



UNISA GRADUATE SCHOOL
OF BUSINESS LEADERSHIP

Evaluating the effectiveness of turnaround strategies amongst industrial companies in South Africa

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ABSTRACT

This research analyses companies who experienced at least one performance shock during the period under study. It is set out to answer four specific research questions viz.:

1. How many companies that experienced performance shocks did manage to turn around their operations?
2. How many of the turnaround companies became "successful" turnarounds by improving on pre-shock operating performance?
3. How long did it take these companies to reach the turnaround operating performance?
4. Which turnaround actions were applied by successful companies?

The concept of OPR (Operating Performance Ratio) is used in this study to define performance shocks as well as when a turnaround had occurred. OPR is defined as the earnings before interest tax, depreciation and amortisation (EBITDA) divided by the total assets (TAS) of the company. A performance shock is said to have occurred if a company's OPR had dropped to being in the lower quartile of its industry while in the previous year its OPR was still above the median OPR of the industry. Similarly a turnaround situation is defined as being a performance shock company which has managed to return its OPR to above the industry median. The adoption of these definitions is in line with the latest research in the field.

The research methodology adopted is predominantly based on quantitative analysis. The source data stems from the McGregor-BFA database which can be considered as the most sophisticated financial system to analyse South African listed companies. To control for diversification, the chosen sample frame consisted of companies belonging to two similar "economic groups", which are classified as being part of the "industrials" sector as per the JSE/FTSE Global Classification System. The final sample frame consisted of 46 companies.

The sample frame companies were studied over the period 1995 to 2005. Companies that did go through at least one performance shock in this period – a total of 16 companies - made up the final sample. For these companies the year in which the performance shock occurred was labeled as T_0 . The first analysis was done

comparing pre- and post-shock years to T_0 in order to establish whether the correct performance shock year had been identified. A further analysis between T_0 and post-shock years was done to determine in which year recovery took place (as per statistical significant difference with year T_0).

Eleven variables were identified for testing the application of turnaround actions. Each of these variables was analysed in the following two situations:

- For turnaround companies, whether there was a difference in the variable in the year before and the years after the performance shock; AND
- In the years after the performance shock, whether there was a difference in the variable between turnaround and non-turnaround companies.

In addition to this quantitative analysis, the chairmen's extracts for all the sample companies were qualitatively analysed for the year of the performance shock and the year immediately after the performance shock.

This research found that 34.7% of the sample frame companies did experience at least one performance shock during the study period. Of the sample companies – those that experienced a performance shock – a comparatively high 44% managed to achieve a turnaround. This study furthermore found the effective period to achieve a turnaround as being three years.

In this study it was decided to distinguish "successful" turnaround by separating companies that recovered to a level just above the industry median from companies that recovered to an OPR level in the upper quartile of the industry. The terminology "ordinary turnaround" (OTA) and "good turnaround" (GTA) was adopted respectively. 43% of the turnaround companies managed to reach a GTA level ... a significant achievement when considering that only 17% of these companies were at a GTA level prior to the performance shock.

This study found the immediate turnaround actions after a performance shock (in year T_{+1}) as being protecting gross margins as well as increasing available cash. The results further suggest that turnaround companies focus on improving turnover and debtors levels in the years after T_{+1} . It was also postulated that non-turnaround companies engage in excessive asset selling in post-shock years which seems to be to their detriment. It was furthermore postulated that the increase in dividend level for

turnaround companies in the years after T_{+1} indicate an eagerness to signal a recovery message to the market.

The analysis of the chairmen's extracts also revealed that turnaround management is highly correlated to changes in top management. Top management changes occurred at 86% of the sample companies.

One of the objectives of this study was to compare the research findings with international studies. The literature research revealed the following findings related to this study's research questions:

- The number of companies that managed to turnaround after a performance shock varied from 10% to 33%;
- The number of years required to achieve a turnaround after a performance shock ranged from 1 to 4 years although it was concluded that ... "the effective duration to achieve a turnaround was approximated to be three years";
- Several turnaround actions have been identified that were categorised as actions impacting on i) the top line (growth based actions), ii) net income (cost-cutting focused on reducing expenses) and iii) balance sheet or owners' equity actions (reducing owners' benefits or assets to generate cash flow).

This study concludes with a recommendation to prudent investors and company owners alike, viz.:

- Prudent investors should analyse the extent of the liquidity issues amongst companies that are experiencing a performance shock and seek the short term value-add by managing debtors and inventory levels efficiently. Equally important is the protection of gross margins; a strategy that can be met by discontinuing product lines or customers which lead to the deterioration of gross margins;
- Company owners should ward off corporate raiders by implementing the actions put forward to prudent investors.

DECLARATION

"I declare that *Evaluating the effectiveness of turnaround strategies amongst industrial companies in South Africa* is my original work and that all the sources I have used or quoted have been indicated and acknowledged as complete references, and has not been submitted for degree purposes previously."

JMG Frazao

Name

30 November 2006

Date

Signature:

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ABBREVIATIONS

EBITDA	Earnings before Interest, Tax, Depreciation and Amortisation
FGCS	FTSE Global Classification System
GTA	Good turnaround
JSE	Johannesburg Securities Exchange
MBFA	McGregor-BFA database
NTA	Non-Turnaround
OPR	Operating performance ratio
OTA	Ordinary turnaround
ROA	Return-on-Assets
TA	Turnaround
TAS	Total Assets

GLOSSARY OF TERMS

GTA	A good turnaround is achieved if a company managed to return its OPR level to the upper quartile of its industry
OTA	An ordinary turnaround is achieved if a company managed to return its OPR level to above the industry median
OPR	Is a measure of a company's operating performance and is defined as EBITDA / Total Assets
Performance shock	Is expressed in terms of OPR and is defined as being the year when the OPR of a company drops to being in the lower quartile of its industry only if the OPR for the same company was above the industry median in the year before
T_{+x}	Refers to the x^{th} year after the year of the performance shock
T_0	Refers to the year of the performance shock
T_{-x}	Refers to the x^{th} year before the year of the performance shock

1. ORIENTATION

1.1 Introduction

No company is guaranteed to avoid performance shocks during its business life cycle. When performance shocks are encountered, it requires timely and effective turnaround actions to increase a company's likelihood of recovery. Turnaround actions used by companies have been widely researched and include activities such as corporate restructuring, changing financial strategies as well as boosting income generation (e.g. Yawson, 2005 and Pant, 1987). Pandit (2000) in particular reviewed 47 studies related to "turnaround", "organizational decline", "crisis" and "recovery". Of these studies 62% were qualitative, 17% were quantitative while 21% used a combination of qualitative and quantitative research.

An useful classification was introduced by Pandit (2000) viz. grouping turnaround research according to i) content, ii) context and iii) process studies. Pandit (2000) found that the most frequent research on turnaround relates to the content of turnaround strategies while context and process studies are rare. Context research refers to, amongst others, the causes of performance shocks, severity of the crisis and attitude of stakeholders during the period of performance shocks. Process studies on the other hand have mainly focused on the characteristics of successful turnaround managers. Pandit (2000) concludes that "other process questions have been neglected by the field as a whole ...".

In terms of Pandit's (2000) classification this research is a content study. However this study differs from the frequent research on turnaround strategies in that it incorporates the timing effects, i.e. the time taken for turnaround actions to influence operating performance.

1.2 Discussion of the problem

Information on South African companies that survive performance shocks is sparse. Furthermore no research could be found demonstrating whether successful South African *survivors* returned to the same or better operating performance levels than prior to the performance shocks. Investors, creditors and other stakeholders would benefit from knowing how long it takes to return to certain performance levels. Also, guesstimating the chance of recovery based on the turnaround actions applied would benefit these stakeholders. Information as to these specifics could not be found for the South African situation.

1.2.1 OBJECTIVES OF THE STUDY

This study therefore seeks to answer the following questions:

5. How many companies that experienced performance shocks did manage to turn around their operations?
6. How many of the turnaround companies became "successful" turnarounds by improving on pre-shock operating performance?
7. How long did it take these companies to reach the turnaround operating performance?
8. Which turnaround actions were applied by successful companies?

The objective of this study is firstly to seek answers to these questions by exploring international turnaround research, and then to seeks answers related to South African companies by analysing a sample from the population of all listed companies on the Johannesburg Securities Exchange (JSE).

1.2.2 DEFINITIONS

Various definitions for performance decline or performance shocks have been used by researchers. In chapter 3 the author provides a table summarizing the performance decline definitions used by some of the more well-known researchers in this field. In this research specifically the author has aligned himself with the definition used by Yawson (2005). The rationale for this includes:

- Yawson's (2005) study is one of the more recent studies in this field and it is clear that he did research the previous work done on the definition of performance shocks;
- Yawson (2005) found sufficient evidence from other research for using his definition of performance decline;
- To a great extent the research questions in this study were motivated by Yawson's (2005) research.

The author also confirmed the use of the definition of performance shocks - as used by Yawson (2005) – by other respected researchers on turnaround management. Kang and Shivdasani (1997), Denis & Kruse (2000), Lie (2004) and Wang (2005) have all used the same definition of a performance shock.

The definition of performance shock focuses on the company's performance from operations as opposed to performance from investing or financing activities. It is expressed as a ratio against the total assets available to the company for achieving this operational performance. The Operating Performance Ratio (OPR) is defined as:

OPR	equals	Earnings before interest, taxes, depreciation and amortization	Divided by	Total Assets

OPR	=	EBITDA	/	TAS

At first glance the OPR seems to be the standard Return-on-Assets (ROA) ratio. However, the traditional ROA ratio uses net income as the numerator which includes amongst others the interest charges. As with Yawson and other "OPR-devoted" researchers' studies, it is important to first identify performance shocks related to operational difficulties whilst excluding the influence of financing decisions. This would favour the use of EBITDA above net income as numerator. Chapter 3 provides more detail on the use of EBITDA as well as Total Assets (TAS) in the OPR definition.

Definition: Performance shock

Using OPR a company is said to have experienced a *performance shock* when:

- The OPR of the company in one year is higher than the median OPR for the industry while in the next year the OPR had declined “substantially”¹ below the median.

Definition: Successful turnaround

A company that has improved its OPR to a level higher than the industry median after a performance shock is defined as a successful turnaround. However, the cumulative difference between the company’s OPR and the industry median - over a minimum three year period after the performance shock – must be positive.

Definition: Turnaround management

The management actions required to turn around a company that has experienced a performance shock is defined as *turnaround management*.

1.2.3 IMPORTANCE OF THE STUDY

As no company is guaranteed to be able to avoid performance shocks, it is imperative to understand which actions have been deployed most successfully to ensure turnaround. This study is firstly important as it is the first of its kind to focus on South African companies. Issues such as perceived weaker shareholder activism and stronger union involvement during performance shocks, make the South African situation different from other countries. As such it is difficult to apply the findings from similar international research to South African companies.

It is believed that a number of stakeholders will benefit from the findings of this research:

- Investors want to know what the chances are of their investment producing the anticipated returns when the company they invested in experiences a performance shock;

¹ In chapter 3 we elaborate on how “substantially” was defined.

- Lenders would want to know whether to impose more strict lending and repayment terms for a company that experiences a performance shock;
- Management would want to know whether specific turnaround actions could lead them to become successful survivors;
- Employees would like to ascertain job security when their employer experiences a performance shock.

1.3 Overview of research methodology

The researcher used the McGregor-BFA database (MBFA) as data source for his research analysis. The MBFA is the most sophisticated financial analysis system available for the analysis of South African listed companies. It includes a complete financial statement database and also contains notes to the annual statements, e.g. chairman's report, which will be important for this study. Financial statements go as far back as 1970 while company information, such as shareholding and company news, is available since 1996.

The MBFA distinguishes between "Published" and "Standardised" financial statements. Standardised financial statements are compiled by McGregor-BFA to aid comparison between companies. In effect the MBFA has three categories of standardised financial statements as i) banks' and ii) insurance companies' standardised financial statements differ from those of iii) other listed companies. This study utilizes the standardised financial statements applicable to other listed companies.

The MBFA standardised financial statements in essence ensure that the same inclusions or exclusions apply to each line item on the financial statements e.g. for all companies current assets is divided into "Total stock", "Debtors", "Short term loans advanced" and "Other current assets". In this manner it avoids comparisons of, for example, one company's current asset figure which differs in make-up from the next company. The standardisation process is done, by amongst other things, considering the notes to published financial statements. A complete guide on how the standardisation is done is available from McGregor-BFA (2006). An extract from the

McGregor-BFA (2006), containing the definition of the MBFA line items used in this study, is given in Addendum A.

The use of the MBFA for this study can be justified when considering similar international studies. Pandit (2000) reports Schendel, Patton and Riggs (1976) using the Standard and Poor's *Compustat* database over the period 1952-1971 for a study on performance decline cases. Bibeault (1982) himself is recorded as having "examined the corporate records of the 4090 listed companies" of the New York Stock Exchange, the American Stock Exchange and the NASDAQ exchange over the period 1967-1976. Pandit (2000) furthermore records Hambrick & Schecter (1983) having used the *Profit Impact of Market Strategy* (PIMS) database which contained information on 200 corporations. In the United Kingdom Slatter used a database of 2100 public traded companies over the period 1961-1976.

The definitions of performance shock and successful survivor draw on the OPR as defined in paragraph 1.2.2. The OPR uses TAS as the denominator. TAS tend to vary significantly between industries and in order to eliminate industry bias the author decided to confine this study to companies within similar industries. In deciding which industry to study the author considered the following:

- The financial industry was discarded due to the complexity involved in accounting which TAS are employed in generating operating profit. This fact is evident from MBFA's special treatment of companies belonging to its "banks" and "insurance" categories;
- Whether international research was available for a specific industry that could be used to benchmark the South African study;
- The availability of data for the specific industry.

Based on the above it was decided to focus on companies belonging to the industrial sector on the Johannesburg Stock Exchange (JSE).

One of the difficulties experienced with this study was that the JSE industry classification has changed during the study period. In 2002 the JSE changed their internal classification system (JSE classification) to align with the FTSE Global Classification System (FTSE classification). Although not impacting this study, the

JSE has since January 2006 changed to a new “definitive industry classification standard” called the Industry Classification Benchmark (ICB classification) in line with practices used by the FTSE Group and Dow Jones Indexes.

This study focuses on two so-called “economic groups” as per FTSE classification consisting of the Basic Industries sector and the General Industrials sector. There are currently 51 companies that belong to these two economic groups on the JSE.

1.4 Assumptions of the study

One of the assumptions underlying this study is in fact related to the sample frame. Although the two economic groups mentioned in paragraph 1.3 are classified as being part of the “Industrials” sector, the individual companies might have significantly diverse asset bases. The assumption of homogeneity is important, as diverse asset bases – e.g. comparing companies with large intangible assets to those with low or no intangible assets – will influence the median OPR used in the performance shock definition. Although an assumption, the author believes that the focused sample frame does mitigate this problem.

The use of “substantial” decline in the definition of a performance shock poses another assumption worthy to be noted. In order to ensure that companies who endured a performance shock have in fact been identified, a criterion was imposed requiring the OPR of all the companies in a given year to fall in the lower quartile (see paragraph 3.3.2.1). In paragraph 5.2 this criterion is tested as having correctly identified performance shock companies. This criterion or assumption might however have overlooked companies that did in reality experience performance shocks but for whom the OPR did not fall in the lower quartile. This might be the reason why some researchers in the field use another popular performance shock definition, viz. return-on-investment being below the cost of capital (where a fixed value for cost-of-capital is adopted for a specific industry).

1.5 Research limitations

In terms of the limitations of this research, the immediate concern is the generalisability of the results due to the "single" industry focus. Industry-focused research on the topic of turnaround management does have its critics. According to Pandit (2000) industry-focused research contains the implicit assumption that company performance is largely a function of industry characteristics. In this regard Pandit (2000) quotes the work of Schmalensee (1985) who found that industry membership accounted for only 14% of profit variations across companies.

Pandit's (2000) critique is based on the premise that "poor or good performance is largely a function of what goes on inside firms and should be gauged relative to benchmarks of poor or good performance *generally*" (Pandit, 2000: 37). On this premise Pandit (2000) favours the use of "cross-industry" definitions for performance shocks and recovery such as those used by Hambrick & Schechter (1983) where a performance shock was defined as not realizing a ROI equal to or better than the cost of capital.

The author acknowledges the sentiments conveyed by single industry critics such as Pandit (2000). In a way this study does have more than a single industry focus as it considers two economic groups on the JSE ... albeit both being in a similar sector. With multi-industry studies such as Yawson (2005) the researchers frequently remind the reader to consider the industry adjusted results. These are obtained by grouping industry-specific companies and then defining performance shocks and successful survivors in relation to the industry median (or the industry average). Therefore poor and good performers in practice are defined per industry – similar to what the author intends in this study. The added benefit from a multi-industry study is that good and poor performance within an industry can be benchmarked relative to other industries - as advocated by Pandit (2000).

A further limitation of this study relates to the completeness of the sample frame. It was the researcher's intention to extract the data from the MBFA from 1996 to 2005 using the FTSE classification codes for the two economic groups mentioned in paragraph 1.3. However, due to the JSE's change in classification system it was

impossible to determine which pre-2002 companies could be classified as being part of these two groups. The sample frame therefore only includes companies that could be linked to the selected FTSE classification sub-sector codes post-2002.

