adjustment". Therefore supplementary CC IS is not prepared.
14. Dunlop	21.12.84	-	-	-	-	-	-	
	31.12.83	+	+	-	+	+	+	Per Guideline 4.003, No current cost accounts were prepared in 1984, and no reasons were given for this.
15. Sentrachem	31.6.84	-	-	-	-	-	-	
16. Premier Holdings	31. 3.84	+	+	-	+	+	-	Prepared in accordance with AC201.
17. Hulett Aluminium	31. 3.84	+	+	-	-	-	-	
18. Pick 'n Pay	28. 2.85	-	-	-	-	-	-	A "Statement of the Effect of Inflation" in terms of Guideline 4.003 was prepared for 1983, but nothing was done for 1984 and 1985 and no reasons were given.
19. Hinlon & Lester Holdings	31.12.84	+	+	-	+	+	-	Prepared in accordance with AC201.
20. Standard Bank Investment Corporation	31.12.84	-	-	-	-	-	-	Presented CC APS in 1982 per SSAP16. No reasons given for not re-presenting these.
21. Field Industries	31.12.84	-	-	-	-	-	-	Prepared in 1982 per Guideline 4.001, but not subsequently. No inflation accounting because not appropriate. No DA because mainly a trading company and LIFO is not appropriate to stock, as there are large price fluctuations, due to technological improvements. No separate CC APS, LIFO and depreciation on revalued fixed assets are used in HC APS.
22. Bromain Holdings	31.12.84	-	-	-	-	-	-	
23. OK Bazaars	31. 3.84	+	+	-	-	-	-	

TABLE 2.6

TABLE TO SHOW THE EFFECTS OF INFLATION ON REPORTED EARNINGS (LOSSES) PER SHARE (EPS)

Company	Date of AFS	Current year		Prior year	
		HC EPS	CC EPS	HC EPS	CC EPS
Utico Holdings	31.12.84	71.0	35.4	97.8	46.6
Adcock Ingram	30.09.84	535.0	419.0	509.0	344.0
Afrox	30.09.84	80.0	66.1	82.7	69.6
Pretoria Portland	30.09.84	161.0	108.7	132.4	94.7
Putco	30.06.84	62.5	29.6	9.6	-*
Protea	30.06.84	17.7	5.8	41.5	27.4
Seardel Investment	30.06.84	102.8	47.5	120.2	116.4
Malbak	31.03.84	81.7	47.5	55.4	27.2
S A Breweries	31.03.85	+80.4	71.9	79.4	76.7
Standard Brass	31.12.83	49.4	(45.0)	86.3	18.1
Chemserve	31.12.84	83.2	53.6	81.9	62.6
Anglo-Alpha	31.12.84	144.5	93.1	135.0	91.3
Dunlop	31.12.83	125.1	74.0	134.9	83.0
Premier Holdings	31.03.85	169.0	104.0	214.0	176.0
Hulett Aluminium	31.03.84	211.3	145.2	221.6	150.9
Pick 'n Pay	28.02.83	141.0	104.0	123.0	99.0
Ninian and Lester	31.12.84	(75.0)	(123.1)	38.0	(3.7)

Notes

* CC figures were not given.

\+ HC EPS approximate CC EPS, because FA revaluations were incorporated into the HC accounts.

2.6 - A FIGURED COMPARISON OF HCA, CPP AND CCA

INTRODUCTION

Until the First World War, the price structure of most countries was reasonably stable. Money had a constant value and historical cost accounting had a general validity. With constantly increasing prices in the twentieth century, the validity of HCA has been challenged. The HC of non-monetary assets often bears little or no relationship to the current costs of replacing those assets, and HCA does not ensure that sufficient funds are retained in the entity to maintain operating capacity or the shareholders' investment in real terms.

In spite of the harsh effects of inflation, a single method of accounting for inflation has not yet been generally accepted, and it is interesting to note that where compliance with inflation accounting is not mandatory, few companies adopt it voluntarily. The pros and cons of the individual inflation accounting methods have been discussed in Section 2.3 and general reasons for non-acceptance of any method appear to be lower reported earnings and non acceptance for tax purposes (major reasons), as well as the costs involved in preparing data and the complexity of methods. Another major reason may be that management and users of FS do not understand what IA is trying to achieve and what the benefits are. This is partly due to lack of education (particularly from the accountancy bodies) and partly due to lack of practical experience (the inflation adjustments only being prepared once a year for the financial year end). It appears that IA will only gain general acceptance if management and users of FS can perceive the benefits from a practical monthly or quarterly application in the entity's internal MIS and acceptance by the Fiscus.

CPP and CCA are based on different concepts and use different methodologies, particularly in the choice of indices. These differences were described in theory in Section 2.3, however it was felt that these differences could be better illustrated by applying HCA, CPP and CCA methodologies to one consistent set of financial data. To put the uses of these IA methods in context, the purposes of reporting financial information is examined. The main purpose is to provide users (be they management, shareholders, investors, lenders, etc.) with meaningful information on which to base decisions.

- Management need to assess real results and make decisions on future operations.

- Shareholders in all companies need to measure management performance and to assess the real return on their investments.

- Investors in listed companies want to assess performance and determine future cash flows, so they can compare share prices against future dividend streams, price earnings, ratios etc.

- Lenders and creditors want to assess real performance, going concern implications and the real value of asset securities.

For management to obtain the maximum benefit from inflation accounting, it is submitted that it should be used in the company's internal reporting. The calculation of any adjustments should be simple, easily understood and have a practical benefit. On a month to month basis, management's main emphasis is to accurately measure performance, and to continue in business.

The President of FMC Corporation (a case study company), on being shown historical profits adjusted for inflation, noted that his company could continue in existence forever, meeting all its obligations, (commercial and social), if it could always just break even in real terms. Thus on a daily operational basis, management's concern must be to preserve the company's operating capacity in order to continue in business.

This study will convert a set of HC AFS using CCA and CPP. The content of the financial statements has been simplified so the differences in the methodologies can be clearly seen. The example focuses on a "typical" manufacturing company which necessarily has investments in fixed assets and stocks. Again it must be emphasised that this is not an exercise of complex methodologies, no sensitivity analyses have been performed and the base numbers have not been changed. The major objectives of the exercise are to show how the methodologies operate and to compare and contrast the results.

INFLATION (PTY) LIMITED
BALANCE SHEET
31 December 1988

	Notes	1988 R'000	1987 R'000
CAPITAL EMPLOYED			
Share capital	1	1 400	1 400
Retained earnings		420	370
Shareholders' funds		1 820	1 770
Long term loan		280	260
		2 100	2 030
EMPLOYMENT OF CAPITAL			
Fixed assets			
Plant and machinery			
- cost	2	900	800
- PAD		205	140
- NBV		695	660
Land and buildings	3	460	460
Total fixed assets		1 155	1 120
Current Assets		1 180	1 095
Stock	4	300	200
Debtors		570	480
Bank		310	415
Current liabilities - creditors		235	185
Net current assets		945	910
		2 100	2 030

INFLATION (PTY) LIMITED
INCOME STATEMENT
for the year ended 31 December 1988

	Note	1988 R'000	1987 R'000
Sales		1 200	1 000
COS		900	750
Opening stock		200	240
Purchases		1 000	710
Less: closing stock		(300)	(200)
GP		300	250
Depreciation		85	75
Other overheads		100	80
		115	95
Profit on disposal of plant		10	-
PBT		125	95
Tax	5	50	38
PAT		75	57
Dividends		25	19
RE for the year		50	38
RE at beginning of the year		370	332
RE at end of the year		420	370
GP%		25%	25%
Other OH % of sales		8%	8%
Tax % of PBT		40%	40%
Dividend		3 times cover	

Notes to HC AFS

1. The share capital was issued on 1 January 1985.

2. Fixed assets are comprised of plant and machinery which were purchased as follows:

	R'000
Purchases 1985	300
1986	400
1987	100
1988	200
	1 000
Disposal 1988	100
	900

Additions and disposals are assumed to occur at the mid point of the year. Depreciation is calculated at 10% per annum, on the straight line basis.

On 30 June 1988, plant and machinery which had cost R100 in 1986 was sold for R90. The accumulated depreciation at the date of sale was R20. (Part of the 1988 capital expenditure is therefore to replace this asset which affects the cash flow statement format). The current cost of the plant sold in 1988 was R160.

3. The land and buildings were purchased on 1 July 1985 for R460 and have a replacement cost, based on independent valuation at 31 December 1988, of R900. Land and buildings have not been formally revalued in the books.

4. It is assumed that the stock was purchased evenly over the last four months of each year. The net realisable value of all items of stock exceeded cost, price level adjusted amounts and revalued current cost values in both years. The cost of stock is determined on the FIFO basis.

5. The tax computation ignores deferred tax. An estimated effective tax rate of 40% has been applied, as this is assumed to include arbitrary allowances e.g. assets, training decentralisation, etc).

Table of Indices and Asset Values (base period 1 January 1985 = 100)

	CPI Average for year	Cumulative CPI Year end	Stock Price Year End Index	Plant Net Cost R'000	Plant Revalued Current Cost 1988 R'000
1/1/85 Base	-	100,0			-
1985	107,0	114,0	115,[illegible]	[illegible]	550
1986	121,4	128,8	132,[illegible]	[illegible]	470
1987	137,8	146,3	153,[illegible]	100	160
1988	157,6	168,4	177,9	200	280
				1 000	1 420
Disposal of plant 1988				(100)	(160)
				900	1 270

A figured comparison of HCA, CPP and CCA - Income Statements

INFLATION (PTY) LTD
INCOME STATEMENT
for the year ended 31 December 1988

	HCA R000	CPP R000	CCA R000
Sales	1 200	1 283	1 200
Cost of Sales	900	996	935
Opening stock	200	234	200
Purchases	1 000	1 069	1 000
Closing stock	(300)	(307)	(300)
Cost of sales adjustment	-	-	35
Gross Profit	300	287	265
Depreciation	85	122	85
Depreciation adjustment	-	-	50
Other overheads	100	107	100
	115	58	30
Profit (loss) on disposal of plant	10	(15)	(30)
Net operating income*	125	43	0
General price level/purchasing power loss	-	(62)	-
Gearing adjustment	-	-	(65)
HC/CPP profit (loss) before taxation	125	(19)	-
Owners' income before taxation	-	-	(65)
Taxation	50	53	50
Profit (loss) after taxation	75	(72)	(115)
Dividends	25	25	25
RE for the year	50	(97)	(140)
RE at beginning of the year	370	58	370
RE at end of the year	420	(39)	230

* Current cost adjustments are reflected with the appropriate category. To comply with AC 201, the following disclosure would be made:

	R000
Net operating income under HC	125
Current cost adjustment (depreciation R50) (cost of sales R35)	(85)
Loss on disposal of plant	(40)
Entity operating income	0

A figured comparison of HCA, CPP and CCA - Balance sheets

INFLATION (PTY) LTD
BALANCE SHEET
31 December 1988

	NOTE	HCA R000	CPP R000	CCA R000
CAPITAL EMPLOYED				
Share capital		1 400	2 358	1 400
Retained earnings		420	(39)	230
Current cost reserve	1	-	-	904
Shareholders' funds		1 820	2 319	2 534
Long-term loan		280	280	280
		2 100	2 599	2 814
EMPLOYMENT OF CAPITAL				
Fixed assets				
Plant and machinery				
- cost		900	1 224	1 270
- PAD		205	302	308
- NBV		695	922	962
Land and buildings		460	725	900
		1 155	1 647	1 862
Current Assets		1 180	1 187	1 187
Stock		300	307	307
Debtors		570	570	570
Bank		310	310	310
Current liabilities - creditors		235	235	235
Net current assets		945	952	952
		2 100	2 599	2 814

Note 1: Current Cost Reserve	R000	R000
Plant - excess of net book value (CC over HC)	(962 - 695)	267
Land and buildings (CC over HC)	(900 - 460)	440
Stock (CC over HC)	(307 - 300)	7
Current cost adjustments		
- depreciation		50
- cost of sales		35
Gearing		65
Adjustment on disposal of plant		40
Total Current Cost Reserve		904

In order to understand the differences between these three main accounting methods and their effects on the income statement results and the balance sheet values, a number of comparisons will be made. The effects of the methods on the income statement will be shown by three studies, namely a reconciliation of profits before taxation, a comparison of CPP and CCA adjustments and a comparison of opening RE. The effects of the methods on the balance sheet are shown by the following two comparisons, a reconciliation of shareholders' equity and a comparison of employment of capital.

Reconciliation of Profits before Taxation

The CPP and CCA PBT figures will be compared to the HC PBT and the differences analysed. These differences will arise due to the indexing methodology inherent in CPP and the CC adjustments under CCA.

HC to CPP	CPP R000	HC R000	Difference R000	R000
HC PBT				125
Stock:				
Opening stock	(234)	(200)	(34)	
Closing stock	307	300	7	(27)
Depreciation:	(122)	(85)		(37)
General price level/ purchasing power loss				(62)
Inflation adjustments to:				
Sales	1 283	1 200	83	
Purchases	(1 069)	(1 000)	(69)	
Expenses	(107)	(100)	(7)	7
Adjustment on disposal of plant				(25)
CPP loss before taxation				(19)

HC to CCA		
HC PBT		125
Less current cost adjustments:		
- Depreciation	(50)	
- Cost of Sales	(35)	(85)
Less gearing adjustment		(65)
Less adjustment on disposal of plant		(40)
CCA loss before taxation		(65)

Comparison of CPP and CCA Adjustments

The CCA and CPP adjustments derived from the reconciliations of profits before taxation, are compared below:

	CCA	CPP	Difference
	R000	R000	R000
Depreciation	50	37	13
COS/Stock	35	27	8
Gearing/monetary items	65	62	3
Disposal of plant	40	25	15
Sales, purchases, and other expenses	-	(7)	7
Total	190	144	46
Loss before taxation	(65)	(19)	46

A general comment can be made about the differences in the adjustments. CPP adjustments arise due to the decrease in the value of money. There is a need to retain more assets than under HC to maintain the purchasing power of the investment made by the shareholders. CCA adjustments arise due to the increase in specific prices. There is a need to retain more cash than under HC, to replace assets consumed in the course of business in order to maintain operating capacity. In this example, it can be seen that using CCA results in a larger income statement loss than from using CPP. This arises, in this example, because the increase in the specific costs of the assets consumed in the course of the business was higher than the increase in the CPI. This does not purport to present an empirical position. A number of American companies found that the increase in the CPI closely approximated the increase in the specific cost indices applicable to their business (particularly with certain faster moving inventory items).

Other US comp\ es found a divergence between these indices. In SA, it is felt that this difference may be compounded by economic and political factors (e.g. surcharges, import duties, the costs of avoiding trade restrictions and sanctions, exchange rate differentials). It is submitted that these factors may push specific price indices above the CPI, in which case, this financial case study has increased validity. Experience in the market place, and a review of the statistics produced by the Central Statistical Services, and more specific manufacturing indices produced by, inter alia, SEIFSA and the Stellenbosch University Bureau for Economic Research, tend to support this contention.

There was a large difference between the methods in computing the adjustments for depreciation. Under CPP additional depreciation was computed after restating asset costs in terms of rands of current purchasing power, whereas under CCA additional depreciation was provided on the replacement cost of assets, or on the cost to the business of fixed assets consumed in the course of business. The quantum of the difference is caused by a combination of the materiality of the FA balances, the ages of the assets and the higher rate of increase of specific FA costs as compared to the CPI.

In making inflation adjustments for stocks and COS, CPP removes the holding gains from stocks (i.e. the fictitious profit arising from holding physical stocks while prices are rising), and CCA provides for the excess of the value of stock consumed by the business over HC COS, so stocks consumed can be replaced. In this case the inflation adjustments are reasonably similar because of the relatively smaller quantum of stock balances, and due to the shorter life span of inventories because stock turns over reasonably quickly, so the rate of increase of specific indices will generally tend to be closer to the CPI than with fixed assets. The purchasing power and gearing adjustments are similar in concept, and measure the loss of purchasing power caused by the increase in general price levels.

CPP reflects the loss on holding monetary assets due to the fall in the value of money computed on the CPI, and CCA reflects the loss on holding net monetary assets (in this case, net debtors) due to the fall in the value of money (computed on the related stock indices). The quantum of these adjustments is similar, as both are based on the like assumption that an adjustment is required if monetary items are held when the value of money is falling and because, as noted above, the increase in the CPI and the stock price indices are similar in this example.

The loss on the disposal of the plant arises under CPP once the HC profit is adjusted for the value of plant sold in rands of constant purchasing power, and under CCA once the HC profit is adjusted for the value to the business of the plant sold at the date of disposal. The difference is large because the plant is several years old, and the CC of FA has increased at a higher rate than the CPI.

Sales, purchases and expenses differences arise only from the application of the indexation methodology of CPP, and result from the variation in the CPI from the average dates of the transactions to the year end. It is a positive adjustment in this case because the quantum of the sales adjustment exceeds that of purchases and expenses. There is no comparable CCA adjustment.

Comparison of Opening RE

The above comparisons of the inflation adjustments included in PBT excludes a major difference, that of the opening retained earnings. The opening CC RE is R 370, which is the same as the HC RE brought forward, because it is assumed that 1988 is the first year that CCA has been applied. The major CC adjustment to opening RE is generally the backlog depreciation adjustment.

However, as this is the first year of applying CCA, the opening RE have not been recalculated on a CC basis. This may be a complex calculation particularly if there were many old fixed assets. The CPP opening RE of R88 is also overstated because 1988 was the first year that CPP was applied. However, the opening RE in 1987 is the balancing figure after all items have been restated in rands of equal purchasing power, so the effect of the inflation adjusted restatement is far greater than CCA. Under CPP the greatest effect arises from the restatement of fixed assets. As they have long lives, the effects of changing prices is greatest in this area, and the comparative adjustment has not been made in the CCA figures. To put the CCA opening RE figures on a more comparable basis, backlog depreciation is calculated below. The current (or replacement) costs of the plant and machinery at 31 December 1987 is as follows:

Year of Purchase	Cost R000	Current cost R000
1985	300	500
1986	400	450
1987	100	130
	800	1 080

Therefore the backlog accumulated depreciation from 1985 to 31 December 1987 is:

	R000	R000
1985	500 x 2½/10	125
1986	450 x 1½/10	68
1987	130 x ½/10	7
		200

less HC accumulated depreciation to 31 December 1987

1985	300 x 2½/10	75
1986	400 x 1½/10	60
1987	100 x ½/10	5
		140
Therefore the backlog depreciation adjustment is		60

To reconcile CCA to CPP opening RE, adjustments would also need to be made for the COSA and GA. Adjustments for 1985, 1986 and 1987 were calculated.

	COSA	GA
	R000	R000
1985	33	49
1986	27	77
1987	10	60
	70	186

Restatement of 1987 CC RE

	R000
CC opening RE	370
Less backlog depreciation	(60)
Less cumulative - COSA	(70)
- GA	(186)
Therefore CC opening RE would be	54

The appropriation section of the IS could therefore be restated as follows:

	HCA R000	CPP R000	CCA R000
Profit(loss) after taxation	75	(72)	(115)
RE at beginning of the year	370	58	54
	445	(14)	(61)
Dividends	25	25	25
RE at end of the year	420	(39)	(86)

Income Statement Comparisons - Conclusion

The methodology and the resulting FS illustrate the differences in the bases of calculating the adjustments and the results of applying different IA methods. The above example illustrates an application of CPP methodology to HC results where the increase in specific price indices is higher than that of general price indices (as may well often occur in the SA situation).

From a comparison of the adjustments and results it is apparent that although CPP maintains the purchasing power of the shareholders' equity investment in the face of the decrease in the value of money, it does not retain sufficient funds to provide for the full replacement of assets consumed in the course of business to maintain operating capacity, because the increase in specific prices of replacing assets has exceeded the increase in the CPI.

Reconciliation of Shareholders' Equity

HC to CPP	R000
HC shareholders' equity	1 820
Increase in ordinary share capital	958
Decrease in retained earnings	(459)
CPP shareholders' equity	2 319

The increase of R 958 in ordinary share capital represents the increase needed to maintain the shareholders' original investments, linked to the change in the CPI as follows:

	R000
Original investment in ordinary share capital	1 400
x increase in the CPI	x 1,684
Current value	2 358
Less original investment	1 400
Additional funds required	958

Due to the decrease in the purchasing power of money, R2 358 in 1988 is required to keep the shareholders in the same "real" position of R1 400 in 1985.

The net decrease in the RE reflects a number of adjustments in the income statement to account for the debasement of currency reconciled above.

HC to CCA

	R000
HC shareholders' equity	1 820
Decrease in RE	(190)
Increase in CC revaluation reserve	904
CC shareholders' equity	2 534
Backlog adjustments to RE	176
	2 358

The decrease in RE represents the cost of maintaining operating capacity (of FA and stocks) and the cost of financing the company with net monetary assets when the value of money is falling. The backlog depreciation adjustment is shown separately and shows the cumulative effect of inflation on a CC basis on the opening RE.

The increase in the CC revaluation reserve represents the total additional funds needed to maintain operating capacity and shows the excess of the written down CC of fixed assets over their HC NBV.

Comparison of Employment of Capital

Only non-monetary assets are examined. Monetary items are not adjusted because they are expressed in current Rand terms and already reflect the decrease in the value of money.

	CCA	CPP	Difference
	R000	R000	R000
Fixed assets at cost	1 270	1 224	46
Land and buildings	900	725	175
Stock	307	307	-
	2 477	2 256	221

Balance Sheet Comparisons - Conclusions

The balance sheet comparisons result in the same conclusions as for the income statement. In addition, it can be seen that where increases in the costs of replacing assets (particularly fixed assets) differ from increases in the CPI, CPP will show different asset values on the balance sheet.

Conclusions

Certain parties may favour the proprietary concept of the firm and apply CPP. Their argument may be that if the return on their investment does not at least match the increase in the CPI and yield a desired rate of return, then their capital or investment should be placed elsewhere. Other parties may favour the entity concept of the firm, where it is preferable to at least preserve the company's operating capacity and yield an acceptable real return. The above figured comparison does not seek to prefer one methodology over the other, but is intended to highlight the differences in methodologies and results from applying CCA and CPP to HC results under one set of circumstances. This figured comparison (in conjunction with the theoretical comparison of the methods in Section 2.3) does raise the interesting question of which method may be perceived, in practice, to generate more meaningful results, and whether specific indices yield better information to management than general indices.

2.7 RELATING INFLATION ACCOUNTING WITH CASH FLOW

1. Background

At the time this research was performed, most countries did not have a mandatory cash flow statement and the emphasis was often placed upon the traditional Source and Application of Funds Statements (or Funds Flow Statements as they were commonly referred to in the USA). The preliminary research in the literature survey indicated a link between CCA and future cash flows. (In investigating this link, research was also performed on the format of a cash flow statement which could be used to disclose CC adjustments. It was envisaged that this would be of use because it would allow users to try to establish a sustainable cash flow base, AFTER existing operating capacity had been maintained in times of increasing prices.)

The research performed, particularly on UK and American companies led to the development of a cash flow statement which had a basic three tier structure of operations, investment and finance. (This research was performed prior to the formal introduction of cash flow statements.) It is felt that this was an appropriate framework because it provided users with a base to determine sustainable cash flows and cash movements in the three major areas of a normal company structure. The importance of this split was highlighted when looking at the various techniques for evaluating companies' performances (historical and future). Valuations, discounted cash-flows and ratio analysis all look at the three major business functions (profitability or operations, assets or investing activities and financing activities).

2. Introduction

In the South African context, cash management and cash flow information is becoming increasingly important. This has been intensified by a number of recessionary cycles, inflation of prices and an ever growing number of insolvencies precipitated by a lack of liquidity. The recessionary cycles and liquidity problems are often worsened by high interest rates, which may be used by the Government to dampen demand in an attempt to combat inflation.

In their "Statement of Financial Accounting Concepts No. 1 - Objectives of Financial Reporting by Business Enterprises" the FASB notes: "Since investors' (dividends and interest) and creditors' cash flows are related to enterprise cash flows, financial reporting should provide information to help investors, creditors and others assess the amount, timing and uncertainty of prospective net cash inflows to the related enterprise".

In its discussion paper DP8, "Cash Flow Information", the South African Accounting Practices Committee (APC) notes in paragraph 16: "Information on liquidity of an enterprise is very important to investors. Shortage of liquid resources can, and has, led to business failure and bankruptcy. Times of recession and inflation only increase the importance of liquidity, and investors need information about working capital management". The APC further notes in paragraph 18 "The impact of inflation on income has long been recognised as an important factor in assessing the real profitability of an enterprise". The APC indirectly points the way to applying CCA in the cash flow statement in paragraph 37:

"Where it is possible to differentiate between that portion of the expenditure which maintains present operating capacity, and the portion which extends the operating capacity of the enterprise, this distinction should be made in the cash flow statement". This has relevance to the application of CCA, as one of the fundamental concepts of CCA is, after all, to maintain operating capacity. However, a conflict arises when trying to link CCA to an HC cash flow statement, because the CC adjustments are non cash items. To illustrate these concepts, cash flow statements have been prepared on the HC basis following the recommendations of DP 8, and on a CC basis which adjusts the results of the cash flow statement prepared in terms of DP 8 for CC adjustments. The net cash movements computed by each method have been reconciled to illustrate the relevance of the inflation adjustments to users of the AFS. These cash flow statements have been prepared from the HC and CC AFS used in Section 2.6 above.

The C cash flow statement highlights two fundamental problems in traditional HC reporting: firstly, the HC profit before tax of R 125 000 becomes a loss of R(65 000) under CCA. Therefore, on a real basis, the company could not even maintain its operating capacity from pre-tax profits and all tax and dividends are paid out of capital. The effect on cash flow is shown in the reconciliation of net liquid assets below. It becomes apparent that if the company had not been so liquid, it might have had problems in being able to finance existing capacity. Secondly, the CC cash flow statement shows the potential problem of investing funds into future operations (i.e. to expand capacity) without first considering the effects of inflation on the existing capacity. The cash flow statement does not disclose CC revaluations of non-monetary assets, because they do not involve the flow of funds, and because the revaluation is taken directly to a CC revaluation reserve in the balance sheet. This is not considered a problem because the company should also disclose a CC Statement of Assets and Liabilities as supplementary disclosure to the HC AFS.

Certain arbitrary assumptions were made for this exercise and amounts were allocated to certain figures to provide the appropriate disclosure (e.g. interest and dividends received, and research and development expenditure).

3. Inflation (Pty) Ltd

Cash flow statement for the year ended 31 December 1988

	Note	HC R000	C R000
Operating activities			
Cash generated from continuing operations, (net of R140 to finance increase in working capital)	1	60	60
Interest paid		(30)	(30)
Taxation paid	2	(50)	(50)
Cash available from continuing operations		(20)	(20)
Additional expenditure required to maintain the existing operational capacity of trading stock (COSA)		-	(35)
Cost of discontinued operations	3	-	-
Cash utilised by operations - available		(20)	(55)
Extraordinary items		-	-
Dividends paid	2	(25)	(25)
Cash utilised by operations - retained		(45)	(80)
Investing activities			
Disposals - Proceeds from disposal of plant		90	90
Acquisitions to maintain existing capacity - Plant		(100)	(100)
Additional expenditure required to maintain the existing operating capacity of the fixed asset structure	4	-	(50)
Acquisitions to expand future operations - Plant		(100)	(100)
- Research and development expenditure		(5)	(5)
Financing activities			
Long term loan received		20	20
Adjustment to reflect the cost of holding net monetary assets over the period (GA)		-	(65)
Income received - dividends		20	20
- interest		15	15
NET MOVEMENT IN CASH	5	(105)	(255)

Notes to the cash flow statements	HC R000	CC R000
1. Cash generated by continuing operations		
Income before taxation	125	(65)
Adjustments for non-cash items		
- depreciation	85	85
- (profit)/loss on disposal of plant	(10)	30
Inflation adjustments		
- depreciation	-	50
- cost of sales	-	35
Interest paid	30	30
Gearing adjustment	-	65
Investment income - dividends received	(20)	(20)
- interest received	(15)	(15)
Research and development expenditure	5	5
Retained to finance working capital	(140)	(140)
- increase in stocks	(100)	(100)
- increase in debtors	(90)	(90)
- increase in creditors (including taxation)	50	50
Cash generated from continuing operations	60	60

2. Reconciliation of dividends and taxation paid to the HC IS

	Dividends R000	Taxation R000
Amounts unpaid at beginning of the year	-	30
Amounts provided per the HC IS	25	50
Deferred taxation	-	-
Amounts unpaid at end of the year	-	(30)
Cash amounts paid	25	50

It is assumed that dividends are paid on the last day of the financial year.

