

# **An evaluation of the going concern principle on JSE-listed companies**

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Dissertation accepted in fulfilment of the requirements for the degree **Master of Commerce in Management Accountancy** at the North-West University

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Graduation: June 2023

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## PREFACE

I have long been fascinated by the life cycles of companies. As a lecturer, I try to include relevant and practical examples in my notes for my students and in the lively discussions we have in the financial management subject area when we contemplate and evaluate the strategies of companies, the financing of investments, the reasons why companies run into financial distress, and how these problems may be resolved. Consequently, I've spent decades reading about astounding corporate successes, dismal failures and magnificent recoveries, and my interest was piqued regarding the reasons why some companies fail whilst others succeed, when ostensibly faced with the same economies, markets, products, choices and circumstances. This dissertation is the result of my musings.

Writing a dissertation is an arduous process that cannot be completed without continuous support, motivation and inspiration. I would like to acknowledge the following positive influences on my life and my studies:

- I thank God for giving me the opportunity and the ability to conduct this research.
- This dissertation is dedicated to my parents, Cilliers and Lina Swart, for their unfailing belief in me.
- Thank you to my supervisor, Professor Danie Schutte, for his endless patience, encouragement, guidance and support. Without his expert advice, this dissertation would not have been possible.
- I would especially also like to thank my study-buddies throughout the years it took to complete this dissertation: Thuli, Kim and Carleen. Their constant encouragement, support, and the many sacrificed hours have meant the world to me.
- My most sincere appreciation to my brilliant language editor and fabulous friend, Nikki Groenewald, for the excellent and thorough work done on this dissertation.
- I would also like to express my gratitude to a subject librarian of unequalled dedication and unfailing kindness – thank you, Lezelle Snyman.
- A final heart-felt thank you to my family and friends, for their understanding, love and motivation.

# ABSTRACT

## **An evaluation of the going concern principle on JSE-listed companies**

**Key terms:** Business successes, business failure, bankruptcy, going concern, company performance, failure prediction, financial ratio analysis, Johannesburg Stock Exchange, warning signs, users of financial statements.

Failure prediction has long fascinated investors, managers, and academics. When a company becomes financially distressed or possibly even has to liquidate, the impact and economic costs are significant, and the owners of the company, its management and employees, capital markets, the fiscus, and the general society, all suffer the consequences. Despite the significant amount of research that has taken place over the last century, unexpected business losses continue unabated, and these are even expected to worsen as the rate of technology escalates, and world and economic conditions become increasingly unstable and unpredictable. It is therefore even more important now to identify appropriate indicators that will allow the users of financial statements to distinguish between successful and failed companies effectively and timeously.

The remarkable number of companies that enter business rescue each year, the large number of companies that de-list from the Johannesburg Stock Exchange, and the fact that several companies are forced into liquidation annually, also led to this researcher questioning whether the going concern assumption still deserves its status as an underlying principle of financial accounting. The going concern principle should only be retained for the preparation of annual financial statements if it is relevant and valuable to the users thereof in making economic decisions.

The literature review performed for this dissertation revealed that the majority of past research in a South African context has taken place using a matched-pair sampling technique. However, this design could potentially lead to sampling bias, and the results may be difficult to extrapolate to other entities, small businesses and unlisted companies. Furthermore, the financial ratios which are applied in the United States of America, Europe or Asia, may not be applicable to companies in South Africa, as economic and political conditions, infrastructure and capacity, capital availability, legislation and the application of accounting standards, are vastly different. There is also currently very little agreement and limited research regarding the continued applicability of the going concern assumption as an underlying principle of financial accounting: it is mostly accepted without being questioned.

Based on the gaps that were identified, this study has been designed as an evaluation, through the application of financial ratios, of the going concern principle as it applies to JSE-listed companies. Companies listed (or previously listed) on the Johannesburg Stock Exchange, were classified into three groups: (i) successful, (ii) struggling, and (iii) failed companies. The financial data for a sample of ten companies from each designation were then assimilated and averaged, and financial ratio analysis was applied to the results. The data were averaged to control, to some extent, for size and industry variances. The analysis was furthermore performed for two six-year time periods: 1998 to 2003, and 2013 to 2018. The duration of the time periods was set at six years to determine whether there were any discernible trends or patterns in the financial information or the financial ratios that could assist a decision-maker with distinguishing between successful and failed companies, preferably years in advance of failure occurring. These time periods were also selected to avoid periods where accounting changes (the adoption and implementation of International Financial Reporting Standard in 2005) and economic upheavals (the global recession of 2008 and the COVID-19 pandemic in 2020) may have led to abnormal results and higher-than-normal company failures.

The study revealed that financial ratio analysis remains relevant and useful in the prediction of financial distress and potential failure and that, in a South African context, several financial ratios deliver reasonable predictive results, including the headline earnings per share, return on assets percentage, asset turnover, interest and finance charges as a percentage of long-term interest-bearing loans, operating cash flows-to-current liabilities, annual changes in net income, and the market-to-book ratios. The most significant and remarkably accurate predictor of financial failure, even several years before failure is officially recognised, however, was the Springate-model Z-score. The Springate-model Z-score was able to successfully distinguish between successful and failed companies across all years of both time periods of the empirical analysis, and could significantly improve the economic decision-making abilities of the users of financial statements in future.

The study would further like to suggest that the going concern assumption is no longer required as an underlying principle of financial accounting. Instead, the management and auditors of companies should be tasked with clearly, unambiguously, and responsibly, explaining – with detailed supportive documents which may have been previously unavailable to the general public – why a company is able to continue for the foreseeable future as a going concern. It is hoped that a more demanding legal obligation for a going concern explanation will prevent the users of financial statements from having to ‘predict’ when corporate failure may be imminent, and to be able to make more informed economic decisions using the annual financial statements of JSE-listed companies.

## OPSOMMING

### 'n Evaluasie van die lopendesaak-beginsel van toepassing op JSE-genoteerde maatskappye

**Sleuteltermes:** Besigheidsukses, besigheidsmislukking, bankrotskap, lopende saak, maatskappyprestasie, mislukkingsvoorspelling, finansiële verhoudingsontleding, Johannesburgse Aandelebeurs, waarskuwingstekens, gebruikers van finansiële state.

Vir 'n geruime tyd reeds stel beleggers, bestuurders van maatskappye en akademici daarin belang om finansiële mislukkinge te kan voorspel. Die impak en ekonomiese koste van 'n maatskappy wat in 'n finansiële verknorsing kom of selfs moontlik moet likwideer, is wesenlik, en die eienaars van die maatskappy, sy bestuur en werknemers, kapitaalmarkte, die fiskus en die algemene samelewing, ly almal as gevolg daarvan. Ten spyte van die aansienlike hoeveelheid navorsing wat oor die afgelope eeu plaasgevind het, gaan onverwagte besigheidsverliese onverpoosd voort, en dit sal selfs na verwagting vererger namate die tempo van tegnologiese verandering eskaleer, en wêreld- en ekonomiese toestande al hoe meer onstabiel en onvoorspelbaar raak. Dit is dus nou belangriker as ooit tevore om toepaslike aanwysers te identifiseer wat die gebruikers van finansiële state in staat sal stel om effektief en betyds te onderskei tussen suksesvolle en mislukte maatskappye.

Die merkwaardige aantal maatskappye wat jaarliks tot sakereëding toetree, en die groot aantal maatskappye wat van die Johannesburgse Effektebeurs denoteer, asook die feit dat verskeie maatskappye jaarliks gedwing word om te likwideer, het daartoe gelei dat die navorsers van hierdie studie die toepaslikheid van die lopendesaak-aanname as 'n onderliggende beginsel van finansiële rekeningkunde, bevraagteken. Die lopendesaak-beginsel behoort slegs as 'n beginsel vir die opstel van finansiële jaarstate behou word, indien dit relevant en waardevol is vir die gebruikers van die finansiële state wanneer hulle ekonomiese besluite moet neem.

Die literatuuroorsig wat vir hierdie verhandeling onderneem is, het uitgewys dat die meerderheid van die vorige navorsing wat in 'n Suid-Afrikaanse konteks plaasgevind het, van 'n ooreenstemmende-paar-steekproeftegniek gebruik gemaak het. Hierdie ontwerp kan egter moontlik tot steekproefvoordeel lei, en die resultate kan moeilik wees om na ander entiteite, klein besighede en ongenoteerde maatskappye te ekstrapoleer. Verder mag die finansiële verhoudingsgetalle wat in die Verenigde State van Amerika, Europa of Asië toegepas word, nie noodwendig op maatskappye in Suid-Afrika van toepassing wees nie, aangesien ekonomiese en politieke toestande, infrastruktuur en kapasiteit, kapitaalbeskikbaarheid, wetgewing en die toepassing van rekeningkundige standaarde, hemelsbreed verskil. Daar is tans ook baie min

ooreenstemming en beperkte navorsing oor die voortgesette toepaslikheid van die lopendesaak-aanname as 'n onderliggende beginsel van finansiële rekeningkunde: dit word meestal aanvaar sonder dat dit bevraagteken word.

Gebaseer op die leemtes wat aldus geïdentifiseer is, is hierdie studie ontwerp as 'n evaluasie, deur die toepassing van finansiële verhoudingsgetalle, van die lopendesaak-beginsel van toepassing op JSE-genoteerde maatskappye. Maatskappye wat op die Johannesburgse Aandelebeurs genoteer is (of voorheen genoteer was), is in drie groepe geklassifiseer: (i) suksesvolle, (ii) sukkelende en (iii) mislukte maatskappye. Die finansiële data vir 'n steekproef van tien maatskappye van elke groep is versamel en gemiddeldes vir die groepe bereken, waarna finansiële verhoudingsontleding op die resultate toegepas is. Die gemiddelde syfers vir elke groep is gebruik om, tot 'n mate, verskille as gevolg van verskillende groottes en industrieë, uit te skakel. Die ontleding is verder vir twee tydperke van ses jaar elk uitgevoer: 1998 tot 2003, en 2013 tot 2018. Die duur van die tydperke is op ses jaar gestel om te bepaal of daar enige waarneembare tendense of patrone in die finansiële inligting of die finansiële verhoudingsgetalle is – verkieslik jare voordat mislukking plaasvind – wat 'n besluitnemer sou kon help om tussen suksesvolle en mislukte maatskappye te onderskei. Hierdie tydperke is ook spesifiek gekies om jare te vermy waar rekeningkundige veranderinge (soos die aanvaarding en implementering van “International Financial Reporting Standards” in 2005) en ekonomiese omwentelinge (die wêreldwye resessie van 2008 en die COVID-19-pandemie in 2020) tot abnormale resultate en hoër-as-normale mislukkings van maatskappye kon gelei het.

Die studie het aan die lig gebring dat finansiële verhoudingsontleding steeds relevant en nuttig bly vir die voorspelling van finansiële nood en potensiële mislukkings en dat, in 'n Suid-Afrikaanse konteks, verskeie finansiële verhoudingsgetalle aanvaarbare voorspellingsresultate lewer. Dit sluit in die wesensverdienste per aandeelsyfer, opbrengs op bates-persentasie, bate-omsetverhouding, rente en finansieringskoste as 'n persentasie van langtermyn rentedraende skuld, bedryfskontantvloei-tot-bedryfslaste, jaarlikse veranderinge in netto inkomste, en die mark-tot-boek-verhoudings. Die mees betekenisvolle en merkwaardig akkurate voorspeller van finansiële mislukking, selfs etlike jare voordat mislukking amptelik erken word, was egter die Springate-model Z-telling. Die Springate-model Z-telling was daartoe in staat om suksesvol tussen suksesvolle en mislukte maatskappye te onderskei, oor alle jare van beide tydperke van die empiriese ontleding, en mag daarom die ekonomiese besluitnemingsvermoëns van die gebruikers van finansiële state in die toekoms aansienlik verbeter.

Die studie wil verder voorstel dat die lopendesaak-aanname nie meer as 'n onderliggende beginsel van finansiële rekeningkunde vereis word nie. In plaas daarvan moet die bestuur en

ouditeure van maatskappye verantwoordelik gehou word om op 'n duidelike, ondubbelsinnige en verantwoordelike wyse te verduidelik – met gedetailleerde ondersteunende dokumente wat moontlik voorheen nie vir die algemene publiek beskikbaar was nie – waarom 'n maatskappy daartoe in staat is om vir die afsienbare toekoms as 'n lopende saak voort te bestaan. Daar word gehoop dat 'n meer veeleisende wetlike verpligting vir 'n lopendeszaak-verduideliking sal verhoed dat die gebruikers van finansiële state moet aanhou 'voorspel' wanneer korporatiewe mislukkinge mag gebeur, en sodoende meer ingeligte ekonomiese besluite gebaseer op die finansiële jaarstate van JSE-genoteerde maatskappye sal kan neem.

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# CHAPTER 1 THE RESEARCH PROPOSAL

## 1.1 Introduction

### 1.1.1 Overview of Chapter 1

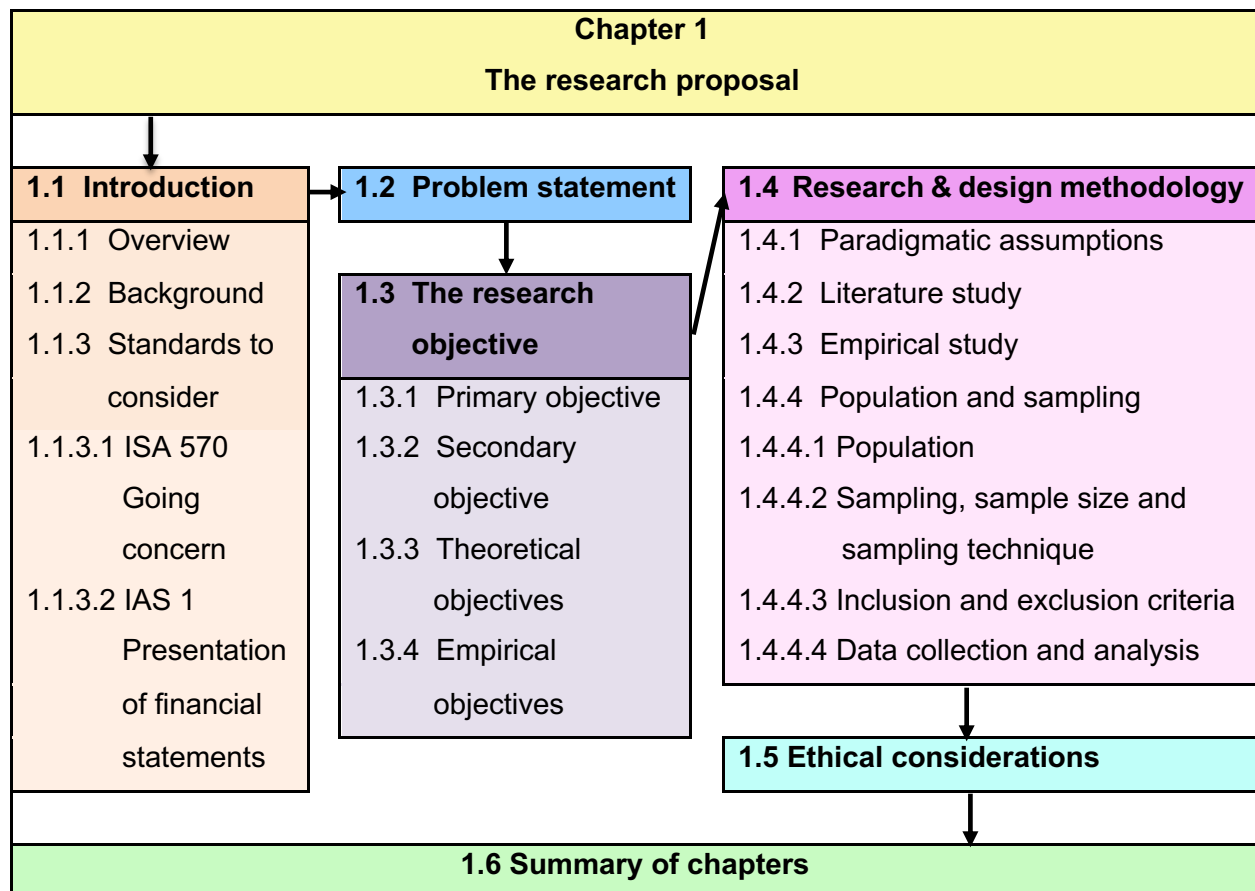
*We are not imprisoned by our circumstances, our setbacks, our history,  
our mistakes, or even staggering defeats along the way.  
We are freed by our choices.*

*Jim Collins*

The purpose of this chapter is to provide the background and motivation for this study and to briefly explain the underlying assumptions and the processes that will be followed in conducting the research. The chapter starts with a review of the goal of financial statements, and considers whether that goal is being achieved when investors, debt providers, analysts and other stakeholders, are still frequently caught unawares by company failures as a result of illiquidity and insolvency. The responsibility of both the directors and the auditors of companies for assessing the entity's going concern status is noted, and the definition of the going concern principle is presented. The chapter also stipulates the accounting standards which may influence the assessment of the going concern status of a company, and sets out the study's problem statement and research objectives. The research design and methodology are briefly outlined, and the ethical considerations are stated. The chapter concludes with an overview of the chapters that comprise this dissertation.

This chapter consists of six sections. Figure 1.1 below presents an overview of the chapter:

**Figure 1-1: Overview of Chapter 1**



(Source: Author compilation)

Section 1.1 provides an introduction and overview of the chapter, which includes a brief look at some of the notable corporate failures in South Africa. The need for appropriate early warning signs to allow companies time to address their problems to prevent liquidation, is explored, and recent developments in research related to the going concern principle are outlined. In Sections 1.2 and 1.3 this study's research problems is described, and the research objectives are explained. Section 5.4 introduces the research and design methodology which will be addressed more comprehensively in Chapter 5 of the dissertation. The ethical considerations for this study are noted in Section 1.5, and the chapter concludes with a summary of all of the chapters of this dissertation in Section 1.6.

## 1.1.2 Background

The goal of financial statements is to provide information about reporting entities that is useful to a variety of stakeholders when making economic decisions (Herz & Pei, 2021:117; IAS Plus,

2021; Correia, 2019:5-5). During the last decade – even before the disastrous effects of COVID-19 became an unfortunate reality – several South African companies and institutions ran into financial trouble. Some of these entities were start-up and inherently risky companies (Cassim, 2021:54; Eisenmann, 2021:78). However, even companies that were previously considered to be successful and profitable businesses, stumbled. Often, the various stakeholders of these companies were thoroughly surprised by the unfortunate turn of events, despite having had access to the published financial information, as well as failure prediction models which have previously shown to be reasonably successful (Abdullah, 2020:1; Mosalakae, 2007:19).

Although corporate failures occur on a daily basis, they only generally become newsworthy when the company involved is well-known, well-respected, has been in existence for a substantial amount of time, has numerous investors (especially pensioners) and employees, or when the failure may be deemed to be an ‘accounting scandal’, where either the management of the company or the auditors of the annual financial statements are considered to be responsible for the losses suffered by the company’s investors and related stakeholders. This might be either through fraudulent activities, or because they did not forewarn the stakeholders of the imminent threat of failure. These companies become the subject of numerous investigative reports, debates and newspaper articles, and their stories often feature on financial magazine covers.

There are several examples of shocking and mostly unexpected corporate failures in South Africa (IoDSA, 2021; Coopers & Lybrand, 1995:2; Kana, 1995:5). These include the near collapse and subsequent restructuring of the established clothing retail brand, Edcon (Maake, 2016; Shevel, 2016), the curatorship of African Bank (Sanchez, 2014) and the decimation of Gijima Holdings’ market value (Ginindza, 2015; Van Zyl, 2015), which were once considered flagships of the new South African economic revolution. Notable liquidations include Masterbond, Regal Treasury Bank, LeisureNet (Roos, 2005:12) and Evraz Highveld Steel and Vanadium (Rowlings, 2016:1).