The size of the final sample of companies that have experienced performance shocks also delimits the generalisability of the results. Whilst the sample frame of 51 companies is reasonable, only 16 of these companies were identified as having experienced a performance shock. Of these seven achieved successful turnaround whilst the remaining nine companies did not turnaround. The final results are based on these companies and this might be considered as a relatively small sample.

The small sample size led to a further limitation described in paragraph 4.2. It revolves around ascertaining whether the company was in crisis in the year prior to the performance shock. In such cases recovery actions might have been applied in the year of or just prior to the performance shock. For these companies the probability – however small – does therefore exist that the turnaround actions studied in the years after the performance shock might appear small or not applicable at all as a result of their earlier adoption. Due to the small sample size this condition was alleviated for this study.

Per design this study has inherent survivorship bias. Companies that did not survive performance shocks could not be analysed in order to determine which turnaround actions have been attempted and why these did not produce the required results. This limitation is of theoretical importance as this study did not reveal any non-survivors amongst the performance shock companies.

2. RELEVANT THEORY

2.1 Introduction

In Chapter 1 it was mentioned that the focus of this study is on the content of turnaround strategies. The emphasis is on the financial measures that are used to evaluate company performance. In discussing the applicable theory the focus is on financial theory and excludes other aspects such as management credentials, employee capability, etc. ... all of which are important in managing a turnaround.

Williams, Haka, Bettner & Meigs (2002) caution that while a satisfactory level of earnings might be a good indication of the company's long-run profitability to pay its debts and dividends, it is also important to look at the composition of the company's assets, their condition and liquidity, the timing of repayment of liabilities as well as the total debt outstanding. In this regard a company may be profitable but unable to pay its liabilities on time. Also sales and earnings may appear satisfactory but assets such as plant and equipment may be deteriorating, valuable patents may be expiring or substantial losses might be accruing due to slow-moving inventories or past-due receivables. On the other hand it is also important to consider the magnitude of debt as large debts make a company more vulnerable to increases in interest rates and/or reduction in cash inflows.

This chapter considers the tools for doing analysis on a company that has experienced a performance shock as advocated in general financial theory. It also considers the strategies or turnaround actions to be considered for "recovery" or to reach successful survivor status. First however, the rationale behind using standardized financial statements is explained.

2.2 Standardised financial statements

In chapter 1 it was mentioned that the source data is the MBFA “standardised” financial statements for companies in the sample frame. The rationale for standardised financial statements is based on the principle accepted within the accounting fraternity as verbalized by Williams et al (2002): “because of the importance of income reporting in making assessments about the future, events and transactions that are irregular – in that they do not recur often or are different from the company’s normal, ongoing operations – require careful attention ...” (pg 504). Revenue and expense transactions are separated into two major categories – normal, recurring and unusual, nonrecurring.

As mentioned in paragraph 1.3 the MBFA’s standardised financial statements in essence ensure that the same inclusions or exclusions apply to each line item on the financial statements. As such it notes items separately that could otherwise deter inter-company comparisons. Separate line items are recorded for amongst others unusual, nonrecurring items which have their origin from the following three categories:

- results of discontinued operations;
- the impact of extraordinary items; and
- the effect of changes in accounting principles.

McGregor-BFA (2006) presents a comprehensive 73-page document explaining the process of standardisation followed by MBFA. It describes the standardisation process per line item. The line items relevant to this study stem from the following categories:

- Lines 1 to 42: Standardised balance sheet;
- Lines 51 to 82: Standardised income statement;
- Lines 101 to 174: Standardised sundry data information;
- Lines 201 to 227: Standardised general supplementary information on balance sheet;

- Lines 301 to 335: Standardised general supplementary information on income statement;
- Lines 701 to 732: Standardised cash flow statement.

Table 16 shows how specific MBFA line items have been applied in this study. Addendum A elaborates on the definitions of these line items used.

2.3 Tools of analysis

Williams et al (2002) mentions the following tools for analysing a company's financial performance:

- Trend analysis and trend percentages (also known as horizontal analysis);
- Common-size statements (also known as vertical analysis);
- Ratio analysis; and
- Benchmark comparisons.

Trend analysis and trend percentages involve comparing two or more years' financial data either as is or in terms of a base year. The base year equals 100% with all other years stated as some percentage of this base. On a common-size statement each item is stated as a percentage of some total (denominator) of which that item is a part. Common-size statements are particularly useful when comparing data from different companies. A popular denominator used for a common-size income statement is the sales revenue, i.e. all income statement items are expressed as a percentage of sales revenue. A popular denominator used for a common-size balance sheet is total assets.

Ratio analysis is particularly important in understanding financial statements because they permit us to compare information from multiple financial statements, e.g. net income from income statement divided by total asset from balance sheet as a measure of how effectively management is using available resources to earn a profit. Benchmark comparisons are done using the calculations done for horizontal, vertical

or ratio analysis and comparing them to either the past performance of the company or to the performance of other companies in the same industry.

Garrison (2001) cautions against comparing financial data between companies due to differences in accounting methods. It is believed that this risk is to a high degree mitigated by using standardised financial statements. Garrison also advises to look beyond the numbers calculated with ratio analysis ... "ratios should be viewed as a *starting point*, as indicators of what to pursue in greater depth" (Garrison, 2001: 764).

In the introduction to this chapter we noted that Williams et al (2002) mentions the level of earnings as a long-run profitability indicator while also mentioning the importance of looking at the composition of the company's assets, their condition and liquidity. In the following two sections we elaborate on measure of profitability as well as measures of liquidity as advocated by Williams et al (2002). Paragraph 4.4 elaborates on which of these – and other – ratios were used to measure turnaround actions.

2.3.1 MEASURES OF PROFITABILITY

The measures of profitability are predominantly based on data from the income statement. Williams et al (2002) advocates the use of a multiple-step income statement. A multiple-step income statement draws its name from the series of steps in which costs and expenses are deducted from revenue. Williams et al (2002) highlights a number of key items in the income statement. The following table shows these items together with their significance when evaluating company performance:

#	Key item	Significance
E1	Revenue or net sales for merchandising companies	The growth or decline trend from year to year (without inflation) is an indicator of the level of market penetration. Revenue or net sales growth faster than the industry average means the company is increasing its market share.
E2	Gross profit	An indicator of how well direct input costs can be managed.
E3	Operating income	A measure of the company's basic or core business operations.
E4	Net income	This amount usually represents the overall increase (or decrease) in owner's equity from all profit directed

		activities during the period. Net income percentage (net income divided by net sales) is an indication of management's ability to control expenses.
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Table 1: Key Items from the income statement (Source: Williams et al (2002))

Besides scrutinising the above key items in the income statement Williams et al (2002) also advocates the use of a few earnings-related ratios. The following table describes the more important earnings ratios as advocated by Williams et al (2002):

#	Ratio	Computation
E5	Earnings per share (EPS)	Net Income / Shares outstanding
	<i>Significance:</i> A measure of the amount that net income contributes to individual stockholder's share value	
E6	Price-earnings ratio (p/e)	Current share price / earnings per share
	<i>Significance:</i> A measure of investor's expectations concerning the company's future performance (a higher p/e ratio signifies more optimistic expectations)	
E7	Return on assets (ROA)	Operating income / Average total assets
	<i>Significance:</i> A measure of whether management has earned a reasonable return with the assets under its control	
E8	Return on Equity (ROE)	Net Income / Average total shareholder's equity
	<i>Significance:</i> A measure of the return shareholders earned on their invested equity	

Table 2: Key earnings ratios (Source: Williams et al (2002))

2.3.2 MEASURES OF LIQUIDITY

A company may be profitable and yet unable to pay its liabilities on time. "Liquidity refers to a company's ability to meet its continuing obligations as they arise" (Williams et al, 2002: 608). The measures of liquidity are predominantly based on data from the balance sheet. Williams et al (2002) advocates the use of a classified balance sheet with the following sub-divisions, viz. (1) current assets, (2) plant and equipment, (3) other assets, (4) current liabilities and (5) long-term or non-current liabilities.

Liquidity is best measured using a number of related ratios. The following table lists the liquidity ratios as advocated by Williams et al (2002):

#	Ratio	Computation
L1	Working capital	Current assets – current liabilities
	<i>Significance:</i> A measure of a company's potential excess sources of cash over its upcoming uses of cash	
L2	Current ratio	Current assets / current liabilities
	<i>Significance:</i> A measure of the company's short term debt-paying ability (a current ratio of 2.0 means the company's current assets are twice as large as its current liabilities)	
L3	Quick ratio	Quick assets / current liabilities
	<i>Significance:</i> Excludes the <i>least liquid</i> current assets from the computation viz. inventory and prepaid expenses, and is therefore a more conservative measure of a company's short-term debt-paying ability.	
L4	Debt ratio	Total liabilities / total assets
	<i>Significance:</i> A measure of the safety of creditors' claims over the long term.	

Table 3: Key measures of liquidity (Source: Williams et al (2002))

2.3.3 CAUTION WHEN USING MEASURES

Williams et al (2002) cautions against the use of the measures in paragraphs 13 and 14 without understanding the characteristics of the company and its industry. The advised way of using the measures is to first analyse the trend in the ratio over time for the same company and then to compare to similar companies and/or industry-wide averages.

One of the biggest limitations of using financial ratios is the existence of *window dressing*. Pandit (2000) is very direct when he defines window dressing as “the tendency of managerial manipulation of accounting-based measures of profitability in declining profit contexts” (Pandit, 2000: 34). An example would be to pay accounts payable that are due in the next period in this period to improve the current ratio. According to Williams et al (2002) “such steps to window dress the financial statements are common and, within reason, are a natural part of financial reporting” (Williams et al, 2002: 613). The prudent analyst needs to take note of window dressing and through close scrutiny of financial statements (including the notes to the financial statements) try and eliminate its effects on the measures of profitability and liquidity.

2.4 The corporate lifecycle

The importance of considering corporate lifecycle theory during turnaround management is twofold, viz.:

- The cause for the performance shock might be related to the company having applied the wrong strategy for its lifecycle stage, e.g. heavy debt financing during the growth phase;
- The recovery strategy should consider the company's lifecycle stage, e.g. difficult to do market expansion in the mature phase.

Bender & Ward (2002) states that a company's choice of financial strategy – how it chooses to finance its business and its selection of dividend policies – must relate to its business strategy. High-risk businesses should adopt low-financing structures, primarily equity-based. This typically applies for start-up and growth-phase companies. Significant pressure is put onto management of companies in these two phases if the overriding source of finance is debt.

In terms of profitability and liquidity measures it is important to consider the following figure as presented by Bender & Ward (2003):

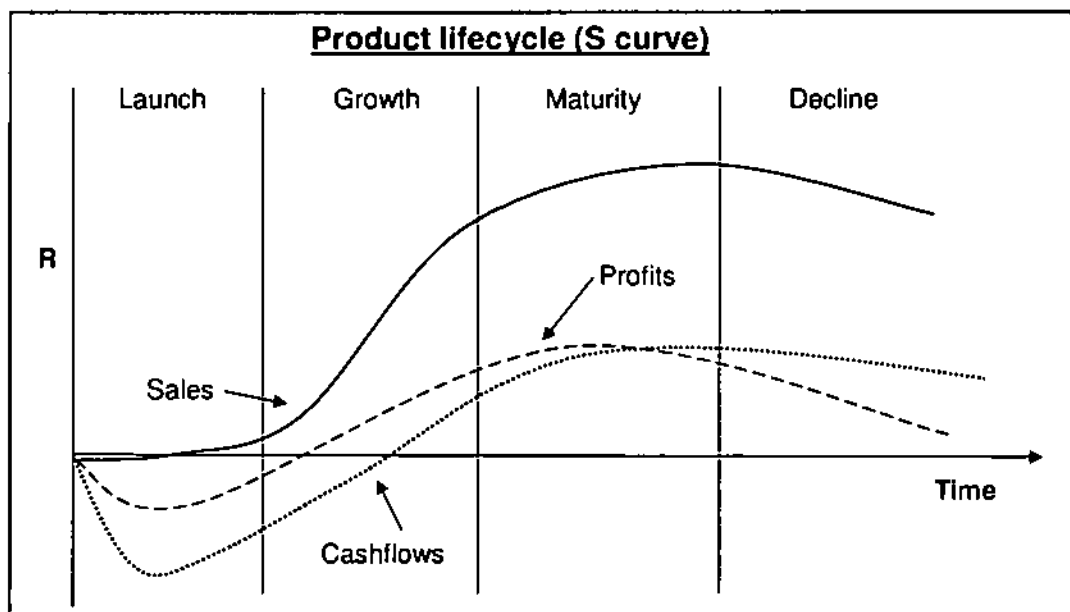


Figure 1: Product lifecycle (Source: Bender & Ward, 2002)

Figure 1 clearly highlights the need for external funding at least into the growth phase. Liquidity (cash flows) and profitability will in most cases be negative up to the growth phase. Also, towards the end of the maturity phase as well as in the decline phase it is to be expected that profits will drop.

Bender & Ward (2002) responds as follows to the ideal debt profile in a company:

- *"... it depends, unsurprisingly, on the company's business, its assets and the structure of the operations. Broadly, the company's debt portfolio should attempt to match long term assets with long term finance and short term assets with short term funding sources".*

The basic reason for this is that short-term debt needs to be refinanced at regular intervals and if the company's financial situation has deteriorated this may become a problem.

Bender & Ward (2002) also point out the dangers of diversification for mature businesses. Most companies regard diversification as a risk-reduction exercise. Bender & Ward however make a case that "... it is clearly much more difficult for a diversified company, with businesses at all the different stages of the lifecycle, to communicate a clear, focused financial strategy to financial markets via its dividend policy or its debt-to-equity ratio. Theoretically such a conglomerate should be valued by the financial markets at the minimum of the weighted average price/earnings multiple of its component businesses ..." (Bender & Ward, 2002: 69). They conclude that many of these companies have been target of corporate raiders who unbundled the individual businesses and sell them off at their own higher price/earnings multiples. They advise for diversification to be financed by debt as opposed to funding with own cash which would diminish the attractiveness for corporate raiders.

From this section it is clear that the corporate lifecycle theory in terms of debt profile, diversification strategy as well as typical attributes of a business in its specific lifecycle stage, should be considered when analysing causes of performance shock and/or making recovery recommendations.

3. LITERATURE REVIEW

3.1 Introduction

This study analyses the effectiveness of turnaround strategies amongst South African companies. This study considers performance shocks on an *ex post* manner. Contrasting an *ex post* analysis against the real business world the author concedes that in practice it is more crucial to *avoid* performance shocks. Therefore this study commences in section 2 of this chapter with recent research on leading indicators of potential performance shocks. The importance of this lies not only in the fact that the turnaround “surgery” could be avoided but in terms of this study in being attentive of whether management might have foreseen the performance shock, but ignored the signs.

Section 3 of this chapter elaborates on the measures other researchers used to define organizational decline or performance shock. It concludes by substantiating the use of the Operational Performance Ratio – and its components - as measure of performance in this study.

In a study trying to determine the speed of recovery and success of turnaround strategies, it is clear that the turnaround management process is to be understood. Section 4 of this chapter focuses on turnaround management. It considers inter alia research related to turnaround phases, turnaround process and reasons for decline.

Section 5 of this chapter focuses on what information is needed prior to engaging in a turnaround process. It also provides a summary of concrete turnaround actions to look out for when analysing turnaround situations.

The objective of this study is to answer the four research questions mentioned in chapter 1. Section 6 of this chapter provides the answers to these questions as recorded from international research.

3.2 Symptoms of anticipated performance shocks

Over the years several researchers have presented diverse approaches to forecast the probability of failure for companies. Bibeault (1982) suggested three basic categories of warning signals, viz. mathematical forecasting methods, adverse trend signals used in comparison with industry indicators and adverse behavioural signals that focus on actions of the company. We consider the most important research in this regard in the following sections.

3.2.1 MATHEMATICAL FORECASTING METHODS

Ratio analysis has long been used as the first measure to classify and evaluate corporate performance. Altman (1993) refers to earlier studies concluding that failing firms exhibit significantly different ratio measurements than continuing entities. One of the classic works in the area of ratio analysis and bankruptcy classification was performed by Beaver (1967). Beaver (1967) found that a number of indicators could discriminate between matched samples of failed and non-failed firms for as long as five years prior to failure.

Altman (1993) concludes that "in general, ratios measuring profitability, liquidity, and solvency prevailed as the most significant indicators". "The order of their importance, however is not clear since almost every study cited a different ratio as being the most effective indication of impending problems" (Altman, 1993: 181). Altman (1993) also concluded that ratio analysis presented in this fashion can be interpreted wrongly and can cause confusion. An example of this is a firm that has a poor profitability and/or solvency record but still with an above average liquidity the situation might not be considered as being serious.