3. Cost of discontinued operations

This is not applicable to this example, but is included because it is felt that this disclosure is useful to FS users. This presentation reflects a trend in the SA economy over several years, as the recessionary cycles and other factors have caused groups to prune unprofitable operations. (This has also been a feature of a number of recent large US take-overs and management and leveraged buy-outs). It is interesting to note that the case study companies in this thesis and a number of the UK companies surveyed in Scapens et al (1983) use CCA (via budgeted profits, rates of return, etc.) to evaluate the individual operations. This CCA analysis is used to determine whether cash resources should be allocated to these divisional operations or whether the operations should be discontinued.

4. Additional expenditure to maintain operating capacity of fixed assets

	HC R000	CC R000
Depreciation adjustment	-	50
Backlog depreciation adjustment	-	-
	-	50

The split of FA additions between those required to maintain or expand capacity is becoming more common, however if the replacement asset represents a technological improvement over the old asset it will increase operating capacity. In this case a reasonable allocation of the "excess cost" could be made to expenditures to increase existing capacity. Backlog depreciation was not included in this example, but if it is calculated, it should be disclosed as above.

5. Net movement in cash

Cash balances per the balance sheet

	R000
31 December 1988	310
31 December 1987	415
Net decrease in cash	(105)

A reconciliation of HC and CC cash movements reveals the following:

	R000	R000
HC decrease in cash		105
Less: inflation adjustments		
- depreciation	50	
- cost of sales	35	
- gearing	65	150
CC decrease in cash		255

This reconciliation emphasises the effects of inflation and it highlights the message contained in the CC IS. In order to maintain operating capacity (that is, just to remain in the same position), an additional amount of R150 must be retained in cash, due to increases in the prices of fixed assets and stocks and to compensate for the loss of purchasing power of the net monetary assets held.

The impact of inflation on the future liquidity of the company can be judged as follows:

	R000
Current liabilities	(235)
Current liquid assets - debtors	570
- bank	310
Liquid assets	645
Inflation adjustments	(150)
"Free" liquid assets	495

A glance at the HC balance sheet shows a strong position, with the gearing ratio improving, expansion of plant and machinery and a strong working capital section, with a current ratio of 5 (1987 = 5,9) and a quick ratio of 2,7 (1987 = 4,8). A company that was not as well geared as Inflation (Pty) Limited with weaker financing ratios, may have found itself in a cash flow crisis, particularly if it had to fund the R.150 000 required to maintain operating capacity.

Other notes to the cash flow statement

1. The CC cash flow statement has ignored backlog depreciation, which could also be provided as part of the DA.

2. It can be debated whether the inflation adjustments would form part of cash generated from continuing operations, or should be disclosed as part of the investing section, to maintain existing capacity.

3. There may be an argument in favour of basing the movements in the CC cash flow statement (e.g. the changes in stock and all fixed asset transactions) on two years' CC balance sheets (as opposed to the methodology above, where the HC movements have been used). However, it is felt that this falls outside the scope of this thesis, and no further investigation or research will be performed on this area in this thesis.

4. Disclosure is not the sole critical element of the CC cash flow statement. Informed management commentary on how inflation affects sustainable cash flows is considered to be vital to users of FS.

5. The "direct" method has been used to compute "cash provided by continuing operations", as it is felt that this gives a better basis for analysing the cash-based movements of the period, predicting future cash-flows and comparability. This gives a better picture of the sustainable base of cash flows generated from operations as the user can trace the components of the flows of cash through the business. Both methods (direct and indirect) will give the same "cash utilised by operations" figure of R(?0). The direct method appears to provide more meaningful information relating to cash-flow and management of working capital. The indirect method does not show how the cash has flowed through the working capital components of the business to result in the "cash utilised by operations". The direct method provides a better base for calculating detailed daily, weekly and monthly cash flow requirements in the budgeting process. It should be noted that the operating section is also split into the three components (operating, investing and financing) so the user can correctly assess operational cash flows. A figured example of the direct method of calculating cash generated from operations (using the CC cash flow statement) is presented below.

Cash utilised by continuing operations - The direct method

	Notes	R000
Operating		
Operating:		
- Receipts from debtors	1	1 110
- Payments to suppliers	1	(950)
- Net cash expenses	2	(100)
Cash generated from operations		60
Additional expenditure required to maintain the existing operational capacity of trading stocks (COSA)		(35)
Cash generated from operations, adjusted for changing prices		25
Investing		
- Dividends received	2	20
Financing		
- Interest received	2	15
- Interest paid	2	(30)
Taxation	3	(50)
Cash utilised by continuing operations		(20)

Notes to the CC cash flow statement - direct method

Note 1

	Debtors R000	Creditors R000
Opening balance	480	185
Sales/Purchases	1 200	1 000
Closing balance	(570)	(235)
Cash movement	1 110	950

Note 2 - Net cash expense

Operating overheads	(100)
Dividends received	(20)
Interest received	(15)
Interest paid	30
Research and development expenditure	5
Net cash expenses	100

Note 3 - Taxation

As per previous example

The cash generated from operations adjusted for changing prices incorporates a realistic estimate of future cash expenditures required to maintain its current level of operations and is therefore an appropriate place to build in the COSA. The COSA is based on stock levels at hand at the year end. Stock levels fluctuate, but it is felt that, unless there is a significant change, that these stock levels should provide a reasonable operating base for future performance. If there are any major changes, these should be taken into account in finalising the quantum of the COSA.

6. "Financing" movements are addressed next. These movements are normally material and are of interest due to the importance of gearing on a company's profitability and going concern, particularly in times of high interest rates (which may be a feature of inflationary times). The gearing adjustment is disclosed under this section because it reflects the gain or loss of holding net monetary liabilities or assets during the period. It helps to emphasise to management and other users of the FS that the monetary structure is important and that there is a cost attaching to holding net monetary assets. The mix of monetary assets and liabilities should be structured by management to take advantage of changing price levels.

The conclusion of this section appears to be that an HC IS which has been adjusted by CCA may provide a better forecast of a company's future cash flows than an HC cash flow statement. A question which arises from this conclusion is whether a combination of the traditional HC cash flow statement adjusted by CCA adjustments will provide management with useful information. Additional questions arose at the time of performing this literature survey. Firstly, whether companies did prepare cash flow statements in practice or not. Secondly, a question arose as to whether a source and application of funds statement or a cash flow statement provided management with more useful information.

2.8 UPDATE TO THE LITERATURE SURVEY 1987 THROUGH 1991

The literature survey and the research was specifically bracketed in the period 1985 through 1987. As the dissertation was only completed in 1991, the literature survey has been updated to the end of 1991. A detailed search for new publications was performed, and it was immediately apparent that the indifference to IA noted in the USA in the period 1985 through 1987 (which arose mainly as a result of continued low inflation rates), continued through to 1991. The inflation rates remained at low levels particularly in the USA and the UK, which are traditionally the driving forces behind new developments in accounting methodology. There were very few new books written about IA, and virtually no major additions to the established theory base. The majority of articles written about inflation in the international financial and popular press generally dealt with the causes of and attempted cures for inflation. The low inflation rates, and lack of acceptance of IA by the Revenue authorities and the companies themselves has further reduced interest in IA.

This continued indifference to IA is manifested in the accounting methodologies adopted by the various standard setting bodies.

The IASC

ED 31 "Financial Reporting in Hyperinflationary Economies" issued in April 1988 was superseded by statement IAS 29 "Financial Reporting in Hyperinflationary Economies" which became effective for financial statements covering periods beginning on or after January 1990.

The USA

There have been no major developments in the official inflation accounting literature since the mandatory requirements of FAS 33 were dropped as crystallised in FAS 89 "Financial Reporting and Changing Prices". Inflation has remained at relatively low levels, and there has been no concerted pressure to enforce IA methodology.

The UK

There have been no significant developments in respect of IA in the UK.

South Africa

South Africa has continued to be beset by relatively high inflation rates, but AC 201 "Disclosure of the Effects of Changing Prices on Financial Results" issued in August 1978 continued to be non-mandatory. In October 1983, AC 202 "Accounting for Fixed Asset Revaluations" was issued. This was not specifically aimed at accounting for inflation, but did note in the introduction at paragraph .04 "Usually, however, a significant element of the objective (of fixed asset revaluation) is to eliminate one of the main distortions that arises in financial statements prepared in accordance with the historic cost conventions in times of changing prices." At paragraph .06 "Revaluing assets is a partial response to accounting for changing prices but usually does not satisfy all the objectives of either a capital maintenance approach or a full current cost approach. It is unlikely that a system of accounting for changing prices will become the required method in the primary, as distinct from supplementary, financial statements of enterprises for some time. In the meantime, there is widespread acceptance of the view that revaluations are appropriate as a modification of the historical cost accounting system".

ED 66 "Disclosure of Current Value Information in Financial Statements was issued in September 1986. AC 201 was aimed only at the income statement, and this ED was designed to address the BS aspects of CCA methodology, and stated at paragraph 16 "It is accepted that current value can be determined in many ways depending on the circumstances of the enterprise concerned and the nature of the non-monetary assets. For this reason it is appropriate to disclose the basis on which current value has been determined. The overriding requirement of this statement is that enterprises should provide information on the estimated current values of non-monetary assets." Paragraph .26 states "The financial statements should disclose the estimated current values of non-monetary assets and the bases upon which current values have been estimated."

ED 77 "Disclosure of Current Value Information in Financial Statements" was issued in September 1989 and introduced a novel approach to accounting for inflation. It adopted an economist's view of income, and recommended that changes in value of assets be reflected on the face of the IS (instead of being taken directly to a non-distributable reserve as was the historical practice). The ED proposed presentation of current value BS and IS on a primary or supplementary basis. ED 77 took the CCA maintenance of physical capacity approach calling for the substitution of current values for historical values, and the ED identified a number of methods of measuring current values. In addition to applying an economist's approach to the revaluation of assets being recognised in the IS (a comprehensive income view) ED 77 also espoused the economist's view that the net present value of future cash flows was the most appropriate method of recognising current value. ED 77 does however explore a number of bases for the determination of current value, namely present value, market value, replacement cost and indexed historical cost. The comprehensive income is subject to a charge transferring an amount to reserves to maintain capital (either on the financial or physical capital basis).

The ED 77 IS could be summarised as follows:

			R000
HC income			1 269
CC adjustments (DA and COSA)			610
Current cost income (per AC201, before the GA)			659
Holding gains	- realised	610	
	- unrealised	971	1 581
Comprehensive income			2 240
Adjustment to maintain shareholders' purchasing power			1 313
Current value income in real terms			927

AC 201 would use the CC income of R 659 000 which would be adjusted by the GA. (The above example was based on a presentation given by G Everingham in August 1990 - "Company 90 - Law, Tax and Accounting Developments for Companies and Close Corporations".)

It is considered that ED 77 is instructive and constructive in its approach and it is hoped that it will re-aw... the IA debate in SA, and encourage companies to address the effects of changing prices on their financial statements and corporate operations.

There may be a certain amount of unease at the introduction of economist approaches via net present values and comprehensive income, but the ED maintains the base CC methodology and it is to be hoped that a mandatory statement develops from the ED, given the chronic level of inflation in South Africa. In conclusion, there has generally been a low level of interest in the theory of IA world-wide, as addressed by the financial press and published documents. Although the South African statement introduces an economist's view of comprehensive income, its contents do not appear to contradict the findings of this dissertation. Singer (1991) emphasised that this ED was never made mandatory as there was a general lack of support and ".... in general commentators disagreed with the principles in ED 77".

As regards cash flows, SA has, in line with a number of other countries, issued a mandatory cash flow statement, AC 118 "Cash Flow Information".

No books on inflation accounting were located by a detailed literature survey in the period 1987 through 1991. A number of articles were published in accounting, financial and other journals, but these generally dealt with the effects of inflation on specific countries, and did not add to the body of knowledge as regards IA methodology.

2.9 PARALLELS AND DISSIMILARITIES BETWEEN THE CIRCUMSTANCES IN THE UNITED STATES OF AMERICA AND SOUTH AFRICA, AT THE TIME THIS RESEARCH WAS PERFORMED

The research for this dissertation was performed in the USA in the period 1985 through 1987. Clearly one cannot draw irrefutable conclusions from this research that apply to the SA situation.

However, this dissertation will compare the circumstances in the USA and SA. One is continually presented with analyses and comparisons of various factors in the USA and SA, including inflation rates, interest rates, productivity, the stage of development of the economies, the amount and nature of government interference in the economy, sanctions, trade tariffs and import duties to protect local industries and so on. These commentaries can be found in the daily press, the financial press and even in magazines and books that are not purely financially orientated. Perhaps the major factors that are compared and contrasted are the inflation rates, the interest rates and levels of productivity. Of course, the exchange rates also play a critical role but are driven to greater or lesser degrees by the above factors.

It is generally contended that the US has controlled its interest rates more successfully than SA, with real interest rates being the order of the day, and this has been a major factor in controlling the inflation rate. SA, on the other hands, is a developing economy, and the lack of stability and maturity compounded by the labour situation has resulted (amongst other factors) in poor control of interest rates and a chronic double digit inflation rate.

It is concluded that the major similarities between the two countries in the context of the research performed on this thesis, are firstly the similarities in physical structure and operations of companies, and secondly the similarities in the effects of increasing prices on the results and operating capacities of the companies. Section 2.9.1 will illustrate these parallels in greater detail, and section 2.9.2 will address the dissimilarities.

2.9.1 Parallels

Similar levels of inflation over a period of time

The US inflation rate peaked at around 14%. Although the SA inflation rate has been at higher levels for a longer period of time, the rate has never greatly exceeded 20% and has appeared to level out at around 15% in recent years.

The nature and structure of the business operations is essentially similar, particularly in manufacturing operations

It is contended that this, and the following point ("The effect of inflation on companies") are probably the strongest points to support the supposition that the conclusions drawn from the research performed in the USA are relevant to companies operating in the SA environment, and to the SA economy.

It can be argued that if the fundamental company structures are compared, they are found to be essentially similar for both American and SA companies. This observation is based on the author's personal experiance in the USA (which included eighteen months of auditing US companies, the case studies, discussions with US auditors, accountants and businessmen, and a wide range of readings). The fundamental similarities can be seen in such areas as:

- the company structure and hierarchy
- accounting controls
- internal controls
- company and management objectives
- manufacturing processes and procedures
- the structure and components of financial statements.

It is submitted that there is a fundamental similarity between US and SA companies (and companies in other countries).

The effect of inflation on the companies

It is submitted that the effect of inflation on the companies is essentially similar. As prices increase, it becomes more expensive to replace assets consumed in the course of business. There is no difference at all between the USA and SA in this regard. (Other economic factors and levels of inflation may be different, but the impact of inflation appears to be broadly similar.)

Productivity

Inflation is a depressant of productivity, for two reasons, because firstly, to control inflation, governments tend to dampen demand and secondly, inflation has a "psychologically" depressing effect on performance. It is submitted that these effects on productivity are similar both in the USA and SA.

First and third world economies

The previous point has compared the nature and structure of businesses. It is clear from this analysis that even though SA clearly has a large third world component, it also faces the dichotomy of having a strong first world business sector with reasonably advanced technology and technical skills. (The dissimilarity aspect of this point is addressed in the previous section.)

Inflation and interest rates

The relationship between inflation and interest rates in SA and the USA is presented graphically below, with appropriate commentaries.

Graphical comparisons of USA and SA inflation and interest rates

To assist in the interpretation of this anecdotal evidence, graphical comparisons of the inflation rates and interest rates in the USA and SA are presented and discussed. The inflation and interest rates are compared between countries, then the relationship between the rates of interest and inflation in the individual countries is examined.

The following graphs are presented to illustrate these relationships to determine whether there is a relationship between interest and inflation rates in the two countries:

Graph 2.7 - SA inflation and interest rates

Graph 2.8 - US inflation and interest rates

Graph 2.9 - US and SA inflation rates

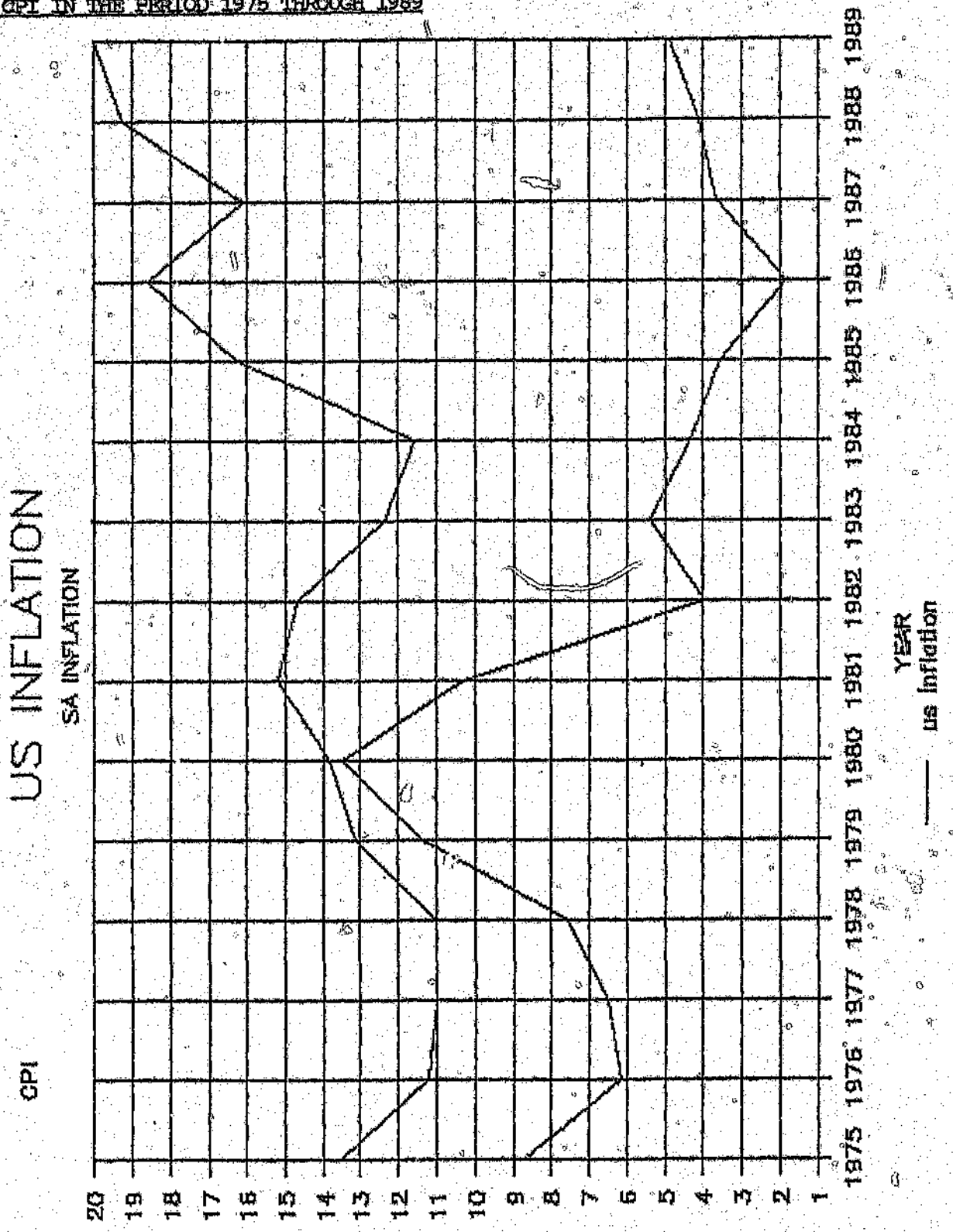
Graph 2.10 - US and SA interest rates

The graphs are all presented for the period 1975 through 1989. The numbers represent the year on year percentage increase in prices, as measured by the CPI and the interest rates in both cases are the prime bank overdraft interest rates.

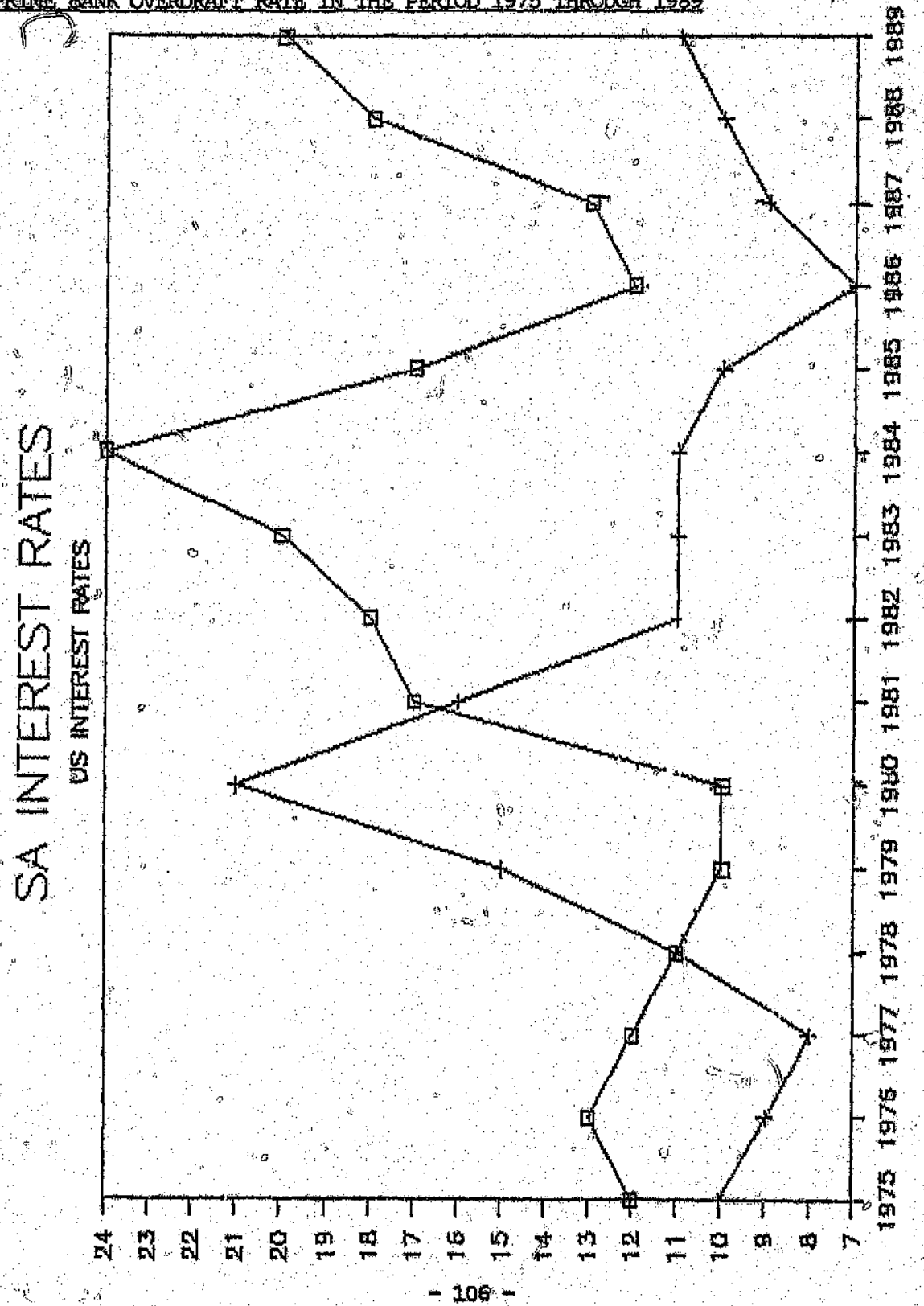
To control the rate of increase in prices, a policy of real interest rates (i.e. interest rates higher than inflation rates) can be applied to curb demand. If interest rates are below inflation, it pays consumers to borrow, which increases demand, encourages expenditure and encourages increases in prices. This policy is clearly demonstrated in the US (graph 2.9) where there have been real interest rates and may explain, to some degree, how the US has successfully managed to contain its inflation rate. When inflation increased, real interest rates rose at a higher rate. This strong fiscal management has resulted in steady interest rate and inflation changes, and control over the level of increasing prices.

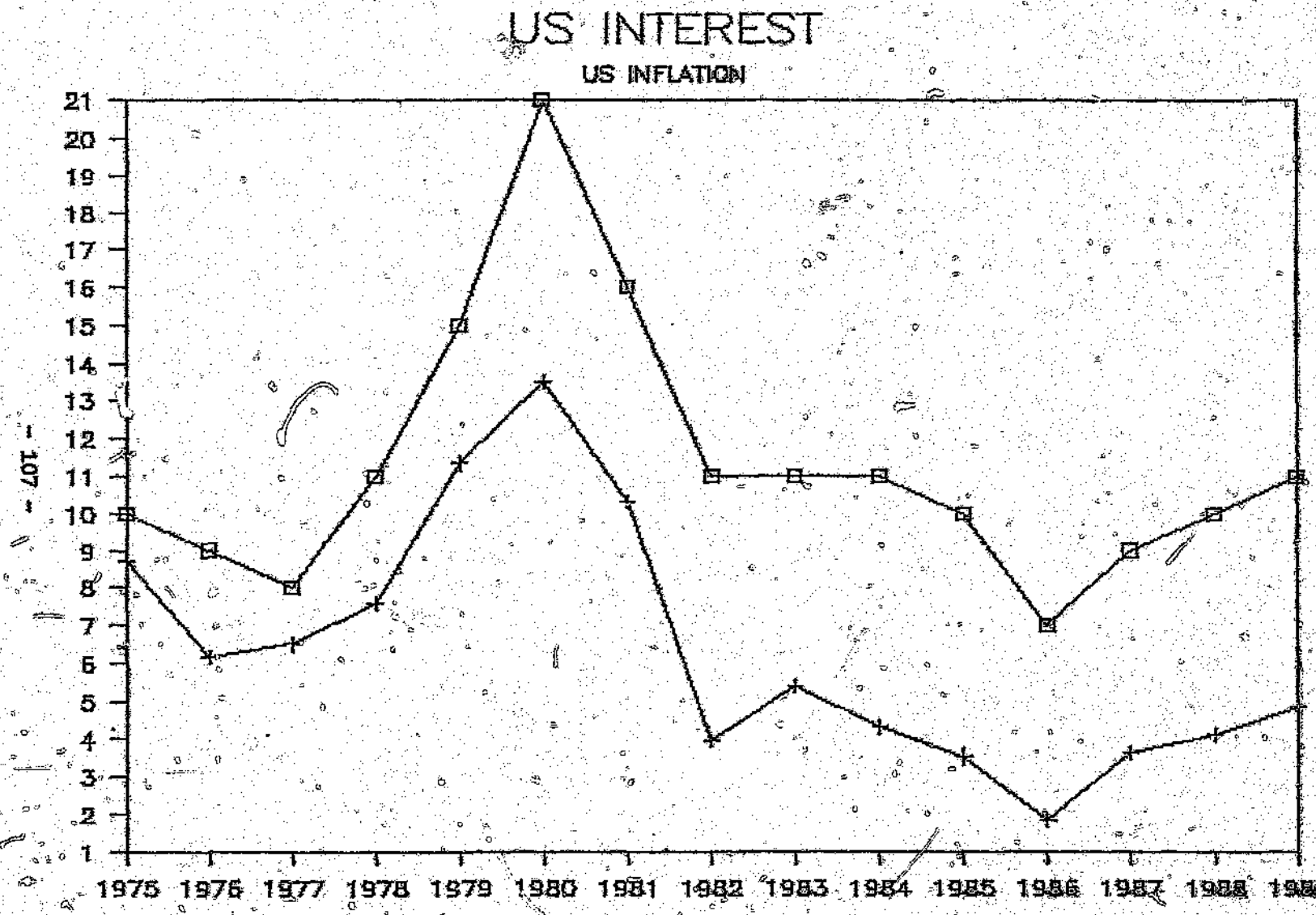
This can be contrasted to the SA situation, where the government has indicated that inflation is a serious problem, but has not implemented a tight policy of fiscal control via real interest rates. This may be explained by a number of factors, e.g. policy decisions to reduce interest rates to promote growth and employment, election ploys, etc. This has resulted in large fluctuations in the interest rate to attempt to control inflation. This "ad hoc" policy can be seen to be failing in that the inflation rate has continued to increase. Graph 2.10 shows the uneven nature of the relationship of the two factors of interest and inflation rates in SA.