More recently, the closure and/or collapse of Bakos Brothers (Sibanyoni, 2020), Steinhoff, EOH, Tongaat Hullett, Group 5, Omnia, Aspen, Mediclinic and Brait (IOL, 2020), as well as VBS Bank, Bosasa [African Global Operations], Sharemax (Business Insider SA, 2020) and Comair (Smith, 2022) have led to economic journalists referring to South Africa as ‘uninvestable’, a perception exacerbated by the downgrading of South Africa’s credit rating by Moody’s to junk status (BusinessTech, 2020). Although not a corporate entity, the numerous bailouts of South African Airways using taxpayers’ funds, and its now much debated and heavily criticised business rescue and restructuring, certainly deserve attention as well (Mutele, 2020; Hill, 2016).

According to Ed (2015), *'StatsSA reports that there were 2 500 to 4 000 liquidations each year from 2008 to 2013, and 3 000 to 6 000 entrepreneurs went insolvent over the same period'*. Between 1 January 2021 and 31 December 2021, there were 1 932 reported liquidations in South Africa (BusinessTech, 2022). This statistic for 2021 might seem horrifying, yet it is even more distressing to realise that such a high number of liquidations represents an improvement from 2020, when 2 035 companies failed. Although the COVID-19 pandemic no doubt contributed to these failures, the blame is also being put squarely on the shoulders of poor corporate governance (Jung & Nanda, 2021; SABC News, 2021; Haarbuerger *et al.*, 2020:2).

These collapses and financial problems cost investors, creditors and the South African economy billions of Rand in direct losses, as well as indirect losses or negative financial consequences, e.g. through substantial job losses and a reduction in tax contributions (BusinessTech, 2022; Cassim, 2021:66; Abdullah, 2020:1). According to the Institute of Directors in Southern Africa (IoDSA, 2009), companies are integral to society, particularly as creators of wealth and employment, and because companies are potentially in control of most human and monetary capital; their demise therefore has a ripple effect throughout the economy.

Fullam (2012:54) puts the situation in rather dire terms: *'Since 2007, the Western economies have been shaken by the near collapse of financial markets. Huge losses have been affecting individuals, corporations and nations in a way not seen since the depression of the 1930s. The banking industry is on the point of collapse in a number of countries. Credit is constrained, there is little economic growth and confidence is in short supply. Trust is a thing of the past. The threat of unemployment is real for a growing number of people.'*

Those who lost money as a result of the collapse of hitherto successful, large or profitable companies inevitably question whether there were warning signs that should have indicated the likelihood of the entity's distress, or that might have allowed them to predict that the entity was in financial trouble (Jiang & Jones, 2018:1064; Yee, 2018). They may wonder whether shady accounting practices disguised the true going concern status of the company, or who may be held responsible for the losses suffered by the stakeholders of the company (McClure, 2021; Haarbuerger *et al.*, 2020:1; Altman, 2018:10; Fraser & Morris, 2010:23).

Such questions are to be expected, as the economic cost of business failures, as mentioned above, is significant and not only limited to the company (Ashraf *et al.*, 2019:1; Kurunmäki & Miller, 2013:1100; Charitou *et al.*, 2004:465–466; Deakin, 1972:167). Individuals, whether employees, investors or pensioners, may have much of their personal wealth destroyed (Jung & Nanda, 2021;

Krawcheck & Lowry, 2021; Roos, 2005:12). International capital markets also lose value through the reduced market values of distressed and other firms (Alaka *et al.*, 2018:164; Jiang & Jones, 2018:1064; Liang *et al.*, 2016:561; Alareeni & Branson, 2013:113; Roos, 2005:13), impaired investor and business confidence, which results in less capital availability on markets (Correia, 2019:1-3; Situm, 2014:23; Payne, 2000:5; Kincaid, 1998:27), the inevitable knock-on effect to customers and suppliers of the collapsed firms, and the collapse of large auditing partnerships (Marriage *et al.*, 2018; Charitou *et al.*, 2004:465–466).

The warning signs should have been discernible from the entity's published financial statements. After all, the goal of financial statements is to provide investors, creditors, lenders, and a variety of other stakeholders, with information about the reporting entity that is useful when making economic decisions (IAS Plus, 2021; Accounting-Simplified, 2020; Correia, 2019:5-2; Osadchy *et al.*, 2018:342). The implementation of the International Integrated Reporting Framework between 2012 and 2015 should furthermore have contributed to the quality, comparability and usefulness of financial statements, and ought to have driven improved financial disclosure, allowing investors and other stakeholders to make sound and discriminating choices (Nel & Esterhuyse, 2019:34).

It should therefore, in theory, have been possible for the various stakeholders to avoid supplying funds to companies destined to fail (Ahmad & Raza, 2016:2). Sadly, however, these failures often came as a complete surprise to investors, employees and communities, and as a shock to analysts and investment advisors who failed to identify and report problems timeously, or who gave unsound advice with tragic consequences (Hawkins, 2021; Jung & Nanda, 2021; Freedman, 2010:8; Hamilton & Micklethwait, 2006:34; Allen, 2000:18).

The directors of companies are morally and legally responsible for the application and review of the going concern principle in the business (ACCA, 2021; Yee, 2018; Coopers & Lybrand, 1995:2). Yet the blame for not having given stakeholders sufficient warning of an imminent threat of bankruptcy or liquidation is now frequently being placed on the shoulders of the auditors, who face a substantial threat of potential lawsuits for failing to provide early warning signals about struggling firms through the issuance of qualified or suitably modified audit reports (Brewis, 2021; Eickemeyer & Love, 2016:8; De Beer, 2011:26; Terry, 2007:36; Charitou *et al.*, 2004:466; Clulow, 2002:3; Chen & Church, 1996:117–118; Cormier *et al.*, 1995:201; Kana, 1995:5).

Auditors are also being held accountable for expressing an incorrect view on the management's declaration regarding a company's status as a going concern, as demanded by the International Auditing and Assurance Standards Board and the original international standard of auditing 570



(ISA 570), effective for all audits of financial statements for periods beginning on or after 15 December 2009 (IFAC, 2013:554), and the now revised ISA 570, effective for all audits of financial statements for periods beginning on or after 15 December 2016 (IFAC, 2015:8).

There is no doubt that an auditor's report is supposed to play a critical role in warning market participants of impending going concern problems (Yee, 2018; Fischer *et al.*, 2016:136; Srinath, 2009:14; Ryu & Roh, 2007:98–99; Agulhas, 2002:3; DeFond *et al.*, 2002:1254). A functional and effective audit profession should be able to flag problematic accounting practices and business activities that expose stakeholders to unnecessary risks or unviable investments, before these threats turn into 'damaging debacles' (Jung & Nanda, 2021). However, it does not seem as though auditors are living up to the markets' expectations, especially as very few accounting failures were preceded by qualified audit reports (Jung & Nanda, 2021). As a case in point, Enron – arguably the most famous accounting scandal of the last three decades – received an unqualified audit opinion in the year prior to its bankruptcy. Following Enron's collapse, the phrase, "*Where were the auditors?*", quickly became very well-known.

In South Africa, one of the most spectacular business failures has to be the dismal demise of the Edcon group ('Edcon'). Once a market leader in the fashion retail industry, Edcon was acquired by Bain Capital in 2007 in a highly leveraged transaction. In 2008, when the global economic crisis became a reality, the folly of having high debt levels and a Euro-denominated loan quickly became apparent, and Edcon struggled to meet its debt commitments. By 2010, Edgars Ltd ('Edgars') – a subsidiary of the group – had a total debt-to-equity level of 5.45:1. In an attempt to alleviate its cash flow predicament, Edgars launched an aggressive sales strategy, but by 2011, despite – or perhaps due to – a 44% increase in retail revenue, the debtors' turnover period had escalated to 139 days per annum, and the company had to acquire a further \$43 million in debt to generate a meagre positive cash flow of \$195 473. In the following year, the company was forced to factor debtors valued at R10 billion.

During 2016, Bain Capital acknowledged that Edcon would not be able to repay the debt raised during the 2007 buy-out, and converted its outstanding loan to equity. Unfortunately, this action came too late to make a significant difference. Although the group's management vehemently denied financial problems during 2018, the Unemployment Insurance Fund, various debtholders and landlords, in an effort to save the nearly 30 000 jobs of the Edcon employees and a further estimated 100 000 jobs in the textile industry, needed to bail the group out with a R2.7 billion recapitalisation during 2019. Despite their efforts, by 2020, Edcon was forced to file for bankruptcy.

The worrying part is that, during all of these years of fairly obvious financial problems, when several financial newspapers expressed their concern about Edcon's sustainability, the auditors only qualified the financial statements twice: the financial statements of Edgars contained an emphasis of matter paragraph in 2010 when the auditors noted that difficult trading conditions could cast doubt on the company's ability to continue as a going concern, and the financial statements of Edcon included a going concern emphasis of matter paragraph in 2016. By 2017, the emphasis of matter paragraph had been removed. Throughout the 12 years of its financial struggles, the Edcon financial statements were consistently prepared on the basis of the going concern principle (Edgars, 2022; Dlodla, 2020; BusinessTech, 2019; Donnelly, 2019; Business Insider SA, 2018; Edcon, 2016; Reuters, 2016; News24, 2015; Derby, 2007; IOL, 2007).

It is therefore quite understandable that Peters, in 2013 (Peters, 2013), posed the question as to whether – given the number of enterprises that failed within a year or less of the issuance of financial statements, despite the fact that the statements were prepared under the going concern assumption – improvements in disclosures associated with the going concern basis of preparation were needed so that investors might be alerted sooner to uncertainties which could compromise the existence of the enterprise.

Hillary (1995:2) noted that a study for the years 1977 to 1986 found that only 26 percent of failed companies had received a GCQ [going concern qualification]. Despite the introduction in 1985 of guidelines by the then Auditing Practices Committee on *The Auditor's Considerations in Respect of Going Concern*, a later study by ACCA showed that in a survey of 125 failed companies, less than 15% received a warning about their viability during the previous audit. A study in the United States of America showed that qualified audit reports were only issued for 42% of the 228 publicly traded companies that filed for bankruptcy protection in the aftermath of the dot-com bubble implosion (Gutierrez *et al.*, 2020:1345). Similar research found equally worrying statistics, with the lowest reported percentage of firms being warned of impending doom set at 9% (Altman, 1984:188) and the highest at 46% (Yee, 2018; Venuti, 2004:40; McKee, 2003:581; Tucker *et al.*, 2003:402; Meyer, 2002:7). The majority of companies that declare bankruptcy do so without auditors' warnings to investors (Fischer *et al.*, 2016:140).

It is little wonder then that Roos (2005:12) and Jung and Nanda (2021) note that the public feels betrayed by the independent experts who, by law, were paid to protect their interests. The numerous accounting scandals and corporate failures have resulted in a credibility crisis for the auditing profession and have decreased user confidence in audit reporting on going concern (Brewis, 2021; Sultanoglu *et al.*, 2018:623; George-Silviu & Melinda-Timea, 2015:216; Marx,

2009:16; Terry, 2007:40; Venuti, 2004:40; Agulhas, 2002:2; Sunter & Visser, 2002:3; Cormier *et al.*, 1995:201).

Auditors, however, may feel somewhat hampered in their judgement as to whether a company is considered to be a going concern, despite the fact that the going concern is considered one of the underlying principles of accounting, as the meaning of the term 'going concern' and what it might imply, have caused a lot of disagreement. For example, does it mean mere existence, or being profitable, does it mean having no realisation intent, or having a realisation intent that is very far into the future, does it mean that a business can't change owners, or become involved in a merger or an acquisition, or does the legal personality of a company give it perpetual life?

It was only in 2013 that the International Federation of Accountants (IFAC, 2013:553) finally provided some clarity by defining going concern as follows:

*Under the going concern assumption, an entity is viewed as continuing in business for the foreseeable future. General purpose financial statements are prepared on a going concern basis, unless management either intends to liquidate the entity or to cease operations, or has no realistic alternative but to do so. Special purpose financial statements may or may not be prepared in accordance with a financial reporting framework for which the going concern basis is relevant (for example, the going concern basis is not relevant for some financial statements prepared on a tax basis in particular jurisdictions). When the use of the going concern assumption is appropriate, assets and liabilities are recorded on the basis that the entity will be able to realise its assets and discharge its liabilities in the normal course of business.*

Unfortunately, especially following the outbreak of the COVID-19 pandemic (The IFRS Foundation, 2021) and subsequent global shutdowns, another global financial crisis remains a significant risk, and local companies must realise that the threat of failure is high (Beams, 2022; Torabi, 2022; Rowlings, 2016:1; Wilson, 2012:40; Kana, 2009:20). More recessions would further decrease demand for consumer credit and lead to cutbacks in orders from commerce and industry, and thus stifle growth and opportunities to acquire capital. Kana (2009:22) and Torabi (2022) also note that the reduced availability of credit due to the inability or unwillingness of financial institutions to provide funding, and illiquidity in short-term funding, may have significant adverse consequences for entities, so much so that it may lead to the eventual demise of said corporations. Add to this the increasing threat of climate change, and companies and

stakeholders will have to heed the warning that global business ecosystems are forever altered (Amankwah-Amoah *et al.*, 2020).

It is due to these threats and our desire to understand the failure of companies, and even more, to develop the ability to predict imminent failure, that much research on the topic of failure and failure prediction has taken place (Cassim, 2021:1; Veganzones & Severin, 2020:204; Alaka *et al.*, 2018:164; Rowlings, 2016:1; Appiah *et al.*, 2015:461; George-Silviu & Melinda-Timea, 2015:218; Kurunmäki & Miller, 2013:1110; Foster, 1986:534). As a result, a number of failure or business distress prediction models have been developed. A reliable discriminant model, if used correctly and periodically, has the ability to predict corporate problems early enough so as to enable management to realise the gravity of the situation in time to take appropriate managerial action (Laurila, 2020:6; Kariyawasam, 2019:1898; Appiah *et al.*, 2015:461; Situm, 2014:24; Charitou *et al.*, 2004:466; Platt & Platt, 2002:184–185; Dimitras *et al.*, 1996:488; Micha, 1984:281–282; Deakin, 1972:167; Altman, 1968:609).

The problem remains though, that irrespective of how good the discriminant models are at predicting potential success or failure, they are still based, whether in univariate or multivariate format, on the information contained within the accounting records and financial statements of the entities under investigation. Balcaen and Ooghe (2006:82–83) and Correia (2019:5-30) state that models based on erroneous annual accounting information may become worthless.

Recently, the Australian Accounting Standards Board (AASB, 2021) launched an investigation into the application and disclosures surrounding going concern issues and concerns, and found that going concern disclosures were inadequate and inconsistent, especially where the management of a company had deemed a company to be a going concern, but where they were also aware of events or conditions that could lead to doubt being cast on their judgement, and that the current requirements of ISA 570 were frequently inconsistently and inappropriately interpreted. Consequently, the study called for additional guidance to be given with regard to ISA 570 to allow for the enhanced consistency and comparability of financial statements of companies and other entities.

Guidance would be beneficial, else Chen *et al.* (2018:77–78) argue that the current going concern definition, which limits the evaluation of going concern to one year past the reporting date, lacks intellectual insight, as the only concern according to the definition is for a company to meet its short-term cash flow obligations. During an economic crisis, a profitable company may be deemed a failure as a result of not having sufficient cash available. During growth periods, the application

of the definition may not be sufficiently conservative, as a declining company could in the short-term meet its cash flow needs, for instance by selling valuable assets, whilst its long-term economic outlook is dismal.

If financial statements are based on the principle of being a 'going concern' (ACCA, 2021; Lamprecht & Van Wyk, 2020), and that principle is being questioned by researchers who argue its validity and veracity, one can hardly expect to be able to rely on the financial statements as fair and reasonable. The information contained within financial statements cannot then in all instances be said to be relevant, reliable or useful. In today's fast-changing environment, and with increasing global competition, most companies do not appear to have indefinite lives, and as there is remarkable uncertainty about the future that makes prediction nearly impossible (Farooq & Qamar, 2019: 632; Yee, 2018; Eickemeyer & Love, 2016:6), the going concern principle may no longer be a valid assumption.

Eickemeyer and Love (2016:9) further note that in two separate court cases, the courts found that investors and acquirers of a company had had sufficient other evidence available to them, based on an assumption of efficient securities markets, that an adverse audit opinion on the going concern of the two distressed companies would not have altered the economic decisions of the users. If the auditors' report does not influence decision-making, is it even necessary for the auditors to assess the going concern assumption?

As a result of these apparent anomalies, Hatting (2012:11) argues that it is time for the accounting standard boards to reconsider the effect that ambiguous and potentially illogical standards may have on the reporting industry, and together with Eickemeyer and Love (2016:9), cautions users of financial statements '*to be wide awake when using IFRS financial statements for taking economic decisions*'.

### **1.1.3 Standards to consider**

The following standards need to be considered in relation to the definition of the going concern concept in terms of accounting and auditing principles:

#### **1.1.3.1 ISA 570 Going Concern**

Both management and the auditors of a listed company should consider the provisions of ISA 570, *Going Concern*, in their determination of whether to prepare financial statements on a going

concern basis of accounting (ACCA, 2021; IFAC, 2015:3–4; Alareeni & Branson, 2013:113). Thus the definition of going concern, as well as the guidelines of the aspects that management and the auditors should consider when determining whether the principle applies, such as the degree of uncertainty regarding future events or conditions, the size and complexity of the entity and the nature of its business, would be applicable to this study (ACCA, 2021). The warning signals that indicate that management's assessment of an entity as a going concern may be wrong, will also be relevant to this study's classification of an entity as successful, struggling or failed.

### **1.1.3.2 IAS 1 Presentation of Financial Statements**

According to the Conceptual Framework, financial statements are prepared on the going concern principle, based on the expectation that the entity will manage to continue its operations into the foreseeable future. IAS 1 demands that the management of the company or entity make an assessment of its ability to continue as a going concern (IAS Plus, 2021).

Should the company be considered to be a going concern, the financial statements would be prepared as usual. However, if management had significant concerns that the company might not be able to continue as a going concern, that fact and the specific uncertainties should be disclosed. If the management of the company deems that a company is not a going concern, the financial statements cannot be prepared on a going concern basis, and another accounting technique, such as the liquidation method, should be applied, and the appropriate disclosures in terms of IAS 1 should be made with regard to this assessment (IAS Plus, 2021).

During the course of this study, consideration will be given to whether the going concern principle had applied to companies that subsequently failed – i.e. companies that were liquidated – and whether stakeholders could have been forewarned of the imminent demise of a company without the management and auditors having explicitly brought the potential going concern issues to their attention.

## **1.2 Problem statement**

Financial statements are prepared at least annually by South African companies. The goal of financial statements is to provide information which is useful to a variety of stakeholders in making financial decisions. However, it would appear as though financial statements are either not useful in predicting business failure, or are alternatively not being used by investors and analysts with

the existing tools which are available to them, such as failure prediction models, to make appropriate economic decisions.

It is also the responsibility of the management of a company, as well as its auditors, to assess the liquidity and solvency of the company, and to express opinions on the going concern of the entities. The going concern principle is considered one of the four basic assumptions of generally accepted accounting practices: it assumes that a business will continue operating indefinitely. Clearly, a business in severe financial distress cannot be assumed to have infinite life, and yet the financial statements of most companies in financial distress are still prepared on a going concern basis. The necessity and relevance of the going concern principle as an underlying assumption of accounting is therefore in doubt.

Consequently, the research question is therefore whether financial statements are in fact useful in predicting business failure, and whether or not, in the light of the continuous failures of companies, the going concern principle remains a reasonable accounting assumption.

### **1.3 Research objectives**

#### **1.3.1 Primary objective**

The **main objective** of this study is to assess the usefulness of financial statements in assisting users thereof to distinguish between healthy/successful and unhealthy/failed companies, and to identify companies that may potentially be heading towards failure.