Ratio analysis in essence is univariate analysis. The shortcomings of univariate analysis as described in the previous paragraph led to the use of multiple discriminant analysis as the appropriate statistical technique. This approach was used by Dr Edward I Altman to develop what can be considered as the authoritative work in terms of mathematical models for "classifying and predicting corporate distress", namely the Z-score formula. The Z-score bankruptcy predictor combines five common business ratios, using a weighting calculated by Altman to determine

the likelihood of a company going bankrupt. It was derived using data from manufacturing firms but has with a few modifications since been adapted to also determine the risk of bankruptcy for service-related firms. The Altman Z-score for public companies is calculated using:

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

where:

Z = Altman score

X₁ = Working capital/Total assets

X₂ = Retained earnings/Total assets

X₃ = Earnings before interest and tax/Total assets

X₄ = Market value of equity and preferred stock/Total liabilities

X₅ = Sales/Total assets

A Z-score lower than 1.81 indicates a high probability of bankruptcy while a Z-score higher than 2.99 indicates a low probability of failure. Scores between 1.81 and 2.99 indicate a gray area. The reliability of the Altman Z-score was initially tested by Altman himself with the following results:

Years prior to bankruptcy	Percent predicted correctly
1	95%
2	72%
3	48%
4	29%
5	36%

Table 4: Reliability of the Z-score model (Source: Altman, 1993)

Altman himself concluded that "... after the second year, the Z-score model becomes unreliable in its predictive ability, and also the change from year to year has little or no meaning" (Altman, 1993: 195).

Researchers have been suspecting that inherent company attributes have changed since 1968 when the Z-score model was first published. In this regard Altman himself assessed Z-scores for the Standard & Poor's 400 Industrial Index firms over the period 1973-1989. He found that the percentage of large companies with Z-scores below 1.8 had shifted from 3% in 1980 to 11% in 1986. These changing "company" attributes, together with the unreliability of the Z-score model for years 3+ prior to bankruptcy, led Altman to revise his research and develop the ZETA model.

Around 1977, Altman developed jointly with a private financial firm (ZETA Services, Inc.) a revised seven-variable ZETA model based on a combined sample of 113 manufacturers and retailers. The ZETA model is allegedly "far more accurate in bankruptcy classification in years 2 through 5 with the initial year's accuracy about equal" (No Author, 2002). However, the coefficients of the model are not specified without retaining services of ZETA Company. The ZETA model is based on the following variables:

- X_1 = Return on Assets (EBIT/Total assets)
- X_2 = Stability of earnings (measured by getting a normalised measure of the standard error of estimate around a 10-year trend in X_1)
- X_3 = Debt service (EBIT/Total interest payments)
- X_4 = Cumulative profitability (Retained earnings/Total assets)
- X_5 = Liquidity (Current assets/Current liabilities)
- X_6 = Capitalisation (Five-year average of total market value of common equity/Total capital)
- X_7 = Size (Total tangible assets)

Altman (1993) claims reliability of 96% one year prior to the bankruptcy (Year-1), 85% in Year-2 and down to a good 70% reliability in Year-5. Notwithstanding its improved reliability fewer practitioners are using the ZETA model when compared to the Z-score model's general acceptability. This is associated with the constraint of having to use the ZETA services company to obtain the coefficients for the ZETA model.

Several other researchers developed failure prediction models. Scott (1981) compared several of the leading empirical models in terms of their observed accuracies and of their coherence to Scott's (1981) own conceptual bankruptcy framework. While he found it hard to determine which model discriminated the best, due to different data and different procedures, he concluded that the best multidimensional models outperformed the best single variable models.

The reason for focusing in this short literature overview predominantly on the work of Altman is echoed in Scott's (1981) conclusion:

"Of the multidimensional models, the ZETA model is perhaps the most convincing. It has high discriminatory power, is reasonable parsimonious, and includes accounting and stock market data as well as earnings and debt variables. Further it is being used in practice by over thirty financial institutions. As a result, although it is unlikely to represent the perfect prediction model, it will be used as a benchmark for judging the plausibility of other theories" (Scott, 1981: 336).

Vivier (1992) quotes the work of De la Rey (1981) as being the South African authority on predicting or anticipating performance shocks. Vivier (1992) notes that De la Rey's (1981) work extends the work of Beaver (1982), Altman (1983) and others to develop a financial forecasting model which measures the risk of financial failure by means of a number of ratios. The final model was tested using a sample of 393 South African companies and produced an overall prediction ability of 93% in Year-1 and 94%, 95% and 85% in the subsequent years.

De la Rey's (1981) model uses the following ratios:

$K = 0,01662 \cdot A + 0,0111 \cdot B + 0,0529 \cdot C + 0,086 \cdot D + 0,0174 \cdot E + 0,01071 \cdot F - 0,06881$
where:

- K = De la Rey score
- A = Total outside financing/Total assets
- B = EBIT/Average total assets
- C = Total current assets plus listed investments/total current liabilities
- D = Profit after tax/Average total assets at book value
- E = Cash flow profit after tax/average total assets
- F = Total inventories/Influctuation-adjusted total assets

3.2.2 ADVERSE TREND AND BEHAVIOUR SIGNALS

Vivier (1992) quotes the 1982 research of Bibeault (1982) as providing a good summary of several adverse trend signals that can be witnessed amongst companies leading up to or experiencing performance shocks. The two primary signals are stated as:

- Declining margins (an inability to translate sales growth into profit growth); and
- Market share loss (attributed to price incompatibility).

Bibeault also mentions other secondary signals being i) increasing debt, ii) declining working capital, iii) management turnover and iv) rate of reinvestment (i.e. usage of retained earnings).

Bibeault (1982) also researched the trend signals looked for by bankers when considering extending credit to a borrower. The most important of these signals are:

1. Slowness in submitting financial exhibits by the borrower;
2. Declining deposit balances, overdrafts and/or returned cheques;
3. Swollen inventories;
4. Defaulting or smaller loan payments;
5. Apathy to arrange site visits or meetings with principals;
6. Borrower becoming a target of legal action;
7. Increasing trade payables or accruals;
8. Adverse comments and information from reputable competitors, suppliers, customers or industry sources.

Slatter (1984) complements the list of “externally noticeable” adverse trend signals by mentioning the use of generally unacceptable accounting practices, a decrease in liquidity and a restriction in dividend payments.

Some adverse trend signals that are more “internally noticeable” according to Vivier (1992), include:

- Top management fear;
- Lack of planning and strategic thinking;
- Resource allocations in the absence of a dialogue about priorities;
- Insufficient information provided in formal internal communications;
- The grapevine amongst staff is louder than usual.

Vivier (1992) also highlights the pitfalls in identifying behavioural signals of performance shocks. They point to the difficulty in distinguishing between symptoms and causes of performance shocks. For example, does lower productivity lead to

performance problems or does the worsening climate lead to a lower morale that results in lower productivity? They conclude that top management is affected by turbulence irrespective of whether it is associated with decline or not, i.e. turbulence can also occur during times of growth. Typical top management responses to turbulence include more centralized decision-making, absence of long-term planning, and non-selective cuts in resources, top management turnover and loss of leader credibility.

3.3 Defining performance shocks

This study refers to performance shocks related to companies undergoing business decline as opposed to business failure. To distinguish between these two concepts we briefly discuss how researchers define business failure.

3.3.1 BUSINESS FAILURE

The definition of business failure used by researchers has to a large extent been dependent on the data available (Everett & Watson, 1996). Five basic measures have been used independently before. These are:

1. Discontinuance of ownership;
2. Discontinuance of the business;
3. Bankruptcy;
4. Disposal to prevent further losses;
5. Failure to make a go of it.

Definitions 1, 2 and 3 above are the most commonly used in research as data in this regard can be obtained from government sources. However definitions 1, 2 and 3 have inherent limitations, e.g. the sale of a business due to relocation will be classified under 2 but can by no means be viewed as a business failure. Everett & Watson (1996) refer to the work of Ulmer & Nielsen (1947) and Cochran (1981) that introduced definitions 4 and 5 respectively in an attempt to address the shortcomings of definitions 1, 2 and 3. Everett & Watson (1996) advocate these definitions to be more relevant. They do however acknowledge that there are significantly larger challenges in obtaining data for definition 4 and 5 as these are clearly more subjective than definitions 1, 2 and 3 and the research would generally have to rely

on the opinion of someone associated with the business" (Everett & Watson, 1996: 374).

The focus of this study is not on companies that have experienced business failure. This study focuses on companies that have experienced business decline or performance shocks as defined in the following paragraphs.

3.3.2 BUSINESS DECLINE AND PERFORMANCE MEASUREMENTS

Pandit's (2000) review of 47 studies related to turnaround management found that many studies define performance in terms of profitability alone. The majority of these studies used nominal pre-tax profit while only Slatter (1984) is quoted as having converted nominal pre-tax profit into real pre-tax profit. Pandit (2000) found the second most frequently used measure of performance related to profitability as being one or other "profit-related" accounting ratio; either return on total assets (ROA) or return on investment (ROI).

Pandit (2000) refers to Figure 2 from Baden-Fuller & Stopford's (1992) work to highlight the problems of using only profitability as a measure of performance.

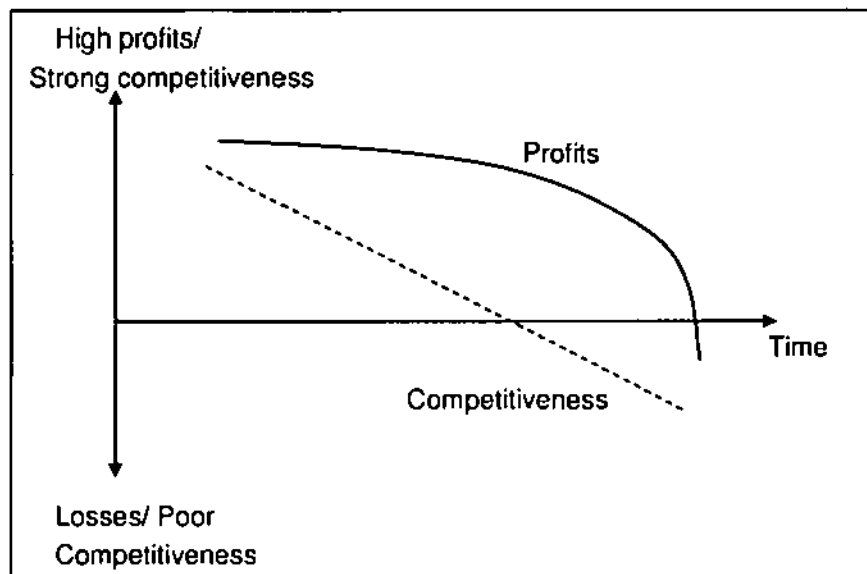


Figure 2 Behaviour of profits with falling competitiveness (Source: Pandit (2000))

demonstrates that a gradual loss of competitiveness is often not reflected as a gradual deterioration in profitability. "For researchers, the problem is exacerbated by the tendency of managerial manipulation of accounting-based measures of

profitability ("window dressing") in declining performance contexts" (Pandit, 2000: 34).

Besides knowing which measure of performance is most frequently used this study has an interest in knowing how these measures were applied in defining performance shocks. Table 5 summarises the criteria used together with an indication of which researchers used the specific criterion in their research:

Criteria for defining performance shocks	Researchers that used this criterion	Source
Benchmarking <u>nominal pre-tax profit</u> against Gross National Product (GNP) growth. If growth in profit is less than GNP growth for four consecutive years a turnaround is required.	– Schendel and Patton: 1976 – Schendel et al.: 1976	Pandit (2000)
If firm's <u>net income</u> is below industry average for three consecutive years a turnaround is required	– O'Neill: 1986	Pandit (2000)
If a firm's <u>Return on Assets (ROA)</u> is in the bottom 25% of its industry for two consecutive years a turnaround is required	– Pant: 1991	Pandit (2000)
If a firm's pre-tax <u>Return on Investment (ROI)</u> is less than the opportunity cost of capital for two successive years a turnaround is required	– Hambrick & Schechter: 1983 – Chowdury & Lang: 1996	Pandit (2000)
If a firm's earnings fall in the bottom 30% of its industry in terms of <u>Return on Assets (ROA)</u> for a specific year while its ROA was above industry average the previous year, a turnaround is required	– Yawson: 2005 – Denis & Kruse: 2000 – Kang and Shivdasani: 1997 – Lie: 2004 – Wang: 2005	Yawson (2005)

Table 5: Applying the definition of performance shocks to a data series (Source: see "Source" column)

Pandit's (2000) recommendations after reviewing the various definitions are:

- "... even the use of multiple accounting measures, although a step in the right direction, is flawed due to the possibility of accounting manipulation. A triangulated approach that looks for consensus among accounting-based indicators and expert opinion seems to be the best way forward" (Pandit, 2000: 37).

- In using benchmarks he cautions that benchmarks tied with the performance of the economy or with industry average performance are flawed, and a good benchmark to use is the firm's opportunity cost of capital.

Research based on the use of empirical data tends to overlook Pandit's recommendations. The main reason is the difficulty in obtaining expert opinions for the suggested triangulated approach. Wang (2005) states that ROA is the most common accounting profitability measure for defining operating performance in the literature. However, due to possible "earnings management whereby firms typically manipulate accruals and profits from non-core operations" (Wang, 2005: 1841), he also used Operating Income divided by Total Assets as well as Total Sales divided by Total Assets. Pant (1987) supports the use of ROA to measure operating performance in his study on turnaround strategies.

Yawson (2005) substantiates the use of the ratio "operating income to total assets" by quoting respectable researchers that studied turnaround phenomena such as Kang and Shivdasani (1997), also Denis & Kruse (2000) as well as Lie (2004) who have all used the same measurement.

3.3.2.1 The components of the Operating Performance Ratio (OPR)

In paragraph 1.3.2 it was established that ROA is not only a common measure of operating performance but to a large degree also the preferred measure. According to McClure (2004) ROA gauges how efficiently a company can squeeze profit from its assets, regardless of size. He furthermore states that "a high ROA is a telltale sign of solid financial and operational performance." This section consists of literature review on the components of the ROA as applied by the author in this study.

There is little doubt about the denominator of the OPR. The use of TAS as denominator is supported in Altman's Z-score model. In the Z-score model – a good predictor of business failure - no less than four of the five variables use TAS as the denominator. The ROA denominator also includes liabilities like debt. ROA is therefore able to highlight if a company has excessive debt or is using debt to drive returns; something that is a shortcoming with another widely used profitability measure viz., return on equity.

One aspect of TAS that should be considered is the type of assets that are included in the denominator. Since the assets in question are the sort that are valued on the balance sheet - namely fixed assets and not intangible assets like people or ideas - ROA is not always useful for comparing one company against another. McClure (2004) furthermore states that ... "some companies are "lighter", having their value based on things such as trademarks, brand names and patents, which accounting rules don't recognize as assets". This is clearly highlighted when comparing a car manufacturer to a software development company of similar revenues... the latter showing a definitely smaller TAS.

Besides being "suspect" – due to the deficiencies of accrual-based earnings and the use of managed earnings (McClure, 2004) - there are also various derivatives of the numerator that are used to calculate ROA. The three most common acronyms encountered in literature that are being used as numerator include Operating Income (OI), Earnings Before Interest and Tax (EBIT) as well as Earnings Before Interest Tax, Depreciation and Amortisation (EBITDA).

EBIT and OI are two acronyms with the same meaning. On a multi-step income statement it can clearly be seen that OI is the Gross Profit minus Total Operating Expenses (Williams et al, 2002: 616) and that it is calculated prior to accounting for interest and tax expenses. OI and EBIT therefore is one and the same thing. However, in terms of this study the distinction on whether to use EBIT or EBITDA as the numerator should be discussed.

At the heart of the EBITDA rationale lays the fact that a company's capital expenditures typically vary from year to year. Income measures try to account for this by artificially spreading the expense of capital investments over the years in which they will be generating value for the company. EBITDA removes this effect from the income measure. The EBITDA measure attempts to approximate the fundamental earning power of the company's operations while separately factoring in the projected capital expenditures needed to maintain those operations. This is valuable because of the time value of money principle, as a large capital expenditure is less costly if it is to be made several years into the future (Wikipedia, No Date).

Other considerations when using EBITDA are stated by Wikipedia (No Date) as follows:

- EBITDA provides an approximation of the company's earnings potential if financed with no debt, i.e. it excludes the impact of the capital structure on earnings;
- EBITDA approximates the free cash flow available to the company (but according to Wikipedia (No Date) is not as useful as calculating physical free cash flow for investment decisions).

The use of EBITDA is not without its critics. Critics include Warren Buffett, who famously asked, "Does management think the tooth fairy pays for capital expenditures?" (Investopedia, 2006). His argument against the use of EBITDA is that hypothetically a company could spend a "trillion dollars" on capital expenditures and this would never show up in the next million years of the company's EBITDA reports. The EBIT number is therefore a truer picture, say critics of EBITDA reporting, and for investors wishing to examine short-term financial performance the use of "operating cash flow" and free cash flow is rather recommended (McClure, 2004).

Wikipedia (No Date) also points to the frequent use of EBITDA by the majority of "dot-com" companies. By emphasizing either EBITDA or pro forma earnings in their financial reports they would explain away the (often poor) operating income number. In essence these companies attempted to ignore one-time write-offs, asset impairments and other costs deemed to be non-recurring. Wikipedia (No Date) furthermore highlights that interestingly enough the U.S. Securities and Exchange Commission does not generally accept EBITDA (and its variations) and requires that companies reconcile EBITDA to net income in order to avoid misleading investors.