GRAPH 2.7 AMERICAN AND SOUTH AFRICAN INFLATION RATES AS MEASURED BY THE CPI IN THE PERIOD 1975 THROUGH 1989

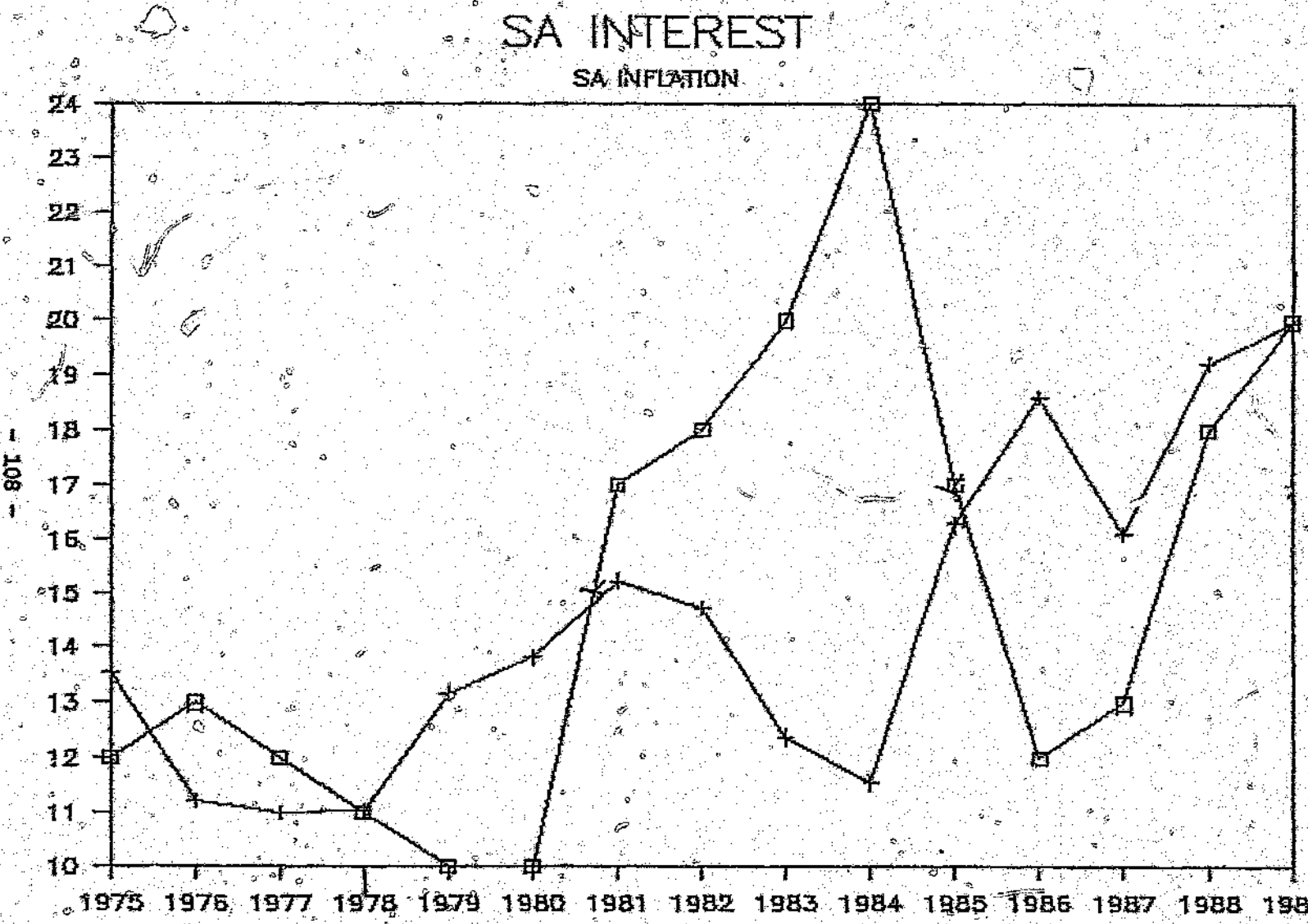


GRAPH 2.8 AMERICAN AND SOUTH AFRICAN INTEREST RATES, AS MEASURED BY THE PRIME BANK OVERDRAFT RATE IN THE PERIOD 1975 THROUGH 1989





GRAPH 2.2 AMERICAN INFLATION AND INTEREST RATES IN THE PERIOD 1975 UNTIL 1989



GRAPH° 2.10 SOUTH AFRICAN INFLATION AND INTEREST RATES IN THE PERIOD 1975 THROUGH 1989

Graph 2.7 compares the US and SA inflation rates (as measured by the CPI). The US rates peaked around 14% and then were brought under control. This is shown by the low rates after 1981 and helps, to a large degree, to explain the indifference to the problem of increasing prices and its effects in the USA at the time the research was performed. In contrast the SA inflation rate is shown to have been at relatively high levels for the entire period, with no success in bringing the rate into single figures (in line with a number of SA's major trading partners).

Graph 2.8 compares the US and SA inflation rates, as measured by the average prime bank overdraft rate. The rates appear to follow a broadly similar trend, with the SA rates lagging the US rates, but at a higher level. However, the comparison of interest rates takes on a new meaning when compared to the inflation rates in the respective countries.

Graph 2.9 compares US inflation and interest rates and there appears to be a clear and consistent trend of real interest rates over the entire period. This is a major factor in explaining how the US was able to control the levels of inflation, and it is apparent how the US manipulated the interest rates in reaction to changes in the general levels of prices not only to keep the rates on a real basis, but also to maintain such an effective cushion or relationship between the rates as to control the rate of increase of prices.

Graph 2.10 compares the SA inflation and interest rates. This clearly shows a mismatching of rates in terms of both maintaining real interest rates and a constant relationship between the rates. It is acknowledged that other factors are considered in the real world equation (e.g. the effects on dampened demand on a developing economy, the labour situation, the trade-off between inflation and employment etc.) However, it can clearly be seen that the absence of a consistent fiscal policy as regards interest rates has allowed inflation to persist at double digit levels.

It is acknowledged that these graphical representations only focus on inflation and interest rates, and that there are numerous other factors that may impact on the conclusions drawn. However it is submitted that there is a clear relationship between the two rates, and that this comparison is meaningful.

Inflation, interest rates and productivity

It was considered that it would be constructive to examine the effects of inflation on three of the key economic indicators, namely inflation, interest rates and productivity.® It was submitted that these are critical measures which all exert a large influence one each other. GNP was taken to the most appropriate measure of productivity. Initial studies soon revealed that inclusion of the GNP was not appropriate because there are a number of components to the GNP, and there are a number of other factors which affect changes in GNP, which went far beyond the scope of this thesis. It is submitted that the relationship between inflation, interest rates and productivity, particularly in South Africa, may be an area for further research, and is raised as such in Section 5.5. It is interesting to note that inflation has an insidious effect on an economy, because it undermines motivation and productivity. The author assisted the Federated Chamber of Industries in formulating an approach to the Department of Trade and Industries, in respect of the effects of inflation on various components of organisations' operations and how the companies could counter the effects of inflation, and improve the productivity of their operations.

Conclusion

It was therefore concluded that the graphs illustrate that there is a similarity in the ways that inflation and the interest rate react to each other, but a dissimilarity in the manner the respective governments have elected to deal with the situation.

2.9.2 Dissimilarities

There are obviously a number of dissimilarities between the USA and SA. Some of the macro-economic differences may include the fact that the USA's economy is more developed than SA's and its technology is more advanced. It may be argued that the majority of Americans enjoy higher standards of living and education. There are differences in the systems of government and the stability of the USA's internal politics.

2.9.3 Conclusions

It is submitted that the macro-economic differences between the USA and SA as detailed above do not invalidate the comparisons of the US findings to the SA position. The two major similarities are the physical structure and operations, and the like manner in which increasing prices impact on the results and operations of companies.

As an area for further research, it may be productive to perform similar research methods (i.e. questionnaires and case studies) on South African companies to gauge their attitudes to (.)flation, IA methods and to determine what IA practices are being used in practice.

CHAPTER THREE - RESEARCH METHODOLOGY

3.1 INTRODUCTION

The research questions were developed out of the literature survey. A number of reference books were consulted and these are listed in the bibliography. Various arguments, ideas and theories were recorded in the literature survey and conclusions were drawn from this research and then re-stated as research questions. This research methodology section will therefore record the conclusions drawn from the literature survey and note certain questions raised in these conclusions. These will be used to develop the research questions. The research questions will be tested by way of a questionnaire and case studies.

The major areas covered in the literature survey can be summarised into a number of broad areass. The dissertation first addressed what inflation is, its causes and development, and illustrated the effects of inflation on information generated by HCA. The methods of accounting for inflation were discussed and the international and South African inflation accounting practices were reviewed. A figured comparison of HCA, CPP and CCA was performed to compare and contrast the effects of inflation on HC results, using CCA and CPP. The relationship between CCA and cash flows was examined. Based on an analysis of the different theories and arguments presented in the literature survey, a number of broad conclusions and certain questions were derived for each of the above major areas.

3.2 DEVELOPMENT OF THE RESEARCH QUESTIONS

The major conclusions and questions that were identified as deserving further research have been noted below, together with certain other material matters raised in various sections of the literature survey.

Research questions were then developed from these points. The research questions have been finally posed in the manner of questionnaire questions and these research questions were addressed by way of case studies as well as the questionnaire.

3.2.1 What inflation is, its causes and effects

Inflation is a problem and this raises the presumption that some method of accounting for the effects of increasing prices is better than no method. Production of inflation adjusted data on an annual basis, for statutory annual financial statements, is inadequate. Inflation must be accounted for in the management information systems and management should use this inflation adjusted information in its day-to-day decision making process. Therefore the two major concerns that are highlighted above are that inflation is a problem, and this problem should be accounted for internally. This gives rise to the first research question, namely whether inflation was a problem that should be accounted for internally. A further question raised in the literature survey was at what threshhold inflation rate does inflation begin to impact sufficiently on MIS to warrant internal adjustments. These two research questions were then posed together us the following question.

"RESEARCH QUESTION ONE - INFLATION IS A PROBLEM WHICH MUST BE ACCOUNTED FOR IN THE INTERNAL MIS (FROM A RANGE OF XX %)"

This question encapsulates the above two major concerns and sets parameters from which respondents would take action internally. However given the opposition and indifference to FASB Statement No 33, it appeared unlikely that companies would prepare IA information in their internal MIS on a formal basis.

This gave rise to an additional research question, namely:

"RESEARCH QUESTION TWO - THE MAJORITY OF COMPANIES, IN TIMES OF INCREASING PRICES, DO NOT FORMALLY ACCOUNT FOR THE EFFECTS OF INFLATION IN THEIR MIS"

3.2.2 IA methods, accounting practices and the figured comparison of HCA, CPP and CCA

The general conclusions that were derived from these broad sections were that there were a number of IA methods, of which CCA and CPP were the most popular. (Differences in applying the methods varied between countries, but the general theory was similar).

CPP, based on the proprietary concept, appeared to have more relevance in hyper-inflationary environments. In non-hyper-inflationary environments, CPP had certain shortcomings including the fact that use of a general price index is arbitrary and potentially misleading, it does not recognise the specific price changes which affect every business, and it does not provide relevant information in respect of likely future cash flows in the business, because it does not account for asset replacement.

CCA, based on entity concept, maintains the operating capacity of the entity, by ensuring sufficient funds are maintained to replace operating assets. This is based on the assumption that assets consumed in the course of business are replaced and therefore maintains the going concern concept.

It matches current costs against current revenues and is a valuable tool for forecasting future cash flows and profits, and evaluating the business. CCA also enables users to obtain a more cash-based view of the company's operating performance.

Given the differences in methodology, the international and South African accounting practices for inflation were reviewed. This review revealed the controversy relating to IA and highlighted the fact that no one method has been universally accepted. The USA, (having made CCA and CPP reporting mandatory via FASB Statement No. 33) preferred CCA over CPP but then made both methods non-mandatory. The UK, which had officially favoured CCA over CPP, made CCA non-mandatory, but kept the methodology in place. If a general conclusion could be drawn from this section of the survey, it might be that CPP was suitable for countries experiencing "hyper-inflation". Here, the inflation rate is so high that monthly figures are not comparable, and a general system of linking all financial management reporting systems to the inflation rate is essential. If all figures are not indexed, then no meaningful data can be produced from the traditional accounting systems. It could also be inferred that CCA was suitable in countries with single or double digit inflation where the two major CCA concepts appear to be acceptable. The concepts are the application of a going concern concept based on the replacement of assets consumed in the course of business, and the revaluation of assets based on specific price increases.

The figured comparisons provided an illustration of the methodologies required to apply CPP and CCA to HC figures, and showed the effects of applying the methods (based on a manufacturing type environment where the rate of increase of specific indices exceeded the rate of increase of the CPI).

Because this was such a specific example, and because no sensitivity analyses were performed, no broad assumptions can be made about which method provides better results. However, it can be stated that application of the CCA methodology appeared to be easier than an application of CPP and the adjustments appeared to be more understandable. If the results of this exercise are taken in the context of the rest of the literature survey, it is not difficult to understand why there has generally been a preference for CCA over CPP in non-hyper-inflationary economies. Based on the above, it may be concluded that CCA may provide management with meaningful information in a non-hyper-inflationary economic climate.

The above three subsections compared IA methods, looked at local and international IA practices and made a figured comparison of HCA, CPP and CCA. The conclusions drawn from these subsections can be developed into the following research question:

"RESEARCH QUESTION THREE - OF THE TWO COMMONLY ACCEPTED METHODS OF ACCOUNTING FOR INFLATION, CCA PROVIDES MORE MEANINGFUL INTERNAL INFORMATION FOR MANAGEMENT THAN DOES CPP (IN TIMES OF INCREASING PRICES, BUT IN A NON-HYPER-INFLATIONARY ENVIRONMENT)"

A second, more specific research question was also developed to address one of the major differences in methodology between CCA and CPP, namely:

"RESEARCH QUESTION FOUR - SPECIFIC INDICES ARE MORE RELEVANT IN ACCOUNTING FOR THE EFFECTS OF INCREASING PRICES THAN GENERAL INDICES"

3.2.3 The relationship between CCA and cash flows

HC cash flow statements were amended to incorporate CC adjustments, and the results of the two statements were compared, to assess such matters as how well the liquidity of a company was measured and whether CCA can give management assistance in predicting future cash flows. The success of a business depends on the actual cash flows through the business and generally accepted accounting practices may sometimes disguise the true cash flows of a business. It was considered that cash accounting provided meaningful and useful data to management and that measurement of future cash flows gave an indication of the viability of the entity.

"RESEARCH QUESTION FIVE - CCA PROVIDES RESULTS THAT ANTICIPATE FUTURE CASH FLOWS"

All of the previous research questions then led to the development of the sixth research question.

"RESEARCH QUESTION SIX - A COMBINATION OF CCA AND CASH FLOW ACCOUNTING PROVIDES A MOST SUITABLE METHOD OF ACCOUNTING INTERNALLY FOR THE EFFECTS OF INCREASING PRICES (IN A NON-HYPER-INFLATIONARY ENVIRONMENT)"

At the time of the thesis research, there were two relevant concerns arising from the cash flow research.

Firstly it appeared that many companies did not prepare a cash flow statement and secondly a cash flow statement appeared to provide more useful information than a source and application of funds statement (which does not provide such a logical picture of the flow of funds through the business). Subsequently, the FASB issued a mandatory statement on cash flow accounting. Detailed analysis will not be performed on these two final research questions, because the results of the research and subsequent developments clearly answer the concerns raised in the research question.

"RESEARCH QUESTION SEVEN - THE MAJORITY OF COMPANIES DO NOT PREPARE CASH FLOW STATEMENTS" AND

"RESEARCH QUESTION EIGHT - A CASH FLOW STATEMENT PROVIDES MORE MEANINGFUL INFORMATION FOR MANAGEMENT THAN A SOURCE AND APPLICATION OF FUNDS STATEMENT"

3.3 RESEARCH METHODOLOGY APPROACH

The objectives of the dissertation as a whole were to study inflation (its causes and effects) and the management and accounting responses developed by American companies. Major conclusions, questions and other matters were summarised into the broad areas covered by the literature survey, and this led finally to the development of eight research questions.

American companies in the period 1980 through 1988 had had practical experience in applying both CCA and CPP via FAS 33. These eight research questions were therefore used to construct a questionnaire that was mailed during 1986 to the American companies required to report under FAS 33 during the statement's mandatory life span.

A questionnaire was developed to determine what IA methods were being used internally by a population of American companies and to measure some of their attitudes to the problem of inflation and IA methods. The objectives of the questionnaire were firstly to obtain valid, independent information in order to answer the research questions developed from the literature survey. Secondly, in answering the research questions, to establish what American attitudes and methodologies were in respect of the problem of inflation, covering the following key areas, namely, was inflation perceived to be a problem, whether an IA method was used internally and, if so, which method. The questionnaire also sought to discover to what uses the inflation adjusted information was put, and whether this inflation adjusted information was linked to cash flows. A third objective of the questionnaire was to identify companies that were using IA internally, so that case studies could be performed. The results of the responses of the questionnaires generally tended to support the conclusions raised in the literature survey and answered the questions that had been raised. The questionnaire responses indicated that certain American companies used some form of inflation accounting as their primary internal accounting methodology.

All the companies so identified were contacted and requests for case studies made. Three companies permitted case studies which entailed visits to the companies' head offices, interviews with accounting management, and studies of the companies' accounting systems and operating philosophies. The results of these case studies were correlated to provide answers to the research questions and, as anticipated, the case studies indicated strong support for the conclusions raised in the literature survey, and the answers to the questions raised were reasonably consistent with the majority of replies from the questionnaires. The two major components of the research methodology therefore generally and consistently supported the conclusions and questions from the literature survey that had been raised as research questions.

3.3.1 Questionnaire development

"Do the individual questions fulfil the requirements set by the objectives of the questionnaire?"

A major objective of the questionnaire was to obtain valid, independent information to answer the research questions. A second major objective was to establish American management's attitudes to, and methodologies adopted, in respect of the problem of inflation. The questionnaire achieves this by its specific practice and theory structure. Questions 1 to 3 were practical questions analysing the actual techniques used internally in the MIS to account for changing prices. Questions 4 to 7 were theory questions, analysing managements' attitudes to some of the key issues in inflation accounting and cash flows. The covering letter to the questionnaire emphasised that these theory questions should be answered, even if the responses to questions 1 to 3 were nil. This approach was adopted because it was not anticipated that many US companies accounted for inflation internally on a formal basis, particularly due to the indifference caused by low inflation rates in the USA in 1986 when the questionnaire was mailed. The seven questions contained in the questionnaire were correlated to the research questions. The literature survey had identified a number of broad areas requiring research, including whether inflation was perceived as a problem to be accounted for internally and if so, which method of inflation accounting was preferred. From a practical point of view the survey raised the question of what inflation accounting methods were used internally (and one of the questionnaire questions also inquired as to what extent IA adjusted data was used internally). The possible link between CCA and future cash flows was raised as an area for further investigation. The correlation between these broad research areas and the questionnaire questions is shown in Table 3.1.

Another major objective of the questionnaire was to identify which companies were using inflation accounting internally, so that case studies could be performed. Questions 1 to 3 were designed to determine which, (if any), method of inflation accounting was used internally, to what uses the information was put, and whether cash flow reports were prepared and linked to the inflation adjusted data. This resulted in a "sub-population" of companies being identified that used IA internally and who could be approached to perform case studies. It is therefore submitted that questions one to three are "specific" or practical questions. That is, they ask specifically for information on how the company uses inflation accounting internally. This is the practical assessment of the "WHAT" of the research methodology i.e. what are the companies actually doing:

- What inflation accounting system is used? (Question one)
- What is the information used for? (Question two)
- What is the company doing to link inflation accounting and cash flow? (Question three).

Questions four to seven are "THEORY" questions and there were two main reasons for including theory questions. Firstly if all the questions asked were "specific" questions (as defined above) then a "NONE" answer to Question one, (i.e. that no system of inflation accounting was used internally) would render all the other questions not applicable. Secondly, the questionnaire is designed to gauge the "WHAT" aspect. This does not only cover what the companies are actually doing but includes WHAT the companies THINK (i.e. what their attitudes to the problem of inflation are). Some critical aspects that are covered by this attitude survey include what influences the choice of inflation accounting method, specific or general price changes (Question 6), whether the companies perceive a link between CCA and cash flow (Question 4) and which method of inflation accounting (CCA or CPP) the company feels produces more meaningful information (Question 7).

However, all the companies tested had practical experience in applying both CCA and CPP via FASB Statement No. 33. Having been exposed to both methods and having had to interpret and analyse the results, the companies were in a position to determine which method presented the results in a more meaningful manner. This was an annual exercise in the AFS, but it was hoped that a number of companies applied an IA method in their internal monthly management accounts.

The "theory" questions were in a different order from the "specific" questions, to try to avoid establishing a pattern. The intention was not to "trick" the person answering the question into contradicting the theory with the company's actual practice. It was rather hoped that by avoiding a pattern, the person completing the questionnaire would give more thought to the responses.

Therefore it is submitted that the questionnaire questions meet the objectives of the questionnaire and the dissertation as a whole and that it will provide the population for selecting companies for case studies.

TABLE 3.1 CORRELATION OF RESEARCH AREAS AND QUESTIONNAIRE QUESTIONS

Research areas	Questionnaire Question	Type of question
Is inflation a problem?	Five	Theory
Is inflation accounting used internally?	One	Practice
If so, which method is used?	One Six	Practice Theory
How is the information used?	Two	Practice
Is the inflation-adjusted information linked to cash flows?	Three Four	Practice Theory

Question Seven (based on a Liekert scale) was added to specifically determine whether the companies perceived that CCA or CPP produced more meaningful information for management.

TABLE 3.2 CORRELATION OF THE RESEARCH QUESTIONS AND THE QUESTIONNAIRE QUESTIONS

RESEARCH QUESTIONS		Practice Questions	Theory Questions
One	Inflation is a problem which must be accounted for in the internal MIS	-	Five
Two	The majority of companies in times of increasing prices, do not formally account for the effects of inflation in their MIS	-	Five
Three	Of the two accepted methods of accounting for inflation, CCA provides more meaningful internal information for management than does CPP	One Two Seven	Four Six Seven
Four	Specific indices are more relevant in accounting for the effects of increasing prices than general indices	-	Six
Five	CCA provides results that anticipate future cash flows	-	Four
Six	A combination of CCA and cash flow accounting provides a suitable method for accounting for the effects of increasing prices internally	Case studies	Case studies
Seven	The majority of companies do not prepare cash flow statements	Three	-
Eight	A cash flow statement provides more meaningful information for management than a source and application of funds statement	-	Three

Research question Six can be further tested by the case studies. The questionnaire will identify companies using CCA internally and case studies will be performed on selected companies. The case studies should provide research findings to answer all of the research questions. It can therefore be concluded that the questionnaire questions are structured to provide sufficient information to answer the research questions. To ensure that this conclusion was valid, two further areas were addressed, in discussions with leading world authorities on inflation accounting and with noted academics, and secondly by a detailed theoretical evaluation of the individual questionnaire questions.

Discussions with leading world authorities on inflation accounting and with noted academics

The following authorities on IA were consulted:

Professor Hein F Redelinghuys, University of Port Elizabeth, Port Elizabeth

Professor Phillip Bell, Rice University, Houston

Professor Stephen Zeff, Rice University, Houston

Professor Adolf Endthoven, University of Texas at Dallas, Dallas

An attempt was made to meet with Professor Brian Carsburg, a leading UK authority on IA and particularly CCA, but the meeting was cancelled due to unforeseen circumstances. The following academics were consulted:

Professor M Pratt, University of the Witwatersrand, Johannesburg

Professor R Jackson, Rhodes University, Grahamstown

Professor K Dilton-Hill, University of the Witwatersrand, Johannesburg

R J Fryer, head of the SA Institute of Chartered Accountants Education Committee

The discussions with the abovementioned individuals led to a number of changes in both the structure of the research questions and the structure, content and focus of the questionnaire questions. In addition, they provided input as to the expected nature of the responses, and how the responses could best be evaluated to answer the research questions.

A Detailed Theoretical Evaluation of individual questionnaire questions

Questions 1 to 3 (refer Appendix Four) were practice questions which identified what IA methodology, if any, was actually being used by the companies in their internal MIS. Questions 4 to 7 were theory questions which the respondent was encouraged to answer, even if the responses to Question 1 to 3 were "none" or "not applicable".

Question 1

The two main methods of inflation accounting (CCA and CPP) were identified separately, and the "other" column allowed the companies to describe any other method used (e.g. LIFO, revaluations, composite methods). If none of the above options was used, the response was "None", and this indicated on the questionnaire that HCA was used.

Question 2

This was a "catch all" question, listing a number of possible uses of inflation adjusted accounting information. Even if the answer to Question 1 was "None" it could be expected that companies would make some adjustments for inflation in their internal MIS, (even if this were done on an informal basis) and that several other uses of inflation adjusted data would be identified. Additional lines were given to describe any other uses.

Question 3

This question was structured in three parts to obtain data on cash accounting. The first question was a theory question on the benefits of an actual cash flow report. This allowed only "yes" or "no" responses, but there were lines for additional comments at the end of Question 3.

The second and third parts asked specific questions about the company's internal accounting practices and was structured into "Yes" or "No" answers. If the first question was answered "No", then the final two parts should also be answered "No", and if the first question was answered "Yes", then a "Yes" answer would have been expected from question two (even though a cash flow statement was not mandatory at that time). The third question would not necessarily be answered "Yes", even if the first two questions were answered "Yes".

Question 4

Responses of 0, 1, 2, (disagree) 4, 5 or 6 (agree) provided a clear indication of the respondents' attitudes. An answer of 3 might indicate a lack of interest in inflation accounting (which should be identified in Question 5) or that the respondent held no strong views or had not thought through the matter.

Question 5

Question 5 was comprised of two questions. The first question was very broad to determine how strongly the company management felt about the problem of inflation, whilst the second question was more specific, in that the respondents were asked to quantify from what range of inflation rates management perceived inflation to be a problem that had to be accounted for internally. These ranges were originally set as:

%
0 - 4
5 - 10
11 - 20
21 - 50
over 50

However, based on discussion with DH&S (Dallas) staff, (see Section 3.3.2) it was felt that the ranges were too broad, and that the majority of responses would fall within the 5% to 20% range. The ranges were therefore modified to:

%
0 - 4
5 - 8
9 - 14
15 - 20
over 20

The responses to both parts of this question would be expected to correlate (i.e. the more inflation was seen as a problem, the lower the range from which management would account for it internally). Any other comments or responses to the question could be evaluated in the light of management's attitude to the "problem". In the first question, responses 0, 1, 2, or 4, 5 or 6 disagreed or agreed respectively that inflation was a problem, and a response of 3 would indicate nothing in terms of the question. A 3 response would not be anticipated because it was felt that all respondents would have some opinion as to whether inflation was perceived as a problem.

Question 6

Different types of businesses would necessarily be affected by different indices, (e.g. depending on whether they were labour or capital intensive, companies dealing with wasting assets, manufacturing operations etc.). The type of business and the nature of the related indices applicable to those businesses would affect the choice of inflation accounting method. The respondents were given an opportunity to comment on why particular responses were made. It was expected that the answers to this question would correlate with the responses to Question 7, because Question 6 examined which category of indices were most applicable to the respondent's company, whilst Question 7 asked the company to rate whether CCA provided more meaningful information than CPP, based on their actual experience.

Question 7

This question asked which method was preferred, CCA or CPP, a choice of other methods was not given because FASB Statement No. 33 applied only to CCA and CPP. Responses 0, 1, or 2 would prefer CPP to CCA, whilst responses 4, 5 or 6 would indicate the opposite. A 3 response might indicate that neither method was preferred and might illustrate indifference to IA and the problem of inflation in general.

Conclusion

Based on this evaluation of anticipated responses, it appeared that the response sections of the questionnaire have been structured in such a manner (in terms of the questions asked and the research questions) to produce the information required to answer the research questions.

3.3.2 Questionnaire testing

Objective

The objective was to determine what responses were likely in relation to the way the questions had been posed. Section 3.2 developed the research questions from the major issues arising from the literature survey and Section 3.3.1 examined the correlation between major research areas, the research questions and the questionnaire questions. Testing the questionnaire responses was essential to ensure the questions were in a format and language that the respondents not only understood, but were able to answer in a clear and unambiguous manner. The information produced from these responses should be capable of answering the research questions and the responses should be in a format that could be easily evaluated.

The responses to the questionnaire questions were evaluated by sending a "dummy run" of the questionnaire to selected Deloitte Haskins & Sells (Dallas) management, and then by mailing a "dummy run" of the questionnaire to selected companies with head offices based in Dallas, Texas.

Evaluation of responses given by DH&S (Dallas) management

A "dummy-run" of the questionnaire was made to selected DH&S (Dallas) management. There were a number of objectives to this step. Firstly to ensure that there were no obvious mistakes in the questionnaire and secondly to ensure that a number of American individuals (with accounting backgrounds but with no specialisation in inflation accounting) would understand the terminology used, the objectives and requirements of the questions, and the methods of answering the questions.

Thirdly, to ensure that the responses given to the questionnaire questions could be easily evaluated and more importantly, that they provided the requisite information to answer the research questions.