Leinwand and Mainardi (2010) and Collins and Hansen (2011:1–2) question what the relevant factors are that would drive some companies to succeed while others would fail, and postulate that successful companies develop a system of a few truly unique capabilities that help them to create differentiated value for their chosen customers. Instead of studying successes, Collins (2009:24) believes that it would be of more value to examine why a great company fell into mediocrity (or worse). A comparison between a failed company and a company that manages to sustain its success could uncover more meaningful variables of success, than a study of successes only. This could assist the users of financial statements in distinguishing between healthy and unhealthy companies on a timelier basis.

Identifying companies that have the potential to be successful, even if they are struggling, could become increasingly valuable in South Africa, especially following the introduction of business rescue legislation through Chapter 6 of the Companies Act 71 of 2008 (Fin24, 2015). The ability

to rescue economically viable companies experiencing financing difficulties is in the best interests of its shareholders, creditors, employees and other stakeholders, as well as in the interests of the country as a whole due to the high costs to the economy of businesses failures (Abdullah, 2020:1; Ashraf *et al.*, 2019:1; Yee, 2018; IoDSA, 2009). Yet, Levenstein (2022) finds that currently more companies are still being liquidated rather than being placed into business rescue.

Consequently, this study will analyse the financial statements of a group of successful companies, a group of companies that have failed, and a group of companies that appear to be on the verge of failure, for two different time sets of six years each. These time sets, which span more than a decade, will include the financial information of three groups of companies (successful/failed/struggling) prior to the introduction of International Financial Reporting Standards (IFRS) and the financial crisis of 2008, as well as the financial information of a group of companies after the 2008 global recession, but before the outbreak of the 2020 COVID-19 pandemic. This study may therefore also uncover whether the changes that are regularly implemented in international financial accounting standards, have had any meaningful effect on the usefulness of financial statements in predicting business failure.

### **1.3.2 Secondary objective**

The **second objective** of the study will be to contemplate, based on the conclusions reached with regard to the primary objective, whether the going concern principle is still deserving of its status as an underlying principle of financial accounting, given that the assumption of unlimited life for corporate entities may no longer be valid.

### **1.3.3 Theoretical objectives**

The study will require an understanding of the goals, users and limitations of financial statements, the indicators of success or failure in company financial statements, and current definitions and applications of the going concern principle. It will therefore be guided by existing knowledge and theories uncovered in the literature review. The results of the empirical review will be analysed and evaluated, so that the usefulness of financial statements for economic decision-making may be deliberated. Potential deficiencies in the current application of the going concern principle, based on the results of the empirical review, might also come to light. Suggestions for interventions or improvements which could be used as the basis for a further and larger study, will then be offered. The theoretical objectives will largely be addressed through Chapters 2 to 4 of the dissertation.



### **1.3.4 Empirical objectives**

In total, sixty companies will be analysed and compared through the application of financial ratios and failure prediction models.

There will be two sets of companies: one set will represent the results that companies achieved before the introduction of the International Financial Reporting Standards in 2003 and the recession which severely impacted South Africa during 2008; the other set will be for a more recent time period, i.e. the financial results achieved by companies listed on the Johannesburg Stock Exchange (hereafter JSE) between 2013 and 2018, thus excluding the potential impact of the COVID-19 pandemic. These two sets of companies will further be divided into three sub-sets each: successful companies, struggling companies and failed companies. The results of the empirical analysis and the comparison between the two sets of companies will be disclosed and discussed in Chapter 6 of the dissertation. A conclusion on the achievement of the research goals and possible avenues for further research will be highlighted in Chapter 7.

The comparative study aims to determine whether the application of financial ratios and failure prediction models should have been sufficient to warn stakeholders as to the imminent demise of a company, and also to evaluate whether the going concern principle applies or has relevance to the published annual financial statements of companies listed on the JSE. Furthermore, the analysis may shed light on whether accounting changes that have taken place over the last decade have improved the usefulness of the financial statements for economic decision-makers.

## **1.4 Research design and methodology**

The purpose of this study is to determine whether there are any particular financial indicators, over and above the currently available failure prediction models already available to stakeholders, that might be able to warn affected parties of the potential demise of a company. The study will furthermore try to identify which characteristics are shared by companies that may be classified, in accordance with pre-set criteria, as 'successful', 'struggling' or 'failed' companies. A comparison between two separate sets of data that span two different time periods will also be performed, to establish whether changes to accounting standards have enhanced the economic usability of financial statements. These tests and analyses will then allow us to consider the validity of the going concern assumption for companies listed on the JSE.

The study will therefore include both a literature review to enhance the researcher's knowledge of the topics being considered and deliberated and an empirical analysis of published financial

statements. Empirical studies are considered by some to be at the very core of appropriate scientific research (Walliman (2011), as quoted by De Villiers & Fouché, 2015:127).

#### **1.4.1 Paradigmatic assumptions**

Gilling, as reported by Dillard (1991:10), stated that *'All professions have a defining ideology, which in a general sense establishes a pattern of thought and a way of looking at the world for the profession. This pattern of thought defines the activities of the profession, its problems and appropriate ways of approaching these problems.'*

At the heart of accounting lie a number of assumptions and principles that have long been held as fact, when, in truth, these assumptions and principles may no longer be defensible, or supported by empirical studies. One of these assumptions, which forms part of accounting's defining ideology, is the assumption that all companies' financial statements are prepared on a going concern basis, with the understanding that a company will be able to continue trading indefinitely. If this assumption does not hold true, the financial statements should be prepared on a liquidation basis, and the basis appropriately disclosed.

Based on the number of companies that fail annually, with little to no warning to their stakeholders, it seems clear that the going concern assumption is upheld even when circumstances or financial information indicate the contrary, which is why this study is questioning whether the going concern principle is still defensible, or should even be assumed to underlie the figures disclosed in the annual financial statements of listed entities.

According to Mustafa (2011:24), it is not enough for researchers only to be aware of the definition of research. Rather, researchers need to be aware of the assumptions and theoretical frameworks underlying their research. An understanding of epistemology and ontology – which are inextricably linked – is required to guide the choice of methods and approaches by which a study may be conducted to ensure that reasonable conclusions may be drawn. Ontology refers to what is true, and attempts to identify 'things that actually exist' (University of Warwick, 2017; University of Idaho, 2016; Mustafa, 2011:24; Jacquette, 2002:1). It thus refers to what will be researched and the questions that will be asked. Epistemology concentrates on the study of knowledge (Zarman, 2018; Truncellito, 2016), i.e. the means or process of knowing (Nugrahanti, 2018:36; Abdul Rehman & Alharti, 2016:52; Dillard, 1991:11). Epistemology is thus about the methods of figuring out the truth referred to in ontology (University of Idaho, 2016). Consequently, the researcher must select a philosophical basis to determine what she 'knows' about reality and

which criteria she will use to determine the validity of claims to knowledge (Richardson, 2012:85). This study is based on the following choices:

- i. This study is best served through a realist approach (also known as an objectivist approach), as accounting is entrenched in positivism, where knowledge of the physical and social world is obtained through the accumulation of activities by 'observers' searching for consistencies and causal relationships (Kirana & Budiarmo, 2021; Dillard, 1991:11).

A realist approach is appropriate as the external data that the author will be analysing exists independently of her observations. Although different circumstances might influence the data that are acquired (e.g. recessionary conditions that may lead to more companies experiencing financial distress), the data and the reality within which they exist, are not influenced by the author's personal circumstances, and the research is therefore fairly objective (Nugrahanti, 2018:37; De Villiers & Fouché, 2015:126 & 128). The author's views of the world should not affect the veracity of the data, and any deductions made as a result of the empirical studies that will be performed, ought to be replicable in future studies.

This study is an empirical analysis of published (and thus historic) financial statements and is therefore firmly entrenched in what is real, and in what has happened, and not in what might have been, or what could have been achieved. The research will thus be performed from a realist's view of reality, and not an idealist's (Richardson, 2012:85).

- ii. The two main paradigms are positivism and interpretivism. The epistemological choice of the approach to follow lies between positivism and interpretivism, where positivism asserts that valid knowledge must be based on tests of propositions deduced from general theories and that valid knowledge is that which has survived empirical testing. Interpretivism suggests that knowledge is derived from the meaning of events and not the events themselves, and so emphasises the act of interpretation as the key means of justifying knowledge claims (Emerald Publishing, 2022; Alharahsheh & Pius, 2020:41–43; Nugrahanti, 2018:38; Abdul Rehman & Alharti, 2016:53–56; De Villiers & Fouché, 2015:127; Richardson, 2012:85; Mustafa, 2011:24–25).

In this study, an empirical analysis of the financial statements of six groups of companies will be conducted. Thus the events – as portrayed through published financial figures – will be scrutinised, analysed, and meaning afforded to the results obtained. The data therefore comply with the requirements for positivism as the figures exist separately and objectively

from the researcher. However, the process of attaching meaning to the results obtained from the empirical work is more closely linked with interpretivism, as the interpretation of the ratios focuses on narratives, is not purely statistical, and allows for multiple viewpoints to be incorporated into the discussion of the analysis. The results of the analysis and interpretation are also not necessarily absolute. The research can therefore best be described as positivistic in nature, with significant traces of interpretivism laced throughout.

- iii. The study also follows a mixed approach in terms of its research methods. Research methods are the procedures which the researcher will implement to collect and analyse data in an effort to address the research question (Emerald Publishing, 2022; Abdul Rehman & Alharti, 2016:52). The research method selected as the most appropriate for a particular study will depend heavily on the nature and characteristics of the data to be gathered (Creswell, 2009:18).

Quantitative studies tend to focus on numbers and are most closely associated with the positivism paradigm. The quantitative method typically makes use of numbers, such as the accounting data contained in the annual financial statements of companies (Marx, 2019:69–70; Saunders, 2016:51; Mustafa, 2011:27; Creswell, 2009:3–4 & 17). A sample of companies that are or were listed on the JSE will be selected for the empirical analysis, and the results of the interpretation of the financial ratios could possibly be generalised to the entire population of listed companies. The application of financial ratios should allow cause-and-effect relationships to be identified (The Free Library, 2022; Dillard, 1991:11), which should assist decision-makers with their choices – this is particularly important as both the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) attach significant importance to the concept of decision-usefulness (Buys, 2011:109). However, contrary to the quantitative technique, the data are not easily convertible to statistics, and the numbers will be supported by explanations.

Qualitative research is mostly associated with the interpretivism paradigm, and generally makes use of words, which the analysis of the financial ratios calculated as part of the empirical research, will do (De Villiers & Fouché, 2015:129). The reasoning around the interpretation of the financial ratios will lean towards inductive reasoning, as meaning for the ratios will be derived as the study progresses. The hope is that the empirical analysis of the data obtained from the six sets of companies will assist decision-makers in more successfully predicting the potential failure of companies long before the predictions become ‘common knowledge’. This study, however, will not make use of interviews,

surveys, questionnaires or case studies, and the data will hopefully not be influenced by the researcher (Asenahabi, 2019:78–79).

The results of the research will then form the basis for any conclusions to be drawn on the reasonableness of the going concern assumption as an underlying principle of financial accounting. It is this researcher's belief that the above processes will allow her to generate credible knowledge (Richardson, 2012:86) and also to gather sufficient and valid supportive evidence from which appropriate conclusions may be drawn.

#### **1.4.2 Literature study**

A literature review will be conducted to achieve the following:

- to establish the goal, users, limitations and decision-making usefulness of financial statements;
- to establish the key factors which have thus far been identified as the attributes of a successful (contrasted against a failed) company so that these attributes may be clearly identified in the sample of companies selected for analysis; and
- to determine the definition and meaning of the term 'going concern', and to briefly evaluate the arguments about the validity of the going concern principle as an underlying accounting assumption, so as to gain an understanding of the nature of the assumption and the instances in which it may be regarded as applicable to a company under review.

The literature study will make use of a variety of resources and sources, including:

- peer-reviewed articles published in journals and financial magazines;
- news sources, such as SABC news, for information on recently liquidated companies, and companies in financial distress;
- the World Wide Web, for definitions of buzzwords and explanations of common terminology, as well as for articles and documents related to this study;
- the World Wide Web and institutional websites, for information related to ISA 570, IAS 1, and other auditing and accounting standards referenced in this study;
- articles from management accounting and accounting magazines, such as ASA (Accountancy SA published by the South African Institute of Chartered Accountants) and

FM (a financial magazine published by the Chartered Institute of Management Accountants);

- journals extracted from the NWU library and databases, like Google Scholar, EBSCOhost, ScienceDirect and Emerald;
- published textbooks regularly used by universities in South Africa for accountancy education and training;
- books written by noted experts responsible for the establishment of failure prediction models and other information related to the topic of this study obtained either from the NWU library or the author's own collection; and
- the Sunday Times, a weekly newspaper, which identifies the Top 100 companies in South Africa annually.

### **1.4.3 Empirical study**

Three sets of companies, where one group has clearly failed, another group is deemed to be successful and the last is considered to be at risk of failure, will be analysed to determine whether the differences between the companies can be identified through ratio analysis.

The three sets of companies will be selected as follows:

- Ten companies will be selected that may be seen as 'successful' companies. These ten companies will be selected from a list of the 'Top 100 Companies' which is published annually by the Sunday Times newspaper. The 'Top 100 Companies' list identifies the South African companies which have delivered the highest returns to shareholders over a period of five years, by considering the compound growth rates in the share prices of every listed company on the JSE (Business Times, 2019).
- Ten companies will be selected as 'struggling' companies, by again using the IRESS platform to identify ten listed companies that suffered losses in the 'Profit attributable to ordinary shareholders' line-item of the Statement of Profit or Loss, in at least two of the six years under analysis for each selected time frame. Preference will be given to those companies that suffered two consecutive years of losses in the final two years of the analysis time frame.
- Ten companies will be selected as 'failed' companies, using the IRESS platform to identify all companies that have delisted, and the World Wide Web to determine which of these companies were subsequently forced into liquidation, elected to liquidate voluntarily,

entered into business rescue or a scheme of arrangement with creditors, or deregistered with the Companies and Intellectual Property Commission of South Africa.

The average results of the companies will be calculated for a five to six year period and plotted graphically, to determine whether there are distinct differences in the results of the selected groups. Financial ratios, especially failure prediction models, will also be applied to the average results to search for noticeable differences between the three groups of companies.

This analysis will be applied to the three sets of companies for a time period between 2013 and 2018, thus subsequent to the financial crisis of 2008, but before the outbreak of COVID-19, so as to avoid major events that may have influenced the financial results of companies unduly. The goal would be to assess whether the going concern assumption is still an underlying accounting principle for listed South African companies.

The analysis will also be compared to the results obtained for three similar sets of companies for which information was obtained for the period from 1998 to 2003, to assess in general whether changes in accounting statements may have improved the usefulness and clarity of financial statements, with regard to the identification of financial distress, over time. This time period was selected as companies could elect to apply International Financial Reporting Standards from 2003, and were legally required to do so from 1 January 2005 (Rowlings, 2016:3). The time period also avoids the disruption caused by the global recession of 2008.

#### **1.4.3.1 Population and sampling**

##### **1.4.3.1.1 Population**

The population from which the sample will be drawn, is all companies that are or were listed on the JSE for the two time periods, 1998 to 2003, and 2013 to 2018. According to the JSE (2022), there are 302 companies whose equity instruments are listed on the JSE as at 1 July 2022.

The study makes use of the published financial information of listed companies as the data are freely available, they are more reliable and comparable (as companies listed on the JSE have to comply with International Financial Reporting Standards), and the required information is available over multiple time periods (Collins & Hansen, 2011:12; Morris, 1998:24).

The study specifically excludes time periods during which the South African economy was impacted by severe recessions, as the occurrence of a recession '*impacts upon the likelihood of*

*corporate failure and it may cause the information content of accounting data to vary*' (Richardson *et al.*, 1998:168). This should allow for the financial ratios and failure prediction models that will be applied to the study, to yield results that are more easily comparable across industries, across time series, and to have greater discriminatory, explanatory and predictive ability.

#### **1.4.3.1.2 Sampling, sample size and sampling technique**

The same process of sampling will be applied to both time periods noted above. In total, sixty companies will be included in the sample. For each time period, thirty companies will be included in the analysis. The thirty companies selected will be made up of three groups of ten companies each. The groups will be defined as 'successful' companies, 'struggling companies', and 'failed companies'.

The sample size is limited due to the fact that the JSE has a limited number of listed entities, which has been steadily decreasing (MyBroadband, 2022). Foster (1986:558) found that the financial ratios of failed companies exhibited behaviour different to those of successful (or non-bankrupt) firms, as early as three to five years prior to liquidation. Because it is thus necessary to consider the trends in financial ratios and failure prediction models over a period of time, to assess whether there were any indicators that might have forewarned stakeholders that a company could potentially be heading towards failure, the number of companies that meet the criteria for inclusion in this study is limited further.

Joy and Tollefson (1975:725–726) noted that the key consideration was to obtain a sufficiently large number of observations from the smaller group (the group of failed companies). Consequently, it was decided that a sample of ten companies in each grouping would be sufficient to be able to draw general inferences from the data analysis techniques applied.

A decision was also taken to very specifically not make use of a matched-pair design for the selection of the ten companies in each group of companies to be analysed. Numerous studies have found that a matched-pair design leads to bias (Appiah *et al.*, 2015:474; Platt & Platt, 2002:184). For instance, Appiah *et al.* (2015:474), Foster (1986:561), Taffler (1982:343), Ohlson (1980:112) and Beaver (1966:76) noted that most matched-pair samples selected firms that were matched in terms of size and industry, thus effectively excluding these variables as potential indicators of distress, when both attributes were often significant in determining the likelihood of a company failing. Ohlson (1980:112) went so far as to state, *'It is by no means obvious what is really gained or lost by different matching procedures, including no matching at all'*.



Morris (1998:24) found that matching bankrupt companies against surviving companies on a one-to-one basis caused sampling bias, as most listed companies do not fail in any one specific year. Appiah *et al.* (2015:474) having reviewed financial distress literature over a period of nearly three decades, asserted that matched pairs are not representative of the whole population of firms. It isn't truly necessary to attempt to match companies in the same industries, as CIMA (1993:368) noted that useful information could be obtained by comparing the financial and accounting ratios of companies in different industries. It might even be virtually impossible to appropriately match failed and non-failed companies, especially in the South African context where the number of listed companies is very small, as most listed firms are diversified into different industries (Correia, 2019:5-29; Farooq & Qamar, 2019:634; Helfert, 1994:72).

Morris (1998:24) further expressed concern that companies reporting losses or low profit or high levels of indebtedness would not be selected as the 'successful' companies, making meaningful comparisons between failed and non-failed companies doubtful – for that reason, a third group of companies, those seen as 'struggling', have also been incorporated into this study.

This study will therefore attempt to find differences in the selected variables and financial ratios, similar to a study conducted by Collins and Hansen (2011:202), as a contrast of the different sets of companies may afford the researcher the best opportunity to '*arrive at new findings*'. As stated by Collins and Hansen (2011:208), '*We don't know whether our findings would hold true across all companies. We are confident, however, that they are likely to hold across many companies and industries, because our findings are based on a diverse data set consisting of seven industries (and not just one or two industries)*'.

#### **1.4.3.1.3 Inclusion and exclusion criteria**

The companies that comprise the 'successful' sample group will be identified from the Sunday Times Top 100 Companies which is published annually. The criteria for inclusion will be that these companies are (a) listed on the JSE, (b) were included in the Sunday Times Top 100 Companies for the final year under consideration for each data set, and (c) the companies must have financial information available for the full period under investigation for each of the data sets (thus six years each, i.e. 1998 to 2003 and 2013 to 2018 respectively).

The companies that comprise the 'struggling' group of companies, will be selected by making use of IRESS, which is financial software available from the North-West University library. The criteria for inclusion will be that these companies must be (a) listed on the JSE, (b) that in the final year

set for the analysis of the data, the company exhibited negative profitability (i.e. the line-item 'Profit attributable to ordinary shareholders' in the Statement of Profit or Loss must be less than zero), and also for at least one other year during the time frame under consideration, with preference given to companies that had two consecutive years of losses in the final years of the analysis time frame, and (c) the companies must have financial information available for the full period under investigation for each of the data sets.