It is clear that the use of EBITDA as numerator in the OPR does have both adversaries as well as advocates. For this study the author based his decision on the use of EBITDA on the following:

- The reason for not using net income is supported by Denis & Kruse (2005) as well as Yawson (2005) as it is not influenced by special charges and "partially controls for the impact of earnings management" (Yawson, 2005: 7); and

- The reason for using EBITDA as opposed to EBIT is due to it featuring prominently in recent studies that examine firm performance (Yawson, 2005); and
- As the unavailability of cash is such a prominent contributor to performance shocks it is reasoned that the impact of – perhaps excessive – capital expenditure should be accounted for by approximating a close-to-cash-flow “income” through the use of EBITDA.

3.4 Turnaround management

Pandit (2000) reasons that turnaround management should be considered from three perspectives viz., i) the context of the turnaround situation, ii) the process making up the turnaround management and iii) the content of turnaround strategies. The following table summarises the frequency of the research focus in each of these areas as per Pandit's (2000) research findings:

Turnaround Management Perspective	Questions frequently addressed	Questions largely ignored
Context	What are the causes of decline?	How are appropriate recovery actions shaped by the: – severity of the crisis facing the firm? – attitude of stakeholders? – firm's outer context? – firm's historical strategy?
Process	What are the characteristics of successful turnaround managers?	– What senior manager mindsets lead to and prolong crisis situations? – What are the triggers that begin the recovery process? – Is there a general sequence of successful recovery actions?
Content	What actions are successful and unsuccessful turnaround strategies composed of?	

Table 6: Summary of basic research questions (Source: Pandit, 2000)

3.4.1 CONTEXTUAL FACTORS INFLUENCING TURNAROUND MANAGEMENT

With respect to the *context* of turnaround management Pandit (2000) notes that the causes of decline have been explored reasonably well. Important for this study is Pandit's conclusion that ... “recovery actions that tackle the cause(s) of decline have

been found to be more successful than those that do not" (Pandit, 2000: 39). Chowdhury & Lang (1996) confirms the importance of understanding the cause for the performance shock by identifying three important actions that managers should take in addressing a performance shock viz. 1) accurate attribution of causes, 2) timely action and 3) adequate resources to affect a turnaround. In section 3.4.1.1 the causes of decline are further explored.

Pandit (2000) refers to the work of Hofer (1980) whereby the latter found that the severity of the crisis, as a contextual factor, determined the appropriateness of certain recovery actions. He found that in situations where the crisis facing the firm was not severe, small changes such as cost pruning could affect recovery. When the crisis was more severe more dramatic changes such as asset reduction or market orientation were adopted. Hofer (1980) explained his findings with the following "break-even diagram":

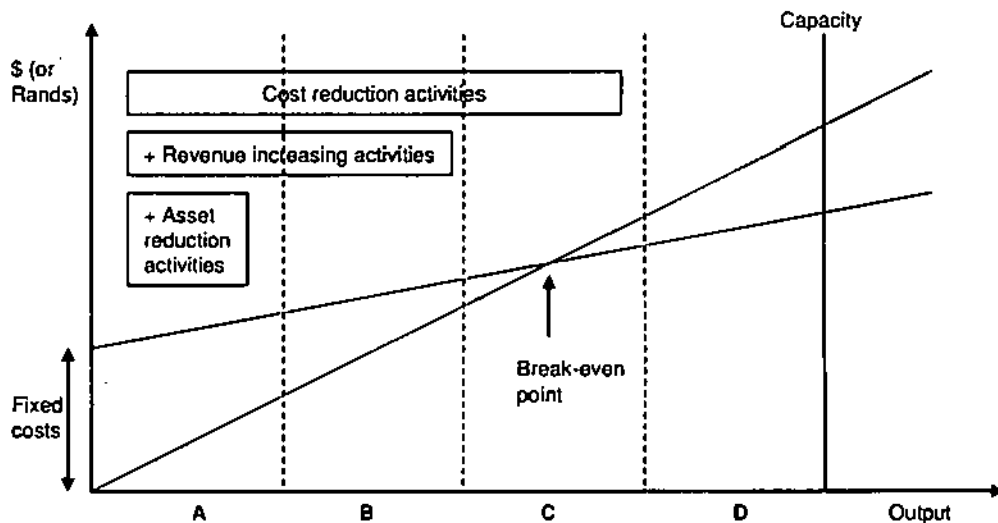


Figure 3: Relationship between the severity of the crisis and the appropriate recovery actions (Source: Pandit, 2000)

In Figure 3 corridors A, B and C signify the areas where the company is in need of turnaround management. The costs (red line) are higher than the revenues (green line). Cost reduction activities are appropriate in all of corridors A, B and C. In corridor B companies tend to consider revenue increasing activities in addition to the cost reduction activities. In corridor A companies will consider asset reduction activities in addition to cost reduction and revenue increasing.

A further contextual factor mentioned by Pandit (2000) is the attitude of stakeholders such as banks, trade unions, etc. Stakeholders can influence or stipulate which turnaround actions can be pursued as well as in which priority they should be pursued, if at all.

In terms of the outer context Pandit found very little research on the relationship between industry characteristics and the appropriate recovery actions. In this regard the work of Pant is quoted (Pandit, 2000: 40) which found that successful recovery actions for firms in the mature phase of the lifecycle are different from those in the growth phase of the lifecycle. In terms of the impact of the macroeconomic environment on company recovery, the only research done in this regard was by Bibeault (1982) and Slatter (1984). Cyclical upswings, improved commodity prices and favourable exchange rate movements are cited as having had an effect on recovery from performance shocks. However, Bibeault (1982) reports that in only 16% of the cases he studied did macroeconomic changes contribute toward successful recovery. Slatter (1984) reported these to have impacted approximately 33% of the companies he had studied.

Virtually no research has been done on what Pandit calls the historical context. Here Pandit (2000) refers to actions taken in the past that are found to constrain or facilitate recovery actions.

To conclude this section on contextual factors that lead to the need for turnaround management, the causes for business decline are explored in more detail.

3.4.1.1 Causes of business decline

Pandit's (2000) conclusion on the importance of understanding the causes of business decline have been echoed by other researchers. "From this study it can be concluded that causes of decline and turnaround strategies are significantly related" (Sulaiman, Ali & Ganto, 2005). Sulaiman et al (2005) reasons that a turnaround situation is an abnormal period in any company's history and as such management actions must be uniquely and distinctly different from previous approaches.

Understanding the cause of the decline can assist managers to focus on the aspects that require these unique and different approaches.

Vivier (1992) provide a summary of the causes of decline as presented by the pioneering researchers in this field. Table 7 is an extraction of this summary by Vivier (1992):

Internal factors cited	External factors cited
<i>Argenti (1976)</i>	
- Poor accounting information - Firm unresponsive to change - Lack of financial control - Failure of big projects - High gearing - Overtrading	- Environmental changes - Normal business hazards
<i>Bibeault (1982)</i>	
- Weak finance function - Internal management problems such as lack of succession, one-man rule, non-participative board - Internal bureaucracy	- Economic change - Technological change - Social change - Government constraints
<i>Slatter (1984)</i>	
- Lack of financial control - Inadequate management - High cost structure - Operational marketing problems - Failure of big projects - Failed acquisitions - Poor financial policy - Overtrading	- Strong competition - Changes in market demand - Adverse movement in commodity markets
<i>Sigoloff (1985)</i>	
- Lack of financial control - Management without guts - Interpersonal conflict at decision-making level - Firm hostage to current products and markets - Could not exploit location advantages - Increasing cost of debt - Poor distribution strategies - Dependence on single customer	- Technological changes - Changes in market place

– Limited financial resources	
– Sales growth faster than capital availability	

Table 7: Causes of business decline (Source: Vivier, 1992)

Table 7 is divided into causes related to internal factors and causes related to external factors. Bibeault (1982) reported that in only 9% of the cases were external factors the sole cause of decline. In 75% of all cases studied by Slatter (1984) two factors – out of eleven – were always present, viz.:

- Inadequate management; and
- Lack of financial control.

Holland (1998) quotes the Small Business Development Center in Alabama as finding that nine out of ten business failures in the United States are caused by a lack of general business management skills and planning. According to Holland (1998) the well-known Dun & Bradstreet information services ascribe 88.7% of all business failures to management mistakes. A survey amongst 1000 owners of failed small businesses in the United States concluded with the following table:

Cause of failure	Internal factor?	% citing this as reason for failure
Lack of management expertise	Yes	29.1%
Under-capitalisation or over extension	Yes	10.1%
Poor positioning against competition	Yes	5.8%
Poor cash flow management	Yes	5.0%
High overheads	Yes	2.5%
Total attributable to internal factors		52.5%
High interest rates	No	15.6%
General state of economy	No	11.4%
High taxation	No	5.8%
Federal regulations	No	3.6%
Total attributable to external factors		36.4%
Other factors not classified		11.1%

Table 8: Causes of small business failure (Source: Peterson, Kozmetsky & Ridgway, 1983)

It is interesting to note that only 36% of the perceived causes of failure are considered as being outside management's direct control. In chapter 1 the work of

Schmalensee's (1985) was mentioned in finding that industry factors account for only 14% of the profit variance across firms in that industry. Pandit (2000) also quotes a more recent study by Rumelt (1991) revealing cross-industry effects accounting for only 8.3% of profit variances across businesses.

Sulaiman et al (2005) studied companies that went through the 1997/1998 Asian economic crisis. They considered strategies followed by companies that emerged successful as well as companies that failed during the Asian economic crisis. The following statistical significant findings resulted:

- Companies that failed experienced significantly higher cash flow problems;
- Companies that failed experienced significantly higher management problems;
- The manner in which turnaround actions were applied in both group of companies were similar except for turnaround actions related to consolidation (cost cutting, debt restructuring, financial and expense control and asset reduction).

This led Sulaiman et al (2005) to conclude that it is important to understand the cause of business decline and match it with the appropriate turnaround strategy.

3.4.2 PROCESS FACTORS INFLUENCING TURNAROUND MANAGEMENT

Pandit (2000) reasons that at least three areas should be considered when discussing the process involved in turnaround management, viz.:

1. What are the characteristics of performance shocks with relation to how it is experienced by management and the company?
2. What triggers the recovery process?
3. Is there a sequence to be followed during the recovery process?

Slatter (1984) found that a typical four-stage model of crisis development prevails amidst a performance shock. Managers first go through a *crisis denial* when the signals of failure are overlooked. The next stage is defined as the *hidden denial* and it is when the crisis is explained away in the belief that it will disappear and as such no action is taken. *Organisational disintegration* is experienced next and it is when some action is taken but the need for radical change is underestimated. The final stage is the *organisational collapse* which is characterized by the inability to take action. This final stage is followed either by failure or successful recovery which is

usually led by a new management team. The importance of this model lies in trying to identify the characteristics of the crisis in order to react long before reaching organizational collapse.

Silver (1992) accentuates the importance of selecting a good crisis management team which is in most instances not the acting management team. "If you are accustomed to year-to-year sales and earnings growth through traditional marketing channels, the sudden jolt of an illiquidity crisis probably will unsettle you and require and outsider or another member of management to take over the leadership and form the crisis team" (Silver, 1992: 88). Silver (1992) reasons that the leadership style to manage a turnaround requires ... "a person who is a downside planner, a defensive strategist and a tireless seeker of cash". It is an approach that requires clarity, a devotion to the core business and a relentless curiosity as to how much i) a vendor, ii) a lender or iii) a customer can be leveraged.

Silver (1992) believes that four psychological characteristics are important for members of a turnaround management team. His advice is that the company should hire externally should it not find internal people fulfilling these characteristics. The important characteristics are:

- *Heart alignment*: this refers to the drive that compels a person to make sacrifices to save the company;
- *Courage* is the internal strength to stand up to the most severe attacks without backing-off;
- *The ability to cooperate* is the awareness of when to push and when to pull back in negotiations;
- *An understanding of leverage* is an internal sense that the company needs time, cash and supporters, coupled with a divining rod for locating all three.

Pandit (2000) quotes the work of Grinyer, Mayes & McKierman (1990) that was done on determining the triggers that set turnaround management in motion. The following table provides a summary thereof:

What triggered the start of a recovery process?	% of companies citing this factor
Intervention from external bodies such as creditors	30%
Change of ownership or the threat of such a change	25%
New chief executive	55%
Recognition by management of problems	35%
Perception of management of new opportunities	10%

Table 9: Triggers for change (Source: Pandit, 2000)

The research on prerequisites or sequence steps for a successful turnaround is scant (Pandit, 2000). Pandit (2000) concludes that only Bibeault (1982), Slatter (1984) and Baden-Fuller & Stopford (1992) researched these important areas. Their findings can be considered similar when combined into three categories. These categories represent the path to follow for successful turnaround and are 1) top management change, 2) "simplify" business through contraction or retrenchment and 3) growth built on new capabilities.

Silver (1992) shares a similar process for managing the turnaround by suggesting four steps, viz.:

1. Select a turnaround management team (Silver (1992) refers to this as the crisis-management team);
2. Sell assets to raise cash;
3. Slash expenses;
4. Improve employee morale.

3.4.3 CONTENT FACTORS INFLUENCING TURNAROUND MANAGEMENT

The content factor of turnaround management refers to those strategies or actions that are used to address performance shocks. In Figure 3 of this section Pandit (2000) mentioned cost reduction, revenue increasing and asset reduction activities much in line with the steps in Silver's process (see paragraph 3.4.2). Rasheed (1995) reasons that the majority of content research has been done on what he calls contraction and consolidation strategies. These are strategies that emphasize the improvement of operational efficiency through cost reductions and asset reductions

and are in line with Pandit (2000), Silver (1992), Hofer (1980) and other research already mentioned.

Rasheed (1995) however found that so-called entrepreneurial or growth strategies are found less frequently in turnaround research. He mentions two types of growth strategies viz., diversification at the corporate level and concentration at the business level. Diversification is said to occur when a company enters into new lines of business either through internal development or by means of acquisition. Concentration can be achieved through vertical or horizontal integration in the fashion typically recommended in strategy text books.

Although Rasheed's (1995) research focus was on small and medium enterprises he also mentions similar findings by D'Aveni (1981) as well as Burgelman (1983) who focused on corporate businesses. Rasheed's (1995) findings suggest that companies will choose growth strategies even when company performance and resource availability are poor. In line with Figure 3 in this section Rasheed (1995) concludes that contraction and consolidation strategies are prone to be used ... "typically when the decline is not severe".

Bibeault (1982) reasons that it is not a case of choosing one or the other strategy, but more a case of focusing on the stage of the turnaround process. The following table shows the management focus during the turnaround process.

Actions	Phases in managing the turnaround		
	Crisis	Stabilisation	Recovery
Financial	Cash-flow		
Operational	Profit		
Strategic	Growth		

Table 10: Management priorities throughout the turnaround process (Source: Bibeault, 1982)

From Table 10 it is clear that contraction and consolidation strategies (as per Rasheed's (1995) terminology) will be used more during the crisis and stabilisation phases while growth strategies will be employed during the stabilisation and recovery phases.

Hambrick & Schecter (1983) summarises the work of Hofer (1980) and concludes that two organizational variables are of particular importance when deciding on the content of turnaround actions, viz. a) how close to breakeven the company is operating and b) the size of the company's market share. They present the following turnaround actions associated with these variables:

- If a company is operating far below break-even an asset reduction strategy is warranted;
- If a company is operating moderately below break-even a revenue generating strategy is called for (as it probably does not have enough idle capacity to allow major asset disposal);
- If a company is operating very close to break-even a cost cutting strategy is warranted;
- A company with a high market share would tend to avoid "unpleasant retrenchment strategies" such as asset reduction and cost-cutting. It is reasoned that a strategy to exert its relative market power through revenue generation and product/market focusing will be more appropriate.

Chowdury & Lang (1996) defined "strategic" turnaround actions as the "... grand, long-term initiatives such as diversification, vertical integration, new market share thrusts, and divestments" (Chowdury & Lang, 1996: 170). On the other hand operating turnaround actions are considered as those short-run tactics geared toward immediate revenue generation, cost-cutting or asset reduction. The prevailing wisdom from observations of larger firms is that strategic and operating problems (i.e. important reason to understand the causes of decline) are best solved by strategic and operating turnaround actions, respectively. In their research Chowdury & Lang (1996) reason that strategic turnaround actions are for larger firms and "have limited relevance for small firms".

Chowdury & Lang's (1996) research highlights the importance of improving employee productivity as a means of achieving turnaround ... especially for small businesses. A further significant finding from their research is that small firms that managed to extend accounts payable – as opposed to paying them earlier to avoid carrying costs – showed a higher probability of surviving performance shocks.

Yawson's (2005) classification of turnaround strategies as being either corporate restructuring or financial strategies fit into Bibeault's (1982) stage theory above. Yawson (2005) defines corporate restructuring strategies as actions justified on operational and strategic grounds (see Table 10) and include divestitures, employee layoffs, replacing the chief executive officer, mergers and acquisitions. Financial strategies on the other hand include scarcely researched actions such as dividend cuts and changes to capital structure and the more common operating expense reductions and revenue increases.

In terms of corporate restructuring strategies, Yawson (2005) acknowledges other researchers' conclusive findings on actions contributing in the recovery process:

- Slatter (1984) and Shimizi & Hitt (2005) found the appointment of a new CEO to be an important turnaround action;
- Weisbach (1995) and Warner and Watts & Wruck (1988) as well as Denis & Kruse (2000) all show a negative relationship between company performance and the likelihood of changing top management;
- Most notable asset reductions include closure of plants, sale of periphery assets and/or subsidiary units and divestitures;
- Lay-off of personnel is usually made after a period of remarkable decline as measured by accounting earnings and stock returns.