The individuals selected were a cross section of five senior managers and five senior partners and who included A Resnick (the Dallas office Technical Partner and ex lead partner on the General Motors' audit), and D Jones (appointed a National Technical Partner in 1987). In addition, the questionnaire was reviewed in detail by Mr James L Kirtland, a senior National Technical Partner in New York.

It can be concluded from the results of this testing that the objectives were all met, and that the responses provided the requisite information to answer the research questions.

Evaluation of responses given by selected Dallas companies

The objectives of this step were similar to those of the previous section and tested the responses of financial directors or controllers, (accountants) in commerce, instead of testing members of the profession. The main reason was that individuals in commerce were probably less likely to understand "common" and "generally accepted" terminology than their counterparts in the auditing profession. In addition, these individuals represented the type of respondents that would complete the actual questionnaire questions, and the population consisted of a variety of companies, (with a great variety of controllers). This step was therefore to ensure there were no errors, ambiguous statements, or misleading questions, before the questionnaires were mailed.

Questionnaires were sent to ten Dallas companies selected to give a reasonable cross section of activities including oil and gas, financial services, utilities, manufacturing and retailing. It can be concluded that this testing satisfactorily met its objectives, and most importantly that the responses provided the requisite information to answer the research questions.

3.3.3 Questionnaire Evaluation

Description of the Types of Responses to be Generated by the Questionnaire

Question Number	Check Box	Circle Choice	Liekert Scale	Comments or explanation
One	X			X
Two	X			X
Three		X		X
Four			X	
Five	X		X	
Six		X		X
Seven			X	X

Conclusions

Responses were easy to record on the questionnaire and evaluation would be relatively simple. Any explanations and comments were treated on their merits.

Evaluation

The questionnaire responses were sorted and analysed in D-Base III and the responses presented in tabular format in the research findings section. The results were initially summarised in tabular form, by questionnaire question. This section also summarises the purpose of the questions and concludes on whether the results of the responses met the purposes of the questions. These results were then applied to the research questions. This was not just a straight-forward application of responses to questions, but various responses would be correlated to further test the research questions. These applications and correlations were derived from the "Questionnaire Design and Development" area of work, particularly in the questionnaire preparation and testing phases. These correlations are not duplicated in this section, but are addressed in detail in the "Research Findings and Discussion of Results" section.

3.3.4 Population

FASB Statement No. 33 "Financial Reporting and Changing Prices" states, at paragraph 23:

"The requirements of this Statement apply to public enterprises that prepare their primary financial statements in U.S. dollars and in accordance with U.S. generally accepted accounting principles and that have, at the beginning of the fiscal year for which financial statements are being presented, either:

a. Inventories and property, plant and equipment (before deducting accumulated depreciation, depletion, and amortization) amounting in aggregate to more than $125 million; or

b. Total assets amounting to more than $1 billion (after deducting accumulated depreciation).

Both amounts shall be measured in accordance with generally accepted accounting principles as reported in the primary financial statements (consolidated if applicable) of the enterprise".

Messrs James Leisenring and Bruce Willis at the FASB in Stamford, Connecticut were contacted. After some negotiation, the FASB agreed to make their mailing list of companies subject to FASB Statement No. 33 available. The covering letter for this mailing list is presented in Appendix Three.

The questionnaire was targeted at a population of American companies applying FASB Statement No. 33. This was explained in detail in the Introduction to this thesis, but included two main motivations. Firstly, a complete population was supplied by the Statement's mandatory reporting requirements for companies over a specified size (as detailed by the Statement No. 33 mailing list). Secondly, all of the companies on this mailing list had practical experience in applying and analysing the results of both CCA and CPP on an annual basis.

The mailing list had been updated and corrected, and therefore represented a complete and valid population, in terms of this thesis' requirements as at November 1985. The list contained the names of 1 672 American companies that fell within the mandatory reporting requirements of Statement No. 33. The entire population was circularised (i.e. 1 672 questionnaires were mailed).

3.3.5 The Case Studies

The questionnaire responses provided a population of companies that indicated they were using some form of IA as their primary internal accounting methodology. All companies thus identified were contacted and three companies consented to case studies being performed on them. The case studies were mainly comprised of interviews with senior accounting management, and the principal objective of the case studies was to generate research findings that could be used to answer the research questions.

The general methodology of the case studies was firstly to obtain an understanding of the nature of the companies' business. (Two of the three companies had diversified international operations.) The financial accounting structure was examined, and the corporate philosophy of using IA as a primary internal accounting method was discussed. The calculation of IA adjustments was then examined in more detail, as was the methodology for disclosing this information. Management uses of IA data were also investigated.

CHAPTER FOUR - RESEARCH FINDINGS AND DISCUSSION OF RESULTS

4.1 SUMMARY OF RESPONSES BY QUESTIONNAIRE QUESTION

Objectives and approach

This section analyses the questionnaire responses. It details the number of responses received, and how these responses were handled to arrive at the final pool of replies that were used in the final analyses. This analysis is followed by an explanation of why financial institutions and regulated public utilities were excluded from the final analysis. Some additional steps performed on the questionnaire responses are detailed, and this is followed by a discussion of the matter of respondee indifference to the problem of inflation.

The section then summarises the questionnaire responses in the questionnaire question sequence to tabulate the responses, and to ensure that the responses meet the objectives of the questions. Once this has been established the responses are applied to the research questions, by individual question, and correlated with other question responses. The results are used in Section 4.2 to determine how the questionnaire responses answered the research questions.

SUMMARY OF QUESTIONNAIRE RESPONSES

Total number of questionnaires mailed	1,672
Total responses received	896
Less 'nil' responses (liquidations, mergers, etc)	52
Total positive responses received	844
Less banking, insurance and other financial institutions	117
Less regulated public utilities	95
	632
Other inflation accounting methods	5
Total responses on which detailed evaluation was performed	627

The total responses on which detailed evaluation was performed represented a positive response rate of (627/1672) 37,5%. The total positive response rate (including financial institutions and utilities) was (844/1672) 52,9%. The response rate appears reasonable to provide sufficient evidence to answer the research questions.

Excluded responses

Financial institutions and utilities were excluded because they did not fit the research parameters of the thesis. The operational structures of financial institutions were different in that they did not include fixed assets and stocks which were replaced to maintain operating capacity. Most assets were monetary, and the emphasis was placed on managing the interest rate sensitivities and trying to match the maturities of monetary assets and liabilities. It is considered that some indexation of their results based on, say, the CPI may be more relevant. The prices, and therefore cost recoveries, of regulated public utilities were regulated by the government, based on HC criteria. These operating structures and philosphies were therefore different from those of the rest of the free market companies. One of the key parallels between the USA and SA was the similarity of the operating structure and operations of companies. It is submitted that the regulated public utilities are sufficiently different from other companies tested to warrant their exclusion. Fifty two other responses were excluded because they were the subject of mergers and takeovers of companies, liquidations and changes in operations resulting in the company no longer meeting the Statement No. 33 reporting requirements. Five other respondents used specialised accounting methodologies so they were also excluded.

The companies on which detailed evaluation was performed comprise a large cross section of business activities. The responses were not classified by industry becuase a number of respondents were conglomerates whose operations covered a variety of industries.

Secondly, to be meaningful, it would have been necessary to obtain details of the fixed asset and inventory dollar values, so that the responses could be evaluated in terms of the industry and the asset base; and thirdly this analysis fell outside the parameters of this study. This topic is raised as an area for possible further research in Section 5.5.

Respondee indifference

The financial press of the time and many people consulted in the course of the research noted that there was a growing disinterest or almost total indifference about IA in the USA. The major cause of this indifference (which still appears to be relevant today) was that the inflation rate in the USA had been at low levels (below 5 %) for some time, and there was a general feeling of apathy and disinterest in inflation and inflation accounting. This indifference was increased by the opposition caused because the companies felt that FASB's Statement No 33 had been 'forced' on them. This negative view about FAS 33 was highlighted by a number of comments to the questionnaires which included the fact that no-one uses the data, no-one understands the results, the methodology is too complex and the users do not understand the concepts. These comments covered both CCA and CPP and were generally made in the comments section of question 7. There were a number of areas that may have had stronger responses had the inflation rate been higher. However, it was presumed that there was still a reasonable level of interest because there was a high response rate (53% of positive responses) from financial directors and controllers.

THE PURPOSE OF QUESTIONNAIRE QUESTIONS AND SUMMARY OF RESPONSES

This section examines each of the seven questionnaire questions in turn, by summarising the purpose of the question, tabulating the responses and finally concluding on these results.

QUESTION 1

"What system of accounting for price changes, if any, do you use in your internal monthly management information system?"

Purposes

The objective was to identify what method of inflation accounting, if any, was used internally by the respondents. The responses to this question would identify companies that used IA as the primary internal accounting method so case studies could be performed. This question also enabled responses to be stratefied by major accounting method because it was considered that the method used would have a major effect on the nature of the responses given to other questions.

Classification of responses

The majority of responses indicated that HCA was used for internal accounting purposes. Responses which indicated inflation was accounted for internally were followed up with the respondents, and were finally classified as :

CCA

PCCA - These partial CCA responses included revaluation of fixed assets, LIFO or current cost inventory, a combination of revaluation of fixed assets and LIFO, or responses where standard costs approximated CC.

CPP - there was only one response which was excluded because it is submitted that one response was insufficient to justify inclusion in the research findings.

Results of the evaluation

Accounting method	Number of responses
CCA	10
PCCA	36
HC	581
	627

Conclusion

The responses clearly indicated that HCA was the most widely used primary system of internal accounting. This represented some 93% of evaluated responses. Companies that used some method of IA as their primary internal accounting were identified which provided information for follow up relating to case studies. The identification of the responses by method was used in the evaluation of responses.

QUESTION 2

"To what use do you put the above monthly accounting information, if derived?"

Purpose

This question was structured to obtain an overview of the major areas where inflation adjusted data was used internally by management, and is supported by the results of the case studies. The main emphasis was on respondents who use CCA, but also takes into account how inflation adjusted data was used by respondents using PCCA methods. It is also of interest to note the number of users of HCA (35%) who use some form of inflation adjusted information internally.

Summary of responses

QUESTION	RESPONSES							
	TOTAL	%	CCA	%	PCCA	%	HCA	%
Q2A - real distributable income	41	7	7	70	4	11	30	5
Q2B - performance	227	36	8	80	22	61	197	34
Q2C - inventory pricing	104	17	7	70	27	75	70	12
Q2D - forecasting	198	32	8	80	23	64	167	29
Q2E - budgeting	234	37	8	80	20	56	206	36
Q2F - corporate planning	217	35	8	80	18	50	191	33
Total responses	627	100	10	100	36	100	581	100

Conclusion

The users of CCA showed a high level of use of CCA internally with most of the respondents using CC adjusted data in most applications identified by the questionniare. PCCA users however made the highest use of inflation adjusted data in inventory pricing and relatively high usage in most other categories (excluding the determination of real distributable income, which may be more appropriate for the users of CCA. This applied to HCA users as well).

The HCA users showed the strongest preference for use of IA data to be related to budgeting, with a high level of response to the forecasting and corporate planning areas. This may be expected because it indicates an informal evaluation of the effects of inflation on the budgeting and planning process. Only 12% of HCA users indicated that they used IA in their inventory pricing decisions. One may have expected this response rate to be higher, even though this was performed on an informal basis. However inflation was informally considered by a high number of respondents in assessing management and departmental performance.

QUESTION 3

"Q3A Do you feel that a cash flow report (as opposed to working capital statement of changes in financial position) has greater benefits for internal management?"

This question determined the respondents' opinion as to whether or not a cash flow statement was more beneficial to management than a source and application of funds statement. (This question was asked before the mandatory FASB statement on cash flow statements was issued).

"Q3B If yes, do you prepare a cash flow report in your monthly management accounts?".

This question identified the accounting practice used internally, and determined whether companies were producing cash flow statements internally on a monthly (or quarterly) basis.

"Q3C If yes, do you link this statement with current cost data?"

This question was only relevant if the respondent produced a cash flow statement and CC data, and sought to discover whether companies were linking cash flow and CC data in practice. Q3C also had relevance to Q4, which questioned the link between future cash flows and CCA.

Analysis of responses

QUESTION	RESPONSES							
	TOTAL	%	CCA	%	PCVA	%	HCA	%
3A	558	89	9	90	32	89	517	89
3B	466	74	10	100	32	89	425	73
3C	27	4	7	70	4	11	16	3
Total responses	627	100	10	100	36	100	581	100

Conclusion

The responses to Q3A showed strong support for the principle that a cash flow statement produced more useful information than a source and application of funds statement. One CCA respondent disagreed because the company prepared and used both statements in practice and the positive rate of 89% applied equally to PCCA and HCA users.

The majority of respondents to Q3B indicated that they produced a cash flow report as part of their MIS. 10 out of 10 CCA respondents, and a high proportion of PCCA and HCA respondents indicated that they produced cash flow reports.

The response to Q3C revealed that the majority of CCA users (seven out of ten responses) linked cash flows with CC data. However 4 PCCA users (61%) and 16 HCA users (3%) also generated positive responses here. It is submitted that these responses were incorrect because it was not possible for the respondents to answer positively, as they indicated that they did not use CCA as their primary internal accounting method. It is submitted that certain of these respondees may have answered positively because they used IA adjusted data internally, in planning and budgeting, or assessment of performance.

QUESTION 4

"Current cost accounting provides a closer approximation of the future cash flows of the business that does historical cost accounting or constant purchasing power accounting"

Purpose

This is a theory question to identify whether respondents perceived a link between cash flows and CCA, in that CCA provides a closer link to future cash flows than HCA and CPP. This not a fact that has been emphasised in traditional inflation accounting literature, (which is perhaps reflected by the low response rate to Q3C), but is becoming an increasingly popular viewpoint. This link is tested because there is increasing emphasis on cash flows in general, and because cash flows assume greater importance as the rate of inflation increases. This thesis examines the management and accounting responses developed to counter the effects of inflation. Cash flow accounting is a positive step, and it is submitted that its usefulness may be enhanced by linking it with CCA.

Summary of responses

QUESTION 4				RESPONSES					
		TOTAL	%	CCA	%	PCCA	%	HCA	%
0	Disagree	91	15	0	0	2	5	89	15
1		66	10	0	0	1	3	65	11
2		117	19	0	0	6	17	111	20
3	Neutral	130	20	0	0	6	17	124	21
4	Agree	141	23	2	20	16	44	123	21
5		61	10	3	30	4	11	54	9
6		21	3	5	50	1	3	15	3
Total responses		627	100	10	100	36	100	581	100

QUESTION 4 - SUMMARY		RESPONSES							
		TOTAL	%	CCA	%	PCCA	%	HCA	%
0 - 2	Disagree	274	44	0	0	9	25	265	46
3	Neutral	130	20	0	0	6	17	124	21
4 - 6	Agree	223	36	10	100	21	58	192	33
Total responses		627	100	10	100	36	100	581	100

Conclusion

The responses give a clear indication of the respondents' perceptions of the link between CCA and future cash flows based on the primary internal method of accounting used. All CCA responses supported the link between CCA and future cash flows and this response may have been expected given the findings of the literature survey. The majority of PCCA responses (21 out of 36 or 58%) agreed with the question, but a reasonable number disagreed or were neutral. One third of HCA replies supported the questions while 46% disagreed and 21% were neutral. Their responses and any comments made did not indicate whether negative or neutral responses were made based on a lack of knowledge of the subject or not.

QUESTION 5A

"Changing prices are a problem that has to be recognised in providing relevant accounting information for management"

Purpose

This question measures how strongly the users of each IA method perceived the problem of inflation.

Summary of reponses

Q5A	TOTAL	%	CCA	%	PCCA	%	HCA	%
0 Disagree	70	11	0	0	3	8	67	11
1	94	15	0	0	3	8	91	16
2	113	18	0	0	2	6	111	19
3 Neutral	128	20	1	10	6	17	121	21
4 Agree	131	21	0	0	12	33	119	21
5	56	9	3	30	8	22	45	8
6	35	6	6	60	2	6	27	4
	627	100	10	100	36	100	581	100

Q5A SUMMARY	TOTAL	%	CCA	%	PCCA	%	HCA	%
0-2 Disagree	277	44	0	0	8	22	269	46
3 Neutral	128	20	1	10	6	17	121	21
4-5 Agree	222	36	9	90	22	61	191	33
	627	100	10	100	36	100	581	100

Conclusion

The majority of respondents, 44%, disagreed that inflation was a problem that must be recognised in companies' MIS and 20% were neutral, with 36% positive. It might have been expected that a greater number of respondents would have answered this question positively, but this may indicate to a large degree respondee indifference to inflation and IA. These total results closely mirror the HCA results. Although 61% (or 22 out of 36) of the PCCA users agreed that inflation was a problem, it was surprising that 39% did not (even though some form of IA was built into their internal MIS). 90% (9 out of 10) of the CCA respondents agreed that inflation was a problem, and again, surprisingly, one response was neutral. This response was nautral because in 1986 inflation rates were low, therefore the respondents did not "currently" perceive inflation as a problem. However, when rates had been higher the respondent had used a form of CCA as his primary internal accounting method.

QUESTION 5B

"From what annual inflation range would you perceive changing prices to be a problem (i.e. that your company would make adjustments for price changes in your internal monthly management information systems)?"

Purpose

This question tests how high the inflation rate would have to rise before the respondents would consider making internal monthly adjustments to their MIS.

Summary of responses

Q5B	TOTAL	%	CCA	%	PCCA	%	HCA	%
0 - 4 %	9	1	1	10	0	0	8	1
5 - 8 %	40	6	6	60	4	11	30	5
9 - 14 %	178	28	3	30	16	44	159	27
15 - 20 %	136	22	0	0	8	22	128	22
over 20 %	100	16	0	0	2	6	98	17
never	141	23	0	0	4	11	137	24
no response	23	4	0	0	2	6	21	4
	627	100	10	100	36	100	581	100

Conclusion

In total, the responses did not clearly indicate preference for any specific threshhold inflation rate for making internal adjustments but generally the greater the internal use of CCA or PCCA the more inflation was perceived to be a problem. The range of threshhold hurdle rates of inflation for CCA users lay between 0% to 14%, with the majority of responses (6 out of 10) in the 5% to 8% range. The largest number of PCCA respondents (16 out of 36) indicated that their threshhold range was 9% to 14%, with another 8 respondents indicating a range of 15% to 20%. The HCA users as may be expected perceived inflation as less of a problem than the users of other accounting methods.

There was a band of support in the general range of 9% to over 20%. 137 responses, 24% of HCA users indicated that they would never make internal adjustments for inflation in their MIS. This indicated that they did not think inflation was a problem, which is unlikely, or it indicates respondee indifference to inflation and IA. The research findings show that the majority of all respondents indicated that they would react to the problem of inflation in their MIS if the inflation rate lay between 9% and 20%. This represented 50% of respondents. Another 39% of respondents indicated that the hurdle rate was above 20% or that they would never react internally to inflation. It may be useful to test the perceptions of South African management, in view of the fact that they have been operating in an environment of continued reasonably high inflation rates. This is indicated as an area for further research in Section 5.5.

QUESTION 6

"Do you feel that the effects of price changes on your company are best accounted for by way of specific or general price indices, or a combination of these methods?"

Purpose

Q6 asks respondents which types of indices they found most useful in accounting for price changes. Respondents had made annual adjustments using both specific and general indices due to the mandatory provisions of FAS 33 and were therefore in a position to assess which indices they found to be more useful.

Q6	TOTAL	%	CCA	%	PCCA	%	HCA	%
Specific	329	52	5	50	23	64	301	52
General	69	11	0	0	2	6	66	11
Combination	173	28	5	50	11	30	158	27
Nil reply	56	9	0	0	0	0	56	10
	627	100	10	100	36	100	581	100

Conclusion

The responses and the comments thereto clearly indicate the respondents' preferences for specific indices. In the total and HCA responses only 11% clearly preferred general price indices. 94% of PCCA users indicated a preference for either specific or a combination of specific and general indices. Although only 5 out of 10 of CCA users preferred specific indices, all of the "combination" responses indicated that in their businesses, general indices closely parallelled specific indices.

QUESTION 7

"Based on your actual experience of applying FASB Statement No 33, current cost accounting provides more meaningful management information than constant purchasing power accounting does."

Purpose

As all companies in the population had had experience of preparing financial information on both the CCA and CPP methods, this was a key question to determine which method they found provided the more meaningful management information.

Summary of responses

Q7	TOTAL	%	CCA	%	PCCA	%	HCA	%
0	78	12	0	0	4	11	74	13
1 CPP preferred	52	9	0	0	1	3	51	9
2	45	7	0	0	1	3	44	7
3 Neutral	139	22	0	0	7	19	132	23
4 CCA preferred	137	22	5	50	8	22	124	21
5	72	11	3	30	8	22	61	11
6	36	6	2	20	5	14	29	5
7	68	11	0	0	2	6	66	11
	627	100	10	100	36	100	581	100

Q7 SUMMARY		TOTAL	%	CCA	%	PCCA	%	HCA	%
0		78	12	0	0	4	11	74	13
1 - 2	CPP	97	16	0	0	2	6	95	16
3	Neutral	139	22	0	0	7	19	132	23
4 - 6	CCA	245	39	10	100	21	58	214	37
7		68	11	0	0	2	6	66	11
		627	100	10	100	36	100	581	100

Certain questionnaire responses indicated that a number of respondents interpreted the question to ask whether FASB Statement No 33 provided meaningful information to management, and their comments were very negative. In other words, they did not answer the question to indicate whether they thought CCA or CPP provided more meaningful information. Where this could be determined, the response was reclassified as a 7, but many of the responses in the 0, 1 and 2 responses which might fall into this category could not be identified as they did not have any comments. For this reason, the "0" responses have been classified separately. In total, and irrespective of method used, the majority of respondents indicated that they perceived CCA to provide more meaningful information than CPP. 37% of HCA responses preferred CCA over CPP. 16% to 29% preferred CPP. Please refer to the comments in the paragraph above as regards answer 0. The majority, 58% (or 21 out of 36) of PCCA replies favoured CCA, but there were no comments in the responses as to why some 17% of replies favoured CPP. As expected, all CCA responses preferred CCA.

4.2 RELATING QUESTIONNAIRE RESPONSES TO THE RESEARCH QUESTIONS

Section 4.1 set out the objectives of the questionnaire questions, summarised the responses and commented on the results of the research findings. This section applies these summarised responses to the research questions. In certain cases, correlations between the responses to different questions were examined in relating the questionnaire results to the research questions. For each of the questions used to test the research questions, the first step will be to record expectations of how the question would be answered.

Secondly a summary of the research findings is presented, and finally the findings are discussed in terms of the research questions and the expectations.

RESEARCH QUESTION ONE : INFLATION IS A PROBLEM WHICH MUST BE ACCOUNTED FOR IN THE INTERNAL MIS (FROM A RANGE OF XX %)

QUESTION Q5A "CHANGING PRICES ARE A PROBLEM THAT HAS TO BE RECOGNISED IN PROVIDING RELEVANT ACCOUNTING INFORMATION FOR MANAGEMENT"

It is considered that the users of full CCA would answer more positively than users of PCCA and HCA, and that users of PCCA would answer more positively than users of HCA. It is anticipated that most respondents using HCA would not perceive inflation as a problem (ie. score 3 or below) because inflation was below 5% for some time before this questionniare was mailed, and because it is submitted that there was a great deal of indifference to the problem of inflation.

Q5A SUMMARY	TOTAL	%	CCA	%	PCCA	%	HCA	%
0 - 2 Disagree	277	44	0	0	8	22	269	46
3 Neutral	128	20	1	10	6	17	121	21
4 - 6 Agree	222	36	9	90	22	61	191	33
	627	100	10	100	36	100	581	100

In total, the majority of respondents disagreed with the research question, (44% disag[illegible] 20% were neutal, and 36% agreed). However, if the responses are stratified by type of IA method used, a different picture emerges:

9 out of 10 of the CCA respondents agreed that inflation was a problem and the nautral respondee had actually applied formal internal CC methodology when inflation was at a level the company considered a problem, so their response could be taken as "agree". One CCA respondent, Borg-Warner Corporation, based in Chicago, answered that they had a neutral opinion as regards the problem of inflation. This attitude was explained in a telephonic follow-up with the Corproate Controller. Borg Warner had developed a dual HC/CC approach internally, and reported internally on both methods.

The internal CC methodology was dropped after the company sold a major division which imported petroleum products and which had been most affected by the effects of price increases. There was little variance between HC and CC in the other divisions, particularly as the level of inflation decreased. Therefore although the company (in January 1987) responded that their attitude to inflation was neutral, when the rates of inflation were higher in the past, the company had actually responded to the problem internally in a formal manner. The controller noted that the company had the methodology and experience to re-implement CCA if the effects of inflation were significant.

The PCCA responses were generally in favour (22 out of 36). However, some responses were neutral and some disagreed. This may be expected as the primary reason for using LIFO, for example, may not necessarily be inflation based, and due to the general indifference to inflation as discussed in Section 4.1.

The HCA responses indicated that the majority of respondents perceived that inflation was not a problem to be addressed internally, particularly at current levels, which was emphasised in a number of comments to the questionnaires.

CORRELATION BETWEEN WHETHER INFLATION WAS PERCEIVED AS A PROBLEM (Q5A), THE IA METHOD USED (Q1) AND INTERNAL USES OF INFLATION ADJUSTED DATA (Q2):

This seeks to establish a correlation between the accounting method used, whether inflation was perceived as a problem and the uses to which inflation adjusted data was put.

	TOTAL	%	CCA	%	PCCA	%	HCA	%
2A Real distributable income	23	4	4	40	3	8	16	3
2B Performance	94	15	8	80	12	33	74	13
2C Inventory pricing	52	8	5	50	16	44	31	5
2D Forecasting	93	15	7	70	15	42	71	12
2E Budgeting	100	16	8	80	12	33	80	14
2F Corporate planning	96	15	7	70	10	28	79	14

There was some correlation in the HCA answers (Q1) with Q2 and Q5A. 191 HCA replies (or 33%) agreed that inflation was a problem that should accounted for. 244 HCA replies (or 42%) answered yes to at least one section of Q2, (that there was some internal use of inflation adjusted data).

As expected, there were higher percentage response rates for PCCA and CCA users. The summary of results indicates that managers take cognisance of inflation, whether formally or intuitively. The common areas of usage of inflation adjusted data under all accounting methods, as identified in question one were budgeting, forecasting, planning and assessment of "real" performance. It may be submitted that one would expect all managers to recognise the effects of increasing prices on their businesses, but the lower response rates especially in the HCA and PCCA categories may have been due to the fact that many respondents may not have answered Q2 fully because they considered they did not use a system of formal IA internally.

A second reason submitted by Professor P Bell of Rice University in Houston was that inflation may not be perceived as a problem due to the fact that inflation had been at such low rates for some time.

However a number of the HCA and PCCA users who disagreed with, or were neutral to Q5A (that inflation was a problem) actually used inflation adjusted data internally in their MIS. These results are summarised below:

Method - disagree/neutral	Internal uses of IA						
	TOTAL	Q2A	Q2B	Q2C	Q2D	Q2E	Q2F
HCA user disagree with Q5A	269	8	79	27	62	81	76
HCA user neutral to Q5A	121	5	43	12	33	44	35
PCCA user disagree with Q5A	8	1	5	6	4	5	6
PCCA user neutral to Q5A	6	0	4	4	3	3	2

It can be inferred that these users do use inflation adjusted data internally, but not in terms of a formal accounting approach such as that advocated by FAS 33. There were two interesting comments in this regard. Firstly, the respondent from Standex International Corporation noted "FAS 33 is a great exercise for academics. The principles of FAS33 are, I believe, automatically applied by good business people without going through the ritual of FAS 33." These views were echoed by Mr James L Kirkland, a Deloitte technical partner in New York "Applying common sense one imagines that all managers account for inflation in at least their budgeting process." Therefore every respondent should should have answered at least '4' and probably '6' (i.e. that they agreed or strongly agreed respectively that inflation was a problem to be recognised internally).

Q5B - THE RATE OF INFLATION FROM WHICH ADJUSTMENTS SHOULD BE MADE INTERNALLY

This tests how high the inflation rate would get before the respondents would consider making internal monthly adjustments to their MIS. The table in the previous chapter has been summarised into broader categories:

Q5B	TOTAL	%	CCA	%	PCCA	%	HCA	%
0 - 8%	49	8	7	70	4	11	38	7
9 - 20%	314	50	3	30	24	66	287	49
Over 20%	100	16	0	0	2	6	98	17
Never/no response	164	26	0	0	6	17	158	27
Total responses	627	100	10	100	36	100	581	100

It is interesting that a number of HCA users indicated relatively low levels (56% of responses indicated a rante of 0% - 20%) at which they would consider making inflation adjustments to their MIS. However this may be seen as theoretical, because formal internal monthly adjustments were not made when inflation was at these levels in the past, based on the percentage of HCA responses to Q2. The majority of PCCA responses (24 out of 36) supported a range of 9% - 20% whilst CCA responses were strongly in favour of a range between 0% - 8%.