The companies that comprise the 'failed' group of companies, will similarly be selected by making use of IRESS, and information available in the financial media. IRESS will be used to determine which companies delisted in the given time periods, and the reason for delisting will then be determined from financial media or company websites, to establish which companies delisted for reasons other than liquidation, so that only those companies that delisted due to financial failure (defined as either the voluntary or forced liquidation of the company, the closure and deregistration of the company, or the entrance into business rescue or a scheme or arrangement with creditors) may be selected for this study. The criteria for inclusion will therefore be that these companies must (a) have previously been listed on the JSE, (b) in the time period set for the analysis of the financial information of the companies, the company became illiquid and insolvent, and (c) the financial information for the company must be available for all six years during the time frames set for this study.

#### **1.4.3.1.4 Data collection and analysis**

The data needed for this study will be collected from the following sources:

- The JSE will be used to draw a sample of listed entities that will form the basis of this study;
- The summarised financial information of listed companies will be obtained using IRESS (previously BFA McGregor), which is financial software available to registered users of the NWU library.

The information will be analysed using financial ratios and failure prediction models, and the results will be presented in graphical format.

## 1.5 Ethical considerations

The ethical standards and procedures of the North-West University (NWU) will be honoured throughout this study. The study will be conducted using information which is freely available to any student registered with the NWU, through the use of its Library and research resources. The data collected will not be used to discredit any entity selected in the sample. The study will be impartial to all entities, accounting boards, and any party mentioned in the information provided. The study will not contact any individuals or companies directly, and no questionnaires will be completed or distributed, negating the need for anonymity or confidentiality. Consequently, this study poses a minimal risk regarding the ethics conditions of the EMS-REC Committee.

## 1.6 Summary of chapters

A summary of all the chapters of this study is outlined in the figure below:

**Figure 1-2: Summary of chapters**



(Source: Author compilation)

The results of the study will be documented in the following chapters:

*Chapter 1* consists of an overview of the research question, the research objectives and the research methodology that will be employed.

*Chapter 2* will consider the existing literature relating to the goal, the users, the limitations and the decision-making usefulness of financial statements. The main objective of this study is to determine whether the financial statements issued by listed companies are useful in predicting the potential demise of an entity which is otherwise considered to have an indefinite life. It is thus relevant to link my study to the generally accepted goal, the traditional users and the limitations of the annual financial statements of companies.

*Chapter 3* will contain a conceptualisation of what will, for the purposes of this study, constitute a successful or healthy firm, in contrast with what will be considered a failure or an unhealthy firm. Some common key distinguishing characteristics will be examined and explained.

*Chapter 4* will provide a brief review of the history of the going concern principle. It will also set out why the continued application of the going concern principle is being questioned, as a secondary objective, in this study.

*Chapter 5* will cover the research methodology employed in the ratio analysis of the three groups of companies over two separate time frames. The method followed, the manner in which the sample was selected, and the consequent procedures employed in the analysis of the data, will be presented. The chapter will also briefly consider the definition and meaning of the term 'going concern', as it will attempt to uncover whether this underlying assumption is still valid, based on the results achieved from the analysis of the six sets of companies selected for this study, i.e. companies that are struggling, companies that have failed, and companies that are deemed to be successful, over two separate time frames.

*Chapter 6* will present the findings of the empirical research undertaken, especially the analytical review of the averages calculated for the three sets of identified companies (healthy/struggling/failed) within the two sets of time frames. The research results will also be discussed. These results are expected to include the identification of indicators of either success or failure which may be useful for the prediction of the status of a company, either as a going concern or as a company with a limited future.

*Chapter 7* will present a conclusion on the success of the study. It will also note any limitations of the study, and include a recommendation for future studies related to this area.

*Chapter 8*, the final chapter of the dissertation, will contain a reference list of the resources used during the literature review and the analytical comparison of the data relating to the three sets of identified companies over the two time frames.

## CHAPTER 2 THE USEFULNESS OF FINANCIAL STATEMENTS

### 2.1 Introduction

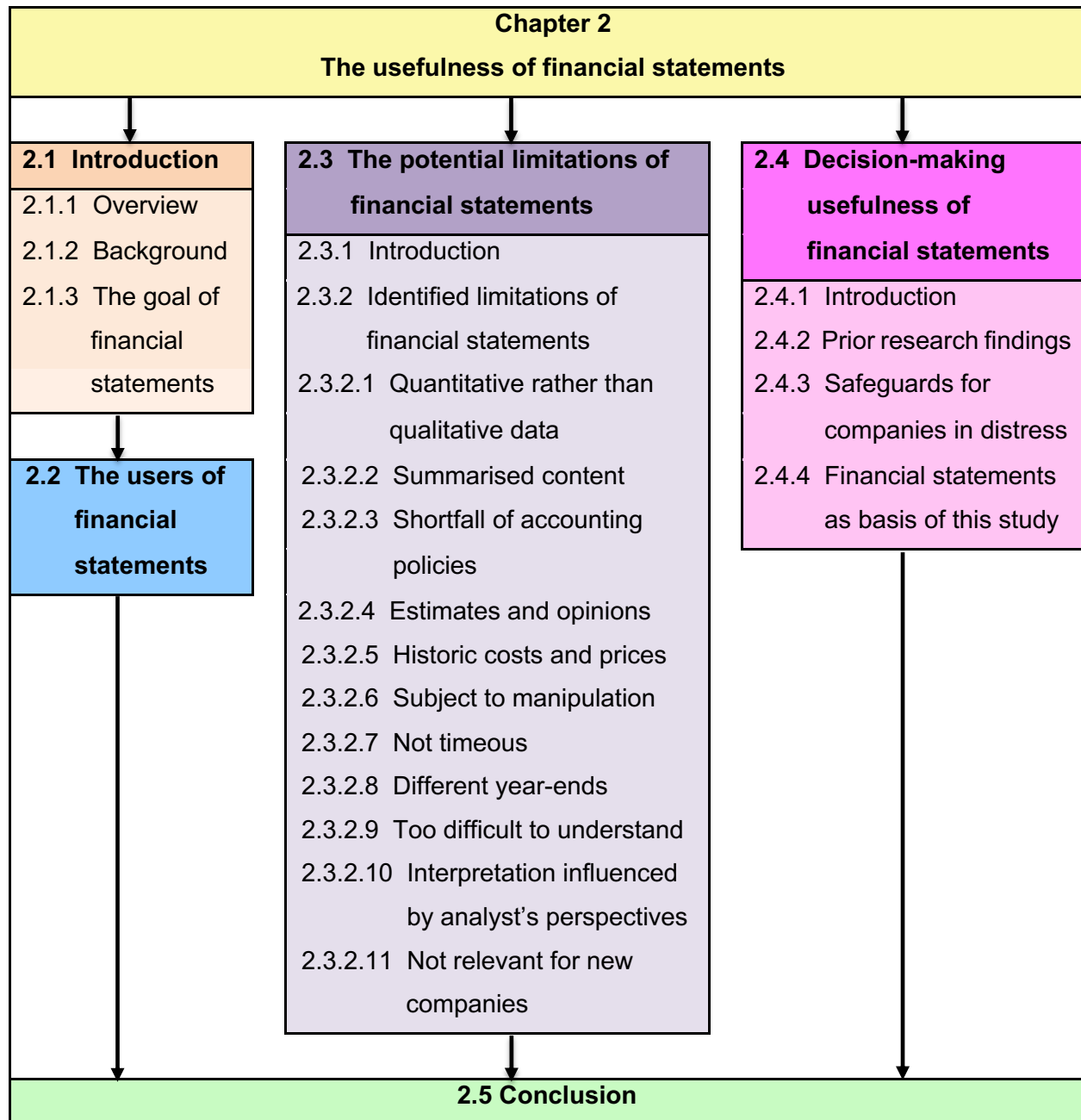
#### 2.1.1 Overview of Chapter 2

*If you read a company's financial statements three times, and you still can't figure out how they make their money, that's usually for a reason.*

*James Chanos*

The purpose of this chapter is to present the results of a literature review on the usefulness of financial statements. Financial statements must be prepared at least annually by South African companies and form the basis for economic decision-making by investors, debt providers, and various other stakeholders. It is therefore of the utmost importance that reliance may be placed on the content of the annual financial statements. This chapter consequently considers the goal of financial statements, investigates the users of financial statements, discusses the limitations of financial statements, and explores the decision-making usefulness of financial statements. The chapter consists of five sections. Figure 2.1 below presents an overview of the chapter:

**Figure 2-1: Overview of Chapter 2**



(Source: Author compilation)

Section 2.1 relates the statutory and JSE listing requirements for South African companies to prepare annual financial statements, and considers and defines the goal of financial statements. In Section 2.2, a comprehensive list of the users of financial statements is provided, which is based on the stakeholders who may have an interest in a company's survival and success. Section 2.3 explores in detail what the potential limitations of financial statements may be; of all of these, manipulation by management may very well be both the most worrisome and the hardest

to detect. This section also establishes the groundwork for potential future studies, as the inclusion of qualitative data in failure prediction is increasingly becoming a focus of academics and investors alike. In Section 2.4, prior research, as well as the effect of the implementation of International Financial Reporting Standards on the reliability of financial statements, are considered. Based on these results, a conclusion is reached in Section 2.5 that, despite the limitations inherent to accounting and therefore the preparation of annual financial statements, the statements do still hold value and remain a key input to users' decision-making. It is therefore possible to use the annual financial statements of listed companies as a base for the financial ratios that will be calculated as the empirical segment of this study.

### **2.1.2 Background**

Financial statements contain the information used in ratio analysis and bankruptcy prediction models (Mankin *et al.*, 2017). It therefore behoves us to review the goal, users, general limitations and decision-making usefulness of financial statements.

Financial statements are prepared at least annually by South African companies (Brigham *et al.*, 2019:45; Marx *et al.*, 2017:40). Financial statements usually include a statement of financial position, a statement of profit or loss and other comprehensive income, a cash flow statement, notes to the financial statements and a detailed discussion of the company's operations in a chairman's report, as well as a discussion of the financial results in a finance director's report. The chairman's report is meant to convey the company's view of the prior year's performance, as well as its future prospects, couched in non-technical language to make it easily understandable to the user (Barnard *et al.*, 2020:358; Pasko *et al.*, 2020:839; Mmako & Jansen van Rensburg, 2017:45; Subramanian *et al.*, 1993:49).

Financial statements of listed companies are required to be set out in terms of International Financial Reporting Standards, which state that the objective of financial statements is the provision of information about the financial position, financial performance and cash flows of an entity, that is useful to a wide range of users in making economic decisions (Herz & Pei, 2021:117; Correia, 2019:5-2; Ahmad & Raza, 2016:2; KPMG, 2012; Gouws & Lucouw, 1999:101; Foster, 1986:9). This information should be presented truly and fairly, so that the users of the financial statement have a full and accurate view of a company's financial situation, even if the information imparted to the users is '*bad news*' (Krüger, 2015:304; Besson-Levine, 2009:33).



Some South Africans may think, as they are not active investors 'playing the market' on the Johannesburg Stock Exchange Ltd, that corporate failures do not affect them. However, as most accumulated wealth, apart from an individual's house and a few other valuable assets, consists of a mixture of policies, shares and bonds, and cash deposits, most wealth is invested, either directly in the form of shares, or indirectly via various policies, in the world's markets (Van Niekerk, 2002:14). It is therefore in every individual's, taxpayer's and company's interest to be able to predict which companies are likely to be successful, and which are probably going to fail, so as to avoid substantial and debilitating losses.

### **2.1.3 The goal of financial statements**

The objectives of financial statements are set out as follows in the International Accounting Standards (IAS 1 – Presentation of Financial Statements):

*“The objective of general purpose financial statements is to provide information about the financial position, financial performance, and cash flows of an entity that is useful to a wide range of users in making economic decisions. To meet that objective, financial statements provide information about an entity's:*

- *assets*
- *liabilities*
- *equity*
- *income and expenses, including gains and losses*
- *contributions by and distributions to owners (in their capacity as owners)*
- *cash flows.*

*That information, along with other information in the notes, assists users of financial statements in predicting the entity's future cash flows and, in particular, their timing and certainty” (IAS Plus, 2021).*

The annual financial statements offer a summarised view of a firm's performance and its financial position at a specific point in time. Analysts and other users of these statements will employ the information contained in the financial statements – both quantitative (the amounts) and qualitative (the descriptions) to form expectations about the company's earnings, dividends, risk exposure and sustainability (Pathiranage & Jubb, 2018:373).

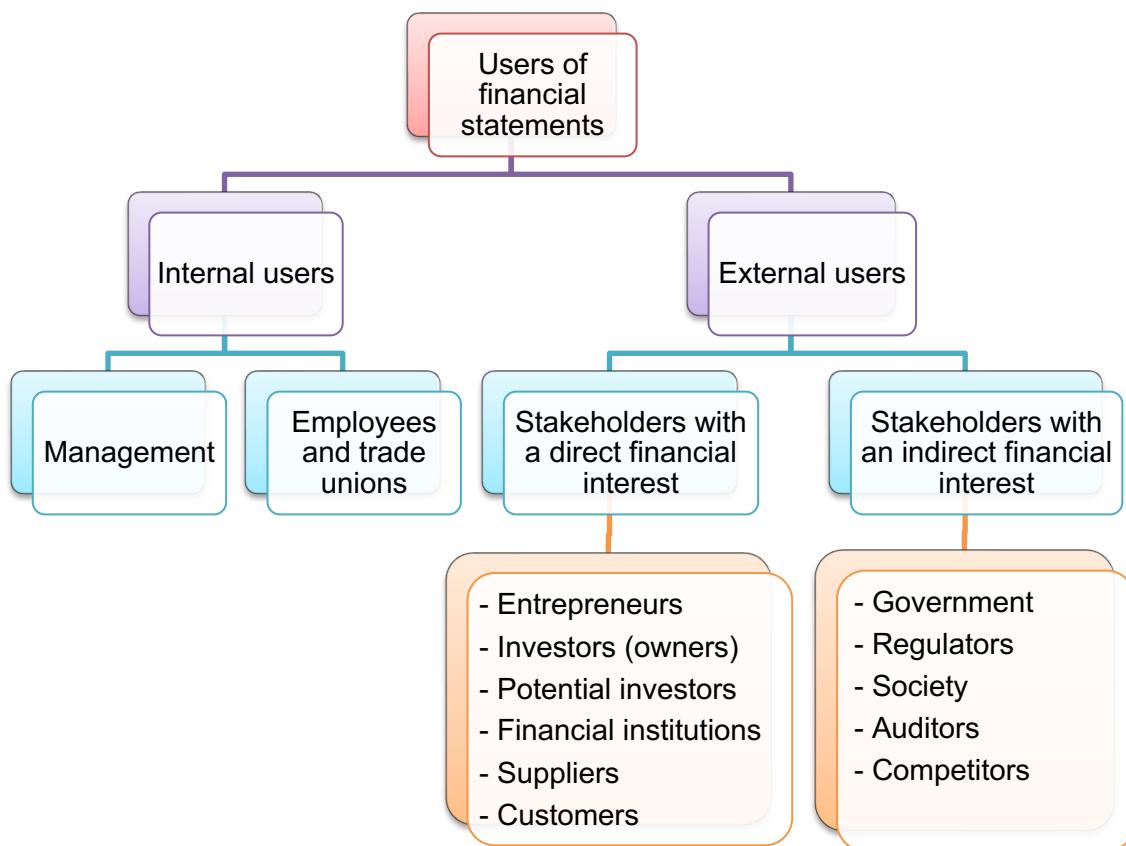
However, the specific goals of the users of the financial statements will depend on the nature of those users, and their particular interest in the company, which is further analysed in Section 2.2 below.

## **2.2 The users of financial statements**

Financial statements form the basis for most economic decision-making relating to companies (Hepp & Reinstein, 2021:40). Economic decisions include decisions regarding investment in or disinvestment from the shares of the company, decisions on whether or not to supply funds in the form of loans, debt instruments or through credit to the company, decisions on whether to enter into a contract with the company, and even decisions on whether or not the company can afford to pay raises during wage negotiations. Financial statements also contain the information used in ratio analysis and bankruptcy prediction models.

The stakeholders of a company are defined in the King IV Report (IoDSA, 2016) as those groups or individuals that could reasonably be expected to be significantly affected by an organisation's business activities, outputs or outcomes, or whose actions can reasonably be expected to significantly affect the ability of the organisation to create value over time. The stakeholders of a company, and thus the users of the financial statements, may broadly be presented as follows:

**Figure 2-2: Users of financial statements**



(Source: Author compilation)

The following is a non-exhaustive list of stakeholders who may be interested in the financial statements of a company, and possible reasons for their interest:

- **Entrepreneurs** who start a company, or who intend to enter into a particular venture, may lose their life savings and suffer reputational damage if the venture is not successful. Entrepreneurs can assess the probability of success, the likely profitability of the investment, the expected future cash flows, or even the specific risk of failure, before starting a business, by making use of pro forma financial statements, industry comparisons, ratio analysis and failure prediction models (Lee *et al.*, 2021:1; Mumbo, 2013:59; Cassar, 2009:27; Lussier & Corman, 1996).
- The **management of a company** should naturally be interested in the financial statements to see whether key performance targets are being met, and to assess the solvency and liquidity of the company, especially as the board of directors of companies may be held

personally liable for losses incurred whilst ‘trading recklessly’, i.e. being technically illiquid or insolvent (Van Auken *et al.*, 2017:3).

Management might be able to arrange a merger with another firm or carry out a business reorganisation (Mazouz *et al.*, 2012:81; Foster, 1986:535; Altman, 1968:608), or appoint a business rescue practitioner to prevent a liquidation or bankruptcy, given sufficient warning of the company’s financial distress (Lamprecht & Van Wyk, 2020; Altman, 1984:184; Taffler, 1982:342). It is possible to avoid or reverse decline, for instance by implementing changes in policies and actions that address the company’s identified strengths and weaknesses (Besley *et al.*, 2015:23; Altman, 1968:608), provided that the decline is detected early, and the distress has not yet become too severe (Hosseinzadeh Shahri & Nematollahi Sarvestani, 2020:242; Collins, 2009: preface). Management will therefore use the financial statements to attempt to detect decline timeously, and to act accordingly.

Furthermore, the management of a company who might suffer indirect losses from shares, held as part of a remuneration scheme, that become worthless, or direct losses due to the loss of future employment and salaries or wages, or as a result of damage to their reputations, will also make use of the financial statements to provide information on trends in earnings, sales, return on investment and regarding the sustainability of the company (Munawaroh & Qamari, 2021:89; Shepherd & Patzelt, 2017:70; Firer, 2012:68; Payne, 2000:5; Dimitras *et al.*, 1996:487–488; Helfert, 1994:73).

- **Employees** have an interest in the continued and profitable operations of their firm, as their future employment (Herz & Pei, 2021:120; Meiryani *et al.*, 2020:2056; Bushe, 2019:19; Skae *et al.*, 2014:280; Payne, 2000:5), salary payments (Alasaad & Gök, 2019:974) and potentially the security of their pension fund – if invested in the company or self-funded – may depend on the survival of the company. Financial statements are a source of information about the future profitability and solvency of the firm and, together with failure prediction models, could be used to assess the risk of future unemployment (Correia, 2019:5-10; Dimitras *et al.*, 1996:487–488; Helfert, 1994:73; Foster, 1986:4).

In South Africa, there is also a very strong **trade union** presence (Von Fintel, 2016). Trade unions could analyse a company’s financial statements to assess whether there is room for negotiations regarding salary and other employee benefit increases, based on the profitability and future sustainability of the company (Cho *et al.*, 2019:2; Osadchy *et al.*, 2018:343; Marx *et al.*, 2017:40).

- The **investors and potential investors** in a company (Ehalaiye *et al.*, 2020:53; Haarbuerger *et al.*, 2020:2; Altman, 2018:5; Marx *et al.*, 2017:40; Skae *et al.*, 2014:280; Mazouz *et al.*, 2012:81; Mosalakae, 2007:9). Investors may be private individuals with limited resources or large, well-endowed institutions such as insurance companies and pension and mutual funds (Dujim & Bisschop, 2018:3376). The shareholders that supplied capital to the company at the start of, or during its operations, and the financial advisers that may assist them, will be interested in the company's earnings, dividends, net asset value and capital growth (thus the return on the investment), its expansion opportunities, gearing ratios and risk exposure, as well as its long-term viability and sustainability.