In terms of financial strategies, Yawson (2005) acknowledges that they constitute the bedrock for a sustainable recovery. "Evidence in prior studies suggests that a firm can recover from a performance shock by properly evaluating its cash generation strategies to ensure the availability of funds to sustain regular operations" (Yawson, 2005: 5). Firms can increase their cash flows by increasing sales revenue, reducing dividend payments and controlling operating costs. Pant (1987) shows that revenue generation strategies account for most profit turnarounds.

A less common financial turnaround action is the change to the company's capital structure. An increase in debt can improve liquidity and provide incentives for management to improve performance but it is unlikely that a company experiencing a performance shock will have adequate access to the capital markets. It is more likely

to find that such companies will repay their debt and, most importantly, negotiate conversions of debt into equity to reduce interest payments.

Scherrer (2003) provides the following guidelines to decide which strategy to use at what time:

1. Mature businesses use retrenchment and efficiency strategies, not product/marketing refocusing;
2. Businesses with low capacity utilization should pursue cost-cutting strategies;
3. Businesses with high capacity utilization should pursue cost-cutting strategies (refocusing);
4. Businesses with high market share should pursue revenue generating strategies and product/market refocusing.

This section provided an overview of more recent research on the content of turnaround strategies. Paragraph 3.5.2 summarises concrete actions mentioned in these studies and which were considered in the analysis of the sample frame.

3.5 Analysing turnaround management

This section provides pointers from previous research that should be considered when engaging in turnaround analysis. The first consideration is the information that should be analysed during turnaround management. This section is then concluded with a summary of concrete turnaround actions to consider when analysing turnaround situations in an *ex post* manner; as this study will do.

3.5.1 INFORMATION REQUIREMENTS FOR TURNAROUND MANAGEMENT

Fredenberger, Lipp and Watson (2001) surveyed 100 turnaround managers to find out what information they require when engaging in turnaround management. Fredenberger et al (2001) base the importance of such a study on the fact that the decline of most companies lies within management's control (see paragraph 3.4.1.1). i.e. "managers' failure to monitor critical information and react on it". The objective of their study was therefore to explore what turnaround managers do that previous management was unable to do – use information effectively to achieve a turnaround.

The following table reflects the most important information requirements as per Fredenberger et al's (2001) findings. The categories are shown in order of relative importance as indicated by the respondents:

1. Financial analysis
– Balance statements – Income statements
2. Working capital analysis
– Cash-flow statements of which weekly and monthly are most important – Aging analysis of accounts receivable – Ageing analysis of notes receivable – Inventory turnover and inventory ABC classification – Aging analysis of accounts payable – Analysis of all secured debt – Lender availability
3. Market analysis
– Gross margin percentage per product line – Gross margin percentage per product or model – Gross margin amount and percent profitability per customer – Cumulative gross margin amount per customer/region or channel – Sales dollars per employee
4. Cost analysis
– Direct and indirect labour compensation as a percentage of sales – Product material costs as a percentage of sales – Product material costs per supplier as a percentage of sales
5. Personnel analysis
– Variable and fixed salary expense as a percentage of sales – Per hour or per month comparison for direct and indirect labour employee – Overtime premium per direct and indirect labour employee – Sales and marketing employee compensation as a percentage of sales – Finance and marketing employee compensation as a percentage of sales – Engineering and related employee compensation as a percentage of sales
6. Asset analysis
– Plant related variable and fixed expense as a percentage of sales – Sales dollars per square meter of plant – Capacity utilization for plant and important machinery and equipment
7. Expense analysis
– Sales and marketing expenses as a percentage of sales – Finance and administration expenses as a percentage of sales

- Engineering and/or research and development as a percentage of sales
- Warranty expense as a percentage of sales

Table 11: Areas of analysis during turnaround management (Source: Fredenberger et al, 2001)

Of the seven report types, turnaround managers consider financial and working-capital reports most important at the beginning of a turnaround engagement. However, respondents felt that all seven types of reports are either directly or indirectly used to improve cash flows during a financial crisis.

Respondents preferred monthly reports for all categories except for working capital analysis where weekly cash flow statements and other cash-related feedback were required. In all cases reporting had to be provided per cost center or business unit or to a degree of more detail. As to be expected, current information is far more important than information about the past or planning information.

Of importance is Fredenberger et al's (2001) finding that the information needed to perform a turnaround analysis at the start of a turnaround engagement, is not available at the start. This was specifically one of the hypotheses tested and a statistically significant result showed a discrepancy between the information requested by turnaround managers and what could be provided.

3.5.2 SUMMARY OF TURNAROUND ACTIONS

This section provides a summary of the turnaround actions identified in the literature research. No universal categories exist to classify turnaround actions. This was evident from the various classifications used by Rasheed (1995), Chowdury & Lang (1996) and Yawson (2005) as outlined in paragraph 3.4.3. Combining and rationalising the classifications used by these researchers – as well as Pant (1987) – resulted in the following turnaround categories:

Abbreviation	Category	Description
TL	Top line effect	Typical growth-based actions focusing on improving sales and/ or gross margin
NI	Net income effect	Typical cost-cutting actions focusing on reducing expenses
BS	Balance sheet or owners' equity effect	Typical actions focusing on increasing/reducing owners benefits or reducing assets as a means of generating cash flow

Table 12: Categories for turnaround actions

The following table uses the categories from Table 12 to group the turnaround actions identified during the literature research:

Category	Objective	Action	Source**
TL	Increase sales revenue	– Increase product or service sales – Increase sale of inventory	Pant (1987)
TL	Provide new revenue streams	– Buying a company with your troubled company by securing the capital required against the asset of the new company	Silver (1992)
NI	Control or cut operating expenses	Include: – Centralising financial administration – Salary reductions – Outsourcing of non-core operations – Insurance expenses, etc.	Silver (1992)
NI	Control or cut operating expenses	– Increase employee productivity	Chowdury & Lang (1996)
BS	Generate cash from suppliers or customers	– Reduce receivables – Stretch payables	Pant (1987); Chowdury & Lang (1996)
BS	Generate cash from owners	– Reduce dividend payment – Sell treasury stock	Yawson (2005)
BS	Generate cash from lenders	– Try and raise new debt – Restructure debt repayments – Move from cash flow lenders (banks) to asset lenders (commercial finance) – Negotiate conversion of debt into equity	Yawson (2005); Silver (1992)
BS	Generate cash from own assets	– Sell or lease back fixed assets and office space – Spin-off non-essential assets – Sell slow-paying accounts receivables	Silver (1992)

		- Sell obsolete inventory - Rent out freed-up space	
	Focus turnaround responsibility	- Appointment of new CEO or management team - Appointment of external turnaround specialists	Slatter (1984)

Table 13: Summary of turnaround actions to be considered during sample analysis

** The source column in Table 13 is by no means exhaustive. It provides but one or two references for the reader that can lead to the exploration of several other researchers who share a similar view.

Chapter 4 (see paragraph 4.4) highlights which of the actions in Table 13 were considered during the analysis. The measurement used to analyse the specific action is also discussed in paragraph 4.4.

3.6 The effectiveness of turnaround management

This section considers the results of turnaround studies as found by some of the authoritative researchers in this field mentioned earlier in this section. The focus here is to evaluate the results specifically related to this study's own research questions. Table 14 provides the related research findings.

(1) Research done by:	(2) Sample Size	(3) % performance shocks	(4) % that recovered	(5) Years for recovery measurement
Schendel, Patton and Riggs (1976)	1800	37%	10%	4 years
Bibeault (1982)	4090	27%	33%	4 years ²
Hambrick & Schecter (1983)	770	33%	20%	4 years
Slatter (1984)	2100	20%	25%	Not mentioned
Chowdury & Lang (1996)	1918	8%	18%	2 years

Table 14: Effectiveness of turnaround management (Source: Pandit, 2000)

Columns 3 and 4 in Table 14 provide research findings that correspond to research questions 1 and 2 of this study, viz. the percentage of companies that experienced

² Although Bibeault (1982) did not specify duration for turnarounds, the average elapsed time was 4 years from trough to peak for successful turnarounds (Hambrick et al, 1983)

performance shocks and the percentage of successful recoveries. Column 4 refers to the companies that have experienced performance shocks e.g. in Bibeault's (1982) study 33% of the companies that experienced performance shocks did recover.

"There exists no universal performance measure or threshold level" (Hambrick & Schechter, 1983: 235) and as such Table 14 should be read in conjunction with Table 5 to understand that "performance shocks" and "recovery" differ in interpretation from researcher to researcher. As such in order to compare the findings with research question 3 of this study – time to recover – column 5 was added to Table 14. Column 5 refers to the time allowed by researchers for a company to demonstrate whether recovery did occur. While column 5 refers more to the length of observation time used by the researchers it should be noted that this was not an arbitrarily chosen duration. Based on work from Hofer (1980) and Bibeault (1982) the minimum duration to effect a turnaround was approximated to be three years (while noting the exception in Chowdury & Lang's (1996) research on smaller firms). This is concluded based on the following remarks:

- "The amount of time required for a turnaround is of interest ... Among Hofer's (1980) successful turnarounds, the average elapsed time from trough to peak was three years. The range was one to four years. Among Bibeault's (1982) successful turnarounds, the average time from trough to peak was four years. Bibeault (1982) noted that the time required for a turnaround is a function of the size of the organization" (Hambrick & Schechter, 1983: 235); and
- "Most of the firms that turned around within the period examined, needed at least three years to pull themselves up from the bottom quartile to the top quartile of the industry" (Pant, 1987: 27); and
- "Because Bibeault's (1982) study included firms as large as Memorex, the two-year period used here was judged adequate for observing short-term turnaround for smaller firms" [less than 500 employees] (Chowdury & Lang, 1996: 172).

In terms of time to recovery Yawson (2005) provides a more holistic picture in highlighting that although short-term recovery might be achievable relatively quickly, it does not necessarily equate to sustainable recovery. The positioning and timing of turnaround actions is the base of Yawson's (2005) research. Yawson (2005) does also provide conclusions related to research question four of this study. In this

regard Yawson (2005) provides evidence that changes to revenue growth, financial leverage and operating expenses provide the quickest performance improvements. For longer term sustainable performance improvement Yawson (2005) found that top management changes – e.g. replacing the CEO – and asset reduction result in performance improvement in year 2 and year 3 after the performance shock. Table 13 in addition provides further responses to research question 4.

4. RESEARCH METHODOLOGY

In deciding on the research methodology to use the researcher was guided by similar international research. Pandit (2000) reviewed i) anecdotal studies, ii) large sample studies as well as so called iii) longitudinal studies (e.g. describing the turnaround of a single case). This type of study falls into Pandit's (2000) *large sample studies* category; albeit recognising the limitations – as discussed elsewhere – of using a relatively small sample. Of all the large sample studies reviewed by Pandit (2000), 67% of the researchers relied on secondary data stored in publicly available databases such as the *Standard and Poor's Compustat* database and the *Profit Impact of Market Strategy* database.

A quick overview of the objectives of the studies mentioned in Pandit's (2000) review confirmed that the appropriate research methodology for this study was in fact to use the MBFA database and relying either on quantitative analysis only or on a mixture of quantitative and qualitative analysis. This research is therefore predominantly a quantitative study using the MBFA database as source.

The objective of this research is firstly to identify companies that have experienced a substantial drop in operating performance. It furthermore seeks to analyse objective financial information for these companies. This analysis needed to reveal which companies managed to return to original or improved operating performance as well as which specific turnaround actions were applied in achieving this. Paragraphs 4.1 and 4.2 describe how the researcher identified the companies to consider for this study while paragraph 4.3 details how turnaround and non-turnaround companies were differentiated. Paragraph 4.4 outlines the variables used to analyse which turnaround actions were deployed by the sample companies.

4.1 Data source

The sample of companies was drawn from the MBFA which provides a pool of standardised, objective financial data for all listed companies on the Johannesburg Stock Exchange (JSE). Financial statements go as far back as 1970 while company information such as shareholding and company news is available since 1996.

To control for diversification, which would introduce confounding portfolio effects, the sample only included companies engaged in two “economic groups” as defined by the JSE/FTSE Global Classification System (FGCS). In its selection of industries the researcher was primarily guided by the availability of data as well as international studies for related industries that could be used as benchmark. The two economic groups selected comprise companies belonging to the Basic Industries and General Industrials indexes on the JSE. The sample frame for this research is made up of the 51 companies that belonged to the various sub-sectors (see Table 15 below) within these two economic groups at the time when this research was conducted. This “as-current” approach was necessitated since the JSE changed from the old JSE sector classification to the FGCS in 2002 and it was impossible to map delisted companies back to the FGCS index.

Basic Industries		
Sub-sector	#	Type of companies in sub-sector
Chemicals	4	– Producers of commodity and industrial chemicals, industrial gases, coatings and paints, fibres and films; – Producers of cellular polymers and specialist plastics. Manufacturers of polystyrene and other plastic packaging materials; – Producers of fine chemicals, dyestuffs and chemicals for specialised applications.
Construction and Building Materials	13	– Wholesalers of building materials and timber importers; – Producers of materials used in the construction and refurbishment of buildings and structures and refractory materials; – Constructors of residential buildings; – Constructors of non-residential buildings. Infrastructure contractors and providers of services to construction.
Forestry and Paper	2	– Owners and operators of timber tracts, forest tree nurseries, sawmills; – Producers, converters and merchants of all grades of paper.
Steel and Other Metals	6	– Metal traders or producers of primary non-ferrous metal products, encompassing all processes from smelting to alloying, rolling and drawing; – Steel stockholders or manufacturers of primary iron and steel products, encompassing all processes from smelting in blast furnaces to rolling mills and foundries.

General Industrials		
Aerospace and Defense	0	– Manufacturers and assemblers of aircraft, equipment and aircraft parts primarily used in commercial or private transport; – Producers of components and equipment for the defence industry.
Diversified Industrials	9	– Industrial companies engaged in three, or more, classes of business that differ substantially from each other, no one of which contributes 50%, or more, of pre-tax profit, nor less than 10%.
Electronic and Electrical Equipment	10	– Producers of electrical components and equipment.
Engineering and Machinery	7	– Manufacturers of commercial vehicles, railway rolling stock and heavy agricultural and construction machinery; – Designers, manufacturers and installers of industrial plant and pollution control equipment; – Producers of castings, pressings, welded shapes; fabricators and erectors of structural steelwork; – Engineering companies not classified elsewhere, making or distributing a variety of products.

Table 15: JSE Sectors from where sample-frame companies were selected (Source: No Name, 2002)

Five companies from the sample frame had to be discarded as incomplete data prohibited their further use in the study. The final sample frame equated to 46 companies.

4.2 Sample selection

Data were obtained for the eleven-year period, 1995-2005. The MBFA recorded the chairman's reports and interim reports – called chairman's extracts in the MBFA - since 1996. As the chairman's extracts are an important source of potential reasons why performance shocks occurred, as well as for the discovery of potential recovery strategies, it was decided to consider performance shock occurrences since 1996³.

Chapter 3 was ended with a reference to Hambrick & Schechter's (1983) conclusion on the amount of time required for turnaround to occur, viz.:

³ 1995 is included as the method of identifying performance shocks requires that OPR is above industry average for at least one year prior to the performance shock occurring.

- “The amount of time required for a turnaround is of interest ... Among Hofer's (1980) successful turnarounds, the average elapsed time from trough to peak was three years. The range was one to four years. Among Bibeault's (1982) successful turnarounds, the average time from trough to peak was four years. Bibeault (1982) noted that the time required for a turnaround is a function of the size of the organization.” (Hambrick & Schechter, 1983: 235);

In essence Hambrick & Schechter (1983) found that for mature industrial businesses experiencing performance shocks, the first two years constituted the turnaround situation and the second two years either recovery or failure. Scherrer (2003) lists the time required to reach the final stage – stage 5: return to growth of the business – as taking between 12 and 24 months. Chowdury & Lang (1996) also proposed a 24-month period to be plausible.

With the above guidelines and considering the available data set the researcher decided to discard any company from the sample for which the performance shock occurred in either 2004 or 2005. This signified that at the minimum – for performance shocks in 2003 – there would be two “post-shock” years to analyse recovery efforts.

Similar to Yawson (2005) as well as Denis & Kruse (2000), the *primary selection* criteria sought companies whose ratio of their EBITDA to total assets – the OPR - is above the industry median in one year (1995 to 2002), but the OPR is below the industry median in the following year (1996 to 2003). Yawson acknowledged that simply requiring the OPR to fall below the industry median might result in the inclusion of companies that had a minimal decline in operating performance and therefore not requiring turnaround action. To overcome this Yawson included only the bottom 30 percent of companies in his final sample.

A similar approach to that used by Yawson (2005) was followed to obtain the final sample. A Microsoft Excel function – *quartile* – was used to identify the companies whose OPR values were in the bottom 25% for each year. A company was therefore regarded as having experienced a performance shock only if in the year preceding the shock (T_{-1}) its OPR was above the industry median and in the year of the shock (T_0) its OPR was in the bottom 25%.