CORRELATION OF THE IA METHOD USED ((Q1), WHETHER INFLATION IS PERCEIVED AS A PROBLEM (Q5A), AND THE LEVEL AT WHICH INTERNAL ADJUSTMENTS WOULD BE MADE (Q5B)

Q5B	TOTAL	%	CCA	%	PCCA	%	HCA	%
0 - 4%	6	1	1	10	0	0	5	1
5 - 8%	29	5	6	60	4	11	19	3
9 - 14%	77	12	2	20	8	22	67	12
15 - 20%	49	8	0	0	7	19	42	7
Over 20%	21	3	0	0	0	0	21	4
Never	29	5	0	0	2	6	27	5
No response	13	2	0	0	2	6	11	2
Responses	224	36	9	90	23	64	192	34
Total responses	627	100	10	100	36	100	581	100

The "Total" column measured the correlation between respondents who considered that inflation was a problem and at what inflation rate they would account for inflation internally. The other columns measured at what inflation rate users of the different methods considered they should account for inflation internally. All these companies have had experience of applying HCA, CA and CPP over a number of years under varying inflation rates. It is submitted, however, that the nature of the business, the composition of the asset base, the impact of inflation on the business and the industry, and other specific factors will affect this choice of the cut off inflation rate.

Based on the above table, it may be concluded that respondents who perceived that inflation was a problem would account for it internally at the following ranges of inflation:

CCA	5 - 8%
PCCA	5 - 20%
HCA	9 - 14%

It is submitted that the HCA responses may have been theoretical because the HCA responses to Q2 did not appear to support these conclusions in practice. A number of respondents commented in the questionnaires that the inflation rates should persist at the threshhold level for some time before the company would start adjusting the MIS data.

Research Question One - Conclusion

In total, the majority of respondents disagreed that inflation was a problem that should be recognised in the MIS. However, stratifying the results by IA method used revealed that the majority of CCA and FCCA users agreed with the question, whilst the majority of HCA users did not. However, a number of HCA users who disagreed with this question, indicated that they used IA adjusted data internally. It is submitted that this implies that the use is on an intuitive or commonsense basis, as opposed to a formal, internal basis. The majority of internal uses of IA adjusted information in the MIS were assessment of real performance, budgeting, forecasting and planning. The threshhold range at which IA adjusted data would be used internally depended on the accounting method used, but general support was shown for a range between 0% and 20%.

RESEARCH QUESTION TWO : THE MAJORITY OF COMPANIES, IN TIMES OF INCREASING PRICES, DO NOT FORMALLY ACCOUNT FOR THE EFFECTS OF INFLATION IN THEIR MIS

QUESTION 2

The purpose was to identify the main areas where this inflation adjusted data was used internally. It was perceived that the uses of inflation adjusted should vary with the method used, but that there would be some level of usage even by HCA users.

	TOTAL	%	CCA	%	PCCA	%	HCA	%
2A Distributable income	39	6	5	50	4	11	30	5
2B Performance	227	36	8	80	22	61	197	34
2C Inventory pricing	104	17	7	70	27	75	70	12
2D Forecasting	198	32	8	80	23	64	167	29
2E Budgeting	234	37	8	80	20	56	206	36
2F Corporate planning	217	35	8	80	18	50	191	33
Total responses	627	100	10	100	36	100	581	100

Evaluation of responses

The CCA responses were generally positive which is to be expected. It is surprising that there was not a higher positive response to Q2A, as a major advantage of CCA is that it generates a 'real' distributable income figure. These responses generally show that the inflation adjusted data has a wide range of uses internally by CCA users. A 100% response may have been expected to all sections (as was achieved by the case studies). No further follow up was performed.

The largest internal use of inflation adjusted data based on the PCCA responses was in inventory pricing. These responses generally show that the inflation adjusted data had a wide range of uses internally by management. As expected, the responses were lower than CCA (except in inventory pricing) and higher than HCA. The HCA responses showed an unexpectedly high internal use of inflation adjusted data. On a percentage basis, the highest response rates were in the forecasting, budgeting and corporate planning areas indicating an informal reaction to the effects of inflation. Q2B (assessment of performance) was also answered positively and it is possible that the effects of increasing prices are informally taken into account in assessing the performance of management or departments.

A number of companies who used HCA did not respond to this question, as they said it was not applicable. However, it is suggested that they at least take some account of inflation in their planning and budgeting process, and in fact might follow the trend of activities established by the positive HCA responses. Of the 581 total HCA responses there were 337 who replied negatively to all parts of question 2. However, these responses did not indicate that they responded negatively because they did not use a formal IA method internally, whereas they may well have addressed the effects of increasing prices internally on an informal basis. Again the comments made by the Standex International Corporation respondent and Mr J Kirtland are applicable here.

Conclusions

The more integrated the system of accounting for price changes, the greater the percentage of respondents who use inflation adjusted data in the internal MIS. Despite the accounting method used, there are a number of areas where management can, and do, use inflation adjusted data, and the range of potential uses covers a large proportion of information areas in the typical MIS. The most popular areas of use of inflation adjusted data were planning, budgeting, forecasting and assessment of performance.

RESEARCH QUESTION THREE : OF THE TWO COMMONLY ACCEPTED METHODS OF ACCOUNTING FOR INFLATION, CCA PROVIDES MORE MEANINGFUL INTERNAL INFORMATION FOR MANAGEMENT THAN DOES CPP (IN TIMES OF INCREASING PRICES, IN A NON HYPER-INFLATIONARY ENVIRONMENT)

QUESTION 7

All companies in the population had had experience of preparing AFS on both the CCA and CPP methods. This was a key question to determine which method they found provided the more meaningful management information.

It is submitted that the usefulness of preparing inflation adjusted FS was reduced by several factors. Firstly the information was only required to be produced on an annual basis (and not produced and used as part of the MIS). Secondly, management and the directors were not required to give a comprehensive commentary in their financial statements on the inflation adjusted data and the effects of inflation on their operations.

Q7 SUMMARY	TOTAL	%	CCA	%	PCCA	%	HCA	%
0	78	12	0	0	4	11	74	13
1 - 2 CPP preferred	97	16	0	0	2	6	95	16
Sub-total	175	28	0	0	6	17	169	29
3 Neutral	139	22	0	0	7	19	132	23
4 - 6 CCA preferred	245	39	10	100	21	58	214	37
7 FAS No. 33 not useful	68	11	0	0	2	6	66	11
Total responses	627	100	10	100	36	100	581	100

The above table indicates that the majority of respondents considered that CCA provided more meaningful management information than did CPP. This finding was common to CCA, PCCA and HCA, and represented 39% of total responses, against 28% in favour of CPP. 23% of respondents were neutral, with 11% indicating opposition to FAS 33. A factor which is peculiar to the questionnaire responses is that a number of respondents interpreted the question to ask whether FASB Statement No 33 provided meaningful information to management and their comments were negative. In other words, they did not answer the question to indicate whether they thought CCA or CPP provided more meaningful information. Where this could be determined, the response was reclassified as a 7, but many of the responses in the 0, 1 and 2 responses which might fall into this category could not be identified as they did not have any comments. For this reason, the "0" responses have been classified separately in the table above.

CORRELATION FOR CCA PROVIDES MORE MEANINGFUL DATA THAN CPP (Q7 >3) AND CCA PREDICTS FUTURE CASH FLOWS (Q4 >3)

This tests the respondents' perception of the correlation between CCA providing more meaningful information than CPP and CCA providing an approximation of future cash flows.

There were 136 responses that fell into this category, as follows:

METHOD	RESPONSES	% OF TOTAL RESPONSES
CCA	10	100%
PCCA	12	33%
HCA	114	20%

10 out of 10 CCA users met this correlation, with 12 out of 36 responses for PCCA.

RESEARCH QUESTION FOUR : SPECIFIC INDICES ARE MORE RELEVANT IN ACCOUNTING FOR THE EFFECTS OF INCREASING PRICES THAN GENERAL INDICES

QUESTION 6

Q6 asked respondents which types of indices they found most useful in accounting for price changes because these respondents had made annual adjustments using both specific and general indices. In addition certain respondents who used CCA or PCCA internally had had regular exposure to the use of indices (as opposed to other companies complying with FAS 33 who would only apply these indices on an annual basis).

It would be expected that specific indices would be perceived as being more relevant than general indices, which is consistent with the FASB's actions to prefer CCA over CPP.

QUESTION 6	TOTAL	%	CCA	%	PCCA	%	HCA	%
Specific	329	52	5	50	23	64	301	52
General	68	11	0	0	2	6	66	11
Combination	174	28	5	50	11	30	158	27
Nil reply	56	9	0	0	0	0	56	10
Total responses	627	100	10	100	36	100	581	100
Specific and combination	503	80	10	100	34	94	459	79

The responses and comments thereto indicated that specific indices were preferred to general indices. The combination of "specific" and "combination" responses gives a high proportion (80%) of total responses. (The combination responses indicated that a combination of specific and general price indices was appropriate.) This response was common to all three accounting methods. Only 11% preferred general indices over specific indices. If CCA or PCCA was used, then specific indices should be preferred. Some CCA and PCCA users used general indices, but noted that these approximated the specific indices for their particular businesses.

CORRELATION BETWEEN THE IA METHOD USED (Q1) SPECIFIC INDICES ARE MORE RELEVANT THAN GENERAL INDICES (Q6) AND CCA PROVIDES MORE MEANINGFUL DATA THAN CPP (Q7)

Generally, if the respondents considered that specific indices provided better data than general indices, then it is submitted that these respondents should perceive that CCA provides more meaningful data than CPP. The correlation will be tested by the IA method.

CCA	CCA BETTER		CCA NOT BETTER		NEITHER/NEUTRAL	
	Number	%	Number	%	Number	%
Specific indices	5	50	0	0	0	0
General indices	0	0	0	0	0	0
Combination	5	50	0	0	0	0

All of the CCA respondents complied with this correlation.

PCCA	CCA BETTER		CCA NOT BETTER		NEITHER/NEUTRAL	
	Number	%	Number	%	Number	%
Specific indices	13	36	5	14	5	14
General indices	1	3	0	0	1	3
Combination	7	19	1	3	3	8

The largest group (13 out of 36) supported CCA via specific indices and a combination of both indices. Only 5 [illegible] lies preferred specific indices but did not perceive CCA as preferabl[illegible] CPP.

HCA	CCA BETTER		CCA NOT BETTER		NEITHER/NEUTRAL	
	Number	%	Number	%	Number	%
Specific indices	135	23	67	12	99	17
General indices	10	2	31	5	25	4
Combination	62	11	46	8	50	9
Ni[illegible] reply	0	0	0	0	56	10

The largest group (34%) supported CCA via specific indices and a combination of both indices. 12% o[illegible] replies preferred specific indices but did not prefe[illegible] CCA, and 17% pre[illegible]ed specific indices but indicated that neither method was preferable. A review of comments raised on the questionnaires indicated that specific indices were preferred to general indices.

The responses above can be summarised as follows:

	TOTAL	%	SPECIFIC	%	GENERAL	%	COMBINATION	%
CCA is preferable to CPP	238	38	154	24	12	2	72	11
Neutral or no response	183	29	104	17	26	4	53	9
CCA is not preferable to CPP	150	24	72	11	31	5	47	7
Nil reply	56	9	0	0	0	0	0	0
Total responses	627	100	330	52	69	11	172	27

Where specific indices were preferred, the majority of support was for CCA, and where general indices were preferred, 31 out of 69 preferred CPP. Where both indices were acceptable, there was no method clearly preferred, although the majority of responses were in favour of CCA. The responses indicated a degree of indifference, (neutral or nil responses comprised 38% of the replies) towards FAS 33 and inflation accounting. There appeared to be some contradiction in a number of the responses i.e. 11% of all respondents who said that specific indices were preferred did not feel that CCA was preferable to CPP. However, this may be explained to a large degree by the way question 7 was answered (i.e. that neither method nor Statement No. 33 was useful).

RESEARCH QUESTION FIVE : CCA PROVIDES RESULTS THAT ANTICIPATE FUTURE CASH FLOWS

QUESTION 1

This question tested whether respondents saw a link between cash flow and CCA, in that CCA may be better able to anticipate future cash flows than HCA and CPP.

Q4 SUMMARY	TOTAL	%	CCA	%	PCCA	%	HCA	%
0 - 2 Disagree	274	44	0	0	9	25	265	46
3 Neutral	130	20	0	0	6	17	124	21
4 - 6 Agree	223	36	10	100	21	58	192	33
Total responses	627	100	10	100	36	100	581	100

The CCA users all perceived a link between CCA and future cash flows, and half of those strongly agreed. The majority of PCCA users perceived this link but most HCA users did not. It may be argued that because this link was not stressed as an intrinsic part of the traditional accounting literature and education, the responses were sharply divided depending on the IA method used.

THE CORRELATION BETWEEN CCA ANTICIPATES FUTURE CASH FLOWS (Q4) AND A CASH FLOW REPORT IS PREPARED (Q3B) AND THE CASH FLOW STATEMENT IS LINKED TO CC DATA (Q3C)

Q4 POSITIVE (4 - 6)	AND Q3B POSITIVE Number	%	OR Q3C POSITIVE Number	%
CCA	10	100	7	70
PCCA	19	53	4	11
HCA	137	24	5	1

Q4 AND Q3B POSITIVE

This was a logic test, in that if CCA or PCCA were used internally it might be expected that cash flow statements would be produced. As expected, all CCA users fell into this category. The percentage of PCCA users appears a little low, but this could be explained to some degree by the fact that only 58% of PCCA respondents answered Q4 positively.

Q4 AND Q3C POSITIVE

If Q4 and Q3B were answered positively, one might anticipate that the respondents would see a link between CCA and cash flows. 7 out of the 10 CCA users' answers matched, but this represented 100% of those who answered yes to Q3C. The PCCA and HCA matches were low.

Conclusion

The respondents perceived a link between CCA and future cash flows. Again, the more comprehensive the internal IA method, the stronger the support for this proposition. This link extended to those respondents who prepared a cash flow statement in practice.

RESEARCH QUESTION SIX : A COMBINATION OF CCA AND CASH FLOW ACCOUNTING PROVIDES A SUITABLE METHOD FOR ACCOUNTING FOR THE EFFECTS OF INCREASING PRICES INTERNALLY (IN A NON HYPER-INFLATIONARY ENVIRONMENT)

This question was not asked directly by the questionnaire due to the low anticipated response rate, but was examined in some detail in the case studies. The case studies revealed that these companies used CCA internally and linked this to cash flow information, to produce what they felt was meaningful management information. It is considered that the conclusions to be derived from this research question could be useful to companies affected by increasing prices (but not operating in a hyper-inflationary environment).

RESEARCH QUESTION SEVEN : THE MAJORITY OF COMPANIES DO NOT PREPARE CASH FLOW STATEMENTS and

RESEARCH QUESTION EIGHT : A CASH FLOW STATEMENT PRODUCES MORE MEANINGFUL INFORMATION FOR MANAGEMENT THAN A SOURCE AND APPLICATION OF FUNDS STATEMENT

QUESTION 3

There were three parts to Question 3:

Q3A - Was a cash flow statement more beneficial to management than a source and application of funds statement (S&A)?

Q3B - Did companies produce cash flow statements internally on a monthly basis?

Q3C - Did respondents preparing a cash flow statement perceive a link between cash flow and CC data in practice? Q3C was also linked to Q4 (above), which posed a question on the link between cash flows and CCA.

The cash flow aspect is emphasised here, because it is submitted that effective cash and asset management was perceived as an important tool in combatting the effects of inflation.

QUESTION 3	TOTAL	%	CCA	%	PCCA	%	HCA	%
3A	558	89	9	90	32	89	517	89
3B	467	74	10	100	32	89	425	73
3C	27	4	7	70	4	11	16	3
Total responses	627	100	10	100	36	100	581	100

Q3A

This indicated the number of respondents that perceived that a cash flow statement was more meaningful than S&A. The CCA, PCCA and HCA responses all showed a positive response to this question which indicated that there was a large theoretical support base for the cash flow statement over the S&A.

Q3B

This indicated the number of respondents who actually prepared a cash flow statement internally. One would have expected that the responses would have paralleled those of Q3A and show a clear correlation between the theory and practice of these two questions. This was clearly the case for CCA and PCCA responses. Whereas the HCA responses to Q3B were not as high as Q3A, they indicated that a high proportion of HCA users actually prepared cash flow statements.

460 respondents made a positive response to Q3A and Q3B. 467 respondents said they prepared cash flow statements, therefore 7 respondents did not perceive cash flow to be more beneficial (or were neutral) and prepared cash flow statements. This was not a material fluctuation and did not appear to indicate any ahnormal trends.

Q3C

This indicated the number of respondents who link CC data and cash flow data. 7 out of 10 of the CCA responses were positive, and only 4 out of 36 of the PCCA responses. The PCCA responses appeared low because all these respondents used CC data and most prepared cash flow statements.

It is submitted that this might indicate a deficiency in the way in which inflation accounting was presented and taught to users or it might indicate that the primary reason for using PCCA was not IA based. A few HCA users (3%) answered positively to question 3C, but no further follow-up was made as it was not a logical response, and because no comments were received to support these responses.

General questionnaire comments

Several respondents noted that both statements were useful. A few respondents noted that they used a funds based S&A, and therefore did not prepare a cash flow statement and a number of respondents prepared cash flow statements and management accounts on a quarterly basis.

Conclusions

In theory, a cash flow statement was preferred to a source and application of funds statement. The majority of CCA, PCCA and HCA users prepared cash flow statements. Few of the PCCA users linked cash flow to CCA data.

4.3 Case Studies

Three case studies were performed on American companies that used CCA as their primary internal accounting methodology. The accounting and management responses developed by these companies to deal with the effects of inflation are described. The accounting practices applied and management attitudes were examined in greater depth in the case studies than in the questionniares.

The following case studies are be presented:

4.3.1 American-Standard Incorporated

4.3.2 FMC Corporation

4.3.3 Bergen Brunswig Drug Company

4.3.1 AMERICAN-STANDARD CASE STUDY

CONTENTS

1. Description of the business

2. Objectives, operating policies and management philosophy

3. The control system

4. Modifying HC conventions

   4.1 Inventories and COS
   4.2 Severing the link between the income statement and balance sheet
   4.3 Fixed assets and depreciation
   4.4 The capital charge
   4.5 Foreign exchange
   4.6 Operating income
   4.7 Return on net assets
   4.8 Cash flow performance measures
   4.9 Management bonuses

5. Benefits of using CCA

6. Disadvantages of using CCA

7. Conclusions

4.3.1 AMERICAN STANDARD INCORPORATED CASE STUDY

1. DESCRIPTION OF THE BUSINESS

The following summary describing the operations of American-Standard Incorporated (AS) was extracted from the 1985 annual report. At that time, AS reported sales of US$ 2,9 billion and had total assets of US$ 2,3 billion. "American Standard is a major international manufacturer. Its operations are divided into four general categories: Air Conditioning Products, Building Products, Transportation Products and Commercial Printing. American Standard and its affiliates manufacture in some two dozen countries and market in nearly every country in the world. The company employs about 40 000 people and is owned by approximately 33 600 shareholders. Its product lines are long-standing and have excellent reputations. Its financial position is strong."

The current cost approach arose from a visit to an operating facility by the chairman, Mr W A Marquard. He found that the results were favourable, but could not find a depreciation charge because the facility was fully depreciated. This made him wonder how it was possible to compare the performance of two business units under such circumstances and the research that he initiated led to the concept of replacement cost depreciation, and later to the revaluation of inventories and the capital charge.

2. OBJECTIVES, OPERATING POLICIES AND MANAGEMENT PHILOSOPHY

The company's overall financial objective is "To obtain a real, inflation adjusted rate of return on assets sufficient to finance and expand the businesses and to offer above average returns to our shareholders", and the company's core concept is the maintenance of productive capacity.

To achieve these concepts, AS must focus on the allocation of resources and assessment of performance. AS considered that inflation distorts HCA in these areas and had three major objections to HCA. Firstly, return on assets reflects when the assets were acquired, and new investments would lower this return and discourage new (necessary) investment. Secondly HC pricing may not be in line with current costs as HCA may disguise true profitability. Thirdly inflation distorts performance and the real results cannot be assessed. Application of CCA, and particularly asset replacement, enables AS to take a long term view of operations. (It is a common complaint that US companies place too much emphasis on short term performance).

3. THE CONTROL SYSTEM

There is a very small head office staff. (Top management wanted local management to have considerable autonomy in operating decisions, and helped by cutting the corporate staff from 76 to 6 people in 1971). The head office staff devises financial and accounting controls, sets budgets and monitors performance and becomes involved in material decisions. Operating management are accountable for their performance, but have a reasonable degree of autonomy in running the operations. There is no middle management layer. This philosophy is exercised through a "TIGHT-LOOSE" control system, where corporate management exercises tight controls over budgets and performance, (i.e. in the planning and performance measurement stages) and the controls are loose in that local management have more autonomy in operating decisions. The control system is built around a 5 Year Strategic Plan, a 1 Year Plan and a 4 Month rolling forecast, which is prepared monthly.

4. MODIFYING HCA CONVENTIONS

AS's core concept is the maintenance of productive capacity, i.e. staying in business. Operating income is defined as the funds remaining after maintaining productive capacity, (fixed assets and inventories), and after providing a minimum return to security holders, (lenders and shareholders). The AS accounting system is designed to meet the company's overall financial objectives. AS adopted a CC approach to fixed assets and inventories, introduced the concept of a capital charge and severed the link between the income statement and the balance sheet for inventories. It changed the parameters of the traditional performance measures, including operating income, RONA and cash flows, and it formulated a clear policy to deal with the translation of foreign currencies. These modifications to the HC accounting conventions are discussed in more detail below.

4.1 Inventories and COS

Increasing prices resulted in inventory holding profits, which do not reflect management performance, do not represent cash, and which mask the shortfall in funding required to replace the inventories consumed in the course of business at higher prices. "Holding profits" arise from inventory revaluations, and these holding profits are removed from the units' operating income and treated as a head office expense. AS makes it clear that managers should not 'speculate' in inventories, but should concentrate on managing their operations.

A number of the manufacturing divisions use a CC standard costing system with current standard costs. This results in a simple, easily applied and cost beneficial system. The CC standards are generated by setting 'anticipated' standard costs, which provide a reasonable approximation of CC.

Other operations use the LIFO system of inventory valuation which brings the COS closer to CC than using HCA, because the most current purchase costs for inventories are matched against current sales, and a portion of the inventory holding profits is eliminated. All operating units also track actual replacement costs, based on amounts actually paid, vendor price lists, etc. This data can be used in forecasts and projections, and is used to monitor selling prices. At year end, for external reporting purposes, inventories are valued on the LIFO basis, using the averaging method.

4.2 Severing the link between the income statement and the balance sheet

To achieve corporate goals, the link between the IS and BS is severed as regards inventories. In the IS, COS are on LIFO, but the BS inventories are on FIFO which approximates a CC value as inventories are valued at the latest purchase prices. The LIFO reserve is then deducted to balance the management accounts or the AFS.

4.3 Fixed assets and depreciation

AS subscribes to the traditional CC theories as regards the depreciation adjustment, and also has several interesting arguments to support FA revaluations. There are a number of arguments against revaluing FA. Three main arguments, together with AS's counter arguments, are :

Firstly that estimated useful lives are not necessarily accurate and replacement depreciation is not a precise calculation. However, these same criticisms can be levelled at HCA, which uses the same rates and estimated useful lives. (In addition, the CC revaluation procedures may also result in better estimates of the useful lives.)

Secondly, FA will be replaced with assets that have different capacities and technological advances will result in greater future cost savings. AS argues that timing is what is critical. AS will only receive the benefit of these lower costs after the capital outlay has been made, but the company needs sufficient funds to replace the assets at higher prices now, regardless of any future benefits.

Thirdly, the whole problem can be avoided by examining cash flows. However, AS contends that the DA enables it to measure earnings based on cash flows available for distribution or expansion, after the maintenance of current operating capacities. Inflation adjusted results are more in line with future cash flows. The controller, F Allardyce stated "Should you subtract capital expenditures from cash flow in considering what a unit's cash flow has been ? ... In this sense, inflation adjusted profits are more in line with the cash flow available for growth, which is one of our fundamental concepts of profit measurement."

The depreciation charge includes depreciation on fully depreciated assets, because these assets still generate current income and their replacement costs continue to increase. AS contends that it cannot remain competitive locally or internationally if it does not keep its facilities modern and this practice encourages operating management to replace old machinery which helps AS to stay modern and remain competitive.

Replacement costs are calculated annually by the operating units. CC revaluations are based on the use of local indices or replacement costs and corporate management strongly favors the use of local indices which are cost efficient. Corporate management supplies the operating companies with a reference guide of indices applicable to their areas, and operating management selects the appropriate indices from this guide.

This helps to maintain comparability between the inflation adjusted results of different operations. The revaluation process excludes assets that will not be replaced where maintenance of productive capacity is not required, (eg depreciation on assets of businesses which are being discontinued).

4.4 The capital charge

This charge is aimed at making operating management conscious of asset levels and the costs of funding this asset base. The capital charge uses the opportunity cost of capital to the corporation, (ie the real corporate cost of capital, including debt and equity elements) and recognises the use of net assets by each operation. The charge is an allocation of all corporate charges and replaces head office administration fees, interest charges and tax, which the operations do not control.

4.5 Foreign exchange

To ensure foreign subsidiaries are comparable to the local business units, in local currency, normal foreign exchange gains and losses on operating transactions are accounted for in the IS and translation differences are split between stable and hyper-inflationary economies. If the divisions or subsidiaries operate in stable economic climates then the translation difference is excluded from operating income and the evaluation of unit performance. However, if the operations are conducted in hyper-inflationary economies then the translation loss is included in operating income and impacts on the unit's performance. This acts as an incentive for local management to earn an economic profit.

4.6 Operating income

At "breakeven" operating income, a unit can maintain productive capacity and contribute a return to lenders and shareholders, but can only maintain its current level of opetations, with growth of approximately 3%. It cannot expand internally or channel funds to the corporate head office to finance the expansion of other units. Operating income excludes interest, corporate overheads and tax (which were included in the capital charge), and the revaluation of standard costs. Operating income includes adjustments for CC COS, the capital charge, all foreign currency gains and losses on normal operations, and translation differences of units operating in countries with hyper-inflation.

4.7 Return On net assets (RONA)

RONA forms the basis of measuring long term profitability. It is not a day to day measure, but is of strategic importance and influences capital expenditure plans. One of AS's major corporate objectives is to attain real returns on assets to finance and expand the business and RONA's main application is that it measures asset utilisation in real terms. It is calculated for each operating entity, on a CC asset base, including CC FA and FIFO inventories. The return is operating income per 4.6 above, but the capital charge is added back, as this is not controllable by operating management.

4.8 Cash flow performance measures

'Net cash from operations' is the critical performance measurement for operating management and the cash flow statement is well structured to reflect the items which operating management control, namely cash flow from operations, working capital and fixed asset expenditures.

AS management contend that there is a strong correlation between CCA and future cash flows. The CC adjustments result in the current period IS was being adjusted now for future (replacement) expenditures, which necessarily anticipate future cash flows. The operating management bonuses are linked to these cash flows.

4.9 Bonuses

Real performance is encouraged by the bonus system which is based on operating income, RONA and cash flows. All of these performance indicators are measured against the 1 year plan. This performance measurement system streses annual performance and maintenance of working capital and facilities, asset management and longer term profitability and operating cash flows.

5. BENEFITS OF USING CCA

These benefits are not the general benefits of CCA covered in the literature survey, but are the specific benefits accruing to AS from their development and application of an integrated, internal CCA system. The major benefits of CCA to AS were:

- It forced AS to focus on the critical areas of :
  - asset management
  - working capital management
  - cash flows.

- It enabled management to take a longer term view of operations, cash flows and management decisions.

- It made management understand the true nature of "real profit and therefore protected operating capacity and going conce principles.

- Purchasing economies were enhanced because AS recognised the ev increasing costs of holding inventories in inflationary time and implemented various purchasing stratagies to contr inventory costs. In addition, investments were made to u energy more efficiently.

- HCA pricing may ignore the increased costs of replacing asse consumed, thereby causing the need to borrow funds to finan working capital. The CC system allowed more realistic pricin to be made. Management introduced the concept of "pricing up" anticipation of inflation, (based on CCA stock revaluations) a achieved a $ 350 million increase in income in the period 19 through 1979.