The decisions made by these parties include not only which shares to buy, retain or sell, but also the timing of the purchases or sales of those shares (Herz & Pei, 2021:118). Investors may also choose which investments to accept or avoid, based on their risk preference (risk acceptance, risk avoidance, or risk neutrality), or what the required return on their investments ought to be based on their risk assessment, provided that an accurate failure prediction model gives them early warning of financial problems which may occur within a corporation (Feixiong-Ma *et al.*, 2020:1; Beaver *et al.*, 2010:112; Platt & Platt, 2002:185; Altman, 1968:608). Thus the first objective of a potential or existing investor that peruses the financial statements may very well be to sift out the companies that are likely to fail (Davern *et al.*, 2019:240; Howard, 2005:35).

- **Financial and lending institutions**, as well as investors in debt instruments, that supply long-term debt capital to the company, and who may have to forfeit interest payments and who could even suffer losses due to the non-repayment of their loans, would be interested in the company's cash flows, interest cover, gearing ratios and solvency, to determine the company's ability to pay its debts when due, and its sustainability (Gustafson *et al.*, 2021:452; Tung, 2021:160; Service, 2020:1–4; Altman, 2018:2; FASB, 2018:3; Du Jardin, 2015:286; Cascino *et al.*, 2014:196; Gitman & Zutter, 2014:68; Skae *et al.*, 2014:280; Mazouz *et al.*, 2012:81; Beaver *et al.*, 2010:99 & 112; Platt & Platt, 2002:185; Dimitras *et al.*, 1996:487–488; Lussier & Corman, 1996; Helfert, 1994:98; Foster, 1986:6 & 534).

These suppliers of long-term financing will also use the financial statements and any additional information which they may obtain, to consider under what conditions to supply the funds or lines of credit (Tung, 2021:160; Gitman & Zutter, 2014:68; Skae *et al.*, 2014:280; Beaver *et al.*, 2010:112; Platt & Platt, 2002:185; Dimitras *et al.*, 1996:487–488). Financial statements may also be employed to continuously monitor the financial position

of the company to assess any changes that may occur. Determining whether or not to grant a loan or line of credit, as well as continuously monitoring the financial position of the company, is especially important the longer the period of the loan (Gustafson *et al.*, 2021:452; Jiang & Jones, 2018:1064; Osadchy *et al.*, 2018:342; Helfert, 1994:98).

- **Suppliers**, whether those who supply on credit or those who only accept cash transactions, may also be interested in the financial results of a company (Herz & Pei, 2021:118; Meiryani *et al.*, 2020:2056; Brigham *et al.*, 2019:70; Cascino *et al.*, 2014:199; Gitman & Zutter, 2014:61). Platt and Platt (2002:184) found that, due to increased competition, manufacturers and their component suppliers now have much closer relationships, and as a result, manufacturers are also concerned about the financial health of their suppliers and vice versa.

This is especially true in the current environment where business ecosystems are being built. Business ecosystems seek to connect multiple businesses interested in eventually solving the same business problem, and are an expansion on the traditional customer-supplier relationships. For instance, to enable electric car manufacturers to produce and sell their products, relationships have to be built with hotels and other accommodation providers, fuel stations and shopping centres, to provide special recharge facilities to the owners of the electric cars. By working together, all of the parties in the ecosystem can benefit (Pidun *et al.*, 2020).

These suppliers who run the risk of losing out on a long-term relationship with the company in question, should the company be liquidated due to financial distress, will attempt – especially where they are dependent on the patronage or products of the company, the mutual networks or the distribution channels – to assist a company in ensuring its long-term survival, e.g. by offering more lenient and extended credit terms, waiving financing costs such as interest on long-outstanding debt, providing knowledge and experience in running the operations of a company at little or no cost, and by assisting the company to secure long-term contracts with relevant parties (Thorne, 2014:12; Evans & Koch, 2007:187).

- The **customers** of a company would be interested in the sustainability of the company as the success of claims relating to guarantees or warranties may depend on it. The ability to obtain spare or replacement parts for purchased products and after-sales services or repairs also depends on the company's capacity to continue into the future (Service, 2020:1–4; Altman, 2018:2; Osadchy *et al.*, 2018:342; Skae *et al.*, 2014:281; Firer, 2012:68).

- The **government and other regulators** would also be interested in the financial statements of companies (Herz & Pei, 2021:120; Ehalaiye *et al.*, 2020:53; Meiryani *et al.*, 2020:2055; Altman, 2018:2). For a government, the survival of companies is of paramount importance, as revenue is derived from corporate entities in a variety of forms, i.e. from income tax payments (by the company or its employees), the collection of value added tax, dividend withholding taxes, capital gains taxes, and skills development levies, which affect the country's ability to provide essential services (Brigham *et al.*, 2019:45; Osadchy *et al.*, 2018:342; Payne, 2000:5; Helfert, 1994:73). The South African government greatly depends on the regularity and reliability of tax receipts gathered through the South African Revenue Services (Stats SA, 2016; Helfert, 1994:73).

Consequently, the government and policymakers may use company financial statements and financial distress prediction models to assess whether a company is in danger of being liquidated, and to select firms to assist, and to decide on whether to prevent failure or to promote further growth, weighing the economic, political and social considerations that may impact such a decision (Barnard *et al.*, 2020:981; Brigham *et al.*, 2019:379; Rowlings, 2016:25; Lussier & Corman, 1996; Foster, 1986:534).

The government could also use the information contained in financial statements to determine where economic resources should best be allocated and used (Haarburger *et al.*, 2020:2; Brigham *et al.*, 2019:70; Bushe, 2019:6 & 20; Osadchy *et al.*, 2018:340; Platt & Platt, 2002:184).

- **Society** in general and communities surrounding companies, as well as various social and environmental protection organisations and other special interest lobbying groups, may also wish to assess companies' annual financial statements to determine whether a company will have the wherewithal to meet various social and environmental obligations (Dimitras *et al.*, 1996:487–488; Helfert, 1994:73). There is currently an increasing drive for reporting on corporate sustainability, which includes information on a company's carbon footprint or environmental impact (Godelnik, 2021:2–22).
- The **auditors** of the company have to express an opinion on whether or not the financial statements are a fair presentation of the transactions, financial position and cash flows of a company. The auditors thus have to determine whether the information contained in the annual financial statements is relevant, reliable, comparable and understandable. Following new auditing standards, the auditors now also have to judge the management of the

company's assessment regarding the applicability of the going concern assumption (Hepp & Reinstein, 2021:40; Barnard *et al.*, 2020:367; Lamprecht & Van Wyk, 2020; Altman, 2018:7; Jiang & Jones, 2018:1064).

- Although it is not the goal of the company to provide information to them, **competitors** may also use the financial statements of competing companies in the same industry for comparison purposes, so as to improve their own levels of performance (Baiochi *et al.*, 2019:6; Firer, 2012:68; Jacobi, 1992:14).
- Finally, **academics** may require financial statements to assist them with various forms of research (Altman, 2018:2; Cascino *et al.*, 2014:185). Interestingly, research by Huang *et al.* (2016:18) found that the addition of accounting academics to the boards of companies improves firm performance, the quality of corporations' financial reporting, and transparency.

## 2.3 The potential limitations of financial statements

### 2.3.1 Introduction

At the same time that the goal and users of the financial statements are considered, it is also necessary to take cognisance of the potential limitations of financial statements.

It is generally assumed that the published annual financial statements of companies that have been audited, are both trustworthy and a fair and true representation of the financial position, financial performance and cash flows of the company (Enyi *et al.*, 2019:2; Balcaen & Ooghe, 2006:82; Steyn & Von Wielligh, 2003:18).

However, the limitations detailed below as well as literature about the reliability of financial statements, may cast doubt on the ability of analysts and users to place reliance on the contents thereof, the results achieved or the conclusions reached, when calculating financial ratios as part of failure prediction or making economic decisions (Lev, 2018:465; Balcaen & Ooghe, 2006:82; Van Tendeloo & Van Straelen, 2005:157). Allen (2000:18) particularly notes that the belief is still held that annual financial statements provide information that supports decision-making, but argues that there is so little correlation between the actual or economic value of a business and the net worth as reported by the statement of financial position, that this belief may be flawed.



In response to these allegations, the financial regulatory bodies have attempted to, and are still increasingly attempting to issue and set standards that will improve the usefulness of the financial statements and their relevance to investors and other user groups (Herz & Pei, 2021:118; Jianu & Jianu, 2021:1; Service, 2020:1–17; Davern *et al.*, 2019:237; George-Silviu & Melinda-Timea, 2015:216; Beaver *et al.*, 2005:94; Van Tendeloo & Van Straelen, 2005:157). This ought to improve and enhance the quality of financial statement data and then its predictive ability with respect to bankruptcies.

### **2.3.2 Identified limitations of financial statements**

Whilst the author of this study believes that the financial statements are able to provide useful information for decision-making and for purposes of the ratio analysis performed to assess the stated hypotheses, the limitations stated below will be borne in mind.

#### **2.3.2.1 A focus on quantitative rather than qualitative data**

Financial statements, especially for companies listed on the JSE, are often quite voluminous. As a result, the majority of the users of financial statements tend to focus on the information expressed in monetary terms. Hence, any information not communicated in monetary terms, may be ignored (Barnard *et al.*, 2020:364; Ehalaiye *et al.*, 2020:54; Correia, 2019:5-11; Drake *et al.*, 2019:1935; Lev, 2018:470; Pascual-Ezama *et al.*, 2018:29; Skae *et al.*, 2014:316).

However, a lot of extremely valuable information cannot be ascertained from the quantitative data. For instance, quantitative data:

- do not provide the users of financial statements with any information regarding the experience, knowledge levels, networks, passion, leadership skills or motivation of its management team (Correia, 2019:5-11; Li, 2019:378). Many would argue that a truly great company's success may to a large extent be attributed to a strong and ethical management team;
- do not elucidate the manner in which a company or organisation achieved its financial results. Gouws and Lucouw (1999:105) argue that traditional accounting and financial ratios only show the outputs of systems, but that the users are left with insufficient information about the changes in market forces, the competition faced, the processes followed by the company, its strengths and its capabilities that determine the numbers;

- do not provide any direct measures of the historical or, even more importantly, the future volatility of a company (Skae *et al.*, 2014:316; Beaver *et al.*, 2010:114–115). However, higher levels of variability in earnings and cash flows are considered to be distinguishing factors of unsuccessful or unhealthy companies (Johnson & Soenen, 2003:366), and a significant measure of the riskiness of an organisation (Beaver *et al.*, 2010:114–115). The risk assessment of a company may influence its value and its cost of capital.

Costa Lourenço and Mota De Almeida Delgado Castelo Branco (2015:127) note that the adoption of International Financial Reporting Standards (IFRS) by most countries across the world has led to a significant economic transformation. Together with increased calls for sustainability reporting, the above limitations may now be largely addressed. Doherty (2012:28) in fact states that narrative reporting and sustainability reporting mean that financial statements are already moving beyond simple statements of financial facts. Reporting will continue to adjust and develop – and thus improve – due to increased shareholder activism and demands for increased clarity from staff, customers and suppliers (Lev, 2018:466; Prickett, 2002:3).

### **2.3.2.2 Financial statements contain summarised content**

The statement of financial position, the statement of profit or loss and other comprehensive income, and the cash flow statement that are contained in the annual financial statements of a company, aim to convey the results of a full year's monetary transactions – some of which may have been particularly complex – on a couple of pages. The information must thus, by necessity, be significantly summarised (Barnard *et al.*, 2020:363; Brigham *et al.*, 2019:69; Balcaen & Ooghe, 2006:85–86; Blum, 1974:3). As a result, a user of financial statements may be able to see, to a limited extent, a company's standing at a certain point in time, but the user would not be able to determine what detailed transactions took place throughout the year (Correia, 2019:5-12).

However, financial statements are not the only source of information available to the users of financial statements (Ehalaiye *et al.*, 2020:54; FASB, 2018:3; Pascual-Ezama *et al.*, 2018:30; Eickemeyer & Love, 2016:7; Ak *et al.*, 2013:555; Beaver *et al.*, 2010:114–115). So, for instance, *“the report of the chairman or chief executive that accompanies the published accounts might be very revealing. Although this report is not audited, and will no doubt try to paint a rosy picture of the company's affairs, any difficulties the company has had and not yet overcome will probably be discussed in it. There might also be warnings of problems to come in the future”* (CIMA, 1993:370).

Investors, analysts and other stakeholders also have access to JSE declarations (if the company is listed), market information on stock prices and industry averages, economic information on inflation and interest rates, declarations by the company and other statements or information that may be gleaned from its website, reports and advice from analysts in financial and daily newspapers and magazines, and prospectuses and auditor's reports (CFA Institute, 2022a; Ehalaiye *et al.*, 2020:54; Brigham *et al.*, 2019:70).

### **2.3.2.3 The shortfall of accounting policies**

*'A financial reporting system supported by strong governance, high quality standards and sound regulatory frameworks is key to economic development. Indeed, high quality standards of financial reporting, auditing, and ethics underpin the trust that investors place in financial and non-financial information, and thus play an integral role in contributing to a country's economic growth and financial stability'* (Peter Wong, quoted by SAICA in Accountancy SA, 2005:18).

As much as accounting policies and standards are issued to assist companies and their accountants in preparing financial statements that are relevant and reliable, these policies cannot address all possible variations of business transactions, prescribe comparable treatment of events, enforce compliance, or prevent collusion, fraud, or management manipulation of the financial figures (Correia, 2019:1-2; Terry, 2007:41).

Consequently, although the quality of financial reporting may affect companies, analysts, users of financial statements and capital markets (Prickett, 2002:3), accounting standards and their application cannot guarantee that the financial statements based on these policies will always be relevant, reliable, accurate or fair. Gouws and Lucouw (1999:99–100) reason that accounting numbers presented in financial statements merely represent reflections of reality. This naturally means that users of financial statements should be encouraged when exercising economic decisions, to still maintain a healthy level of scepticism about the data they use to inform their opinions.

The users of financial statements should also bear in mind that the management of the company is at liberty to decide how to apply certain accounting policies and, consequently, the profit earned and reported by a company in a financial year is largely dependent on the accounting policies that the management of the company has selected. Unfortunately, these policies may not always reflect economic reality (Brigham *et al.*, 2019:65; Correia, 2019:1-10; Appiah *et al.*, 2015:472; Firer, 2012:69).

Management may apply discretion, for instance, with regard to selecting methods for depreciation or amortisation of intangibles – which means that there are always different ways to work out the figures. Consequently, accounting figures between different firms are often not comparable, especially across different industries (Brigham *et al.*, 2019:82; Correia, 2019:5-12; Besley *et al.*, 2015:42; Gitman & Zutter, 2014:63; Firer, 2012:69; Musvoto & Gouws, 2011:38–39; Beaver *et al.*, 2010:114–115; Henderson, 2004:24; Prinsloo & Rosenberg, 2004:13; Gardiner & Bagshaw, 1997:30; Helfert, 1994:72).

Even when accounting policies are correctly and objectively applied, they may still make financial statements harder to interpret, rather than easier to use. For instance, one of the principles of financial accounting is that an accrual basis is used in the preparation of statements. The accrual basis recognises revenue at the time of sale whether payment has been received or not, and recognises expenses when they are incurred. However, the accounting profit generated from the application of this principle does not guarantee that cash flow will be received to match the profit earned, or that any cash flow will be available for the ordinary shareholders of the company (Correia, 2019:1-11; Li, 2019:380). Those not fluent in accounting techniques may also not understand the apportionment of revenue and costs in line with this principle. Accrual accounting therefore cannot be said to fully describe the circumstances of the firm.

Annual accounts could also simply be unreliable due to the size of the firm. In smaller firms accounts may be based on systems that suffer from a lack of internal controls, and smaller firms may elect not to apply international accounting standards to their financial statements. This makes them subject to more management discretion and therefore makes them less comparable to other companies' statements (Balcaen & Ooghe, 2006:82).

Accounting policies could possibly have one other detrimental effect, and that is in creating a gap between the information required by an investor in making informed investment decisions and the information available in the company's financial statements, as regulatory requirements are still insufficient to address the needs of *all* of the stakeholders and therefore users of the financial statements (De Beer, 2011:27).

In 2007, Terry (2007:41) suggested that, although different accounting policies still exist which can have dramatically different effects on corporate earnings, the accounting profession can play an important role in ensuring that accounting practices do not lag far behind business practices. In fact, the accounting profession is currently trying to do just that: even as the users of financial statements take cognisance of the potential serious shortfalls of accounting policies, they must

also acknowledge that a number of accounting and auditing boards have been attempting, through the continued issuance of new accounting and auditing standards, to address these failings and the lack of comparability that different accounting policies and choices may cause (Herz & Pei, 2021:118; Correia, 2019:5-29; Van Tendeloo & Van Straelen, 2005:157).

Ball (2006:5) and Van Tendeloo and Van Straelen (2005:155) note that, since accounting is shaped by economic and political factors, harmonisation of accounting standards and practices is almost an inevitable consequence of the increasing integration of markets and policies. This has been witnessed by the mandatory adoption of the International Financial Reporting Standards (IFRS) in several countries since 2003 (Costa Lourenço & Mota De Almeida Delgado Castelo Branco, 2015:127).

The new accounting standards have significantly reduced the number of different accounting policies available, leading to greater conformity and comparability, and simultaneously increased the disclosure requirements, thus providing the users of financial statements with more information to support economic decision-making (Barnard *et al.*, 2020:364; Rowlings, 2016:146; Ball, 2006:7; Van Tendeloo & Van Straelen, 2005:157).

The following have been identified by Lev (2018:471), Costa Lourenço and Mota De Almeida Delgado Castelo Branco (2015:126 & 134), Service (2020:1–8), Ball (2006:7–8 & 11) and Van Tendeloo and Van Straelen (2005:157) as some of the advantages of the implementation of IFRS internationally:

- Information is more useful, such as the relation of financial variables with share prices, and more comprehensive, as additional information is provided in the notes to the financial statements;
- Systems based on IFRS better reflect the economic substance of transactions than their legal form, and also reflect economic gains and losses in a more timely or appropriate manner;
- The quality of information has thus been improved, which should also improve the ability of investors to make informed financial decisions and eliminate confusion arising from different measures of financial position and performance across countries, thereby leading to a reduced risk for investors and a lower cost of capital for companies;

- Capital markets are consequently more stable;
- The results of companies in the same industry are more comparable;
- Analysts are able to better predict future earnings and events based on the annual financial statements issued by companies;
- Costs related to the preparation of financial information according to several sets of standards have been reduced;
- Compliance with IFRS gives credibility to the financial statements and makes them understandable to foreigners, thus encouraging foreign investment;
- Due to increased transparency, investment and/or funding conditions may be improved; and
- This will allow a more effective allocation of financial resources worldwide.

#### **2.3.2.4 Financial statements are based on estimates and opinions**

It should be borne in mind that financial statements are not supposed to be perfectly accurate or a hundred percent correct. In compiling a company's annual financial statements, management and the accountants of the company by necessity have to estimate certain figures and apply judgement to others. Consequently, the information provided in the financial statements will always be somewhat subjective (Correia, 2019:5-12; Lev, 2018:478).

According to Fraser and Morris (2010:23), the accounts of a corporation cannot be, and usually aren't, statements of absolute fact, as they are based on conventions, estimates and opinions, especially where the corporation carries on a complex modern business. Accounting thus only calls for financial statements to be 'true and fair'.