Using this approach resulted in a sample of 16 companies (from 46 in the final sample frame) who had experienced a performance shock.

Yawson also cautioned against including firms that may be financially distressed prior to the year of the performance shock: "... such firms might have already embarked on some turnaround actions, rendering the assessment of their impact difficult" (Yawson, 2005: 8). Yawson's (2005) hypothesis in this case was that an OPR above the industry median in year T_{-1} did not provide assurance that the company hadn't already experienced financial distress. To avoid this possibility this study combined the distance from the OPR to the median in year T_{-1} to the same distance in year T_{-2} . A financial distress situation in year T_{-1} was ruled out only where the total of the two distances was positive⁴. Four of the 16 companies satisfied this condition; two of the companies eventually achieving turnaround whilst the other two did not.

Due to the small sample size it was decided to lessen this condition as this would have reduced the sample to 12 companies only (and the successful turnarounds to four companies only). This is noted as a limitation of this study.

4.3 Turnarounds vs. Non-turnarounds

Each of the 16 companies' OPR was tracked for at least two years – or more, data permitting – after T_0 . The same Microsoft Excel function – *quartile* – was used to identify successful turnarounds. A company whose OPR returned to the upper 25% of the values in a year – tracked from years T_{+1} to T_{+4} – was considered a "good" turnaround. A company whose OPR returned to above the industry median but below the upper 25% was considered an "ordinary" turnaround. The "good" and "ordinary" classification was used in this study to comment on whether a TA company recovered to levels better than those prior to the performance shock.

Figure 4 shows the OPR per year for the 16 sample companies. Column 2 indicates whether the company did achieve a turnaround ("TA") or a non-turnaround ("NTA"). Column 3 indicates the year that the performance shock occurred (T_0). Figure 4 should be studied using the following legend:

⁴ This condition was ignored for new ventures that started in year T_{-1} .

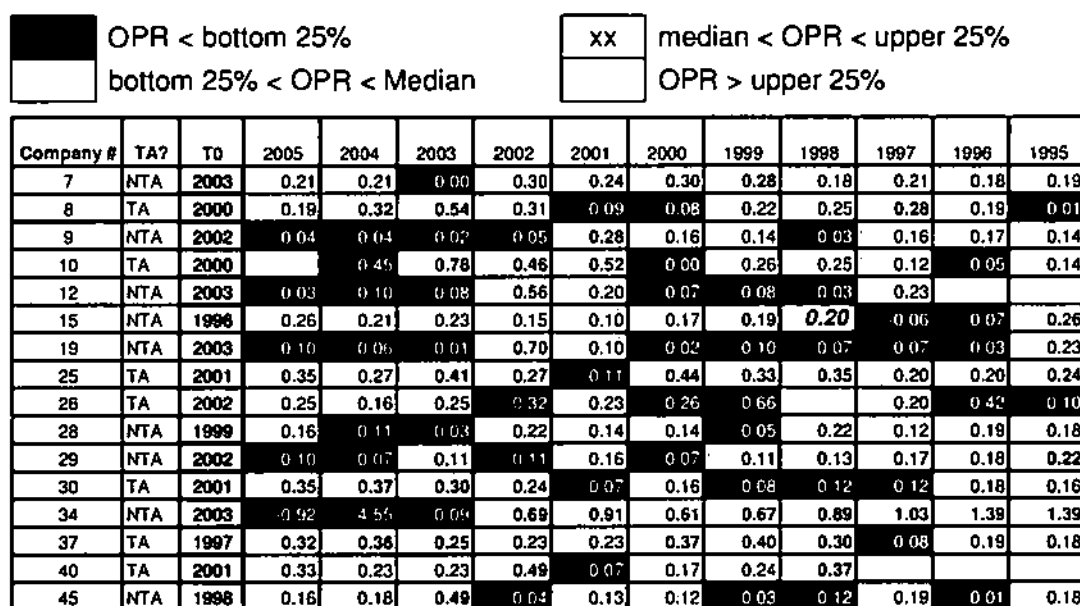


Figure 4: OPR per year for sample companies

A number of companies represent the opportunity to study two performance shocks during the timeframe e.g. company #12 experienced a performance shock in 2003 as well as in 1998. The approach for such companies was to rather use the performance shock year for which two preceding years of OPR data was available; in order to test for existence of crisis prior to T_0 . Where ambiguity still existed – e.g. company #26 – the performance shock year was used that posed the largest probability of studying a successful recovery (as seen by visually inspecting Figure 4).

Also note that in Figure 4 blank cells without an OPR value point to data not being available for that company in that year.

Addendum B provides a similar breakdown to Figure 4 for the final sample frame (N=46).

4.4 Measuring turnaround actions

Paragraph 3.5.2 outlined the turnaround actions as encountered in the literature research. In deciding which variables to use to best represent a specific turnaround action, the researcher aligned this study primarily with those researchers who used OPR as performance shock and recovery measure (see Table 5). The research of Yawson (2005) as well as Chowdury & Lang (1996) bears particular resemblance. The measures advocated by these researchers were tested against Table 12 to ensure that all turnaround categories were covered. These measures were tested against the relevant theory in chapter 2 to determine the extent of profit and liquidity measures covered. At the hand of this comparison it was decided to also include the quick ratio as a variable. Table 16 also shows the specific MBFA line items making up the formula which was used to calculate each variable. This enhances the reproducibility of the analysis.

The following variables were used in this study to measure the extent of turnaround actions applied:

#	Table 12 Category	Variable	Measurement	MBFA line items ⁵
1	TL	Δ in sales level	Turnover / Gross sales	L52 = Variation in turnover
2	NI	Cost of goods	Cost of sales / Turnover	L53 / L51
3	NI	Operating expenses	(Gross profit – Operating profit) / Turnover	[(L51 – L53) – L54] / L51
4	NI	Employee productivity	Turnover / No of ee's	L51 / L131
5	BS	Inventory level	Inventory / Turnover	L26 / L51
6	BS	Newness of plant	Net book value / Gross book value of plant & equipment	(L12 – L13) / L12
7	BS	Plant & equipment level	Δ in gross book value of plant and equipment	(L12 _t – L12 _{t-1}) / L12 _{t-1}
8	BS	Receivables level	Receivables / Turnover	L27 / L51
9	BS	Dividend level	All dividends / Net income	(L80 + L81) / L72

⁵ Addendum A provides a description of the MBFA line items used in this study

10	BS	Financial leverage	Long term debt / Total assets	L24 / L40
11	BS	Quick ratio	Quick assets / Current liabilities	(L27 + L28 + L29) / L37

Table 16: Variables to measure specific turnaround actions (Source: Various)

In addition to the variables in Table 16 the researcher also used the so-called “chairman’s extract” from the MBFA. The chairman’s extract contains the chairman’s interpretation of the current year results as well as his/her outlook for the future and actions proposed to meet the stated outlook.

The chairman’s extract was analysed for each company in the sample for the years T_0 and T_{+1} . The chairman’s extracts were analysed in an attempt to highlight any specific turnaround actions mentioned. These were cross-referenced to the variables in Table 16 and recorded if not contained in Table 16.

5. RESEARCH RESULTS

This chapter covers the results of this research. Descriptive statistics resulting from the analysis are provided in section 1. Section 2 focuses on the results relating to research questions 1, 2 and 3. The focus of section 3 is to highlight the actions employed by successful TA companies; thus responding to research question 4.

5.1 Descriptive statistics

Table 17 represents the annual distribution of the sample firms in the year of the performance shock. Although performance shocks occurred in each of the years⁶, Table 17 does show an increasing pattern in this industry since 1996.

Year	No of companies experiencing performance shocks	% of total companies
1996	1	6.3%
1997	1	6.3%
1998	1	6.3%
1999	1	12.5%
2000	2	18.8%
2001	3	18.8%
2002	3	18.8%
2003	4	25%

Table 17: Annual distribution of performance shocks

Whilst this distribution differs from that in Yawson's (2005) study it is acknowledged that Yawson used a significantly larger sample size (N=269). Yawson's (2005) study found the occurrence of performance shocks ranging from a minimum of 8.18% per year up to a high of 16.73%.

Figure 5 depicts the percentage of companies who experienced performance shocks and managed to turnaround (TA) as well as those that did not (NTA).

⁶ As per discussion in chapter 4, any performance shocks occurring in 2004 and 2005 were ignored.

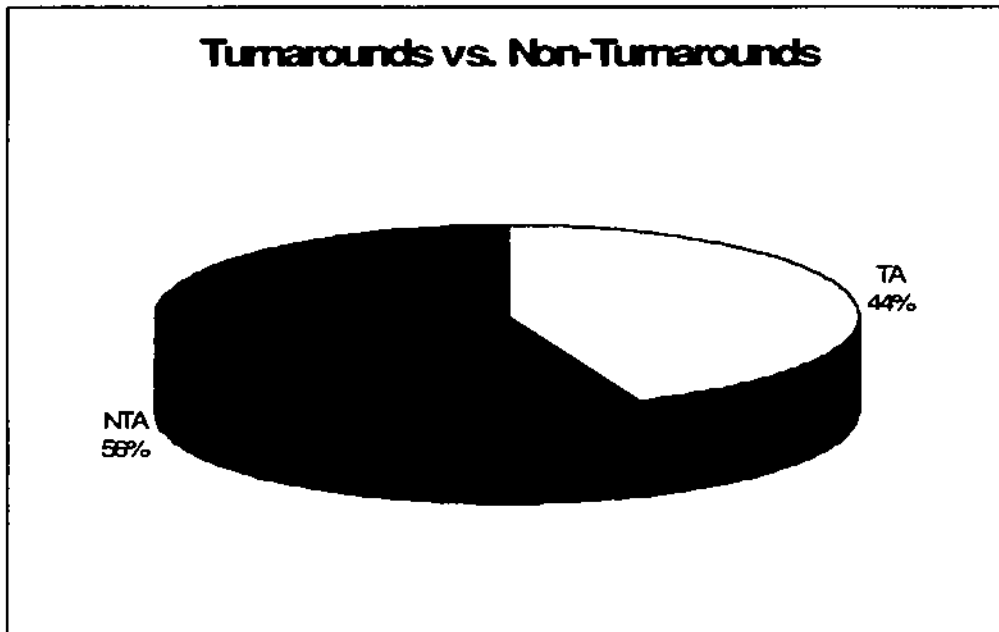


Figure 5: Turnaround survival rate

At this point it is worthwhile recalling the definition of NTAs used in this study viz. companies that – over a minimum 3-year post-shock period – did not reach an above industry median operating performance level as was the case prior to the performance shock. In contrast to Yawson's (2005) findings none of the NTA companies in our sample ceased to exist (8.2% of companies in Yawson's (2005) study ceased to exist).

The average OPR - when averaging the OPRs for all the sample companies over all the years – equates to 17.72%. The equivalent median OPR is of the same magnitude viz. 17.55%. The OPR range extends from a minimum of negative 91.64% to a maximum of positive 90.9%. This stands in extreme contrast to Yawson's findings of negative 14.0% (lowest) and negative 6.7% (highest); albeit recognising that this 11-year study period does pose more opportunity for companies to reach highs (and lows) than Yawson's (2005) 8-year study period.

The diverse nature of the sample companies is further highlighted by considering the reported number of permanent employees working at these companies. While the average number of employees equates to approximately 6,400 the range of

employees for the 16 companies over the 11-year period extended from as low as 119 to almost 50,000 employees.

5.2 Operating performance and speed of recovery

Table 18 (Panel A) presents the operating performance of the sample firms over a seven-year period covering the year of the performance shock (T_0), the three-year period prior to the shock (T_{-1} , T_{-2} , T_{-3}) as well as the three years after the shock (T_{+1} , T_{+2} , T_{+3}). A paired samples t-test was used in Panel B of Table 18 to determine whether the OPR had changed significantly from the year prior to the performance shock through to year T_{+3} . The comparison was done with respect to OPR values in year T_0 . The t-values show a significant difference in the average OPR for year T_{-1} when compared to year T_0 as well as for year T_{+3} when compared to T_0 . No statistical difference existed in the means for years T_{+1} and T_{+2} when compared to T_0 .

Panel A: Level of operating performance					
OPR per year	Median	Average			
Performance in year T_{-3}	0.16	0.16			
Performance in year T_{-2}	0.18	0.19			
Performance in year T_{-1}	0.25	0.32			
Performance in year T_0	0.05	0.01			
Performance in year T_{+1}	0.14	0.16			
Performance in year T_{+2}	0.18	0.14			
Performance in year T_{+3}	0.24	0.29			
Panel B: Change in operating performance					
			Paired samples test of means		
Change in OPR	Median	Average	t-value	df	Sig. (2-tailed) ⁷
Change in T_{-1} to T_0	-0.20	-0.31	-5.974	15	0.000
Change in T_0 to T_{+1}	0.14	0.16	-0.475	15	0.641
Change in T_0 to T_{+2}	0.18	0.14	1.459	15	0.165
Change in T_0 to T_{+3}	0.24	0.29	4.064	11	0.002

Table 18: Results from paired samples test: Analysing operating performance

⁷ Significance was measured at the 95% confidence level

Table 19 tracks the progress for each company in the sample that did achieve a turnaround. The color scheme has the same meaning as used in Figure 4 with the green cells depicting a GTA and the white cells – in the last 4 columns - an OTA. Table 19 shows that turnarounds for all companies have only been achieved by year T_{+3} . By year T_{+4} some of the companies' performances had declined again to below the industry median. Table 19 complements the response to research question 3, viz. duration required to achieve a turnaround, which is discussed in chapter 6.

Comp#	TA or NTA?	T_{+1}	T_{+2}	T_{+3}	T_{+4}
8	TA	0	0	1	1
10	TA	1	1	1	1
25	TA	1	1	1	1
26	TA	1	0	1	No Data
30	TA	1	1	1	1
37	TA	1	1	1	1
40	TA	1	1	1	1
% TA not yet realised		14%	14%	0%	0%
% TA realised but slipped below median		0%	14%	0%	17%
% of AVERAGE TA achieved in Year		43%	14%	57%	17%
% of GOOD TA achieved in Year		43%	57%	43%	67%
% of companies that realised TA		86%	71%	100%	83%

Table 19: Quality and speed of recovery for all TA companies

The following section elaborates on the results from the turnaround actions that were analysed.

5.3 Turnaround actions

The analysis of turnaround actions that were applied by the sample companies revolved around the 11 variables mentioned in Table 16. Two specific areas of analysis were of interest, viz.:

1. For TA companies, how did the actions applied by TA companies after the performance shock differ from their application before the performance shock?; AND
2. How did the actions applied by TA companies differ from those applied by NTA companies?

The first area of analysis can be regarded as the “hygiene factors” of turnaround management i.e. these are actions that were analysed for TA companies only but could also have been applied by NTA companies (the latter were not analysed). It is therefore turnaround actions that were applied after the performance shock – and therefore rightly assumed to be contributors to turnaround – but that did not necessarily differentiate TA from NTA companies. These actions are reflected in the results shown in Table 20.

An independent samples t-test was used to compare the before and after performance shock years. The change from year T_{-1} to T_0 formed the basis of comparison and this was compared subsequently to different post-shock periods, viz.:

- the change in value of the variable from year T_{-1} to $T_0 \rightarrow$ compared to ...
 - ... the change in value of the variable from year T_0 to T_{+1} ; AND also
 - ... the change in value of the variable from year T_0 to T_{+2} ; AND also
 - ... the change in value of the variable from year T_0 to T_{+3} .

Data sets for multi-year periods e.g. from T_0 to T_{+3} , were obtained by using the value of the variable in the latter year and deducting it from the former year.