- Resource allocation was improved. Resources included money a management time, staff time, raw materials, plant capacity a cash flow, which should be allocated to operations with the be (potential) returns. The allocation process was hampered by HC which distorted the RONA (particularly where there were larg old investments in fixed assets) and may disguise an operation results where a real loss is shown as a profit, there inventory holding gains, etc. CCA enables comparability betwe diverse operations, and internal use of CCA resulted in t optimal allocation of resources in terms of achieving the group objectives.

- By revaluing FA and providing CC depreciation, the following benefits arose :

  - Management were encouraged to replace old assets because they did not have lower HC depreciation and higher RONA to conceal their true performance. The CC results already contained replacement depreciation, so it was therefore more efficient to acquire the new machinery, and take advantage of the benefits attaching to it.

  - This reduced working costs and improved labour productivity and manufacturing methods.

  - It assisted the group to remain competitive locally and internationally because the group remained technologically current and enjoyed the manufacturing cost savings of such improvements.

  - It improved asset utilisation through the CC based RONA, which was important because AS was very asset intensive.

- CCA gave a basis of comparability between different companies in the same and different industries and even in different countries. It assisted management to integrate and standardise a large diverse international group.

- It enabled management to ascribe realistic values for businesses and operations, (eg for acquisition and divestiture purposes).

- CCA results gave a closer approximation of future cash flows.

- The payment of bonuses was linked to "real" profits, cash flows and improved real productivity. This was important both in times of rising prices, and in depressed times when inflation rates were low.

- Profits and gross margins rose steadily in the period 1971 to 1980. Long term debt was reduced and cash flows improved to the extent that the 1978 annual report stated, "the company was entirely self sufficient in cash in 1978...." Top and operating managers considered that the CC system helped achieve this with the focus on asset management and improved understanding of real profitability.

- It motivated better performance from operating management. This was in a large degree due to the way profit was defined. Break-even profit was acceptable, but in the real world who wants to just break even?

- Operating management felt it helped the company achieve better profitability, (particularly by focussing on long term cash flows, prices and margins). It also focused attention on how much price sensitivity there was in the markets.

- It improved management's focus on costs, and control of overheads.

- The availability of the data meant it was easily used, with no restatements or adjustments.

6. DISADVANTAGES OF USING CCA

There were some disadvantages perceived in using CCA internally, and these disadvantages were:

- There were concerns about the asset replacements, (different capacities etc).

- Operating management were concerned with the effects of using CCA in a recessionary cycle. eg replacement depreciation is more consistent with aggressive pricing.

- It was difficult to compare results to competitors who used HCA and who might not disclose sufficient CC data.

- Companies with low returns on an historical cost basis found the system demotivating because they often had negative operating income, and in addition all components of the system reduce the factors that operating management's performance is measured against (in times of increasing prices).

7. CONCLUSIONS

AS considers there were two critical factors for the success of this CC system, firstly the commitment and involvement of top management, and secondly the involvement of the operational management, whose level of participation was very high, once they had been educated to understand and accept the system. This was enhanced by the autonomy given to operational management.

As in any major corporate exercise, one of the critical factors, (after the research and technical evaluations have been done), is to keep management and staff motivated and to get them committed to the project. It was generally considered that the system was easy to understand, and operating management sympathised with the concepts. This motivation was enhanced by basing operational managements' bonuses on real performance measures (operating income, RONA, cash flows and working capital ratios). Acceptance of the system was not always easy because all components tended to reduce operating income, RONA and cash flows, which were used to assess management performance, and these inflation adjusted results were a major component in the calculation of operating managements' bonuses. All top managers interviewed agreed that a lot of selling effort was necessary. However, implementation was assisted by the fact that operational management recognised that there was strong backing for the system by the CEO and top management.

An impressive feature of the AS system is the way the group has set specific corporate objectives, and then developed and structured the policy manual, the operating systems and the reporting environment to achieve these objectives. The logic and objectives flow through the longer term strategic objectives to shorter term objectives and budgets. In addition, the group carefully analysed the effect inflation had on their business and operations, and developed a practical, easily applied system to cater for the situation. A major benefit for the group was that when inflation levels dropped, it was found that the CCA methodology continued to provide meaningful information to management.

Some general conclusions about the use of CCA internally were that it was easily applied and practical, easily understood, there was a strong education programme, it was supported by top management, it was consistent with the group's objectives and it had relevence both in times of increasing and decreasing prices. It enabled AS to deal with inflation to improve the quality of decision making, performance, profitability and cash flows. At the end of the day, the critical question was "Did the CC system assist the company to achieve its major ojectives ?" It certainly appears that this was the case, and the major objectives that AS achieved were all the benefits listed above, the fact that it consistently earned above average returns for its shareholders, and that it financed and expanded the business internally.



4.3.2 FMC CORPORATION CASE STUDY

CONTENTS

1. Description of the business

2. History of the CCA system

3. Management philosophy

4. The planning and control process

5. Modifying historical cost conventions

   5.1 Inventories and COS
   5.2 Fixed assets
   5.3 Constant Purchasing Power Accounting
   5.4 Q-Ratio
   5.5 Cash flow return on investment
   5.6 Current cost return on capital employed
   5.7 Net contribution
   5.8 Adjustments for monetary holding gains and losses

6. The link between CCA and cash flows

7. Benefits of using CCA

8. Conclusions

1. DESCRIPTION OF THE BUSINESS

FMC Corporation (FMC) has four major divisions, being industrial chemicals, defense systems, performance chemicals and machinery and equipment. In 1987, FMC had consolidated turnover of some US $ 3 billion and total assets of some US $ 2,75 billion. The major factor affecting FMC's short-term financial performance was a material financial restructure in 1986. The scheme had two major effects, namely large negative equity on an HC basis and high gearing. CCA assisted in two ways. Firstly, the banks were concerned with the negative equity as it appeared that HC assets did not provide adequate security, but FMC used a CC replacement valuation which put the company into a positive equity position. Secondly, the high gearing meant that cash flow and asset management assumed great importance, and CCA was perceived as being an effective tool for focussing on these areas even though inflation was at low levels.

2. HISTORY OF THE CCA SYSTEM

Deficiencies in the HC system

Generally, FMC experienced a number of the same inflation related problems under a HC based accounting system in times of increasing prices as AS did:

- HC measures were distorted by changing prices and there was less comparability between businesses with assets of different ages and countries with different inflation rates.

- HC did not focus on measures which maximized shareholders' value. In the area of asset utilisation, old assets could not be replaced with newer, more productive assets, because higher depreciation charges adversely affected performance measures. Secondly, inventory turns reduced, as inventory levels were increased in anticipation of increasing prices (and holding gains). Finally, the effect of the net monetary position was not shown in the IS, so operations did not maximise their net monetary liability situation.

- The group cost of capital was ignored. A strategically sound project with a return on capital employed (ROCE), which exceeded FMC's cost of capital and added to FMC's value, might be rejected if it was below the operation's historical ROCE.

- The HC performance measurement system did not correlate with FMC's strategic measure, CFROI (used to make major resource allocation decisions based on "inflation-free" cash flow data).

Criteria for the new CCA system

The criteria set by management for the new CCA based system were that it should be consistent with the strategic goal of increasing value (via WC management, inventory turn, use of productive FA etc), and had also therefore to correlate with the market's valuation of FMC (via the CFROI and the Q ratio). It should be based on the existing accounting model and focussed on performance (based on factors operating management could control). There should be comparability between different operations. In 1983, all internal reporting functions were converted to a CC basis.

FMC had considered using cash flow accounting to negate the effects of increasing prices, where inventories and fixed assets would have been valued at the NPV of the future cash flows they were expected to generate. However CCA was preferred, because it did not require future estimates, and gave a closer link to the market's valuation of FMC shares.

3. MANAGEMENT PHILOSOPHY

FMC stressed an ongoing pursuit of excellence and strove to meet customer needs by tapping the excellence of its staff to enhance performance. This was supported by quality control and safety measures on the product side. On a more macro-economic level, FMC stressed the development of relationships with the communities where FMC did business.

Financial planning and operations philosophy is illustrated by the following quotes from FMC's manual, "Measuring Real Financial Performance" and shows management's commitment to the policy, and to the education of and commitment to all its employees in the operations of the system. "In general, FMC's management has found CCA to be a valuable tool for highlighting the long-term viability of businesses and their shorter term operating challenges and opportunities.....An understanding of these (CCA) measures, the reasons why they were selected and their benefits is vital for anyone who makes decisions that affect the financial position of the company". FMC believes that each business decision made by operating managers has a direct discernable effect on FMC's market valuation. To link internal and external performance measures, the distortions caused by inflation must be eliminated.

FMC's goal is to become a great company and FMC's performance measurement system supports this goal by generating return measurements that are strongly correlated with the target rates of return and market valuation. The Q-ratio evaluates the stock market's perception of the value of FMC's shares (based on its ability to generate cash flows). It is the ratio of the share price to the inflation adjusted book value per share (based on the current value of the net assets). Management must try to link internal decisions to an increase in Q, therefore the internal measurement system must be correlated with Q. On the internal basis, CCA puts management focus on increasing profits and controlling costs, improving asset productivity and better working capital management. CCA is used internally to calculate a "net contribution" figure. A charge of 7½% of total assets is levied on income after CC depreciation and tax to generate the net contribution calculation. The 7.5% is based on the company's after-tax cost of capital.

Management continually values the existing businesses, and considers that CCA is the best tool for this evaluation. A general management philosophy is that FMC is not closely tied to any of its businesses, and would sell them if a good offer, (in excess of the CC value) were received. In acquisitions, management is very value conscious and will not 'bid up' above what they feel the real value of a company is.

In foreign currency decisions, managers are held responsible for all foreign exchange gains and losses from the time contracts are negotiated to the time they are settled, and they are therefore encouraged to take forward contracts. Managers are to avoid losses or lock in gains, and are not expected to become currency speculators.

To summarise management's concerns:

The balance sheet is as important as the income statement.

Cash flows and internal cash generation are emphasised.

The results of businesses with different assets, different operations, or located in different countries must be comparable.

There must be meaningful comparison of actual results to budgets.

FMC must provide the best returns to its shareholders via positive contributions and external measures must be linked to the internal MIS system.

4. THE PLANNING AND CONTROL PROCESS

All forecasts and plans are set on a CC basis and are used to measure performance. Long range plans are also set on HC. For long term planning, a ten year plan is set annually with the emphasis of the plan set on the first five years. For short term planning, the annual operating budgets are prepared by operating management. These are reviewed by the President and "comfort" reserves may be set up at a corporate level. Operating managements' compensation is also tied into the budgeting system, which is CC based.

The division of functions is clearly set out. The corporate head office has a small planning staff to assist, but only acts once the divisions have identified a potential transaction.

The corporate head office also handles tax, treasury (centralised cash function), government liaison, patents etc. On a daily basis, the operations act in a very autonomous manner. They are responsible for research and development, but submit major acquisition and divesiture ideas to the corporate head office. EMC measures operating performance based on factors that management can influence. The operating portion of the IS is split into two tiers. The operating portion of the IS incorporates CC adjustments, and is used to measure operating management's performance. The non-operating portion includes items not under management's control, and can also be used to record entries to offset CC adjustments to put the figures on an HC basis for external reporting purposes.

5. MODIFYING THE HISTORICAL COST CONVENTION

Detailed studies of the mechanics employed by EMC to value assets, and the related recording system have been made. This detailed information is not included as it is beyond the scope of this thesis.

5.1 Inventories and COS

Externally, inventories are valued on LIFO. For internal purposes inventory standard costs are set prospectively on 1 January, based on the average costs for the coming year. Generally inventory costs are made up of materials 50%, labour 10% and overheads 40%. For material, EMC attempts to cover 80% of raw material costs and obtains bids from three vendors. To determine labour standards, inventories are exploded from the budgets to determine how much labour is needed (i.e. labour volumes and the rates set by union contracts are used, or rates are estimated. Overhead budgets, fixed and variable, are set for each department. The overhead rates are then set using the budgeted labour.

The standard manufacturing times are set by the manufacturing and engineering departments and may be factored for labour inefficiencies. Pricing is mainly determined by what the operating companies consider the market will bear. The CC of manufacturing inputs are examined in detail, to see if the market can support price increases to cover the CC of manufacturing the goods. The standard costs for individual products are based on HC depreciation (but the system is being changed to a CC basis). When companies report on product lines, then a CC depreciation charge is allocated. This is also used in evaluating pricing levels.

5.2 Fixed Assets

Broad inflation indices by asset categories are computed, generally using external indices and applied to calculate the following year's depreciation. The system identifies fully depreciated assets and adds them back as if they had one more year of life (or cost) left. Therefore depreciation is calculated on fully depreciated assets. The CC system of charging depreciation on all assets encourages the replacement or scrapping of idle and underutilised assets because this improves asset utilisation and RONA. Operating management has become far more involved with asset lives because of the impact of CC depreciation. (As with AS, a benefit of the CC exercise was that asset lives were adjusted to more realistic levels). Any problem with inaccurate asset lives has been greatly reduced by charging depreciation on fully depreciated assets.

5.3 Constant purchasing power accounting (CPP)

This is calculated at the corporate level, and does not affect the operating companies. The emphasis on CPP has decreased due to the implementation of CCA and CPP does not really form part of the daily management information system.

5.4 Q-Ratio

FMC's share price reflects market expectations of future cash generating abilities and the current value of FMC's assets. To ensure that internal decisions are linked to the Q ratio, internal performance measures are correlated with Q.

5.5 Cash flow on return on investment (CFROI)

This is an internal rate of return measure, which is linked to the Q-ratio, and is used at the strategic level. It is inflation adjusted and cash flow based and it compares the PV of future cash flows with the cost of the investments that produced those cash flows.

5.6 Current cost return on capital employed (CCROCE)

This is made up of inflation adjusted operating profits after tax as a percentage of CC average capital employed. It is calculated at the operating level, and rewards operating management for increases in profits or productivity (including WC, cash and asset management).

5.7 Net Contribution (NC)

The is calculated by OPAT over the earnings target for CCROCE (ie. CC average capital employed x 8%.) This ratio is monitored at the operating level and measures an operation's ability to generate profits in excess of those required to maintain the productive asset base. Projects and asset decisions are evaluated on net contribution. Therefore a company should accept a project if the NC exceeds 8%, (even though this may be lower than the CCROCE actually achieved in that company). Breakeven means the operation has achieved the 8% CCROCE goal.

5.8 Adjustments for monetary holding gains and losses

These are made in countries with hyper-inflation (e.g. Brazil, Mexico, and Argentina). To preserve their productive base, operations must account for losses on holding net monetary assets (and their pricing must compensate for this loss). Gains are included in income.

6. THE LINK BETWEEN CURRENT COST ACCOUNTING AND CASH FLOWS

A cash flow calculation can be performed using CC or HC data. FMC believes that the use of CC data has more significant benefits. The short term cash management objectives are to meet the short term repayments due on the recapitalisation. Thus CCA is very important in ensuring management is focused on achieving their short term goals. The long term view is that the value of a company to its shareholders is its ability to generate cash.

7. BENEFITS OF USING CCA

FMC perceived numerous benefits accrui to the company from its use of CCA in the internal MIS. These benefits are described below and CCA assists management to achieve corporate goals and maximise cash flows in the following ways:

Project evaluation

Management is able to make better business decisions through the use of inflation adjusted real data and will not bid above a certain level of value based on real CC criteria. Asset acquisitions and projects are evaluated based on whether they make a positive net contribution, as opposed to just increasing CCROCE. Therefore all future cash flows as well as "real" criteria are used in the evaluation decision.

Pricing

Pricing decisions are improved. Although prices are set on what the market can bear, management has a more realistic view of the real cost of the components of their products and can analyse the possibility of being able to pass these costs on to the consumers.

Fixed asset management

Asset management is enhanced, especially by charging depreciation on fully depreciated fixed assets. This encourages managers to purchase new assets which may improve productivity and decrease operatin costs, and to re-evaluate excess capacity which can be sold or converted to more productive use, thereby reducing idle assets. Better estimates of useful lives can be made.

WC Management

CCA increased focus on working capital, and FMC enhanced this by making working capital levels a part of management's bonus system. This emphasis on WC minimises the holding of monetary assets and improves cash flows. FMC has generated about $ 400 million internally from better working capital management over a number of years, in a large degree due to CCA. In fact, the company has been running with negative working capital for the last four years. The performance measures encourage reduced inventory holdings because earnings targets (net contribution and CCROCE) are improved. Income levels remain constant, while capital employed is reduced.

Comparability of Performance Measures

A benefit of CCA is comparability of results. The "real" results eliminate distortions caused by different asset ages and inflation rates. Different businesses, (even in different countries) can therefore be assessed and compared, and better comparisons of actual results to budgets and forecasts made.

Monetary Holding Decisions

In hyper-inflationary economies, monetary holding gains and losses are charged to income to encourage the timeous collection of debtors and to obtain favourable payment terms from suppliers. This results in lower capital employed, and higher earnings, thus improving the performance measures.

Assessment of Management Performance

This can be better measured in real terms, and management bonuses are based on this real performance. There is an increase in the efficiency of operating divisions, and an ability to better assess unprofitable operations (via net contribution) due to increased focus on the balance sheet. Operating management's emphasis on the IS is reduced, and greater importance is attached to the balance sheet. This has resulted in a reduction in working capital levels.

The share price

The share price has benefitted from the use of CCA and brokers and investors consider that FMC is focused on the correct issues, and is a sound investment with solid prospects based on its maintenance of operating capacity approach focus on WC and asset management and strong cash flows.

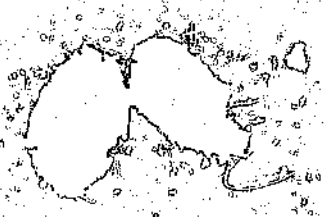
8. CONCLUSION

In its CCA manual, FMC came to the following conclusions about the effect of the CCA system: "Since the CC system was implemented in 1983, a variety of factors have enabled FMC to outperform the market. These have included a major share repurchase, improved use of cash, greater asset productivity, a better focus on earnings returns and the availability of inflation adjusted information for management decision making."

FMC compared a portfolio of 50 of its competitors (on a stock index performance measure). The portfolio underperformed the market by 30%, whereas FMC consistently outperformed the market. To quote the CC manual again: "The Corporation's inflation adjusted performance measures have successfully supported FMC's goal of increasing shareholders' value" and thereby supports FMC's goal to become a great company.

Although inflation in the USA is relatively low, management considers that CCA is more important now than it was when inflation rates were in double digits. Over time the emphasis has moved to asset management, and the CCA system has been "converted" to this asset management system, with the use of CCA based performance measures and the restructure of the compensation system around these measures. CCA drives home the message that every manager is responsible for the assets used, and results in an increase in the efficiency of using those assets. Even if inflation was zero CCA still has great value to FMC. The company still has assets on its books that were purchased when inflation rates were high, and management is still responsible for managing those assets in the most efficient manner, and earning an adequate return on those assets.

CCA helps management to achieve this because the balance sheet is as important as the income statement, there is emphasis on cash flows and internal cash generation, there is comparability between different business, and comparability between actual and budget results. Shareholders' returns are maximised via positive contributions. FMC feels that share prices have also benefitted from the use of CCA internally. Brokers that FMC have dealt with have been impressed with the use of CCA internally, and feel comfortable that management are addressing the correct issues.



BERGEN-BRUNSWIG DRUG COMPANY CASE STUDY

CONTENTS

1. Motivation for the case study

2. Description of the business

3. The inventory recording system

4. Inventory figured example

5. Benefits of using CCA

6. Conclusions

1. MOTIVATION FOR THE CASE STUDY

BBDC was selected for a case study despite the fact that it does not have as comprehensive a CCA methodology in place (as do American-Standard and EMC). The company has relatively small investment in fixed assets as its operations are inventory intensive, and the majority of their facilities are leased. However, it has an interesting approach to fixed assets, comparing the use of facilities by operations on a "real" basis, by an allocation of a "real" market related corporate charge from the head office for the use of facilities by the operations. The major focus of the case study is on their treatment of inventories. The company has large inventory holdings (around 25 000 line items purchased from about 750 vendors) due to the nature of its business, and has a sophisticated and integrated CC system to deal with these inventories. The company values inventories on a number of bases, namely LIFO, FIFO and current replacement costs. A detailed study of the methodology used to revalue inventories and the related reporting structure was made, but this is beyond the scope of this thesis.

2. DESCRIPTION OF THE BUSINESS

BBDC has a centralised inventory management and accounting function serving approximately thirty sales divisions. BBDC is the US's second largest drug and pharmaceutical product wholesaler (with McKesson as the market leader and FoxMeyer holding third position).

BBDC has three main methods of generating profits and cash flows:

- High volume turnover with low profit mark-up.

- Realisation of inventory holding profits.

  These arise from the revaluation of physical inventory on hand, for current vendor price increases. This can comprise 50% to 70% of earnings. BBDC also applies a policy of making large purchases in anticipation of vendor price increases (where permitted by the suppliers). This is different to the philosophy of American-Standard and FMC, where these gains are not recognised in the assessment of operating managements' performance, because managers must concentrate on the performance of their operations, and not "speculate" in inventories. BBDC, in direct contrast, actively seeks to maximise profits and operational cash flows by "speculating" in inventories and realising inventory holding gains. The use of CCA inventory adjustments allows the company to maximise the returns from holding gains on inventories.

- Vendor free goods, advertising allowances and volume rebates.

3. THE INVENTORY RECORDING SYSTEM

Inventories are recorded in a perpetual system, which is reconciled monthly to the GL. Each division has its own perpetual inventory and inventory transactions (receipts, COS and price adjustments) are recorded daily with COS being relieved at replacement cost. The average inventory turnover is 45 days. Physical inventories are taken quarterly.

Inventory valuation

Inventory is valued on the following bases:

- annual financial statements - LIFO
- monthly management accounts - consolidated - LIFO
  - operations - FIFO
  - current replacement cost
- subsidiary inventory records - current replacement cost
  - FIFO

Inventory receipts are recorded at invoice price, and revalued when vendor prices change.

Operational IS's disclose COS on a CC replacement basis. However, this profit is convereted to FIFO/HC by adding back the realised portion of the inventory revaluation reserve. Therefore inventory is carried at replacement (current) cost in the books, based on current vendor prices. Inventory receipts are recorded in the invoice price, and revalued whenever BBDC receives notice of vendor price increases. BBDC monitors these inventory price increases so it can purchase inventory in advance of price increases. The suppliers will only permit BBDC to purchase "normal" quantities once a price increase has been announced, (but before it takes effect). Therefore management are actively encouraged to "speculate" on inventory price changes to realise holding profits.

Inventory pricing

Pricing is made on a cost-plus basis. The margins are low, (generally between 3% - 7%) but these are based on the replacement costs.

Sales to hospitals, (approximately 50% of purchases) are covered by a group contract with the suppliers. The suppliers want to encourage the hospitals to use their products and therefore contract with BBDC to supply the hospitals below cost. The hospitals generally belong to a group, and the group will negotiate these contract prices directly with the supplier. BBDC uses this contract price as cost to the hospital, and puts its profit mark up on the lower contract price. BBDC invoices the suppliers for the difference between the actual cost and the contract cost, (about 20% below actual cost).

4. INVENTORY FIGURED EXAMPLE

A simple figured example has been prepared for one month to explain how the system operates. The major transactions are:

(1) 100 units of inventory are received at at $ 10 each.

(2) The vendor increases the price of the product line by 4% and inventories are revalued to reflect this increase.

(3) 66 units are sold, at a mark-up of 5%, (on replacement cost).

(4) At the month end, a portion of the inventory valuation reserve is taken against COS based on the average inventory turnover.

Analysis / Results	$
Income Statement in AFS	
Sales	720
COS	660
GP	60

This is effectively a FIFO based IS, (COS being 66/100 x original cost $1 000 = $660). A GP of $60 or ($60/$720) 8.3% is generated.

(In practice, a LIFO adjustment is made to the IS in the AFS, and the GP calculated above will be lower. However, this is not applicable to this example because only one inventory purchase was made).

Internal IS	$
Sales	720
COS (replacement cost) (66/100 x $1,040)	686
"System" (real) GP	34
Inventory reserve/holding profit realised (66/100x$40)	26
FIFO GP	60

This results in a real GP % of ($ 34/720) 4.7 %

The IS up to the "system" basis is on a CC basis, as it provides for the replacement cost of assets consumed. The add back of the inventory reserve, (in practice based on the average inventory turnover), converts this to a FIFO profit.

FIFO GP

The FIFO profit can be analysed as follows:

-	applicable to FIFO mark up (5% x $ 660)		33
-	applicable to revaluation		
	- holding profit	26	
	- mark up on holding profit (5% x $ 26)	1	27
FIFO GP			60

"System" or Real GP

The GP can be analysed as follows:

-	applicable to FIFO mark up	33
-	applicable to inventory revaluations	1
Total "System" GP		34

Of course, in applying the CC maintenance of operating capacity theory, the above CC figures approximate the future cash flows, as the CC COS, at current vendor prices, anticipates payment for the replacement inventory. For BS purposes, the divisional inventories (net of the valuation reserve) are on a FIFO basis but are converted to LIFO for the total company. A LIFO adjustment is also made in the internal accounts. (This was based on advice from the BBDC tax division, which noted that the basis of internal inventory valuation should be consistent with the external basis, or the company's tax status could be challenged by Revenue.)

In the figured example, 66 units were sold, 1[illegible] 34 units on hand

	$
Replacement cost (34/100 x $ 1,040)	354
Inventory revaluation reserve (34/100 x $ 40)	(14)
FIFO Cost (34/100 x $ 1,000)	340

In this example, using one product, it is easy to allocate the inventory reserve to COS, to obtain a FIFO GP and inventory valuation. In practice, BBDC has around 25,000 line items and the inventory reserve is therefore allocated based on the overall average inventory turn, estimated to be around 45 days. BBDC actually allocates the valuation reserve on a 60 day moving average.

5. BENEFITS OF USING CCA

For properties, the market rentals charged to divisions allow the corporate head office to compare the performance and efficiency of different operations on a real basis.

The replacement cost pricing is used to generate holding gains on inventory, which is realized through the profit mark up on sales. BBDC has three main methods of generating income and cash flows; firstly being high volume turnover with low profit mark-up, secondly, being realisation of inventory holding profits (which arise from the revaluation of physical inventory on hand for current vendor price increases and can comprise 50% to 70% of earnings) and thirdly being the profits generated on vendor free goods, advertising allowances and volume rebates.

The replacement cost is used to generate a real cost-plus selling price.

Management can judge operational performance on "real" gross profit.

Operating capacity is maintained at the gross profit and net profit levels.

In conclusion, it can be seen that the application of CCA principles has relevance in generating more than 50% of the company's operating profits and in providing meaningful and useful inflation adjusted data to management and is closely linked to current and future cash flows.

6. CONCLUSIONS

BBDC is slightly different from other companies, in that it has small FA and large inventories. It has analysed and clearly understood the effects of increasing prices on its operations, and has designed a practical internal response.

This system is not easily applied, and is complex due to the large number of stock items. The system has the following advantages :

- It allows BBDC to realise inventory holding profits, which accounts for a large proportion of its income.

- It also enables manangement to make detailed analyses of stock movements and to follow up on problem areas.

- It provides a large data base of information on inventory items and categories.

- It updates retail outlet pricing information, and is therefore a valuable customer service.

- Losses on hospital supplies are refunded by the suppliers.

In general, BBDC has adopted CCA methodology to maximise its performance (particularly between CC inventories and cash flows), maximise returns to shareholders and to provide meaningful, inflation-adjusted data to management. In fact, the application of CCA principles in respect of the inventory revaluation is a major factor in generating over 50% of BBDC's operating profits.

4.4 RELATING CASE STUDIES TO THE RESEARCH QUESTIONS

A summary of whether the research findings from the case studies answer the research questions positively or negatively is presented in Table 4.2.

RESEARCH QUESTION ONE : INFLATION IS A PROBLEM WHICH MUST BE ACCOUNTED FOR IN THE INTERNAL MIS (FROM A RANGE OF XX)

Obviously all three case studies answered this research question positively because CCA formed an integral part of their internal MIS. All three companies clearly understood the effects of inflation on their particular operations and FAS 33 methodology. These companies had modified this methodology to suit their circumstances, and had been practical in establishing systems that provided meaningful inflation adjusted data to management. To achieve this, the companies agreed that CCA adjustments should not just be made in the FS, but would provide more meaningful information if built into the internal MIS. To determine whether inflation was a problem, the companies also agreed that, in practice, one should assess the effects of inflation on the particular business, and its main categories of assets. If the effects were material, then these effects should be accounted for internally. In assessing whether the effects were material, one would have to look at the individual circumstances of each company. The case study companies definitely perceived inflation to be a serious problem, one which required adjustments in their internal MIS. In fact, it was perceived as so important that CC methodology was used as the primary internal accounting methodology.