Some examples of commonly used estimates and opinions are:

- The matching principle, which necessitates apportionment, relies on judgement about the allocation of costs and revenue. Judgement is developed from experience and different compilers of financial statements may come to different – and not incorrect – decisions on how to allocate costs and income;

- The application of fair value accounting. According to the IFRS Foundation, an entity, when measuring fair value, *'uses the assumptions that market participants would use when pricing the asset or the liability under current market conditions, including assumptions about risk.'* (The IFRS Foundation, 2022). These underlying assumptions and mark-to-market calculations may be incorrect or may not reflect economic reality (Correia, 2019:5-30).
- The calculation of inventory values. The International Financial Reporting Standards allow companies and other businesses to select an inventory valuation method based on management's judgement of what would best suit the company's needs. Management can opt to use the first-in-first-out, weighted average cost, or specific identification valuation methods (CFA Institute, 2022b; IAS Plus, 2022). These three will lead to different results, and are equally acceptable for accounting purposes.

A company also has to determine how it is going to allocate the fixed production overheads to the cost of inventories. IAS 2, the financial standard for inventories, states that overheads should be allocated based on the normal capacity of the production facilities (CFA Institute, 2022b; IAS Plus, 2022). This statement is wide open to interpretation – normal capacity is not maximum capacity, but rather the capacity that can be achieved on average over the long-term under normal circumstances. But who decides what normal circumstances are, or over how long a period of time to measure the 'average'?

Finally, according to financial reporting standards, inventory has to be shown in the statement of financial position at the financial year-end, at the lowest of cost price or net realisable value (PCAOB, 2022), which necessitates an estimate of what the inventory in the company's stores and shops could sell for, less the estimated costs necessary to make the sale (IAS Plus, 2022).

- Fixed (or non-current) assets must now, in accordance with IAS 16, be recorded based on the various significant components that make up an asset, to ensure that depreciation is written off on these various components according to each component's estimated useful life. This means that, should a company acquire a building, it would have to separate the price paid for the building, into a reasonable price for the (possibly previously used) lifts, the windows, the doors, the building structure, the bathroom amenities, the kitchen equipment, the carpets, etc. To determine a fair price for each component may be extremely challenging (Holt, 2011). Furthermore, the decision of the useful economic life of each component

requires judgement and estimation as well, as does the test for impairment of each component at year-end.

- There are several other examples of estimates and opinions, e.g. the valuation of ordinary shares owned (as investment assets) in private companies, the determination of revenues from contracts accounted for by the percentage-of-completion method (PCAOB, 2022), the projection of the value of contingent liabilities, which requires inputs on revenue volatility, the probability of commercialisation of the product and the timing thereof (Mukhopadhyay & Vaidya, 2022), and the estimation of pension and warranty expenses (PCAOB, 2022).

It is clear from the above examples that financial statements are indeed no longer a record of physical rands and cents – several entries and balances will depend very heavily on management's perceptions, motivations and judgements. Nonetheless, Lev (2018:479) notes that some estimates can be reliably predicted, for instance the bad debt provision, as historical data and unbiased forecasts of economic changes support these estimates. Consequently, although an analyst should be wary of directly comparing the financial statements or ratios of two or more businesses or organisations, there is still value in preparing financial ratios, especially where these are compared to industry averages.

#### **2.3.2.5 The use of historic costs and prices (a lack of inflationary adjustment)**

Besley *et al.* (2015:43), Gitman and Zutter (2014:63) and Heathcote and Human (2008:25) are concerned about the fact that traditional financial statements, being prepared using an accrual basis, suffer from the inherent limitation of being based on the past and not reflecting current economic reality appropriately.

Correia (2019:5-12 & 5-30) and Li (2019:378) consequently warn the users of financial statements to use financial ratios based on financial statement information with caution. Over time, these ratios become less comparable (Skae *et al.*, 2014:315) – some ratios may improve year-on-year purely because the denominator value decreases (e.g. the book value of a depreciated asset) without the asset having been applied more productively or having generated more income. As different companies also own assets of different ages and levels of depreciation, direct comparisons between companies may also not yield results suitable for decision-making purposes.



Beaver *et al.* (2010:114–115) state that, aside from not reflecting current market values appropriately, historical costs also do not reflect expected future cash flows or future expectations of the business or the market in sufficient detail, which makes it difficult to assess the standing and future viability, e.g. the solvency and liquidity, of a company. Vigario (2002:167) similarly contends that users cannot know, based on annual financial statements, whether the following year's market will be larger or smaller, whether a competitor is likely to take away part of the current sales of a company, and whether a substitute product will erode the current market share. Labour union militancy, economic conditions such as foreign exchange factors, and future management team changes are also not reflected.

Financial statements may thus not be sufficient on their own to meet the objectives of financial reporting, and management commentary, which is forward-looking and provides information about future cash flows, could be the only solution (FASB, 2018:2; Lev, 2018:465 & 471; Heathcote & Human, 2008:26). However, although some of the other sources of information (such as management forecasts) are more prospectively oriented (Beaver *et al.*, 2010:114–115), they are not audited and may therefore also not be reliable (Lev, 2018:485–486).

#### **2.3.2.6 Financial statements are subject to manipulation**

The management of a company may purposefully attempt to misstate its financial information to reflect a more positive position than that in which the company actually finds itself (Herz & Pei, 2021:118; Enyi *et al.*, 2019:2; Besley *et al.*, 2015:43; Skae *et al.*, 2014:316), especially where a company is in financial distress (Balcaen & Ooghe, 2006:82).

Companies in distress are frequently the target of predator companies interested in takeovers or mergers and, often during these transactions, the management of the target company will be removed or replaced, especially where the target company has been underperforming. In an attempt to avoid being dismissed, the managers may misreport the company's financial results. Similarly, the motivation for misstating the financial statements may be to increase the share price of the company – albeit temporarily – which would make it more expensive (and thus less likely) for the predator company to acquire the target. Shareholders, satisfied with the increased shareholders' wealth as a result of the higher share price, would also then be less likely to sell their shares to the predator company (Cascino *et al.*, 2021:76–77; Beaver *et al.*, 2010:145).

Financial statements may also be misstated to prevent creditors from forcing the company into liquidation, recalling financing or tightening credit terms, or to enable the company to secure debt-financing at more favourable rates (Beaver *et al.*, 2010:145; Masocha & Weetman, 2005:163).

The management of the company may further be incentivised to paint a rosier picture of the company than its situation actually allows, where their remuneration is tied to share incentives (Cascino *et al.*, 2021:76–77; Beaver *et al.*, 2010:145).

#### **2.3.2.7 Financial statements may not be issued timeously to inform decision-making**

Statutory financial statements are only published annually, although shorter and less detailed interim financial statements are often published half-way through the year. The latter, however, may not be audited and are therefore less reliable than the annual financial statements. This means that the information contained in the financial statements may not be timely to support the decision-making of its users (Li, 2019:381).

#### **2.3.2.8 Different year-end timings make financial statements incomparable**

Seasonality and different year-ends may affect comparisons between companies (Gitman & Zutter, 2014:63; Firer, 2012:69). A simple illustration would be to compare companies who had financial year-ends on 28 February 2020, which occurred just before the global COVID-19 pandemic and subsequent lockdowns, with companies in similar industries who had financial year-ends of 30 June 2020 or 30 September 2020. The results of the companies with later year-ends would have been substantially distorted by the pandemic, whereas companies with February year-ends would have had time to recover to some extent before having to report on their results again, and would also have faced less uncertainty at the time of reporting.

#### **2.3.2.9 Financial statements may be too difficult to understand**

Lev (2018:470) and Gouws and Lucouw (1999:102) state that there are a vast number of reasons why annual financial statements are not as useful as they are meant to be, noting that annual reports may simply be too difficult to understand or that the interpretation process may not be fully understood. Financial statements are often deemed ‘unreadable’ and far too long (Ehalaiye *et al.*, 2020:58; Drake *et al.*, 2019:1935; Pascual-Ezama *et al.*, 2018:29).

Intangible assets also make the financial statements of companies hard to interpret (Correia, 2019:1-2; Lev, 2018:476; Beaver *et al.*, 2010:149). Some intangible assets, for instance the value

derived from research or training, may not be stated on the financial statements at all, instead being expensed in the year incurred, whereas others, such as patents and developments, may be stated at the cost incurred to establish the asset instead of the true economic value thereof. In most cases, determining the true value of a brand or patent is a subjective and complicated process. Companies that are very much involved in research, e.g. pharmaceutical companies, or those that deliver services requiring intellectual capital, such as software development companies, may therefore have financial statements that are not comparable to companies with limited investment in intangibles.

#### **2.3.2.10 Interpretation may be influenced by the perspective of the analyst**

Whether a financial ratio based on the financial statements of a company is seen as acceptable, outstanding, disappointing, or worrying, will very much depend on the perspective and outlook of the user conducting the analysis and interpretation (Correia, 2019:5-28). A naturally pessimistic person may consider financial ratios more indicative of potential problems or even a looming catastrophe, than an optimistic person – we are hardly ever truly neutral or objective in our interpretations.

It may also be very difficult to assess whether a financial ratio is weak or strong when assessed in conjunction with other financial ratios: for instance, a company may have a high net profit margin, but also a very high debt: equity ratio. Its relative profitability may thus be as a result of, or despite, its high gearing levels. Users are potentially unable to make logical conclusions that exhibit a dichotomous nature (i.e. an item may be deemed to be one of two things, such as strong or weak, relevant or not, truthful or not) and thus any inferences drawn from accounting information have to be deemed vague and ambiguous (Besley *et al.*, 2015:43; Skae *et al.*, 2014:316; Musvoto & Gouws, 2012:2).

#### **2.3.2.11 Financial statements are not relevant or reliable for start-up or new-age companies**

Foster (1986:10) notes that start-up ventures' financial statements will not reflect the feasibility of new technologies and the market acceptance of products not yet developed. Furthermore, internally generated intangibles are still being written off in the Statement of Profit or Loss, even though the creation of such intangibles holds long-term value for the company, and therefore, by definition, ought to be classified as assets for the company (Davern *et al.*, 2019:240; Li, 2019:378). The information contained in the financial statements of technology-based, start-up or

new-age companies is therefore sadly inadequate for estimating the real economic condition of such companies.

Moreover, new-age companies require completely different metrics for valuations. The financial statements of e-commerce companies, internet businesses, Software-as-a-Service (SaaS) companies and websites will, especially in the early years of their existence, not give a reasonable indication of the value of the company. The intrinsic value of these companies will have to be determined using key performance indicators such as the number of active and/or transacting users, average order value, bounce rate (the number of users who clicked on the 'back' button to avoid a website) and revenue run rates (The Corporate Finance Institute, 2022).

## **2.4 The decision-making usefulness of financial statements**

### **2.4.1 Introduction**

In South Africa, the financial statements of public and listed companies must be generated annually according to the Companies Act 71 of 2008. The aim is to ensure that the financial statements are reliable, thus trustworthy, as well as understandable, consistent between reporting periods, comparable and relevant, which means that it applies to the objective for which the financial statements are used and makes a difference to the users' economic decisions (Marx *et al.*, 2017:40, Steyn & Von Wielligh, 2003:18; Gouws & Lucouw, 1999:101). Reliable and relevant financial statements provide useful information. Jianu and Jianu (2021:1) go so far as to state that the reliability of financial information is essential to ensure the credibility and stability of capital markets.

Osadchy *et al.* (2018:340) declare that the preparation of financial statements is crucial to the successful conduct of the activities of a company, or any other organisation for that matter. Skae *et al.* (2014:279) furthermore note that the evaluation of these financial statements, in particular regarding the company's financial position and operating performance, is critical in ensuring the financial sustainability of the organisation.

The information contained in the four basic components of the financial statements – i.e. the statement of financial position (or balance sheet), the statement of profit or loss (or income statement), the statement of changes in equity, and the cash flow statement – is of major significance to a variety of interested parties who regularly need to have relative measures of the company's performance (Herz & Pei, 2021:117; Haarbarger *et al.*, 2020:2; Correia, 2019:5-2; Osadchy *et al.*, 2018:341; Gitman & Zutter, 2014:61). In fact, Osadchy *et al.* (2018:340) write, 'In

*modern conditions, financial statements are the most complete, objective and reliable information base, based on which one can form an opinion on the property and financial position of a company’.*

Thus financial statements, including their notes, have not been rendered completely obsolete, despite the limitations noted above (Herz & Pei, 2021:119; Correia, 2019:5-30; Eickemeyer & Love, 2016:7). Provided that the limitations are borne in mind, the correct perspective can be applied when financial statements are analysed (Correia, 2019:5-11).

## **2.4.2 Prior research findings**

Several studies have been conducted, particularly since the introduction of the International Financial Reporting Standards (IFRS), as to whether financial statements are still important and useful to the stakeholders of organisations. Users, including investment professionals, still regard the financial accounting information contained in financial statements as a key input to their decision-making, despite the shortcomings noted in Section 2.3 (Cascino *et al.*, 2021:84; Herz & Pei, 2021:119; Jianu & Jianu, 2021:2; Ehalaiye *et al.*, 2020:54; Davern *et al.*, 2019:237 & 242; Pascual-Ezama *et al.*, 2018:35; Skae *et al.*, 2014:279). Cascino *et al.* (2021:88) and Ehalaiye *et al.* (2020:52) conclude that financial statements are considered to be the most important source of information to support economic decision-making.

Not only are financial statements still very relevant to decision-making, but the quality of the financial information and the reliability of the financial statements have also been assessed as of a higher standard following the introduction of IFRS, than information which were presented according to national accounting regulations (Jianu & Jianu, 2021:2; Ehalaiye *et al.*, 2020:54). Annual financial statements are also regarded as more relevant and reliable than alternative information sources, such as interviews with the board of directors, direct personal contact with the management of the company, management discussions in the notes of financial statements, coverage by journalists and feedback provided by analysts (Davern *et al.*, 2019:242).

Consequently, Brigham *et al.* (2019:70), Skae *et al.* (2014:279) and Firer (2012:43) suggest that a set of annual financial statements of a company is the single most important document that an entity can provide to its stakeholders. Moreover, Skae *et al.* (2014:279) observe that, *‘An integrated report is a concise communication about how an organisation’s strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value in the short, medium and long term’.*

Based on the results of their studies, Ehalaiye, *et al.* (2020:52) and Brigham *et al.* (2019:70) found that the statement of financial position, the statement of profit or loss, and the accompanying notes provided the most useful information, whilst Davern *et al.* (2019:237) noted that the net income, shareholders' equity and operating cash flow figures remained relevant for investment decisions.

Financial statements also become easier to analyse, often through the use of ratios, based on the application of IFRS globally. The composition, content and presentation are now more unified, which allows analysts to develop standard methods to read and analyse the financial statements (Osadchy *et al.*, 2018:340). Financial statement analysis aids stakeholders with the interpretation and use of both financial and non-financial information (Skae *et al.*, 2014:280).

This does not mean that there isn't always room for improvement. The same research also found a need for far more disclosure of information that is not necessarily prescribed by IFRS, for instance more information on cost of sales figures, EBIT and EBITDA, as well as non-financial information, for instance management commentary on environmental and social progress, to aid investor and other stakeholder decision-making (Herz & Pei, 2021:120; Davern *et al.*, 2019:241; Drake *et al.*, 2019:1935).

Providing profit forecasts as part of non-IFRS prescribed financial information will reduce uncertainty for investors and stakeholders, which could lead to higher or more stable firm valuations (Ehalaiye *et al.*, 2020:53; Pascual-Ezama *et al.*, 2018:30). In fact, Davern *et al.* (2019:240) postulate that their research indicated that non-financial information was the leading indicator of future performance. Regulators and standard-setters should bear these recommendations in mind when future adjustments to reporting standards are considered. However, these recommendations do not detract from the research that has shown that financial statements are still, by and large, relevant and reliable as sources of information to enhance economic decision-making.

#### **2.4.3 Additional safeguards for companies in distress?**

One would expect that, if a market is capable of anticipating failure accurately, funds would not be invested further into failing firms. However, interestingly, Blum (1974:12) found that the opposite was often true. The reasons for this apparent anomaly may range from investors expecting higher returns on riskier stock, to investors and analysts simply not being able to interpret financial information correctly. According to Pascual-Ezama *et al.* (2018:29), Hamilton

and Micklethwait (2006:173) and Agulhas (2002:25), it may therefore be necessary, in an increasingly complex business world, to provide safeguards for investors, creditors and society, in order to prevent future losses.

Yet the argument may equally be put forward that investors ought to know that the failure or liquidation of any enterprise in which they invest, is a distinct possibility. Shareholders demand a return in exchange for the risk that they assume by investing in equity – thus, they cannot claim ignorance about the existence of that risk (Hopkin, 2012). It may therefore be unreasonable to follow the advice of Hamilton and Micklethwait (2006:173) and Agulhas (2002:25) to institute additional safeguards to protect investors.

According to Berstein (1998:598), the existence of protective provisions could not, and possibly should not, be a substitute for alertness and a continuous monitoring of the results of operations and of the financial condition of an enterprise in which long-term funds are at risk. It is therefore the duty of all of the stakeholders, i.e. the users of financial statements, to closely scrutinise and evaluate the information that is available to them.

#### **2.4.4 Financial statements as the basis of this study**

As noted by Cascino *et al.* (2021:99), financial accounting information, regardless of its shortcomings, remains a key input to users' decision-making. Thus this study can conclude that there is still value to be gained from an in-depth analysis of the financial statements of companies that are listed on the JSE. Our interest now lies in determining whether financial ratio analysis can distinguish between companies that are successful, and those that are not.

## **2.5 Conclusion**

Although the accounting standards and policies that form the basis of audited financial statements of listed companies may have been adapted throughout the years, the goal of the financial statements remains unchanged. Financial statements are produced to provide the numerous users thereof with decision-usefulness information.

The users of the financial statements, which include investors, potential investors, the management and employees of the company, providers of both long-term and short-term financing, customers, government and policy-makers, have to bear the potential limitations of the financial statements in mind when scrutinising the statements. Financial statements may be very

long and very voluminous, which may make them difficult to read and understand, especially as the information may be summarised, based on different accounting policies and reflecting different year-ends, and may contain estimates, such as fair value adjustments. The users of financial statements should bear in mind that the financial statements of companies, even those in the same industry, may therefore be difficult to compare, and should preferably use the financial statements in conjunction with other information, such as newspaper articles, press releases, JSE notifications and analysts' reviews, when making their decisions.

Although financial statements may provide some challenges to investors and analysts, they remain the most important source of information that is available regarding the financial position, the results of the trading activities, and the cash flow trends of a company. Appropriate financial ratio analysis is still considered to be an effective and efficient tool for analysing the available financial information, and for attempting to identify the early warning signals of potential financial distress.