Table 20 shows the results of this comparison:

Var#	TA companies: comparing change in T_{-1} to T_0 with ...	Years	t-value	DF	Sig (2tail)	t-stat @ $\alpha=10$
1	Δ in Turnover for period ->	T_0-T_{-3}	1.184	10	0.264	1.37
	Δ in Turnover for period ->	T_0-T_{-2}	1.852	10	0.094	1.37
	Δ in Turnover for period ->	T_0-T_{-1}	0.480	10	0.642	1.37
2	Cost of sales Δ for period ->	T_0-T_{-3}	-1.407	10	0.190	1.37
	Cost of sales Δ for period ->	T_0-T_{-2}	-0.841	10	0.420	1.37
	Cost of sales Δ for period ->	T_0-T_{-1}	-1.755	10	0.110	1.37
3	Operating expense Δ for period ->	T_0-T_{-3}	0.618	10	0.550	1.37
	Operating expense Δ for period ->	T_0-T_{-2}	-1.210	10	0.254	1.37
	Operating expense Δ for period ->	T_0-T_{-1}	-0.691	10	0.505	1.37
4	EE productivity Δ for period ->	T_0-T_{-3}	0.758	8	0.470	1.40
	EE productivity Δ for period ->	T_0-T_{-2}	0.588	8	0.573	1.40
	EE productivity Δ for period ->	T_0-T_{-1}	-0.448	8	0.666	1.40
5	Inventory level Δ for period ->	T_0-T_{-3}	0.152	10	0.882	1.37
	Inventory level Δ for period ->	T_0-T_{-2}	-0.034	10	0.974	1.37
	Inventory level Δ for period ->	T_0-T_{-1}	0.554	10	0.592	1.37
6	Net book value of P&E Δ for period ->	T_0-T_{-3}	-0.226	12	0.825	1.36
	Net book value of P&E Δ for period ->	T_0-T_{-2}	-0.424	12	0.679	1.36
	Net book value of P&E Δ for period ->	T_0-T_{-1}	-0.926	12	0.373	1.36
7	Gross book value of P&E Δ for period ->	T_0-T_{-3}	1.260	12	0.231	1.36
	Gross book value of P&E Δ for period ->	T_0-T_{-2}	1.301	12	0.218	1.36
	Gross book value of P&E Δ for period ->	T_0-T_{-1}	1.092	12	0.296	1.36
8	Debtors level Δ for period ->	T_0-T_{-3}	-2.357	10	0.040	1.37
	Debtors level Δ for period ->	T_0-T_{-2}	-0.575	10	0.578	1.37
	Debtors level Δ for period ->	T_0-T_{-1}	-0.912	10	0.383	1.37
9	Dividend level Δ for period ->	T_0-T_{-3}	2.503	10	0.031	1.37
	Dividend level Δ for period ->	T_0-T_{-2}	1.837	10	0.096	1.37
	Dividend level Δ for period ->	T_0-T_{-1}	0.964	10	0.358	1.37
10	Financial leverage Δ for period ->	T_0-T_{-3}	0.236	12	0.817	1.36
	Financial leverage Δ for period ->	T_0-T_{-2}	0.806	12	0.436	1.36
	Financial leverage Δ for period ->	T_0-T_{-1}	0.705	12	0.494	1.36
11	Quick assets Δ for period ->	T_0-T_{-3}	0.717	12	0.487	1.36
	Quick assets Δ for period ->	T_0-T_{-2}	0.028	12	0.978	1.36
	Quick assets Δ for period ->	T_0-T_{-1}	0.186	12	0.856	1.36

Table 20: Results of independent samples test: TA companies compared in years after and one year prior to performance shock

The statistical significant differences in Table 20 are emphasised through the shaded cells. Statistical significance was measured i) for the difference in the means between the data sets under comparison (two-tail t-test) as well as ii) for greater-than or smaller-than differences in the means (one-tail t-test). From table 20 the following statistical significant differences are evident when compared to the base year T_{-1} to T_0 (all significances are at the 90% confidence level unless otherwise indicated):

- Turnover variation was different in the period T_0 to T_{+2} ;
- Cost of sales was smaller in all post-shock periods except T_0 to T_{+2} ;
- Debtors level was different only in the period T_0 to T_{+3} (at 95% confidence level);
- The dividend level was different in all post-shock periods except T_0 to T_{+1} (at 95% confidence level for period T_0 to T_{+3}). Contrary to possible expectation the difference was such that the dividend level was greater (not smaller) than the level in the base year.

The second area of analysis revolved around those actions that differentiate TA from NTA companies. An independent samples t-test was selected to compare the TA and NTA companies. For each of the eleven variables the following two data sets were compared:

1. the change in value of the variable for TA companies from year T_0 to T_{+1} , compared to →
 - ... the change in value of the variable for NTA companies from year T_0 to T_{+1} .
2. the change in value of the variable for TA companies from year T_0 to T_{+2} , compared to →
 - ... the change in value of the variable for NTA companies from year T_0 to T_{+2} .
3. the change in value of the variable for TA companies from year T_0 to T_{+3} , compared to →
 - ... the change in value of the variable for NTA companies from year T_0 to T_{+3} .

Table 21 shows the results of this comparison:

Var#	TA versus NTA comparison	Years	t-value	DF	Sig (2tail)	t-stat @ $\alpha=10$
1	Δ in Turnover for period ->	T_0 to T_{+3}	-0.329	9	0.750	1.38
	Δ in Turnover for period ->	T_0 to T_{+2}	0.486	13	0.635	1.35
	Δ in Turnover for period ->	T_0 to T_{+1}	-0.841	13	0.533	1.35
2	Cost of sales Δ for period ->	T_0 to T_{+3}	-1.198	9	0.262	1.38
	Cost of sales Δ for period ->	T_0 to T_{+2}	-0.855	13	0.408	1.35
	Cost of sales Δ for period ->	T_0 to T_{+1}	-0.453	13	0.658	1.35
3	Operating expense Δ for period ->	T_0 to T_{+3}	0.530	9	0.609	1.38
	Operating expense Δ for period ->	T_0 to T_{+2}	0.315	13	0.758	1.35
	Operating expense Δ for period ->	T_0 to T_{+1}	-0.906	13	0.381	1.35
4	EE productivity Δ for period ->	T_0 to T_{+3}	0.384	8	0.711	1.40
	EE productivity Δ for period ->	T_0 to T_{+2}	0.643	12	0.416	1.36
	EE productivity Δ for period ->	T_0 to T_{+1}	0.191	12	0.852	1.36
5	Inventory level Δ for period ->	T_0 to T_{+3}	0.498	9	0.630	1.38
	Inventory level Δ for period ->	T_0 to T_{+2}	-1.118	13	0.284	1.35
	Inventory level Δ for period ->	T_0 to T_{+1}	0.206	13	0.840	1.35
6	Net book value of P&E Δ for period ->	T_0 to T_{+3}	-0.311	10	0.762	1.37
	Net book value of P&E Δ for period ->	T_0 to T_{+2}	-0.653	13	0.525	1.35
	Net book value of P&E Δ for period ->	T_0 to T_{+1}	-1.331	13	0.206	1.35
7	Gross book value of P&E Δ for period ->	T_0 to T_{+3}	1.417	10	0.187	1.37
	Gross book value of P&E Δ for period ->	T_0 to T_{+2}	0.861	13	0.405	1.35
	Gross book value of P&E Δ for period ->	T_0 to T_{+1}	0.402	13	0.694	1.35
8	Debtors level Δ for period ->	T_0 to T_{+3}	-1.343	9	0.212	1.38
	Debtors level Δ for period ->	T_0 to T_{+2}	-0.121	13	0.908	1.35
	Debtors level Δ for period ->	T_0 to T_{+1}	-0.344	13	0.736	1.35
9	Dividend level Δ for period ->	T_0 to T_{+3}	2.198	9	0.056	1.38
	Dividend level Δ for period ->	T_0 to T_{+2}	2.622	13	0.021	1.35
	Dividend level Δ for period ->	T_0 to T_{+1}	1.662	13	0.121	1.35
10	Financial leverage Δ for period ->	T_0 to T_{+3}	0.331	10	0.747	1.37
	Financial leverage Δ for period ->	T_0 to T_{+2}	0.919	14	0.374	1.35
	Financial leverage Δ for period ->	T_0 to T_{+1}	1.002	14	0.333	1.35
11	Quick assets Δ for period ->	T_0 to T_{+3}	0.469	10	0.649	1.37
	Quick assets Δ for period ->	T_0 to T_{+2}	1.128	14	0.278	1.35
	Quick assets Δ for period ->	T_0 to T_{+1}	3.465	14	0.004	1.35

Table 21: Results of Independent samples test: TA vs. NTA companies in years after performance shock

As previously, the statistical significant differences in Table 21 are emphasised through the shaded cells. From Table 21 the following statistical significant differences are evident when comparing TA and NTA companies over the same post-

shock period (all significances are at the 90% confidence level unless otherwise indicated):

- The gross book value of TA companies was found to be greater than the gross book value of NTA companies over the period T_0 to T_{+3} ;
- The dividend level of TA companies was different to that of NTA companies in all post shock periods except T_0 to T_{+1} (in period T_0 to T_{+2} at the 95% confidence level);
- The quick asset ratio of TA companies was different to that of NTA companies in the period T_0 to T_{+1} (at 99% confidence level).

In addition to statistical analysis this research also analysed the chairmen's extracts for all sample companies. The following section provides the results of this analysis.

5.3.1 QUALITATIVE RESULTS FROM CHAIRMEN'S EXTRACTS

The chairmen's extracts for all the companies in the sample – except two companies whose weren't available – were analysed for the years T_0 and T_{+1} . These extracts were analysed with the following mindset:

- To look for evidence of top management changes (including changes to members of the board);
- To look for evidence supporting any of the 11 turnaround variables used in this analysis;
- To identify any other turnaround actions not currently represented by the 11 turnaround variables.

The results of this analysis are summarised in Figure 6. The first turnaround action not covered by the 11 variables relates to top management changes. In 86% of the cases ($N=14$) the chairman's extract did mention the resignation or introduction of new top management and/or board members. In several cases the exact designations were mentioned and these included replacing Chief Executive Officers, Chief Financial Officers as well as Managing Directors.

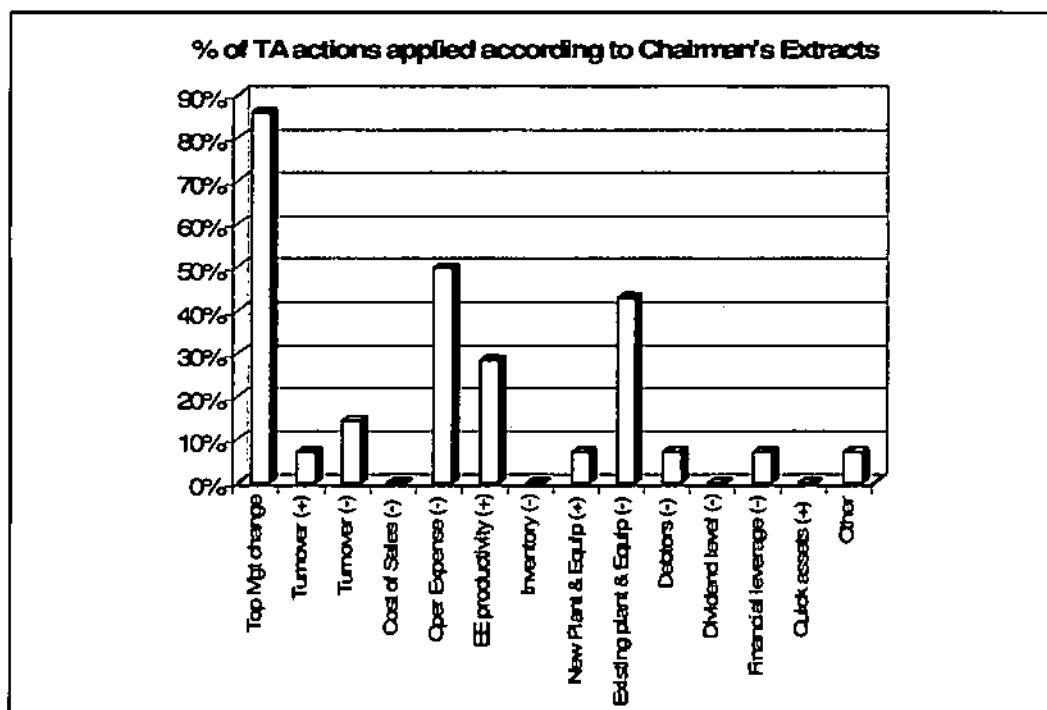


Figure 6: Results from analysis of chairmen's extracts

Except for one company, all other actions mentioned could be relayed to the 11 variables used in this study. The exception relates to one company whose largest portion of turnover was earned in foreign currency. The specific turnaround action mentioned was to introduce forward cover for all foreign exchange transactions made. The chairman's extract does mention the exorbitant cost of this action. However this action was instituted in the year where the Rand-Dollar exchange rate moved from the range of R13,00 to the range of R7,00 to the dollar and it was believed that forward cover did contribute towards the company's recovery.

In all cases categorised under "existing plant and equipment (-)" in Figure 6, the specific action mentioned was the selling of non-performing business units or subsidiaries. Also note that in such instances if "reduction in operating expenses" were explicitly mentioned as an action pursued by the company, it was noted as a separate action reflected in Figure 6.

6. DISCUSSION OF RESULTS

The discussion in this chapter is structured around the research questions that this study sought to answer. It discusses the results for research questions 1 to 4.

6.1 Research question 1

From paragraph 1.2.1 research question 1 is recalled as being:

- How many companies that experienced performance shocks did manage to turn around their operations?

Figure 5 provides the answer to this question as being 44%. This percentage is higher than any of the research quoted in Table 14 and is believed to be directly attributable to the inherent bias of a small sample. To put the sample size into perspective, the smallest sample of performance shock companies analysed by researchers in Table 14 is 153 companies by Chowdury & Lang (1996); a sample almost 10x more than used in this study. Chowdury & Lang (1996) overcame the potential biasedness of multiple industries by concentrating on small and medium companies whose asset bases – they reasoned – should be similar. Other researchers such as Yawson (2005) adopted a cross-industry approach whilst doing a within-industry adjustment for OPR. This is a definite recommendation for further study in this field.

Contemplating the pattern of increasing performance shock occurrences since 1996 as per Table 17, the intuitive thought is that it should actually be a decreasing pattern. Such an expectation is based on the lower interest rate environment in South Africa – coming from peaks in 1998/1999 – and the improved business confidence since the beginning of this decade. However a closer scrutiny of the companies making up the sample reveals the following contributing factors which validate the performance shock increase as per Table 17:

- At least two companies were largely dependent on foreign exchange revenues and the chairman's extract for each of these companies puts – at least partially – the blame on the increasing Rand exchange rate during the 2001 to 2003 period;

- One performance shock company is based in Zimbabwe and the economic woes in that country since 2001 inundated this company too;
- Anecdotes of a less than buoyant South African economy was gathered from the chairmen's extracts e.g. the largest company in the sample recorded the following ... "In South Africa signs of an economic slowdown started to emerge towards the end of 2002 as interest rates remained high and GDP growth dropped below 2% (from company #8's chairman's extract (2002)).

Notwithstanding these externally based contributors the research findings echoed in Table 8 (chapter 3) should be remembered, viz. only 36% of causes of failure could be attributed to external events.

6.2 Research questions 2 & 3

Research question 2 relates to the percentage of performance shock companies that improved on their pre-shock operating performance. In answering this question it is firstly important to decide at which time after the performance shock is "improvement" going to be measured e.g. T_{+1} or T_{+2} , etc. This decision is directly related to research question 3, viz. "How long did it take these companies to reach turnaround?".

Table 18 is the primary source for the response to both questions 2 and 3. The statistical significant difference between T_{-1} and T_0 firstly confirms that the performance shock year has been correctly identified. This is also evident from the OPR change of -0.31 between T_{-1} and T_0 , it being the biggest (negative) difference recorded in the 7 years captured in Table 18.

Table 18 furthermore shows no difference between T_0 and T_{+1} neither between T_0 and T_{+2} . This confirms that – statistically – a turnaround had not yet been achieved in these years. Year T_{+3} is the first statistical different year after the performance shock indicating that this is the year when significant turnaround had occurred. Table 19 – although not statistically tested – portrays the same response viz. only by year T_{+3} had all TA companies reached either a good or ordinary turnaround. This research therefore concludes – in response to question 3 – that statistically significant turnaround is reached in year T_{+3} .

Using Table 19 to measure “improvement” in year T_{+3} , this research concludes as follows in response to question 2:

1. That 100% of the TA companies had reached turnaround by year T_{+3} ;
2. Of these TA companies, 43% managed to be GTAs.**

** : The initial sample frame revealed that 17% of the companies that managed a turnaround were GTAs prior to the performance shock. Thus more companies used the performance shock to improve their operating performance to better levels than before the shock.

6.3 Research question 4

From paragraph 1.2.1 research question 4 is recalled as being: “Which turnaround actions were applied by successful companies?”. The results in paragraph 5.3 respond to research question 4 as follows:

Table 20 highlights the immediate (year T_{+1}) recovery strategy of TA companies as being to protect or re-establish their gross margins (evident from the reduction in cost of sales). The increase in the quick asset ratio – from Table 21 – in the first period points to TA companies being able to better manage their cash components than NTA companies. The fact that this is not evident from Table 20 (no difference before and after the performance shock) alludes to more efficient cash management being a “way-of-life” for TA companies. Without discarding the latter conclusion it should be mentioned that an increase in debtors’ collections was required by TA companies over the three year post-shock period.

These actions viz. re-establishing gross margins and improving cash availability, are in line with the crisis and stabilisation stages of turnaround as advocated by Bibeault (1982) and discussed in Table 10. During these stages the focus is on cash flow and profit improvement.

The fact that other more frequently cited turnaround actions such as reduced operating expenses and asset reduction have not been highlighted as statistically significant, does not allude to these actions not having occurred. The t-values for the

related variables (variable 3 and variable 6 in Table 20) do point to a reduction having occurred, albeit not at the minimum level of confidence expressed in this research.

The results in Table 20 related to the turnover increase in the period T_0 to T_{+2} alludes to some growth options having been followed once crisis and stabilisation was dealt. It does however come as a surprise that the turnover increase does not also roll over to period T_0 to T_{+3} .

The greater level of the plant and equipment's gross book values for TA companies over the period T_0 to T_{+3} (and not for NTA companies) is more a pointer towards the extensive asset selling of NTA companies than an indication of acquisitions by TA companies. The reasoning for this is based on the fact that variable 7 in Table 20 does not provide an indication of significant plant and equipment selling for TA companies before and after the performance shock. It should therefore be deduced that NTA companies sold extensively more plant and equipment assets than TA companies.