The case study companies took this concept a stage further. CCA was introduced as a result of high inflation rates, when changing prices were having an adverse effect on companies' performance. Management felt that these effects should be accounted for internally, and on a monthly basis.

However once inflation rates dropped, CCA was perceived to have other advantages. The case study companies clearly set out their mission or corporate philosophy, and then built a carefully structured operating system to achieve those goals. These systems built this "new" CCA philosophy and approach into the MIS.

The level of inflation was not relevant to these companies at the time of the case studies because:

American-Standard perceived "real value" in using CCA when inflation rates were low, because it helped management to focus on asset management and it improved their understanding of real profitability.

FMC clearly considered CCA as an effective tool for managing cash, assets and working capital, as well as accounting for the effects of changing prices.

Bergen Brunswig Drug Company relied on volumes of inventory turnover and holding profits to generate profits, and therefore found it vital to continually monitor the CC of inventories. Their CC based system also allowed the company to monitor real performance.

RESEARCH QUESTION TWO : THE MAJORITY OF COMPANIES, IN TIMES OF INCREASING PRICES, DO NOT FORMALLY ACCOUNT FOR THE EFFECTS OF INFLATION IN THEIR MIS

The case study companies all accounted for inflation in their MIS. However, the application of CCA principles should be seen on two levels:

1. The first level is an application of FAS 33 CCA IA methodology (e.g. COSA, DA etc.) in determining the level of real operating income, but not incorporating all of the adjustments as envisaged by FAS 33 (e.g. gearing type adjustments). This measurement of real income is practical, and is tailored to match the effects of increasing prices on inventories and fixed assets.

2. The second level is the development of an integrated system whereby CCA is not only seen as an IA tool, but more as a general performance measurement tool and a cash and asset management tool. These uses are generally part of a sophisticated system which may be simple to apply, but which is the result of considerable thought to develop an integrated system which logically assists the company to achieve its corporate goals.

RESEARCH QUESTION THREE : OF THE TWO COMMONLY ACCEPTED METHODS OF ACCOUNTING FOR INFLATION, CCA PROVIDES MORE MEANINGFUL INTERNAL INFORMATION TO MANAGEMENT THAN DOES CPP (IN TIMES OF INCREASING PRICES, BUT IN A NON HYPER-INFLATIONARY ENVIRONMENT

The case study companies had experience of preparing supplementary disclosures in their annual financial statements on both the CCA and the CPP bases. Given the nature of their operations and operating assets and the range of inflation rates experienced, CCA was perceived as providing more meaningful internal information to management to CPP. The case studies illustrated how detailed and practical the uses of CCA internally were, and the nature of those uses.

These uses included, inter alia:

- measurement of real operating income

- measurement of real performance (by management, operations, divisions etc.)

- pricing decisions

- asset management

- linking CCA data with cash flows

- investment and divestment decisions.

RESEARCH QUESTION FOUR : SPECIFIC INDICES ARE MORE RELEVANT IN ACCOUNTING FOR THE EFFECTS OF INCREASING PRICES THAN GENERAL INDICES

The uses of indices by the case study companies and the nature of these indices are summarised below, by case study company.

American-Standard used specific indices and replacement costs for revaluing inventories to current cost (and in certain subsidiaries, LIFO was used as an approximation of the COSA). The use of specific indices and replacement costs for stock valuation was also built into the inventory standard costing system. Fixed assets were revalued to current cost by using specific indices and replacement costs. General indices, via CPP methodology, were applied to subsidiaries or divisions operating in hyper-inflationary economies, where use of CPP was often mandatory.

FMC Corporation used a standard costing system for inventories, where the replacement costs of raw materials was obtained from vendors. Fixed assets were revalued to current cost using specific indices generated internally by their estimating department. CPP and general indices were used by subsidiary operations operating in hyper-inflationary economies. The corporate head office placed little emphasis on data generated with general indices and CPP methodology.

Bergen Brunswig Drug Company used a specific integrated system of revaluing inventories to current cost based on their vendors' replacement costs. This was an on-line system and inventories were revalued to CC immediately the company became aware of the price of a specific inventory item increasing. Most premises and fixed assets were leased.

The case study companies therefore illustrated that the use of CPP or general indices was only made in hyper-inflationary economies, and often the use of general indices and CPP methodology was mandatory in those countries. Inventories and fixed assets were generally revalued to current cost by using specific indices and replacement costs. It is submitted that the use of replacement costs is more compatible with CCA methodology (than CPP) because it focuses on the specific price increases and costs of assets, rather than relying on some general measure of price increases.

RESEARCH QUESTION FIVE : CCA PROVIDES RESULTS THAT ANTICIPATE FUTURE CASH FLOWS

This research question was addressed in theory by the article "Inflation Accounting - The link between CCA and cash flows" presented in Appendix Two.

As noted in the comments relating to research question Two above, it is submitted that the case study companies' response to research question Five was on two levels:

1. CC adjustments via FAS 33 methodology. Discussions with case study company management teams clearly showed that they perceived a strong link between income adjusted by CC adjustments and future cash flows.

2. At the internal MIS level, the use of CCA was perceived by management to be a management tool in an integrated system. The emphasis of their use of CCA internally was to improve asset and WC management, and particularly to protect and enhance future cash flows.

This internal approach to linking CCA and cash flows appeared to have been successful because American-Standard was known for its strong cash flows over a number of years as illustrated by its annual financial statements. In fact, the consistency and strength of American-Standard's cash flows (amongst other factors including proven quality products, good market share, and a strong management team), made it an attractive target for a leveraged buy-out in March 1988 for a consideration of some 3,2 billion (Jereski L, 1989).

FMC's reported results also illustrate that their use of CCA in their MIS appeared to have been a positive factor in FMC generating consistent and strong cash flows. This focus on CCA, cash flows and asset management enabled FMC to repay external borrowings of some $ 2 billion arising from a recapitalisation scheme in 1986.

BBDC illustrates, using their on-line, integrated inventory systems, how the link between the CC of inventories and performance is maximised in a certain operating structure to maximise cash flows.

RESEARCH QUESTION SIX : A COMBINATION OF CCA AND CASH FLOW ACCOUNTING PROVIDES A SUITABLE METHOD FOR ACCOUNTING FOR THE EFFECTS OF INCREASING PRICES INTERNALLY (IN A NON-HYPER-INFLATIONARY ENVIRONMENT

The case study companies clearly perceived the link between CC and cash flows. This link was not only understood theoretically, but was also built into their MIS. In understanding this link, both companies built CC adjustments into their IS to make the IS more cash based. This assisted management in being more focused on the management of operational cash flows and operating assets.

In the American-Standard case study, the financial manager, Mr F Allardyce noted that "inflation adjusted results were more in line with future cash flows .....". The answer is to use replacement depreciation for measuring the income of internal operations. In this sense, inflation adjusted profits are more in line with the cash flow available for growth, which is one of our fundamental concepts of profit measurement." Therefore, the company not only looked to preserve operating capacity, but also to generate sufficient internal funding to finance growth (and to achieve corporate objectives).

FMC went even further in formalising this link between CCA and future cash flows in linking CCA and cash based measures throughout their performance measurement system. This link was structured into the operating philosophies and systems used to achieve corporate goals.

BBDC maximised the cash flow effects of holding inventories in times of increasing prices, by applying CC principles in their MIS.

RESEARCH QUESTION SEVEN : THE MAJORITY OF COMPANIES DO NOT PREPARE CASH FLOW STATEMENTS

AND

RESEARCH QUESTION EIGHT : A CASH FLOW STATEMENT PROVIDES MORE MEANINGFUL INFORMATION FOR MANAGEMENT THAN A SOURCE AND APPLICATION OF FUNDS STATEMENT

Research question Seven is not applicable to the case study companies because they all prepared cash flow statements.

The case study companies support Research question Eight because all the companies prepared, and placed great emphasis on, cash flow statements. S&A were not used by these companies.

CHAPTER FIVE - CONCLUSION

5.1 THE TIMING OF THE PROJECT AND VALIDITY OF RESEARCH DATA

The research into the project began in March 1985. At this time, inflation had already been at relatively high levels in the USA and SA for some time, and it was having serious effects on the economy. The mandatory reporting of CCA and CPP financial information in annual financial statements issued between 1979 and 1984 created a unique population for the evaluation of inflation accounting. Although there is some time differential from the time the research data was gathered in the USA, culminating in March 1987, and the completion of this dissertation, it is submitted that the research findings and conclusions are still valid.

Although the research and the related findings have been "frozen" in the period 1985 through 1987, there are certain broad parallels and circumstances between the research period in the USA and South Africa. One of the major factors is that the rate of inflation in South Africa has remained at a reasonably consistent level throughout the period that the data was gathered and the dissertation was completed. Other material parallels noted in Section 2.9 were the similarity of American and SA companies' operating structures and the effect of inflation on these companies' reported results.

5.2 MAJOR CONCLUSIONS DERIVED FROM THE RESEARCH FINDINGS

This section gives a very broad summary of how the research findings answered the research questions and summarises and concludes on the research findings.

The responses were analysed into companies that used CCA internally, partial users of CCA and users of HCA and this stratification produced results and research findings that were clearly consistent with this stratification. There was therefore a strong correlation between the type of IA method used and the positiveness of the responses. The respondent's perception of how great a problem inflation was, and whether it should be accounted for internally, had a strong influence on the choice of accounting method used. A number of responses to questions indicated that the respondents were neutral, held no view or were indifferent to the issues and there are a number of places in this section where a poor response rate to a questionnaire question has been ascribed to indifference. The major conclusions that can be drawn from the research and research findings are presented for each research question.

Major conclusions drawn from these research findings

- Inflation is a problem that should be accounted for internally although a clear threshhold level at which internal adjustments should be made was not established.

- In practice, even though inflation was seen as a problem, the majority of respondents had not developed a formal system to account for the effects of increasing prices. There was, however, a wide range of uses of inflation adjusted data, irrespective of which accounting method was used and whether a formal system was used or not.

- The majority of respondents considered that CCA provided more meaningful information than CPP. (It should be noted that a number of respondents were indifferent, and a number of respondents felt that neither method had any benefits.)

- The above conclusion preferring CCA over CPP was reinforced by the fact the majority of respondents agreed that specific indices provided more meaningful management information than general indices.

- There was strong support for cash flow statements, which were preferred over statements of source and application of funds. However, the link between CCA and cash flows was less well perceived.

- The questionnaire did not establish that a combination of CCA and cash flow accounting would provide meaningful management information in times of rising prices. However, this assertion was strongly supported by the case study companies.

- In theory, the respondents considered that adjustments for inflation should be made internally in the MIS, as opposed to the annual mandatory FAS 33 adjustments in the financial statements (but this conclusion did not appear to be formally supported by the accounting and management practices adopted by the companies). It appeared that a number of such companies addressed the problem of inflation internally on an informal basis in budgeting, forecasting and assessing performance.

- The case study companies illustrated that using a combination of both CCA and cash flows in their businesses provided meaningful management information, irrespective of the rate of inflation. This was because CCA provided methodology that permitted the companies to focus on the balance sheet via asset and working capital management, and to link this to improved cash flows and assessment of "real" performance.

5.3 A SUMMARY OF HOW THE RESEARCH FINDINGS ANSWERED THE RESEARCH QUESTIONS

RESEARCH QUESTION 1 : INFLATION IS A PROBLEM WHICH MUST BE ACCOUNTED FOR INTERNALLY. (FROM A RANGE OF xx %)

Q5A "Changing prices are a problem that has to be recognised in providing relevant accounting information to management."

In total, the majority of the respondents disagreed with the research question and there was a strong correlation between the total results and the HCA replies. The majority of CCA and PCCA users agreed with the research question. The research question was reasonably broad in that it did not specify whether it referred to a formal accounting system, or to less formal reactions to the effects of inflation. However, the questionnaire structure helped to pinpoint these factors. Generally, CCA and PCCA users had some degree of formal system installed. The informal reaction of HCA users came through in Q2, (how inflation adjusted data was used internally). A number of HCA and PCCA users who answered Q5A negatively, (that inflation was not a problem that had to be accounted for internally), answered Q2 to show that they made some sort of informal adjustments for the effects of inflation. This indicated that they should have answered Q5A positively. If this adjustment is made to Q5A, then the majority of all respondents do, in fact, agree with Research Question One.

In Section 4.2 several comments were raised which implied that good managers should account for inflation internally on a common sense basis, but not formally or in terms of FAS 33. It is submitted that a number of companies accounted for inflation on an intuitive basis. They knew their business and the industry, and had a business feel for how inflation affected their operations and results. The research findings indicated that inflation would always be regarded as a problem which should be addressed in the MIS above some hurdle rate.

There may be some sympathy for this intuitive approach to inflation (where inflation adjusted data is used internally on an informal basis). However it does not appear feasible to operate medium to large size businesses, often with a number of diverse operations and operational areas, on such a haphazard and disorganised manner. This approach may lead to payment of dividends from capital, erosion of operating capacity, non-comparability of results and the inefficient allocation of resources, finance and management time. It is submitted that calculating FAS 33 adjustments on an annual basis may help, but is only a partial solution. However the problem is compounded as the rate of inflation increases. It can be argued that some reaction to inflation is better than none at all but this is clearly countered by good business practice which says if it is worth doing, it is worth doing well. The case study companies illustrated how the problem of inflation could be accounted for internally, on a formal and effective basis.

Q5B - The level at which inflation should be accounted for internally

This question tested how high the inflation rate would get before the respondents would consider making internal monthly adjustments to their MIS. Overall, no clear threshhold range was established, from which respondents would make adjustments for inflation internally. There was a reasonable correlation between the accounting method used and the level at which inflation was perceived as a problem. It is interesting that a number of HCA users indicated relatively low levels of inflation at which they would consider making internal adjustments in theory, and highlights the gap between theory and practice. This threshhold rate of accounting internally for inflation is raised as a topic for further research.

RESEARCH QUESTION TWO : THE MAJORITY OF COMPANIES, IN TIMES OF INCREASING PRICES, DO NOT FORMALLY ACCOUNT FOR THE EFFECTS OF INFLATION IN THEIR MIS

Research question One showed that the majority of respondants considered that inflation was a problem which should be accounted for internally, in theory. In examining the responses to Q2, it was clear that most companies took some cognisance of the effects of inflation, although this was not necessarily in terms of a formal accounting system, which generated internal adjustments to the accounting data produced. Q2 was designed to establish actual accounting practices and the more comprehensive the IA system, the greater the number of practical applications of IA adjusted data. Q2 clearly shows the discrepancies between theory and practice particularly in view of the range of informal uses to which IA adjusted was put, even by HCA users.

The responses to Q1 and Q2 tended to indicate the necessity for IA adjustments in times of increasing prices, whether this was performed on a formal or intuitive basis. This may support the need for a more formalised internal response to the effects of increasing prices, above some threshhold inflation rate. The case study companies did formally account for increasing prices internally, by adopting some form of IA as the primary accounting methodology in the MIS. It is interesting to note that the majority of questionnaire respondents did, in fact, make some adjustments for inflation internally, even though a number of these were not on a formal basis.

RESEARCH QUESTION THREE : OF THE TWO COMMONLY ACCEPTED METHODS OF ACCOUNTING FOR INFLATION, CCA PROVIDES MORE MEANINGFUL INFORMATION FOR MANAGEMENT THAN CPP (IN TIMES OF INCREASING PRICES, BUT IN A NON HYPER-INFLATIONARY ENVIRONMENT)

This was directly addressed by Q7. In total, 39% of respondents agreed with the research question which proved that the largest number of respondents agreed with the research question. However there was some level of indifference to the problem of inflation which was illustrated by the number of neutral responses, 22%, or neither method was useful, 11%. ie 33% of respondents did not express an opinion. It is submitted that there may have been a more positive response rate had there been more education and a mandatory requirement in FAS 33 for the directorate to comment in detail on the results of applying the two IA methods.

The usefulness of CCA over CPP was further highlighted by Q6, which asked respondents which indices were found to be more useful in accounting for the effects of price changes. There was a clear majority in favour of specific indices and a level of support for a combination of both methods. However the case studies and telephonic follow-ups to the questionnaires tended to indicate that use of combination indices was more as a result of the CPI approximating specific indices and these companies were actually applying CCA methodology (with the CPI approximating specific indices).

The case study companies strongly supported this research question in theory and in practice and they considered that their corporate performance had been enhanced by using CCA as their primary internal accounting method. This finding is supported by the case study responses to Research Question Six. In general it may therefore be concluded that the research findings indicated that CCA was perceived as providing more meaningful information to management, (in the then prevailing US situation) than did CPP.

RESEARCH QUESTION FOUR : SPECIFIC INDICES ARE MORE RELEVANT IN ACCOUNTING FOR THE EFFECTS OF INCREASING PRICES THAN GENERAL INDICES

This was addressed by Q6. Respondents had made annual adjustments using both specific and general indices in applying FAS 33. CCA and PCCA users used indices more frequently, depending on which method they were using. Some CCA and PCCA users used general indices, but noted that these approximated specific indices for their particular businesses. The responses and the comments thereto indicated that specific indices were greatly preferred to general indices because they provided more relevant information to management. The case study companies strongly agreed with this research question because they applied CCA methodology in practice. The companies generally applied specific indices (generated internally or externally) or used replacement costs for assets, which is submitted supports the concept of using specific (as opposed to general) indices.

RESEARCH QUESTION FIVE : CCA PROVIDES RESULTS THAT ANTICIPATE FUTURE CASH FLOWS

QUESTION 4

In total, the majority of the respondents disagreed with the research question that there was a link between CCA and cash flows. However, when the population was stratified there was a discrepancy between the responses generated by the different methods, because all of the CCA users and the majority of the PCCA users perceived this link between CCA and future cash flows. This was given more credibility because all the CCA users, who use CCA internally in practice, strongly perceived this link. Most HCA users did not perceive this link, and it is submitted that these results were generally what one might have anticipated in advance.

In addition, the correlation between the accounting method used, whether CCA did predict future cash flows and the practice of producing a cash flow statement and linking it with CCA was tested. As expected, there was a strong correlation with CCA users, and a reasonable correlation with PCCA users which supports the comments above. The results of the case studies clearly showed a link between CCA and future cash flows and in fact the implementation of CCA methodology internally was designed to enhance present and future corporate cash flows.

RESEARCH QUESTION SIX : A COMBINATION OF CCA AND CASH FLOW ACCOUNTING PROVIDES A MOST SUITABLE METHOD FOR ACCOUNTING FOR THE EFFECTS OF INCREASING PRICES INTERNALLY. (IN A NON HYPER-INFLATIONARY ENVIRONMENT)

This research question was not directly addressed by the questionnaires, but was tested in the case studies that were performed. The case study companies strongly agreed with this research question and this was illustrated by the manner in which the companies had integrated CCA and cash flow accounting into their internal MIS, and through to their corporate philosophy.

It is submitted that the benefits experienced by the case study companies by applying a combination of CCA and cash flow accounting in practice could significantly contribute to the development of an internal CCA and cash flow methodology in the SA context. This could also be of use to the profession in motivating the use of CCA in SA. SA is in the anomolous situation that it has been experiencing relatively high levels of inflation for a protracted period, and yet the profession has not developped an appropriate methodology to successfully deal with the situation. SA companies could benefit from these accounting methodologies, and it is submitted that this may be an area for further research.

The major practical business uses of CCA and cash flows, (even when there are lower inflation rates) were:

- a focus on the balance sheet
- working capital management
- fixed asset management
- cash management
- an assessment of real performance

The reasons and benefits of using a combination of CCA and cash flow accounting internally can be summarised into a number of broad points:

- Improved comparability of results, (particularly of companies operating with different assets or different currencies).

- More efficient allocation of resources. CCA and cash flows may provide a more realistic view of an operation's performance. If it is making losses, or is making returns below group hurdle rates, then it should be reorganised to perform within group parameters, or it should be divested. The same principles can be used in making more realistic pricing decisions in the acquisition of companies or operations because the companies will not pay more than the perceived 'real' value of the target.

- Management compensation is linked to criteria that make a greater contribution to the long term success of the company. It enables management to take a longer term view of the company's operations. In addition, this methodology reduces managements' preoccupation with profits, and puts the focus on a more appropriate measures, (particularly in times of rising prices), namely asset, working capital and cash flow management.

- It enables the company to maintain its operating capacity..

- It results in better estimations of the useful lives of FA and better utilisation of assets, (fixed assets as well as the components of working capital), particularly where CC depreciation is charged on old or fully depreciated assets.

- Lower profits may lead to lower wage demands which may improve cash flows and result in a better matching of wage increases to increases in productivity. This may be a benefit in a developing economy with trade union pressures and in any event, developing economies may be more likely to experience higher rates of inflation.

- Lower profits may support higher prices because customers etc may not perceive the company to be making "excessive" profits.

Some problems in using CCA internally were that it reduced reported profits which could be demotivating for staff and line management, and that taxation was paid on HC results (which could result in an erosion of capital).

The case study companies noted that to make the system work in practice, and to really enhance the benefits of applying this comprehensive CCA and cash flow methodology that a comprehensive educational programme was necessary to make operational staff understand the system and its benefits, and that successful application of the methodology required the visible support of the top management, as well as that of the operational management.

RESEARCH QUESTION SEVEN : THE MAJORITY OF COMPANIES DO NOT PREPARE CASH FLOW STATEMENTS and

RESEARCH QUESTION EIGHT : A CASH FLOW STATEMENT PRODUCES MORE MEANINGFUL INFORMATION FOR MANAGEMENT THAN A SOURCE AND APPLICATION OF FUNDS STATEMENT

This question was asked before the FASB statement on cash flow statements was issued and is recognised that cash flow statements now appear to be generally accepted. However, in the period of this study, 1985 through 1987, the FASB and other accounting bodies were still investigating this area. The cash flow aspect is emphasised here, because it is submitted that effective cash and asset management is seen as one of the keys in combatting the effects of inflation. The research findings and conclusions are still applicable to the period of the study, but obviously less emphasis has been placed on them in view of the accounting developments.

Q3A - The majority of respondents considered that cash flow was more meaningful than S&A. The HCA responses were as positive as the CCA responses, indicating that there was a large theoretical support base for the cash flow statement.

Q3B - The number of respondents who actually prepared a cash flow statement internally should parallel Q3A. This was clearly the case for CCA and PCCA responses. The HCA responses were not as high as Q3A, but showed that a high proportion of HCA users actually prepared cash flow statements.

Q3C - In determining whether respondents perceived a link between CCA and cash flows, there was a high response rate from CCA respondents and a low response rate from PCCA and HCA users. However, there was strong support for this link from the case study companies who used CCA and cash flow accounting internally and perceived that their performance was enhanced by exploiting this link in their MIS.

5.4 PARALLELS AND DISSIMILARITIES BETWEEN CIRCUMSTANCES IN THE UNITED STATES OF AMERICA AND SOUTH AFRICA

Section 2.9 of the Literature Survey addressed these issues in some detail, and there were several major parallels that arose between the USA (1985 and 1987) and South Africa in 1991. The first similarity was the level of the official inflation rates as measured by the CPI. The second similarity was, in many cases, the operating structures of companies, and thirdly the fact that inflation was perceived to have similar effects on the operating results and performance of US and SA companies. It may therefore be deduced that the research findings generated from American companies might have applicability to SA companies. An area for possible further research is whether or not SA companies could benefit from the development of a primary internal accounting methodology that combined CCA and cash flow accounting.

5.5 AREAS FOR POSSIBLE FURTHER RESEARCH

1. Classification of attitudes to inflation accounting, by industry and asset bases

   Responses to the questionnaires were not classified by industry and the nature of their asset bases.

The classification by industry might be difficult due to the conglomerate nature of many of the respondees, but there may well be a correlation in perceptions regarding IA and even use of IA, and the nature of the companies' business and the nature of their major assets.

2. The relationship between inflation, interest rates and productivity

In Section 2.9, the relationship between inflation and interest rates in the USA and SA was examined. It may be interesting to research the relationship of these two factors on productivity (possibly as measured by the GNP).

3. Performance of the research in SA

The research was applied to American companies. Section 2.9.3 identified that an area for further research may be to test the attitudes and accounting practices of South African companies, perhaps by way of a questionnaire and case studies. This would gauge the attitude of SA management to the problem of inflation, determine management's preferences as to IA methodology, and establish what IA practices are being applied by SA companies.

4. Threshhold rate for management to react to inflation in their MIS

The threshhold rate of inflation, at which American management indicated that they would react to the inflation in their MIS, did not indicate any clear preference amongst the general body of respondees.

An area for further research, identified in the research findings to questionnaire question 5B, may be to determine what the threshhold inflation rate is preceived to be by South African management, particularly as they have been operating in an environment where relatively high inflation rates have prevailed.

5. Development of a CCA and cash flow accounting methodology for SA companies

The case study companies perceived that they derived numerous benefits from applying a combination of CCA and cash flow accounting methodology internally in their MIS. Given the continued high rates of inflation in SA, this may be an area warranting research, in determining whether the case study companies' methodologies could produce meaningful information for SA companies.

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APPENDIX ONE

Article, Accountancy SA April 1986

Accounting for inflation



A survey of practices in various countries



By D.J.J. Benatar *(left)* and R.A. Fryer of Deloitte Haskins & Sells

Inflation has proved to be one of the major economic plagues of modern times, affecting governments, businesses and the man in the street. It is very much a twentieth century phenomenon, which arose from such diverse causes as governments' commitments to provide employment and economic growth, the changes in people's expectations and desires, the general availability of credit, and the oil price shocks.

In more recent times, inflation has become a subject of great interest to accountants, as the profession came to realise that financial statements prepared in terms of the historical cost convention during periods of changing prices, have limitations. More than a decade of research in major western countries into inflation accounting (or accounting for changing price levels, as it is generally called today) has, however, failed to silence the debate. There is still no generally agreed 'best' basis for accounting for inflation, and hardly a month goes by without at least one major article on the subject in the overseas accounting journals. With this situation it is hardly surprising that businessmen in general, let alone taxation authorities, have shown little interest in changing their traditional historical cost accounting bases.

With inflation rates in South Africa well above those of her major trading partners, and with the prospect of even higher inflation in the near term, the authors have noted some renewed interest in the subject among South African corporate managers. This prompted us to undertake a survey of practices and trends in various countries, the results of which are contained in this article. We looked at a number of 'first world' and three Latin American countries. We also attempted, unsuccessfully, to obtain information regarding practices in Mexico and Israel.

There are two main components to inflation, one being an increase in the general level of prices (or a general debasement in the value of money), and the other being increases in specific prices. These two components have given rise to two major systems of accounting for inflation, the former to constant purchasing power accounting (CPP) and the latter to current cost accounting (CCA).

The effect of inflation is to distort the traditional picture presented by historical cost accounting. Applying CPP theory, it is contended that historical cost accounting does not maintain the purchasing power of the shareholders' funds invested. Under CCA theory it is held that historical cost accounting does not maintain the operating capacity of the company; historical cost balances differ from current costs, resulting in unrealistic debits on the income statement for cost of sales and depreciation of fixed assets.

The recommended practice for inflation accounting in South Africa is laid down in Guideline AC 201, which was issued in 1978. This guideline contains a simple form of CCA. However inflation accounting is not widely practised in South Africa, particularly as the Guideline is not mandatory. In fact, the number of companies producing a supplementary CCA income statement in terms of the Guideline has dwindled in recent years. What is happening elsewhere?

The International Accounting Standards Committee (IASC)

Statement No. 6 'Accounting Responses to Changing Prices' was published in June 1977, requiring disclosure of the inflation accounting method used, or the fact that no method had been used.

This was updated by Statement 15 'Information Reflecting the Effects of Changing Prices' in January 1983. This also does not prescribe a particular method, as the Committee feels that further experimentation is necessary. However, it states that some inflation accounting method should be used by large companies, and calls for more detailed disclosures of the method, the adjustments and the effects of inflation.

The Committee has recently approved an exposure draft for release on 'Accounting in Highly Inflationary Economies', which proposes that companies operating in such environments should use a constant monetary unit in their financial statements (i.e. a form of CPP).

(Continued on p. 174)

("Accounting for inflation" continued from p. 173)

First World Countries

United States

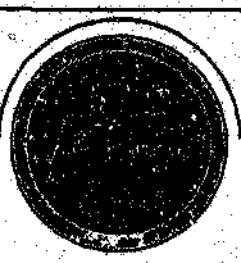
In 1976 the Securities and Exchange Commission issued Rule 4–09 'Current Replacement Cost Information', which required publicly owned companies to provide supplementary, unaudited data on current cost depreciation and cost of sales, current cost of stock, and replacement cost of fixed assets.