## CHAPTER 3 SUCCESS VERSUS FAILURE: A CONCEPTUALISATION

### 3.1 Introduction

#### 3.1.1 Overview of Chapter 3

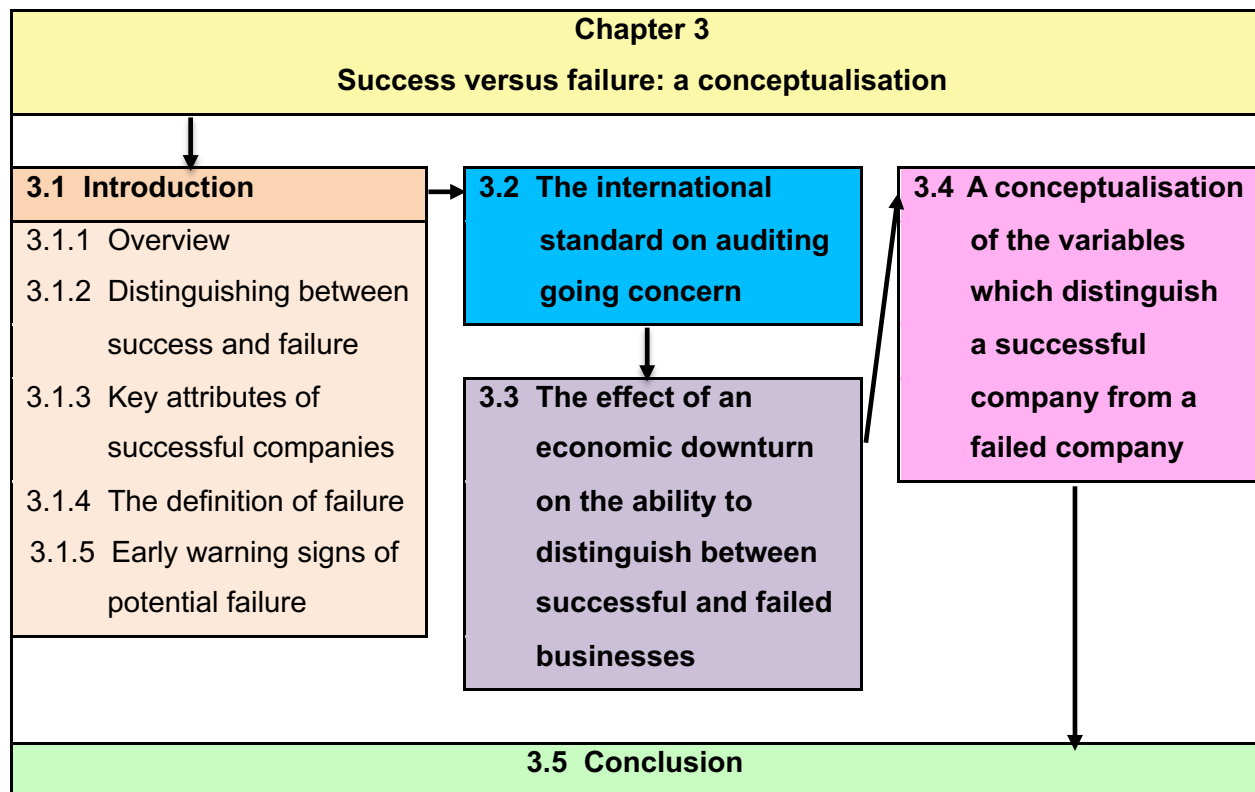
*Success consists of going from failure to failure without loss of enthusiasm.*

*Winston Churchill*

The literature review for Chapter 3 focuses on the distinction between successful and failed companies. Although there should be warning signs to inform a user of financial statements of possible or impending doom, in reality many stakeholders are unable to distinguish between successful and failed firms, and continue to supply funding – much of which they will not be able to recover – to the companies that are heading into financial distress. It is consequently important that we consider what characteristics or key attributes are generally assigned to successful companies, and which are the potential warning signs associated with companies heading for failure. The goal, of course, is to prevent further losses in future; companies that can accurately measure and determine their financial condition can – provided distress is identified early enough – improve their performance to minimise the risk of failure (Yendrawati & Adiwafi, 2020:79). For the many stakeholders of a company, and for this study, *‘Failure is about prediction rather than pronouncement’* (Kurunmäki & Miller, 2013:1102).

This chapter consists of five sections. Figure 3.1 below presents an overview of the chapter:

**Figure 3-1: Overview of Chapter 3**



(Source: Author compilation)

Section 3.1 begins with an overview and introduction into the dilemmas of not being able to distinguish between successful and failed companies accurately and timeously, and not being able to identify the warning signs displayed by a company that is beginning to flounder. The section then relays the results of the literature review regarding the key attributes of successful companies, and the signs of potential failure, which will form the basis of this study's conceptualisation of financial success versus failure. Section 3.2 sets out the requirements of the international standard on auditing going concern which auditors need to comply with when performing an annual audit on a South African company.

In Section 3.3, the effect that a recession or an economic downturn may have on an analyst's, investor's, debt provider's or other stakeholder's ability to differentiate between successful and failed companies, is explored – for this study, the period around 2008 when a global recession impacted on nearly all companies and businesses world-wide, was excluded from the analysis to prevent incorrect conclusions being drawn as a result of the upheaval caused by such turbulent conditions. Similarly, the second period selected for this study was purposefully set prior to the lockdowns that resulted from the COVID-19 pandemic, to also exclude the abnormal and

unnatural results that companies would have experienced during these periods of forced inactivity. Section 3.4 then presents a conceptualisation, which will be used in the empirical analysis of this study, of the variables which distinguish successful companies from failed companies. The chapter ends with a conclusion that summarises the key indicators of success, and the most important failure warning signs, which may be useful to the users of financial statements, especially to allow for timeous failure prediction.

### **3.1.2 Distinguishing between success and failure**

Collins and Hansen (2011:1–2) posed the following questions: *“Why do some companies thrive in uncertainty, even chaos, and others do not? When buffeted by tumultuous events, when hit by big, fast-moving forces that we can neither predict nor control, what distinguishes those who perform exceptionally well from those who underperform or worse?”*

The dilemma of not being able to distinguish between successes and failures successfully or comprehensively has been voiced in several subsequent studies by numerous authors. For instance, Alasaad and Gök (2019), Ahmad and Raza (2016:19) and Leinwand and Mainardi (2010) also wondered what the distinguishing features are that enable certain companies to be successes whilst others languish.

In 2005, Howard (2005:36) performed a financial analysis that would have successfully allowed investors to avoid all of the companies that turned out to be failures, but unfortunately failed to identify the top performing companies. Howard writes: *“So how did I not spot the winners? The answer is that I simply do not know.”* It is a question that has not yet been adequately answered.

To complicate matters further, businesses are simply not all the same, nor do they follow the same life cycles, and thus some may initially be profitable and later on fail, whereas others may struggle initially, and later turn into successes. Some may suffer losses during their lifetimes, without failing, whereas others may be profitable, but eventually run out of cash. Still others will only ever earn very small and unsatisfactory profits (Du Jardin, 2015:286; CIMA, 1993:337).

In a similar vein, Collins (2009:8) and McLoughlin (2005:21) write that a company will not necessarily remain either a success or a failure (depending on the definition of failure) into infinity. Rapid change, innovation, globalisation, technological changes, disruptions and unexpected events characterise business today and, as a result, a company which is considered to be a

resounding success in one year, could easily be an example of failure in the next. As Collins (2009:8) puts it, *“Anyone can fall and most eventually do.”*

Collins (2009:25) and Hamilton and Micklethwait (2006:1) believe that merely identifying an unsuccessful company is insufficient. They advise investors and analysts to rather gain a thorough understanding of why a decline in performance or the failure of a company has occurred, and to determine who ought to be held responsible, so as to avoid similar mistakes in future. As George Santayana said, *“Those who cannot remember the past, are condemned to repeat it.”*

Conversely, Freedman (2010:144) cautions researchers and users of financial statements not to implicitly trust the results of studies regarding business successes. He reasons that it is particularly difficult to obtain information on failed businesses, and consequently advice is often based on the results of successful companies only. Unfortunately, this leads to an inherent bias – it is impossible to state that the way in which a successful company is operating, comprises a winning recipe, unless the company can be compared to a similar failed company, to ensure that the failure wasn't operating in exactly the same manner. For instance, a high-risk investment may lead to spectacular successes for some, and dismal failures for others – the difference may be due to a variety of reasons, such as timing, management and market perceptions.

The goal with identifying companies that are suffering from a decline in performance or that are facing financial distress, is surely to assist the companies in turning the business around while there is still time to do so, and to protect stakeholders from losses should it not be possible to prevent failure (Brigham *et al.*, 2019:377). Collins (2009:preface) writes that it is almost always possible to avoid decline, provided that the 'seeds of decline' are detected early. The problem is that it may be difficult to spot such distinguishing factors early on in a company's decline, as the warnings signs may begin to show internally, but external observers will be told that any problems that the company are experiencing are merely temporary or due to economic cycles and that these problems do not indicate any fundamental problems that cannot be resolved (Marx *et al.*, 2017:408; Collins, 2009:11–12). Consequently, it may be some time before external observers and users of financial statements are able to make informed economic decisions.

The objectives of this study, as set out in Chapter 1, are thus to assess the usefulness of financial statements in assisting the users thereof with distinguishing timeously between healthy/successful and unhealthy/failed companies, and to consider whether, given the usefulness of the financial statements (or the lack of usefulness), the going concern principle is still deserving of its status as an underlying principle of financial accounting. The study may

perchance also uncover whether the changes that are regularly implemented in international financial accounting standards, have had a meaningful effect on the usefulness of the financial statements in predicting business failure.

It is therefore important to first consider which key factors have been uncovered by prior research as the attributes that are typically associated with successful companies, or with failed companies. These do not always necessarily display a perfectly inverse relationship and therefore the key attributes of successful companies will be listed first, followed by the key attributes of failed or struggling companies.

### **3.1.3 Key attributes of successful companies**

A successful company may be defined as one that achieves its ultimate goal, which is to increase shareholders' wealth (Marx *et al.*, 2017:12; Chitakunye *et al.*, 2014:451; Gitman & Zutter, 2014:1). Wealth can be increased by delivering a return (measured through share price increases and dividends paid) higher than the required rate of return of the investors, or reducing the risk to which the investors are exposed (Brigham *et al.*, 2019:12; Skae *et al.*, 2014:11).

There is one non-financial aspect that a variety of researchers agree is the single most important differentiator between a successful and a failed company, and that is a focus on core values. A visionary company focuses on identifying the truly unique capabilities that allow the company to achieve a competitive advantage by creating a differentiated value (Leinwand & Mainardi, 2010; Van Niekerk, 2001:10). Graves and Waddock (2000:395) declare that visionary companies clearly state what their core values are, and do everything in their power to live up to, and stay constant to, the stated ideology.

Collins and Hansen (2011:21) also define discipline as a *consistency of action*, explaining that it means that a company and its management should act in a manner that is consistent with the values that were set for the business, consistent with the long-term goals that have been envisioned, consistent with the performance standards used to measure whether those goals are being achieved, and consistent in method and over time.

The service or product delivered by a company may fulfil a fundamental human need – and such companies rarely go out of business – but the visionary company aims at being the best in the world in delivering this core product or service (Leinwand & Mainardi, 2010; Collins, 2009:32). Visionary companies also develop positive relationships with stakeholders, creating a high morale

to ensure productive employees, and work with communities to prevent and resolve problems that may arise between the company, its surroundings, and other stakeholders effectively and timeously (Graves & Waddock, 2000:395).

Unfortunately, it is very hard to measure whether a company is adhering to its core values, and most evaluations thereof would tend to be subjective. This study will therefore focus on financial measures which may indicate success or failure. Altman (2018:5) noted that investors search for equity investments that deliver appropriate or superlative returns, and Johnson and Soenen (2003:365) found that this quest has resulted in prolific literature on defining characteristics of companies beating overall stock market performance. The following are frequently identified as the key attributes of successful companies:

- i) **High market-to-book ratios**, where the market capitalisation of the entity (which is the number of shares in issue multiplied by the market price per share) far exceeds the book or even fair values recorded in the financial statements of the company (Parshakov & Zavertiaeva, 2017:268; Johnson & Soenen, 2003:365). Graves and Waddock (2000:398) assert that vision-driven companies generated share price increases which were six times higher than the returns of a comparison (matched pair) group of companies, and fifteen times higher than the returns earned by the general market.

The market price of a company is based on more than its net asset value, i.e. the value of its assets less its liabilities. The market price also reflects the perceptions of the market regarding the company, and will include adjustments for the perceived risk attached to the company, and its growth expectations. The lower the risk and/or the higher the growth expectations, the more a company should be worth (Correia, 2019:6-19).

- ii) **Larger companies** could be more successful, due to their ability to diversify risk more successfully, to claim a dominant market position (with the benefits, for example, of economies of scale: more negotiating power, the ability to buy in bulk, and loyal customers), and because they have better access to capital markets and therefore are able to negotiate better financing terms (Gharaibeh & Bani Khaled, 2020:279; Brigham *et al.*, 2019:379; Rahim, 2017:54; Van Auken *et al.*, 2017:6; Chitakunye *et al.*, 2014:454; Johnson & Soenen, 2003:366–367).

It should be noted that there have also been studies that have shown that size and success may be negatively correlated, with growth companies potentially achieving more success

than traditional, established companies (Gharaibeh & Bani Khaled, 2020:279; Johnson & Soenen, 2003:365).

- iii) A high sustainable **growth rate**, i.e. the growth rate a company is able to maintain without adding to its debt structure, is another key attribute of successful companies. The return that a company is able to generate by employing its assets will be one of the key factors that determine how high this rate will be. The higher the rate, the more financial flexibility a company has to expand through organic growth or acquisitions (Gharaibeh & Bani Khaled, 2020:280; Correia, 2019:17-35; Rahim, 2017:54; Pretorius, 2009:2; Johnson & Soenen, 2003:365).

A company's **financial policies** should also enable the company to take advantage of potential growth opportunities. The company should be allowed to make judicious use of external funds, so that it is not limited to internally generated funds only to drive growth. It should, however, also manage its distribution policy to ensure that internal funds are available to fund growth, when needed. The less of its earnings a company pays out as a dividend, the higher its sustainable growth rate will be, allowing the company to reinvest its earnings in potentially profitable projects, and thus stimulating and encouraging future growth (Correia, 2019:5-50 & 16-12).

- iv) A company cannot survive in the long term, and generate positive cash flows, unless it is **generating profits**. High profitability levels, which may, for example, be measured with the Return on Assets (ROA) or Return on Equity (ROE) ratio, drive cash generation and growth over the long term (Chitakunye *et al.*, 2014:451; Johnson & Soenen, 2003:365; Graves & Waddock, 2000:401–402; Helfert, 1994:71). Successful companies also tend to measure their performance regularly (Alasaad & Gök, 2019:976). Becchetti and Sierra (2003:2105) disclose that an analysis of trend indicators confirmed that the various profitability indices and trends emphasise the overall higher profitability of active enterprises.
- v) The **capital structure** of a company, i.e. the mixture of long-term debt, equity and hybrid instruments such as preference shares that together provide the financing with which the company purchases its assets and operates the business, should be optimised in a manner that lowers the overall cost of capital, whilst not raising the financial risk of the company to a point where it can no longer access long-term financing or ends up in financial distress. Studies conducted by Gharaibeh and Bani Khaled (2020:280), Johnson and Soenen (2003:365) and Graves and Waddock (2000:406) found that successful companies had

lower debt-to-equity and debt-to-asset ratios than struggling and unhealthy companies, and that the values of the companies increased with lower levels of debt, potentially as a result of a sense of greater stability provided to shareholders.

- vi) The availability of sufficient **cash resources** and the ability to generate sustainable cash flows, increase the value of a company and establish it as a more successful company than one without these resources (Barnard *et al.*, 2020:981; Alasaad & Gök, 2019:974; Yee, 2018; Collins & Hansen, 2011:104; O'Flaherty, 2006:12; Johnson & Soenen, 2003:365–366; Richardson *et al.*, 1998:169; Helfert, 1994:71). Successful companies tend to have higher cash-to-assets and cash-to-liabilities ratios than struggling or failed companies. Holding sufficient cash allows companies to respond quickly and at low cost to new opportunities, serves as a buffer in case of distress or unforeseen events, and allows companies to distribute dividends.
- vii) The more quickly sales are turned to cash, and the longer a company can take to pay a creditor without damaging its relationship with the creditor, the better a company's cash flow position will be. A shorter **cash conversion cycle** based on efficient and effective working capital management, is therefore a key attribute of successful companies (Jalal & Khaksari, 2020:639; Chitakunye *et al.*, 2014:454; Gitman & Zutter, 2014:64; Johnson & Soenen, 2003:366–367).
- viii) Successful companies tend to have **less variability** in their earnings than failed or unhealthy companies (Gharaibeh & Bani Khaled, 2020:280; Gitman & Zutter, 2014:10). The more variable a company's earnings, the less predictable its earnings and cash flows, and the higher the risk that debt may not be repaid, or that unforeseen circumstances may render the company unable to operate (Johnson & Soenen, 2003:366). Earnings may be made more variable by general economic conditions, shifting competitive pressures and operating inefficiencies.
- ix) There have been many studies linking investment in **research and development** and the subsequent introduction of innovative new products to successful firms (Freedman, 2010:140; Johnson & Soenen, 2003:366).

However, there is also evidence to suggest that companies that lead the way, and who are first-to-market, eventually struggle and fail. Collins and Hansen (2011:74–75) therefore found that companies that performed far better than their competitors, were the ones that



did innovate, but only enough to keep pace with their competitors, so that they weren't overly committed during downturns in the economy. The decision on the level of investment in research and development that is required for a company to be successful, is very much dependent on the industry in which it trades.

Innovation is definitely more important to companies in the technology, biotechnology, science-oriented and pharmaceutical fields (Correia, 2019:5-35; Collins & Hansen, 2011:74–75; Johnson & Soenen, 2003:366).

- x) Companies with **unique products** are more at risk of failure, and therefore may have no choice but to spend large amounts on **advertising** (Chitakunye *et al.*, 2014:454). However, companies that spend more on advertising may – almost in contrast to the previous statement – build more brand loyalty and as a consequence be 'safer' investments than those that do not. It is important for a company that wishes to be successful to measure its advertising expenditure (as a percentage of sales) against the amounts spent by competitors.

There are of course many other factors, and many different combinations of factors, that may determine whether a company will be successful (or more successful than its competitors). Other qualitative indicators of financial success may include a dynamic leader driving performance, a break-through in pharmaceutical research, a much-loved brand, excellent relationships with suppliers, or a strong competitive drive (Correia, 2019:5-11). Many of these factors are difficult to research. For instance, a strong leader could be inspirational and motivating, driving positive performance, or autocratic and demanding, potentially leading to the downfall of the company (Li, 2019:378; Skae *et al.*, 2014:312; Vigario, 2002:177; CIMA, 1993:371). For the most part, information on the nature of the leader will only be available to those working within the organisation, and not to the general public, potential investors or academic researchers.

### 3.1.4 The definition of failure

Before attempting to identify key indicators of failure in companies, it is necessary to define what failure is for the purposes of the study. Failure can (and has been) defined in many different ways (Laurila, 2020:8; Veganzones & Severin, 2020:208; Bushe, 2019:6; Yee, 2018; Appiah *et al.*, 2015:473; Pretorius, 2009:1; Altman & Narayanan, 1996; Dimitras *et al.*, 1996:487).

The legal framework for assessing bankruptcy focuses on the technical definitions of solvency and liquidity, but other definitions have also been applied during bankruptcy failure prediction studies. So much so, that Bushe (2019:6), Balcaen and Ooghe (2006:72), Platt and Platt (2002:186) and Cybinski (2001:30) proclaim that research regarding business failure is often simply not comparable as the term 'failure' is not well-defined. It is important to ensure that failure is defined appropriately, as the inappropriate application of a failure definition could lead to sampling bias and deliver results which cannot be generalised for a population of companies (Appiah *et al.*, 2015:474; Balcaen & Ooghe, 2006:72–73).

The Companies Act 71 of 2008 states that a company satisfies the solvency and liquidity test 'at a particular time if, considering all reasonably foreseeable financial circumstances of the company at that time—

- a) the assets of the company, as fairly valued, equal or exceed the liabilities of the company, as fairly valued; and
- b) it appears that the company will be able to pay its debts as they become due in the ordinary course of business for a period of—
  - i) 12 months after the date on which the test is considered; or
  - ii) in the case of a distribution contemplated in paragraph (a) of the definition of 'distribution' in Section 1, 12 months following that distribution'.

The *liquidity* of a company, according to Gitman and Zutter (2014:64), CIMA (1993:375) and Foster (1986:61) refers to its ability to satisfy its short-term financial obligations, thus pay its debts, when and as they fall due. A company is generally regarded as being *insolvent* when its liabilities exceed the (fair market) value of its assets (Yee, 2018; Gitman & Zutter, 2014:716; Beaver *et al.*, 2010:103; Levenstein, 2004:10), i.e. the company has a negative shareholders' interest on the statement of financial position.