As mentioned in paragraph 5.3 the increase in dividend level in the latter periods after the performance shock is somewhat surprising. However the fact that this increase is not evident for the year immediately after the performance shock does offer an explanation in line with other research. The author postulates that the "no-significant-increase" of the first year supports a cash preservation strategy, i.e. the cash needed for crisis and stabilisation is not used to pay dividends. However companies that experienced a performance shock are for various reasons eager to signal their recovery to the market. An increased level of dividend payout once turnaround stabilisation is reached could well communicate this message. To some extent the analysis of the chairmen's extracts supports this postulate as chairmen were quick to communicate a "positive outlook" in the years after the performance shock.

The other finding from the analysis of the chairmen's extracts worth mentioning relates to the change in top management. This turnaround action is supported by virtually all research on turnaround content. It should be noted that the 86%

occurrence also includes NTA companies. As such a top management change during a performance shock period can not be regarded as the silver bullet that will automatically fix all the problems.

6.3.1 CORPORATE LIFECYCLE

In paragraph 2.4 the importance was discussed of considering corporate lifecycle theory during turnaround management. Analysis of the sample companies revealed that all companies except one have been listed on the JSE for 5 or more years prior to the year of the performance shock. The one exception was a company who was listed for 4 years on the JSE when the performance shock took place. It is however acknowledged that a sample company might have existed for several years prior to having been listed. It could not be established for all companies in the sample how long the company existed prior to it being listed. As such the only deduction that this research made was that the sample companies were either in the late growth stage or in the maturity stage of the corporate lifecycle.

Neither the turnaround actions – e.g. financial leverage variable - nor the chairman's extract analysis provided evidence to decide whether the theoretically correct financial risk was matched to the equivalent business risk for a late growth or maturity stage business. This was identified as an area worthy of note for future research.

7. CONCLUSION AND RECOMMENDATIONS

This research revealed that 34.7% of the sample frame companies – over a 10-year study period – did experience at least one performance shock. This is in line with results obtained by international researchers; they indicated a range from 8% to a high of 37% (see Table 14). Of the companies in this research that did go through a performance shock, 44% managed to turnaround. This is relatively high compared with other international research analysed, where the highest turnaround percentage is given as 33%.

Given that the sample analysed consists of either mature or late growth stage companies, it is astounding to acknowledge that more than half of all companies undergoing a performance shock will not provide an adequate return on the assets they are managing for at least three years after the performance shock. On the other hand, opportunities await prudent investors as per conclusion in paragraph 6.2, viz. that those companies that do turnaround are likely to perform at a superior level than before the performance shock.

For the prudent investor this study points to the foremost importance of evaluating the company's liquidity. Debtors levels were highlighted as a differentiator between TA and NTA companies and, although not explicitly, also the level of inventory. The latter is contained in the increased availability of cash evident through the quick asset ratio.

The reduction of operating expenses is an important focus area for turnaround managers as advocated by the majority of researchers in this field e.g. Yawson (2005), Silver (1992), etc. This study did reveal a pattern of reduction in operating costs for TA companies, although not at a statistical significant level. This is contrary to expectation and the researcher postulates that the complexities of reducing personnel in South Africa – generally the largest contributor to operating costs - can lead to this result being different from those obtained in international studies. It will be interesting to note the results of a larger sample analysis in this specific area.

Once the cash-flow crisis is stabilised this research points to two areas of activity, viz. turnover management and asset reduction. The former goes without saying, although interestingly enough this study concurs with other international research in finding that turnover management is not an immediate post-shock focus (focus only in year $T+2$).

The postulate put forward relating to the findings on plant and equipment reduction also differs from intuitive expectation. It was to be expected that TA companies would sell assets to generate cash. It does however seem that liquidity issues were addressed by improving the quick asset ratio; the latter pointing towards being the cause of reduced debtors and stock levels as discussed. Our postulate alludes to great care being required when reducing plant and equipment (as done by NTA companies). Assets seemingly not required today might curb operations to the detriment of the company in a few years time.

Although not the main focus of this study, in this conclusion it would be prudent to consider what actions companies can take to avoid being victims of performance shocks. Contrary to Yawson (2005) who lists financial leverage as being one of the three main focus areas for turnaround management (the others being revenue growth and reduction in operating expense), this study emphasises a “focus-on-the- basics” approach. Companies should primarily guard their liquidity by containing debtors and stock levels. Equally important is the preservation of gross margins through a strong focus on the cost of sales. A focus on these areas can make all other turnaround actions redundant as the performance shock will in all likelihood be avoided.

7.1 Recommendations

The researcher acknowledges that the relative small sample size used in this study did restrain the generalisability of these results. Even though this study had good intentions of ensuring homogeneity through a single industry focus, this did limit the number of companies available for the analysis. It is recommended that future research includes a larger sample size which could be obtained by analysing cross-industry companies whilst using Yawson's (2005) approach to limit industry biasedness.

The second limitation concerns the limited analysis in this study related to the impact of corporate lifecycle theory on turnaround actions. Definite value-add to this field stands to be gained from a comprehensive study on turnaround content in each stage of the corporate lifecycle.

As a final recommendation this study can be used by prudent investors and company owners alike:

- Prudent investors should analyse the extent of the liquidity issues amongst companies that are experiencing a performance shock and seek the short term value-add by managing debtors and inventory levels efficiently. Equally important is the protection of gross margins; a strategy that can be met by discontinuing product lines or customers which lead to the deterioration of gross margins;
- Company owners should ward off corporate raiders by implementing the actions put forward to prudent investors.

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Addendum A:

MBFA Line Items

Please note that all rights to McGregor-BFA (2006) belong to McGregor BFA (Pty) Ltd.

Line 12 : Cost of other fixed assets

- This item contains all other fixed assets, apart from land and buildings, as per line 10, at the original cost price or at the most recent revaluation thereof. Included therein are, inter alia, machinery and plant, vehicles, office equipment, furniture and fittings and any other assets, which are used on a long-term basis in conducting the business of the Group (No investments are included on this line). Capital work in progress is included on this line but excluded from the calculations referred to below **UNLESS** normal depreciation is written off this capital work in progress. (An inflation adjustment to the present book value and the current period's depreciation is disclosed on lines 118 and 119 respectively of the sundry data information section).

Line 13: Total depreciation on other fixed assets

- This item represents the total accumulated depreciation written off other fixed assets since the date of acquisition or the date of the last valuation. (By deducting the figure on line 13 from that on line 12 the book value of other fixed assets at the balance sheet date is obtained).

Line 24: Total long-term loan capital

- This is the total of all loan funds obtained on a long-term basis and therefore not repayable within 12 months of the balance sheet date. The figure is made up by the sum of lines 21, 22 and 23.

Line 25: Net investment in long-term assets

- This is the total of all fixed assets and long-term investments at book value or revalued value, less long-term loan funds. This figure is calculated by subtracting line 24 from line 20.

Line 26: Total stock

- This represents the total of all inventories on hand, which includes raw materials, finished goods, merchandise, consumable stores (including maintenance spares), work in progress (including standing crops) and contracts in progress. The individual types of stock are reflected on lines 132 to 137 in the sundry data information section. (The method of valuation is shown on line 151 in the sundry data information). Please note that "merchandise" above and on line 134 in the sundry information section, includes motor vehicles held by vehicle renting firms because these vehicles are normally only held for periods of 12 months or less. The profits or losses on disposal of these vehicles are dealt with in the standardised income statement as "extraordinary items" on line 61.

Line 27: Debtors

- This represents the total of all outstanding debtors at the balance sheet date. Hire purchase debtors are included in the debtors figure because the Act does not provide for this item to be shown separately and consequently many companies do not differentiate between the two types of debtors. Finance charges earned on the hire purchase debtors are also invariably included in turnover, and no meaningful ratios can therefore be calculated on the return earned on the capital used for hire purchase finance. The debtors are shown net of all provisions for bad debts or unearned finance charges. Debtors for property sold are included in the amount of debtors but are also shown separately on line 156 in the sundry data information section. (Whether or not the debtors are ceded or otherwise encumbered, is shown on line 110 in the sundry data information section).

Line 28: Short-term loans advanced

- This represents all loans and deposits, which appear in the financial statements of the Group under current assets. These must then be accepted as investments made with the intention to convert them into cash within the ensuing twelve months from the balance sheet date. This line can include, inter alia, short-term loans to officers or employees of the Group and also loans, which were originally advanced on a long-term basis, which fall due for redemption within the next twelve months from the balance sheet date. Short-term loans and other amounts owing by associated companies, fellow subsidiaries and other group companies are included on this line. The total amount in respect of fellow subsidiaries and other group companies is also shown on line 143 in the sundry data information section.

Line 29: Cash and bank

- This is the total of the cash on hand and the favourable balances in bank accounts, as reflected under current assets in the financial published statements. Bank overdrafts are not included on this line but are shown on line 34 in the standardised balance sheet.

Line 40: Total assets

- This figure represents the total of all assets employed by the Company or the Group, with the exclusion of intangible assets (line 5) and cost of control of subsidiaries (line 4). This figure is arrived at by adding together lines 14, 19 and 31. Total assets play an important role in the analysis of financial results and will therefore be found in a number of important ratios.

Line 51: Turnover

- This figure represents the total turnover as reflected in the published financial statements of the Company or Group. It may sometimes be reflected as "Revenue" and in the case of life insurance companies the amount used is "Gross recurring premiums." Banking companies do not disclose any form of turnover due to the nature of their business. ("Company" figures are used when the published financial statements are in respect of the Company only).

Line 52 : Variation in turnover

- This figure represents the percentage change in turnover compared with the turnover in the previous period for the Company or Group. Where necessary "Turnover" is annualised to do this calculation. Some companies prefer not to divulge the actual turnover of the Company or the Group. Instead thereof they reflect the percentage increase or decrease of turnover compared with the previous year as the basis. Although of much less value than the actual turnover figure, this figure can nevertheless be used in the calculation of some useful ratios.

Line 53: Cost of sales

- This figure represents the total cost of the turnover for the year (or period) to the Company or Group. Although not all companies divulge this figure as yet, it is so valuable in the analysis of financial results that provision is made for it in the Standardised income statements.

Line 54: Trading profit

- This is the profit of the Company or Group before accounting for interest and other investment income, profit and loss of an extraordinary nature and expenses shown separately in the Standardised income statement on lines 64 to 70. Amounts written off intangible assets and or cost of control of subsidiaries (goodwill) NOT shown in the income statement are added back on line 54 and on line 82 (retained profit) to complete the double entry. All amounts so added back or written off are disclosed on lines 322 (intangible assets written off) and 323 (Goodwill written off) respectively in the general supplementary section.

Line 72: Total income

- This is the total income, i.e. the total of lines 54, 59 and 63.

Line 80: Ordinary dividends

- In terms of the current accounting conventions, only dividends paid during the year under review may be disclosed in the income statement for that year. Our standardised databank started in 1972 and dividends disclosed in the standardised income statement were consistently the total dividend paid and/or declared in respect of the year under review. This procedure is still applied in order that "apples may be compared with apples" in the standardised financial statements and the ratios calculated from this information. Furthermore quite a substantial number of analysts indicated that they are in favour of this continuation of consistency in the standardised databank. Therefore the ordinary interim and any special dividends paid, the final or special dividend declared and to be provided in favour of the various classes of ordinary shareholders in respect of the financial period under review are calculated and shown here. The provision for dividends in respect of the year under review but payable after the year-end, is calculated by us by multiplying the declared or disclosed rate with the number of shares in issue (line 201) at year-end and the amount is included on line 80 of the standardised income statement. Provisions payable after the balance sheet date are deducted on line 82 (to complete the double entry) of the standardised income statement and line 3 (distributable reserves) of the balance sheet, and added on line 36 (provision for dividends) of the balance sheet.

Line 81: Preference dividends

- This is the total of all preference dividends paid, declared or provided, during the financial period under review in favour of all classes of preference shares issued by the Company. Provisions calculated i.r.o. the period under review but payable after the balance sheet date, are added on line 81, deducted on lines 82 (to complete the double entry) and 3 (distributable reserves), and added on line 36 (provision for dividends). (As set out in the note for line 80).

Line 131: Number of employees

- This represents the total number of employees of the Company/Group at balance sheet date. In some cases the average number of employees during the year is disclosed and is used if it is the only available figure.

Addendum B:

Sample Frame Data

Company #	TA/ NTA	To	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
1			0.22	0.18	0.16	0.13	0.10	0.16	0.52	0.04	0.18	0.25	0.17
2			1.09	0.30	0.27	0.28	0.29	0.22	0.20	0.22	0.22	0.24	0.23
3			0.13	0.21	0.11	0.37	0.36	0.38	0.34				
4			0.23	0.27	0.18	0.17	0.15	0.18	0.21	0.29		0.37	0.23
5			0.31	0.31	0.24	0.26	0.24	0.26	0.28	0.27			
6			0.13	0.05	0.20	0.16	0.19	0.18	0.18				
7	NTA	2003	0.21	0.21	0.30	0.30	0.24	0.30	0.28	0.18	0.21	0.18	0.19
8	TA	2000	0.19	0.32	0.54	0.31	0.04	0.08	0.22	0.25	0.28	0.19	0.01
9	NTA	2002	0.04	0.04	0.02	0.05	0.28	0.16	0.14	0.03	0.16	0.17	0.14
10	TA	2000		0.45	0.78	0.46	0.52	0.09	0.26	0.25	0.12	0.05	0.14
11			0.34	0.46		0.41	0.38	0.40	0.34	0.35	0.35	0.35	0.29
12	NTA	2003	0.03	0.10	0.08	0.56	0.20	0.07	0.08	0.03	0.23		
13			0.38	0.28	0.29	0.32	0.35	0.35	0.29	0.27	0.24	0.24	0.20
14			0.23	0.20	0.23	0.11	0.09	0.23	0.18	0.42	0.18	0.24	0.21
15	NTA	1998	0.26	0.21	0.23	0.15	0.10	0.17	0.19	0.20	0.06	0.07	0.26
16			1.24	0.12	0.30	0.36	0.44	0.44	0.33	0.29	0.40	0.34	0.30
17			0.43	0.31	0.29	0.31	0.50	0.10	0.45				
18			0.19	0.26	0.44	0.12	0.06	0.13	0.13	0.17	0.19	0.28	
19	NTA	2003	0.10	0.06	0.01	0.70	0.10	0.02	0.10	0.07	0.07	0.03	0.23
20			0.12	0.12	0.12	0.13	0.14	0.09	0.16	0.19	0.11	0.11	0.13
21			0.81	0.30	0.10	0.15	0.28	0.07	0.03	0.15	0.10	0.06	0.11
22			0.27	0.33	0.56	0.37	0.22	0.29	0.21	0.27	0.47	0.22	
23			0.25	0.19	0.23	0.26	0.19	0.21	0.15	0.20	0.26	0.22	0.23
24			0.30	0.29	0.29	0.18	0.18	0.17	0.19	0.17	0.24	0.23	0.22
25	TA	2001	0.35	0.27	0.41	0.27	0.11	0.44	0.33	0.35	0.20	0.20	0.24
26	TA	2002	0.25	0.16	0.25	0.32	0.23	0.26	0.66		0.20	0.42	0.10
27			0.20	0.14	0.29	0.12	0.26	0.08	0.05	0.04	0.03	0.05	0.14
28	NTA	1999	0.16	0.11	0.03	0.22	0.14	0.14	0.05	0.22	0.12	0.19	0.18
29	NTA	2002	0.10	0.07	0.11	0.11	0.16	0.07	0.11	0.13	0.17	0.18	0.22
30	TA	2001	0.35	0.37	0.30	0.24	0.07	0.16	0.08	0.12	0.12	0.18	0.16
31			0.26	0.28	0.16	0.16	0.16	0.21	0.23	0.24	0.27	0.27	0.27
32								0.09	0.10	0.16	0.05	0.16	0.14
33			0.22	0.18	0.26	0.37	0.18		0.15	0.19	0.29	0.22	0.17
34	NTA	2003	0.92	1.55	0.09	0.69	0.91	0.61	0.67	0.89	1.03	1.39	1.38
35			0.81	0.89	0.17	0.13	0.04	0.00	0.22	0.05	0.03	0.04	0.07
36			0.58	0.52	0.38	0.44	0.31	0.23	0.18	0.23	0.22	0.24	0.26
37	TA	1997	0.32	0.36	0.25	0.23	0.23	0.37	0.40	0.30	0.08	0.19	0.18
38			0.03	0.15	0.22	0.13	0.04	0.13	0.12	0.14	0.11	0.10	0.16
39			0.27	0.19	0.23	0.30	0.21	1.14	0.12				
40	TA	2001	0.33	0.23	0.23	0.49	0.07	0.17	0.24	0.37			
41			0.10	0.42	0.08	0.28	0.22	0.09	0.14	0.24	0.21	0.19	0.10
42			0.18	0.24	0.26	0.21	0.10	0.45	0.35	0.21	0.16	0.17	0.14
43			0.08	0.03	0.12	0.06	0.36	0.09	0.57	0.11	0.09	0.01	0.12
44			0.15	0.09	0.09	0.20	0.16	0.17	0.20	0.20	0.19	0.17	0.14
45	NTA	1998	0.16	0.18	0.49	0.04	0.13	0.12	0.03	0.12	0.19	0.01	0.18
46				0.70	-0.03	1.92	-0.14	0.04	-0.24	-0.18	0.01	-0.66	-0.96