The Financial Accounting Standards Board (FASB) brought out Statement 33 'Financial Reporting and Changing Prices', in September 1979. This required all listed companies over a specified size to report inflation adjusted information on both the CPP and the CCA methods. Both methods were made mandatory for a period of five years as the FASB, at that time, had insufficient information to make a choice between them. Some 1 600 companies were required to disclose this information.

Several research studies were sponsored, culminating in the appointment of a task force in mid-1983, to help the FASB evaluate Statement 33. An 'Invitation to Comment' was issued in December 1984, and sent to users, preparers and auditors of financial statements. Based on a review of the replies and the comments of the task force, two main points were highlighted:

1. Users perceived CCA data to be more meaningful and useful.
2. Users of financial statements were confused by the use of two different methods.

The FASB therefore dropped the mandatory requirement for CPP, leaving Statement 33 on a CCA basis. An exposure draft on Current Cost information was issued in December 1984. The comments received have been evaluated and a 'final' statement is scheduled for release shortly.



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Canada

Section 4510 of the Canadian Institute of Chartered Accountants Handbook contains a recommendation for listed companies to publish supplementary CCA information as specified. Section 4510 was issued in January 1983 for a five-year experimental period. A survey of 1983 accounts showed that only 30 % of a sample of just over 140 companies had complied with Section 4510. There has been no major opposition, but resistance is growing due to cost factors of implementation, and the reduced levels of inflation.

United Kingdom

The original pronouncement in the United Kingdom, ED8 and SSAP 7, 'Accounting for Changes in the Purchasing Power of Money', was based on CPP. This was overturned by the Sandilands Committee Report in September 1975 which rejected CPP in favour of CCA.

Battle lines were drawn and there has been an on-going debate involving the profession, academics and commerce, which has still not been resolved.

The Sandilands recommendations were bolstered by:

- ED 18 'Current Cost Accounting' (proposed replacing historical cost accounting with CCA).
- The Hyde Guidelines, (all listed companies to produce a supplementary CC income statement, incorporating a gearing adjustment).
- ED 24 'Current Cost Accounting' (expanded the Hyde Guidelines by introducing a monetary working capital adjustment, and a supplementary CC balance sheet).

The war of words over which methodology was more meaningful dragged on, but SSAP 16 'Current Cost Accounting' (which was based on ED 24 was made mandatory from January 1, 1980.

It required all listed companies and certain other large companies to prepare supplementary current cost accounts. The statement was to remain in force for at least three years to provide experience in CCA.

There was resistance to SSAP 16. As the debate between CCA and CPP continued, compliance with the statement fell. (In June 1985 the London Stock Exchange noted that compliance was below 20 %).

Reactions to SSAP 16 were evaluated and ED 35 'Accounting for the effects of changing prices' was issued in July 1984. This proposed that the mandatory requirement of SSAP 16 apply only to public companies, with disclosure given as notes to the main accounts or as full current cost accounts.

ED 35 did little to quell the opposition, and the situation reached a head in June 1985, with the member bodies of the ASC balloting their members to remove paragraphs 2–6 to the preamble to the standard. This was ratified in July 1985, which had the effect of making the statement non-mandatory, but keeping CCA methodology in place.

The ASC is debating a new exposure draft (ED 38). The ASC has apparently agreed that more flexibility of method is necessary. It is likely that CCA and CPP accounting will be allowed with a five-year inflation indexed summary of performance. It is hoped that this will encourage experimentation and eventually lead to a generally accepted accounting practice. Some critics, however, are saying that it is too soon after the failure of ED 35 to bring out another exposure draft. It is probably true to say that interest in inflation accounting in general in the UK has diminished in recent years with the lower rates of inflation.

Australia

Statement of Accounting Practice 1, issued in 1976 and amended in 1983, sets out recommended disclosure of a current cost income statement and balance sheet. Compliance with SAP1 has been poor, with some companies discontinuing their previous practice of accounting for in-

flation. A strong current view is that inflation accounting is unlikely to gain general acceptance until it is accepted for tax purposes.

New Zealand
Statement CCA1, issued in 1982, requires supplementary current cost accounts. By August 1984, only about 8% of the just over 200 companies on the New Zealand Stock Exchange had complied with CCA1. This general lack of support seems to be continuing, even though inflation rates have climbed this year to a level close to that prevailing in South Africa.

South America

In South America, inflation is an enormous problem; for example, the annual inflation of Argentina is running at around 850% (measured in March 1985) and Brazil at 220% (measured in April 1985). In these economies, all monetary items are, by necessity, linked to the local equivalent of the Consumer Price Index. This obviously lends itself to the application of CPP. A country which we found interesting though, is Chile, which has an inflation rate of around 30% (measured in April 1985) which is somewhat closer to our own situation. Chile has been using inflation accounting for years.

Chile
Chile's inflation accounting standards are contained in Technical Bulletins 3 and 13, issued in 1974 by the accountancy profession (Colegio de Contadores de Chile). In terms of these standards CPP accounts are the only accounts required. Inflation accounting is mandatory for tax purposes and the following basis is used: a depreciation adjustment based on the consumer price index, a cost of sales adjustment based on the cost of the last purchase, together with a general price level adjustment applied to the shareholders' investment. Accounting for inflation is applied on a monthly basis by companies, in the same way as at the year end.

Dividends are limited by law to the amount of the inflation adjusted profits.

Argentina
For many years, inflation had been accounted for by indexing on a non-mandatory basis. From September 1983 all financial statements have to be adjusted for the effects of inflation. This is a legal requirement.

The Federation of Public Accountants Institute issued Technical Resolution No. 6. This prescribes an inflation adjustment to account for the purchasing power changes in the currency, and results in financial statements being expressed in currency units of equal purchasing power. The adjustment is calculated using the General Wholesale Price Index.

The profession recommends that historical cost figures are given in a footnote to the financial statements as this is still the basis for taxation purposes.

Brazil
In 1964 a national strategy was developed which called for the periodic indexation of monetary items, to account for the decline in the purchasing power of the currency.

This only became mandatory for all companies in January 1978, when the national strategy passed into Company Law. A Government index is applied to:
- permanent assets (property, plant and machinery, long-term investments, goodwill and deferred charges);
- shareholders' equity accounts (capital and revenue reserves, revaluation reserves, retained income and deferred tax).

(Continued on p. 176)

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B. AUDITING

Materiality: the concept and its application to auditing: a research study. D.A. Leslie. Toronto: CICA 1985.

C. FINANCIAL ACCOUNTING

Elements of financial statements: a replacement of FASB concepts statement no. 3 (incorporating an amendment of FASB concepts statement no. 2). Stamford: FASB, December 1985. (Statement of Financial Accounting Concepts no. 6.)

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G. MANAGEMENT

Management in South Africa: an introductory text. P.A. Miller, W.B. Roome and G.E. Staude. 2nd ed. Kenwyn: Juta, 1985.

H. TAXATION — South Africa

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J. TAXATION — Foreign

1985 International tax summaries: guide for planning and decisions. J.D. Jacobs, *ed.* New York: John Wiley & Sons, 1985.

Tax and investment profile: Japan. Tokyo: Touche Ross International, January 1985.

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Tolley's capital gains tax 1985–86. P. Noakes and R. Wareham. Croydon: Tolley Publishing, 1985.

Tolley's corporation tax 1985–86. G. Saunders and J. Boulding. Croydon: Tolley Publishing, 1985.

Tolley's income tax 1985–86. E.L. Harvey. Croydon: Tolley Publishing, 1985.

Tolley's value added tax 1985–86. R. Wareham and E.L. Harvey. Croydon: Tolley Publishing, 1985.

("Accounting for inflation" continued from p. 175)

This gives the same result as indexing the difference between monetary assets and liabilities. However, a weakness exists, in that stock is treated as a monetary asset.

Local monetary items, (tax payments, rents, salaries and wages, pensions, interest on bonds, etc.) are adjusted periodically for the rise in the general level of prices on a monthly, quarterly or annual basis, giving rise to 'monetary corrections'.

CPP accounts from the main financial statements and are accepted by the tax authorities. Dividends are limited to the profit determined in the CPP accounts, by law.

Epilogue — What about the management information?

In general there is widespread recognition that inflation is a problem that needs to be addressed by accountants. In countries with hyper-inflation, the system of indexing monetary items creates the setting for the application of CPP. In other countries there are a number of trends emerging.

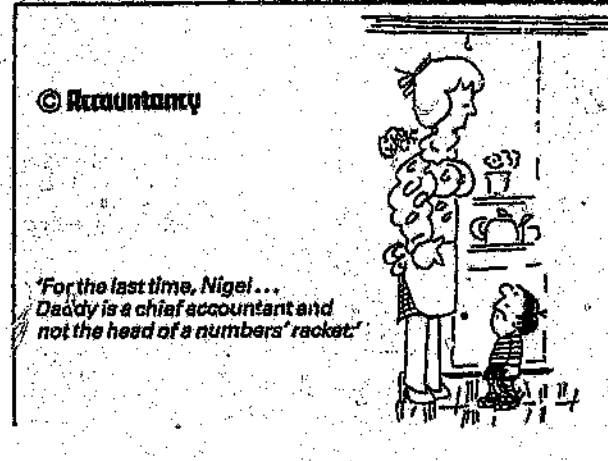
One is for a simple 'one line' adjustment, which could be incorporated into monthly management accounts. Another is for there to be no prescribed method of accounting for inflation. The view is held that the directors of the company should be allowed to choose any method, as long as they disclose what they have done.

Inflation is not a problem to be ignored while rates are low, because economic (and social) fundamentals give no assurance that higher rates will not return. Furthermore the effects of inflation are erosive even at the 'low' levels of around 5%.

Our primary area of concern is that the effects of inflation are not understood by the managers of South African businesses and are therefore ignored in their internal information systems. It is partly because of well-founded distrust of the information provided by the historical cost income statement that corporate managers have turned much more to cash flow information to support management decisions. However, we do not believe one can manage a business just with cash flow information, and trying to manage with information that is a combination of cash flows and historical cost determined income, is perhaps a little like trying to understand a computer program written partly in COBOL and partly in RPG.

Some preliminary research we have carried out indicates that a cash flow statement and a CCA income statement 'talk the same language' and are easily reconciled. We have developed some simple current cost adjustments which can be made on a monthly basis, but are continuing the research both to try to confirm our preliminary findings, and to develop a simple yet effective way of accounting for inflation in the management information system.

Decision-makers need to face the effects of inflation on a daily basis so they can make decisions that will best enable the company to meet its objectives.



'For the last time, Nigel... Daddy is a chief accountant and not the head of a numbers' racket.'

APPENDIX TWO

Article, Accountancy SA April 1987

Accounting for inflation



Incorporating simple adjustments in monthly accounts



By D.J.J. Benatar (*left*) and R.A. Fryer of Deloitte Haskins & Sells

In the concluding paragraphs of our article "Accounting for Inflation — A survey of practices in various countries", published in *Accountancy SA* in April 1986, we stated our belief that current cost earnings more closely approximate a company's free cash flow, over a period of time, than historical cost earnings. This would mean that an income statement which incorporates current cost adjustments gives a result which is closer to a company's 'cash' earnings than one which does not. In this article we have attempted to demonstrate what we mean, using simple examples. The information that we suggest should be generated will allow for compliance to be achieved with a Statement of Generally Accepted Accounting Practice based on the recently issued exposure draft, ED 66.

If indeed current cost earnings are more meaningful than historical cost earnings, then the published earnings of most companies that have significant investments in non-monetary assets such as fixed assets and stock, are likely to be significantly overstated. Very few companies publish results determined on a current cost basis, but the following table of companies that do, shows the large difference which usually emerges between historical and current cost earnings:

Earnings growth percentages can also be misleading when historical cost earnings are used, as can be illustrated using the case of The Premier Group. Premier's earnings per share, as published, are as follows:

	1985	1986	Growth (%)
Historical cost earnings	146	162	11 %
Current cost earnings	82	80	(2 %)

While historical cost earnings 'grew' by 11 percent, current cost earnings decreased by two percent. However, if the 1985 current cost earnings of 82 cents per share are inflated by 15 percent to account for the decline in the purchasing power of money between 1985 and 1986, the company would have had to earn 94 cents on a current cost basis in 1986 just to stand still, so that 80 cents translates into a real earnings decrease of 15 percent! So much for the 11 percent increase in earnings.

Interest in South Africa in inflation accounting has waned in recent years, as evidenced by the dwindling number of companies that produce supplementary current cost financial statements. This is in line with trends in countries such as the USA, Canada and the UK, but, in our view, unfortunate, because our inflation rate is many times higher than these countries. As was pointed out in our April 1986 article, inflation accounting has long been the norm in South American countries, to whom we are surely closer in so far as the problems of inflation are concerned. The reasons given by many companies in their Annual Reports for not preparing supplementary current cost accounts, are particularly unconvincing.

We are not, however, trying to start a campaign for mandatory disclosure of current cost information. We are concerned that virtually all South African businesses have an income statement, prepared using the historical cost convention, as part of their monthly management information

Company	Year ended	Earnings/(Loss) per share (cents) Historical cost	Current cost
Adcock-Ingram	Sept. 1986	585	205
Afrox	Sept. 1986	118	98
Anglo-Alpha	Dec. 1985	124	71
Chemical Services	Dec. 1985	115	55
Premier Group	March 1986	162	80
PPC	Sept. 1986	116	42
Protea Holdings	Aug. 1985	26	(17)
PUTCO	June 1986	(17)	(70)
SA Breweries	March 1986	82*	72

* SA Breweries 'historical cost earnings' incorporates additional replacement cost depreciation, but not a cost of sales adjustment.

system, on which business decisions are based.

We believe that this information which management is using is likely to be misleading, and at odds with the information given by the cash flow statement. In the following sections we have illustrated this point taking, firstly, the effect of processing a cost of sales adjustment and, secondly, the effect of processing a depreciation adjustment.

THE COST OF SALES ADJUSTMENT

The cost of sales adjustment assumes that current stock levels will be maintained. (If this is not the case, the full adjustment may not be required.) Our contention is that, given this assumption, a current cost income statement incorporating a cost of sales adjustment, approximates cash flows, if we ignore the need to replace fixed assets, which is discussed in the next section. The simple example on the right above illustrates what we mean:

The company's historical cost income statement would be as shown in Figure 1, below:

The company's cash flow, assuming all purchases and sales are for cash, will, however, look as shown in Figure 2, below:

The figures used in this simple example are fairly typical of present conditions in many South Africa businesses—a three month stock holding and inflation about two percent per month. The profit margin of about 30 percent on historical cost would also be realistic for many businesses.

Yet, as can be seen, the cash flow generated in this four month period is rather less than the gross profit. And it is the cash flow that is necessary to pay the overheads that are ignored in this example, not the gross profit!

Now let us look at a current cost income statement. The cost of sales adjustment is designed to charge against income the additional cost of replacing stock sold at higher prices (i.e. replacement cost less historical cost). It can be a laborious and time-consuming process to calculate this actual amount, so, in practice, it is normal to use indices to calculate the cost of sales adjustment. The index used can be an internally generated index or a suitable external index. As long as one is prepared to use an index that is a month or two old, the incorporation of a cost of sales adjustment in the monthly income statement will not cause any delay in the production of the monthly accounts.

In our example we have assumed that the index of stock prices increases by two percent per month from the base of 175 000, which is the cost of sales in January. The current cost of sales, calculated using this index, is as follows:

Month	
January	185 711
February	189 425
March	193 214
April	197 078
May	201 020
June	205 040

Month	Sales	Purchases	Cost of sales (FIFO)
October		175 000	
November		178 500	
December		182 070	
January	250 000	184 567	175 000
February	250 000	190 854	178 500
March	250 000	194 529	182 070
April	250 000	198 701	184 567
May	250 000	202 480	190 854
June	250 000	207 012	194 529

NOTES:
This business sells the same quantity of stock each month, and replenishes its stock as it is sold. It holds three months' stock. The cost of replacing stock increases every month by approximately two percent.

Remembering that the company is selling stock that was purchased three months previously, the index must be lagged three months in preparing the current cost income statement. (Current cost of sales for January of 185 711 is, therefore, the historical cost of sales of 175 000 × 1.02 × 1.02 × 1.02).

The company's current cost income statement will be as shown in Figure 3, on p. 106:

As can be seen, the current cost income statement approximates the cash flows, while the historical cost income statement does not. Surely the former, which incorporates the cost of sales adjustment, provides the more meaningful and useful information to management?

In practice, of course, few businesses transact all purchases and sales on a cash basis (particularly those that hold three months stock)! If one were to assume that purchases and sales in our example are on a 30-day credit basis, the cash flows would lag a month behind the current cost income statement. The latter statement would, however, give management meaningful information as to

(Continued on p. 106)

Historical cost income statement

	January	February	March	April	May	June	Total
Sales	250 000	250 000	250 000	250 000	250 000	250 000	1 500 000
Cost of sales	175 000	178 500	182 070	184 567	190 854	194 529	1 105 520
Gross profit	75 000	71 500	67 930	65 433	59 146	55 471	394 480

Figure 1

Cash flow of company

	January	February	March	April	May	June	Total
Sales	250 000	250 000	250 000	250 000	250 000	250 000	1 500 000
Purchases	184 567	190 854	194 529	198 701	202 480	207 012	1 178 143
Cash flow	65 433	59 146	55 471	51 299	47 520	42 988	321 857

Figure 2

("Inflation accounting" from p. 105)

Current cost income statement

	January	February	March	April	May	June	Total
Sales	250 000	250 000	250 000	250 000	250 000	250 000	1 500 000
Cost of sales	185 711	189 425	193 214	197 078	201 020	205 040	1 171 488
Current cost profit	64 289	60 575	56 786	52 922	48 980	44 960	328 512

Figure 3

the future cash flows from current trading, information that is not provided by the historical cost income statement.

THE DEPRECIATION ADJUSTMENT

The depreciation charge in a historical cost income statement represents a periodic allocation of the historical cost of the asset over its expected useful life, matching the original cost of the asset with revenues generated by its use. To maintain operating capacity when the asset comes to the end of its useful life, it will have to be replaced, usually at a higher price. The depreciation adjustment recognises that a greater cash outflow will be needed to replace the asset than the funds that will have been retained as a result of the historical cost depreciation charge.

As fixed assets are generally not replaced on a regular basis, the current cost income statement incorporating a depreciation adjustment will generally not approximate cash flows over the short-term, but over the long-term it should do so if the depreciation rates used are realistic. The following example illustrates this.

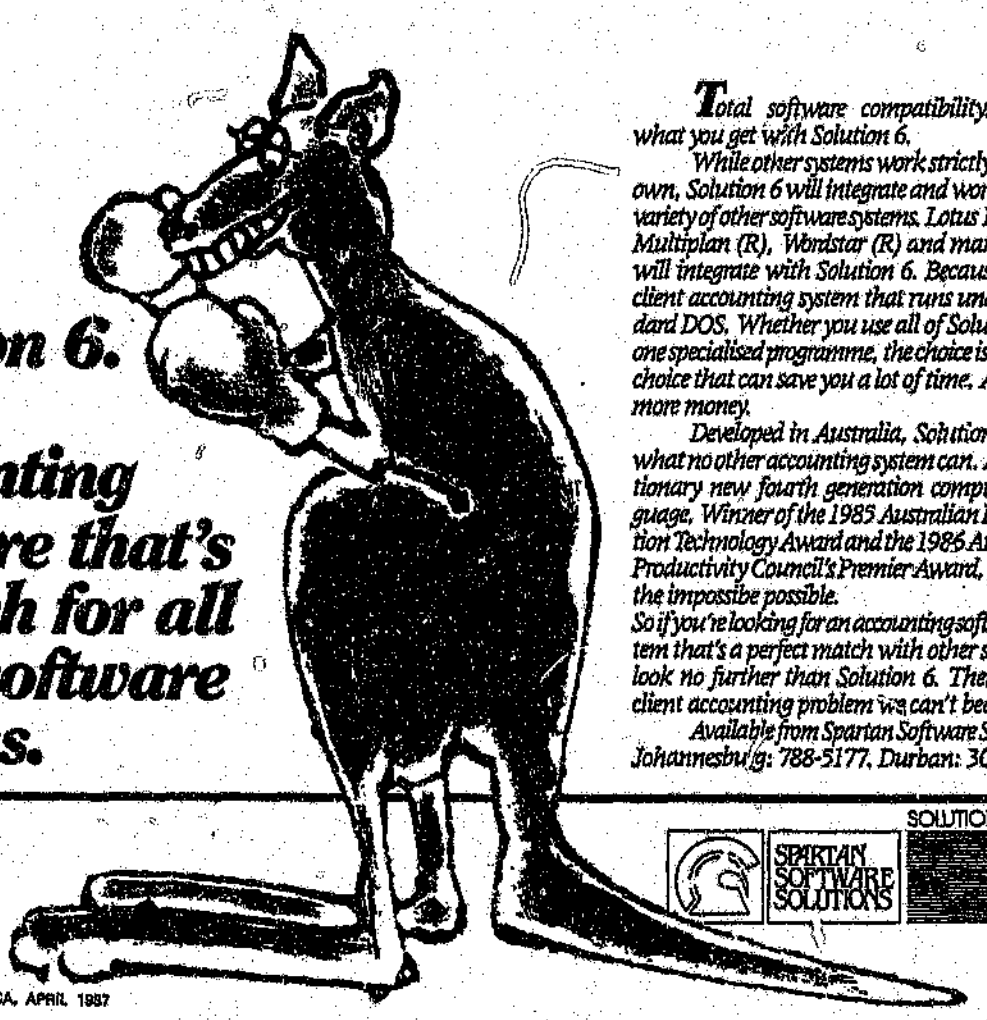
A business has fixed assets that have a five year (60 month) life and no scrap value, and it replaces one sixtieth of its assets every month. The inflation rate applicable to these assets is approximately two percent per month. We have assumed that the business leaves the historical cost depreciation charge at a constant 15 000 from month to month, although this should increase fractionally as assets are replaced each month at slightly higher prices. The cost of replacing one sixtieth of the assets in January is, for convenience, assumed to be the same as the historical cost depreciation charge, i.e. 15 000.

The monthly replacement cost index, escalated at two percent would, therefore, be as follows:

Month	
January	15 000
February	15 300
March	15 606
April	15 918
May	16 236
June	16 562

Besides the depreciation charge we have also introduced overheads, which increase at two percent per month, into our example, from here onwards.

(See monthly income statement, monthly cash flow and monthly current cost income statement as set out opposite.)



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Monthly Income Statement — Historical Cost

	January	February	March	April	May	June	Total
Sales	250 000	250 000	250 000	250 000	250 000	250 000	1 500 000
Cost of sales	175 000	178 500	182 070	184 567	190 854	194 529	1 105 520
Gross profit	75 000	71 500	67 930	65 433	59 146	55 471	394 480
Overheads	35 000	35 700	36 414	37 142	37 885	38 643	220 784
Depreciation	15 000	15 000	15 000	15 000	15 000	15 000	90 000
Net profit	25 000	20 800	16 516	13 291	6 261	1 828	83 696

Monthly Cash Flow

	January	February	March	April	May	June	Total
Sales	250 000	250 000	250 000	250 000	250 000	250 000	1 500 000
Purchases	184 567	190 854	194 529	198 701	202 480	207 012	1 178 143
Cash flow	65 433	59 146	55 471	51 299	47 520	42 988	321 857
Overheads	35 000	35 700	36 414	37 142	37 885	38 643	220 784
Asset replacement	15 000	15 400	15 400	16 000	16 250	16 500	94 550
Net cash flow	15 433	8 046	3 657	(1 843)	(6 615)	(12 155)	6 523

Monthly Current Cost Income Statement with Depreciation Adjustment

	January	February	March	April	May	June	Total
Sales	250 000	250 000	250 000	250 000	250 000	250 000	1 500 000
Cost of sales	185 711	189 425	193 214	197 078	201 020	205 040	1 171 488
Gross profit	64 289	60 575	56 786	52 922	48 980	44 960	328 512
Overheads	35 000	35 700	36 414	37 142	37 885	38 643	220 784
Depreciation	15 000	15 300	15 606	15 918	16 236	16 562	94 622
Net profit	14 289	9 575	4 766	(138)	(5 141)	(10 245)	13 106

Once again, using a realistic inflation rate, given present South African conditions, and realistic asset lives for many types of assets, the current cost profit (13 106) is markedly less than the historical cost profit (83 696), but far more closely reflects the net cash flows (6 523). In practice, of course, companies do not replace their fixed assets as methodically as this, but we hope this oversimplified example illustrates our point. In this short article we have deliberately avoided the complexities of 'backlog depreciation' that arises when assets are revalued.

If a depreciation adjustment is to be incorporated into the monthly accounts, it is again necessary to use an internal or external index, which should preferably be substantiated periodically by asset revaluation.

GEARING ADJUSTMENTS

Gearing adjustments, simply stated, are concerned with whether a company can distribute more cash than it has generated, by borrowing the shortfall. As such, we do not believe it is appropriate to include a gearing adjustment in the monthly operating statements. In our opinion, however, companies that are permanently highly geared, need to incorporate a gearing adjustment in supplementary current cost accounts prepared as part of their annual financial statements, to allow for an increase in borrowings in line with inflation.

CONCLUSION

In our opinion, management would receive far better quality information regarding the results of operations if the monthly income statement were to incorporate current cost adjustments. The calculations should be kept simple using available indices. We accept that the result will be only an approximation of the impact of inflation on the results, but many other amounts in the financial statements are also estimates—such as provisions for obsolete stock and doubtful debtors!

In large organisations, it is important that the adjustments are calculated and processed at operating entity level, and not at the corporate office, so that line managers use the current cost financial information in their decision-making. Businesses which have a large inventory but few fixed assets (such as retailers) can probably ignore the depreciation adjustment, while businesses which have a small inventory but a large investment in plant (such as a power utility) can probably ignore the cost of sales adjustment.

One possible reason why current cost adjustments are so often not taken seriously by managers is that they are generally shown 'below the line'. In our opinion it is important that the adjustments are incorporated into the cost of sales and depreciation lines respectively of the monthly income statement, if managers are to be expected to believe that these are the 'real figures'. We have done just this in our examples, rather than showing separate 'cost of sales adjustment' and 'depreciation adjustment' lines, but more important is that the calculations of current cost adjustments are kept simple, and are preferably automated, to ensure that the benefit of having current cost information exceeds the cost of preparing it.

APPENDIX THREE

Letter from Financial Accounting Standards Board

Financial Accounting Standards Board
HIGH RIDGE PARK, STAMFORD, CONNECTICUT 06905 | 203-329-8401

Research and Technical Activities

November 21, 1985

David Benetar
c/o Deloitte, Haskins and Sells
1400 Lincoln Plaza
LB No. 4
Dallas, Texas 75201

Dear Mr. Benetar:

Enclosed is a list of the names and addresses you requested for all companies subject to the provisions of FASB Statement No. 33: "Financial Reporting and Changing Prices." Several changes have been made to the list to update and correct it.

The computer and operator time were minimal and the cost was inconsequential, so there will be no charge for the listing. I hope this information will be of some assistance.

Sincerely,

Joanne Wakim

Joanne Wakim

Enclosure
1995W

APPENDIX FOUR

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APPENDIX FOUR

RESEARCH QUESTIONS

ONE Inflation is a problem which must be accounted for in the internal MIS (from a range of XX%)

TWO The majority of companies in times of increasing prices, do not formally account for the effects of inflation in their MIS.

THREE Of the two commonly accepted methods of accounting for inflation, CCA provides more meaningful internal information to management than does CPP (in times of increasing prices, but in a non hyper-inflationary environment).

FOUR Specific indices are more relevant in accounting for the effects of increasing prices than general indices.

FIVE CCA provides results that anticipate future cash flows.

SIX A combination of CCA and cash flow accounting provides a suitable method for accounting for the effects of increasing prices internally (in a non hyper-inflationary environment).

SEVEN The majority of companies do not prepare cash flow statements.

EIGHT A cash flow statement provides more meaningful information for management than a source and application of funds statement.

QUESTIONNAIRE QUESTIONS

ONE What system of accounting for price changes, if any, do you use in your internal monthly management information systems?

TWO To what uses do you put the above monthly accounting information, if derived?

THREE A: Do you feel that a cash flow report (as opposed to a working capital statement of changes in financial position) has greater benefits for internal management?

3B: If yes, do you prepare a cash flow report in your monthly management accounts?

3C: If yes, do you link this statement with current cost data?

FOUR: CCA provides a closer approximation of the future cash flows of the business than does HCA or CPP.

FIVE: 5A: Changing prices is a problem that has to be recognised in providing relevant accounting information for management

5B From what annual inflation range would you perceive changing prices to be a problem (ie. so that your company would make adjustments for price changes in your internal monthly MIS)

SIX: Do you feel that the effects of price changes on your company are best accounted for by using specific price changes, general indices or a combination of both methods?

SEVEN Based on your actual experience of applying FAS 33, CCA provides more meaningful management information than CPP.

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