A large number of researchers have opted for the legal definition of failure, e.g. illiquidity and insolvency, to define failure (Veganzones & Severin, 2020:208; Du Jardin, 2015:291; Balcaen & Ooghe, 2006:72; Altman & Narayanan, 1996; Beaver, 1966:71; Dimitras *et al.*, 1996:487; Blum, 1974:3). However, other indicators that have been used in research to define failure, include:

- A poor interest coverage ratio (Platt & Platt, 2002:186);
- Several years of negative net operating income (Kliestik *et al.*, 2020:77; Veganzones & Severin, 2020:208; Platt & Platt, 2002:186);
- Non-adherence to loan covenants, or loan covenant renegotiations with bankers (Appiah *et al.*, 2015:473; Balcaen & Ooghe, 2006:72);
- Defaults on dividends to preference shareholders (Barnard *et al.*, 2020:982; Ashraf *et al.*, 2019:5; Platt & Platt, 2002:186; Dimitras *et al.*, 1996:487; Beaver, 1966:71);
- Involvement in court proceedings such as bankruptcy filings by a company and voluntary actions involving losses to creditors and liquidation (Alasaad & Gök, 2019:975; Appiah *et al.*, 2015:473; Alareeni & Branson, 2013:115; Balcaen & Ooghe, 2006:72; Altman & Narayanan, 1996; Foster, 1986:535; Taffler, 1982:343; Scott, 1981:342; Blum, 1974:3; Deakin, 1972:168; Beaver, 1966:71);
- Delisting of a company (Appiah *et al.*, 2015:473; Alareeni & Branson, 2013:115; Altman & Narayanan, 1996);
- Government intervention via special financing (Balcaen & Ooghe, 2006:72; Altman & Narayanan, 1996); and
- Other failure-related events, such as capital reconstructions, major closures or reorganisation of business segments including forced disposals of large parts of the firm and retrenchment of employees (Bushe, 2019:6; Balcaen & Ooghe, 2006:72; Platt & Platt, 2002:186).

The above list should be applied with the appropriate amount of judgement, as many of these actions may also be undertaken for reasons other than business failure (Bushe, 2019:6). For example, the retrenchment of labourers or the closure of one part of the business could simply allow a company to focus on its core values (Platt & Platt, 2002:186), restructuring may allow a company to become more stream-lined, and dividends may be retained to finance potentially lucrative new investments. A company may decide during a recession to build up stock in the hope of an imminent recovery – this does not mean that the company is illiquid or the inventory obsolete (Du Jardin, 2015:298).

In a world still reeling from the effects of the COVID-19 pandemic, one also needs to heed Balcaen and Ooghe (2006:73), who mention that once-off events, such as natural disasters, cause ‘sudden’ or ‘accidental bankruptcies’ that may lead to inaccurate bankruptcy failure models (if built on the information contained in the sample), or inappropriate findings resulting from the application of failure prediction models as the companies in question may not have shown any indications of failure prior to the event.

Before a company is classified as a failure in terms of the above definitions, it will often be subject to an extended period of financial distress (Kurunmäki & Miller, 2013:1102). The financial distress which the company suffers may very well still eventually lead to absolute disaster and its liquidation. However, with the right and timeous interventions, the company may yet be successfully steered back towards profitability, liquidity and solvency (Cassim, 2021:23; Farooq & Qamar, 2019:6; Rowlings, 2016:6; Situm, 2014:24; Kurunmäki & Miller, 2013:1100). The management and owners of a company would thus be particularly interested in identifying the early warning signals characteristic of a company heading towards financial distress. As Collins and Hansen (2011:91) noted, *‘The only mistakes you can learn from are the ones you survive’*.

The Companies Act 71 of 2008 defines the meaning of a financially distressed company as follows:

- i) it appears to be reasonably unlikely that the company will be able to pay all of its debts as they become due and payable within the immediately ensuing six months; or
- ii) it appears to be reasonably likely that the company will become insolvent within the immediately ensuing six months’.

Aside from the legal definition, financial distress may also be defined as a decline in a company (Platt & Platt, 2002:184–185), severe liquidity problems where these problems cannot be resolved without a significant rescaling of the company’s operations or structure (Fischer *et al.*, 2016:136; Foster, 1986:535), an inability to generate sufficient cash flows to meet the company’s current and future contractual obligations (Correia, 2019:17-29; Beaver *et al.*, 2010:99), or the point where it becomes unlikely that a company will be able to refinance its loans, at reasonable rates, when they become due in future (Correia, 2019:17-29).

Platt and Platt (2002:187–188) explain financial distress as follows: *‘Overall, we characterise the stage of distress of the companies ... as being serious but not fatal. While this description is*

*inexact, it includes companies whose troubles exceed the early stage symptoms of negative earnings before interest and taxes (EBIT), net income, or cash flow. These are companies that have had trouble paying their own suppliers, have missed payments to their bank, or may have difficulty making the next payroll. Furthermore, most have sustained net losses for several years or have suspended dividend payments in an effort to marshal financial resources to deal with operational or debt-related problems. Without any intervention it is likely that most, if not all, of these firms would eventually file for bankruptcy protection.'*

### 3.1.5 Early warning signs of potential failure

It is hardly ever a single item that either causes or indicates financial failure (Brigham *et al.*, 2019:378; Marx *et al.*, 2017:412; Hillyer Group, 2013; Hamilton & Micklethwait, 2006:50). In most cases, it is rather a combination of signs that should warn the investor that the company could be heading towards trouble (McClure, 2021).

Quite often, the reason for a company's demise may be found in uncontrollable events, such as a downturn in the economy, changes in interest rates, unemployment rate changes and pandemic lockdowns (McClure, 2021; Yee, 2018; Gitman & Zutter, 2014:717; IAASB, 2009; Richardson *et al.*, 1998:170; Foster, 1986:549). A careful analyst and investor should also take note of non-financial indicators of potential financial distress, such as an inappropriate business strategy, a change in buyers' habits, the appearance of a new competitor or substitute product, the company's cost structure – the higher the fixed cost in the business, the greater the likelihood of financial distress – and the quality of the entity's management (McClure, 2021; Yee, 2018; Foster, 1986:536).

As most of the non-financial information is not available from the financial statements of a company – a notable limitation – the indicators of failure to which this study will devote itself, are mostly financial. The following are frequently identified as the key indicators of failure:

- i) A **high debt ratio** is the single most likely contributor to financial distress or failure (Brigham *et al.*, 2019:378; Beaver *et al.*, 2005:100; Deakin, 1972:71), especially during times of economic decline (Berstein, 1998:619). There are several ways in which debt may cause financial pressure for a company:
  - The financial risk of the company, i.e. the likelihood that it will not be able to pay its debts when due, increases (Alasaad & Gök, 2019:974; Dennis, 2018; Oxford Funding,

2013; IAASB, 2009; Levenstein, 2009:10; Charitou *et al.*, 2004:465–466; Becchetti & Sierra, 2003:2115; Platt & Platt, 2002:193; Vigario, 2002:176; Hayward, 2001:24; Blum, 1974:3–4).

- The company is committed to a stream of contractual payments over the long run, and with high levels of debt the company becomes more vulnerable to unforeseen events, e.g. pandemic lockdowns, which may lead the company into a situation where it becomes unable to meet its contractual payments when due (Gitman & Zutter, 2014:68; Skae *et al.*, 2014:10; Bernstein, 1998:606; Ohlson, 1980:110), or where it becomes more difficult for the company to raise credit, so that further loans can only be obtained at high cost (Correia, 2019:17-29; Charitou *et al.*, 2004:465 – 466; Hayward, 2001:24; Micha, 1984:288).
- An inability to re-finance the company through a renewed loan or other form of long-term financing (Barnard *et al.*, 2020:981; Correia, 2019:17-29; Jooste, 2007:2; Hayward, 2001:24; Richardson *et al.*, 1998:170).
- Worried creditors may be quicker to place the company into liquidation, e.g. when default risk is noted through a lower-than-average interest cover ratio (Investopedia, 2015; CIMA, 1993:337).
- Covenants may restrict the company in terms of its operations or distribution decisions, and an asset pledged as security may be lost in the case of a single missed debt repayment (Marx *et al.*, 2017:15; Skae *et al.*, 2014:10).
- The cost of debt (interest) will increase due to the increased risk of default associated with increased leverage (McClure, 2021; Correia, 2019:5-19 & 17-29; Investopedia, 2015; Charitou *et al.*, 2004:465–466; Bernstein, 1998:619; Micha, 1984:288).

Any non-payment of a due debt, whether a payment to a creditor or a lender of long-term finance, is a warning sign of the impending failure of a company (Yendrawati & Adiwafi, 2020:72). A failure to meet commitments to the South African Revenue Services, delayed payments to essential or non-essential creditors, non-payment to service providers such as pension and medical aid funds of amounts deducted from employee salaries, a failure to pay insurance, and the possibility of large contingent liabilities, are also all potential

symptoms of failure (Hillyer Group, 2013; Oxford Funding, 2013; Levenstein, 2009:10; Pogue, 2008; CIMA, 1993:370).

- ii) Jim Collins (2009:104) wrote, '*You can be profitable and bankrupt*'. Companies must **generate sufficient cash** – not necessarily profit – through the operations of the business to be sustainable (Barnard *et al.*, 2020:981; Bhandari *et al.*, 2019:12; Correia, 2019:5-37; Yee, 2018; Gitman & Zutter, 2014:15; Oxford Funding, 2013; Levenstein, 2009:10; Bruwer & Hamman, 2005:1 & 8; Prinsloo & Rosenberg, 2004:12; McKee, 2003:573–574; Hayward, 2001:24; Richardson *et al.*, 1998:184; Kelly & O'Conner, 1997:28; Beaver, 1966:80). In the short term, the source of cash may be once-off, e.g. the sale of an asset, but in the long term the source of cash must be the core business of the company, otherwise the company will not be sustainable.

Earnings and cash flows will differ due to the matching concept applied in financial accounting. For instance, sales may be recognised even though money has not yet been received, expenses even though payments have not yet been made, and large cash development or purchase costs may be capitalised and depreciated or amortised in small amounts over a long period of time (Brigham *et al.*, 2019:55; CIMA, 1993:375). Moreover, the company's depreciation policy and its fixed overhead allocation method are determined by the management of the company (who may even attempt to manipulate the accounting figures) (Herz & Pei, 2021:118; Besley *et al.*, 2015:43; Balcaen & Ooghe, 2006:82). Consequently, reported earnings – which may appear very positive – may be vastly different from actual cash flows, and thus cash flows are more useful for predicting the possibility of default than earnings (Charitou *et al.*, 2004:472).

A company should also have a buffer of cash to guard against uncertainties and unexpected fluctuations (Blum, 1974:3–4). Insufficient cash generated, limited cash on hand and the spending of cash reserves are therefore all signs of potential distress.

McClure (2021) and CIMA (1993:370) advise investors and analysts to carefully consider the cash flow statements of a company, rather than the ratios based on earnings or assets, as negative cash flow over a sustained period is a signal that cash reserves may be running low and that the company will be unable to continue with operations unless a new source of capital, whether from shareholders or lenders, can be found.

Some notable examples of companies that failed, where a lack of cash was at least a contributing factor, include Marconi, WorldCom, Enron and Leisurenets Ltd (Terry, 2007:33; Hamilton & Micklethwait, 2006:6; Prinsloo & Rosenberg, 2004:12).

- iii) Jalal and Khaksari (2020:639), Gitman and Zutter (2014:64) and CIMA (1993:361) state that, although both gearing and profitability are important aspects of a company's performance, **liquidity** (and thus the ability to generate cash, as stated in note (ii)), may very well be the most important. A business needs cash to meet its liabilities as and when they become due. One of the ways in which liquidity is managed in a company is through close attention to changes in working capital and regular cash forecasting (Marx *et al.*, 2017:412; Wilson, 2012:40).

According to Marsden (2013:22) and Hayward (2001:24), along with mismanagement and fraud, a shortage of working capital is one of the most common reasons for business failures in South Africa. Signs of **poor working capital management** include:

- Accounts receivable (debtors) that increase more quickly than sales, as well as an increase in the number of days that debtors are outstanding or an increase in bad debt provisions and write-offs, which may indicate an attempt by management to increase turnover by offering overly lenient credit terms (Correia, 2019:5-36; Pogue, 2008; Richardson *et al.*, 1998:184).
- Increases in inventory that exceed increases in sales, as this may indicate that inventory is not selling for a variety of reasons, for instance the stock is obsolete, has been replaced with newer or improved substitutes, is no longer the same quality as previously, or a recession has reduced consumer spending (Correia, 2019:5-36; Pogue, 2008; Richardson *et al.*, 1998:184).
- Inadequate inventory to meet sales demand, which may indicate that a company does not have sufficient funds available to buy products or raw materials, or that employees are not producing adequate quantities of stocks, possibly as a result of retrenchments or low productivity due to the non-payment of salaries and wages (Dennis, 2018).
- The withdrawal of financial support by creditors, e.g. demands for cash-on-delivery payments, a reduction of credit lines, or a failure to supply timeously and in the required amounts (Hahn, 2011:29–30; IAASB, 2009).



- Increases in accounts payable balances and accounts payable payment periods, interest charged on overdue accounts and receipts of letters of demand, may indicate that a company is not honouring its commitments to suppliers (Dennis, 2018; Levenstein, 2009:10).
- A negative net working capital amount, i.e. short-term liabilities exceed current assets, which may indicate that the company will struggle to meet its current liabilities with its most liquid assets. A quick (acid test) ratio and a current ratio that are not in line with generally accepted norms or industry averages may also indicate financial distress or failure (Karas & Režňaková, 2020:27; Becchetti & Sierra, 2003:2105; Platt & Platt, 2002:193).

Despite the importance of liquidity to a company, both in terms of complying with the legal requirements for liquidity and in having sufficient cash available to operate, CIMA (1993:369) and Ohlson (1980:110) found that research indicated that liquidity ratios showed the least evidence of being statistically significant in being able to predict failure.

- iv) Notwithstanding the above discussions regarding the utmost importance of cash, a company can also fail if its **returns are too low**, especially if losses are consistent (Barnard *et al.*, 2020:981; Alasaad & Gök, 2019:975; Bushe, 2019:6; Dennis, 2018; Sultanoglu *et al.*, 2018:626; Marx *et al.*, 2017:69; Rahim, 2017:50; Gitman & Zutter, 2014:716; Levenstein, 2009:10; Bernstein, 1998:622). A failure to earn a return higher than the cost of capital of the company will lead to a decline in the market value of the company (Gitman & Zutter, 2014:716). A company's earning power is the most important source of its eventual liquidity and borrowing capacity, and therefore the indicator that most long-term creditors will consider when determining whether or not the company is a reliable source for the payment of interest and repayment of capital funds (Bernstein, 1998:622). As much as the cash flow of a company is therefore important, its profitability over the long term is essential as well.

Financial ratios addressing profitability may be viewed as fairly accurate predictors, whether alone or in combination with other ratios, of failure or success. Ohlson (1980:110) finds that a measure of performance is statistically significant when predicting failure within one year of the bankruptcy date. Beaver *et al.* (2005:100) state that poor profitability is evident in failed firms as early as four years prior to bankruptcy, and show a worsening trend over time.

- v) Companies that remain stable in a changeable environment and that **do not grow or innovate**, do not survive, as inventory becomes obsolete and products unpopular (Zaharee *et al.*, 2021:31; Alasaad & Gök, 2019:978; Correia, 2019:17-35; Pretorius, 2009:2; Pogue, 2008). Companies that resist change will find themselves rapidly losing market share.

However, companies that **grow too quickly**, that expand beyond their means, especially without access to sufficient long-term financial capital, companies that use cash to fund high growth levels, companies that are extremely focused on being 'first-to-market' and thus have high levels of innovation, and companies diversifying into new products or new markets, often find themselves in financial trouble (Barnard *et al.*, 2020:983; Bushe, 2019:10 & 16; Correia, 2019:5-39 & 17-35; Marx *et al.*, 2017:414; Oxford Funding, 2013; Collins & Hansen, 2011:78; Collins, 2009:21; Hamilton & Micklethwait, 2006:57; Richardson *et al.*, 1998:170).

The reasons for running into financial distress during periods of high growth, include an inability by management to control all of the different functions in the business, inadequate capital to support the growth strategy, over-optimism leading to inadequate market research, which leads to a failure to understand the market and its needs, and not allowing a buffer or resources in case of unexpected changes or market variations.

Where growth diverges from the core operations of a company, and is not properly supported by sufficient research and suitable business plans, disaster looms. A dramatic change to a company's current, working strategy, is therefore often a sign that a business might be heading towards financial distress (McClure, 2021; Collins & Hansen, 2011:45; Collins, 2009:45–46; Hamilton & Micklethwait, 2006:79; Graves & Waddock, 2000:395).

- vi) The **age of a company** may also serve as an indicator of risk with regard to corporate failure, but interestingly, researchers have differing opinions on exactly how the age of a company may indicate its likelihood of decline, with Bushe (2019:9) and Gitman and Zutter (2014:717) stating that a business goes through four live stages – initiation, growth, maturity and decline – and therefore any business is eventually heading to decline, and the more mature a company is, the more likely it therefore is to be heading towards obsolescence. Mature and previously profitable companies can also fail when circumstances change, e.g. when competition increases or recessions occur (Barnard *et al.*, 2020:982; Ahmad & Raza, 2016:2; Vigario, 2002:166).

However, several studies have argued that ‘new’ companies, i.e. those companies that have been in business for a period of five (some say ten) years or less, are more likely to fail than the stable, mature companies that have built up cash reserves, a reputation, and the assets to withstand unfortunate circumstances, as well as the stakeholder relationships to capitalise on growth opportunities (Bushe, 2019:1; Du Jardin, 2015:290; Gitman & Zutter, 2014:716; Charitou *et al.*, 2004:465–466; Rosman *et al.*, 1999:39; Foster, 1986:561).

It should be noted, however, that new companies may exhibit indicators of financial distress, e.g. losses and poor liquidity, that are normal for a viable start-up company (Rosman *et al.*, 1999:39). Thus the age of a company should not be regarded as a key indicator of potential distress in isolation.

- vii) **A single, unfortunate and unexpected event**, or an unforeseeable conjunction of events – such as uninsured fires, reputational scandals, or pandemic lockdowns – may also cause a company to fail (Barnard *et al.*, 2020:982; Bushe, 2019:7; Hayward, 2001:22–24; Bernstein, 1998:597; Morris, 1998:24). Collins and Hansen (2011:58–60) therefore write that a company that depletes its resources by indulging in rapid expansion, could be in serious trouble if an unexpected external shock occurs, and note that a business simply cannot afford to leave itself exposed to unforeseen events when the global markets today are characterised by unpredictability and numerous risks.
- viii) **Mismanagement** is one of the most common reasons for business failure (Barnard *et al.*, 2020:983; Brigham *et al.*, 2019:378; Dennis, 2018; Gitman & Zutter, 2014:716–717; Marsden, 2013:22; Pogue, 2008; Hayward, 2001:22–23).

Yee (2018) and Marx *et al.* (2017:413) contend that management failure is blamed for 80% of businesses in distress, whilst Gitman and Zutter (2014:716) note a more conservative estimate of 50% of all business failures (although it should be noted that not all businesses in distress will necessarily fail). Gitman and Zutter (2014:716–717) combine several of the items addressed individually and separately in this study under the one heading of ‘mismanagement’, for instance over-expansion, poor financial actions such as ineffective capital budgeting decisions based on unreasonable forecasts, failure to assess risk properly, an ineffective sales force, and high production costs. If one considers exposing the company to unnecessarily high debt levels or inefficient working capital management as mismanagement as well, the ratio could be even higher.

An overly powerful management, or a particularly dominant CEO, is also identified as a key reason for business failures (Terry, 2007:39; Hamilton & Micklethwait, 2006:1). Examples of well-known South African corporate failures that could, at least in part, be blamed on mismanagement and weak governance structures, include Leisurennet, Macmed and Regal Bank (Correia, 2019:5-37; Hopkin, 2012:50; Terry, 2007:39; Hamilton & Micklethwait, 2006:79).

Poor strategic decisions and over-optimism, a lack of planning and marketing, mergers and acquisitions that didn't realise the expected synergies or that cost too much, inappropriate growth, over-dependence on one client, a management team that isn't sufficiently skilled, inadequate internal controls and accounting fraud may all be linked to poor management and subsequent business failures (Ahmad Shiyuti *et al.*, 2021:7; Barnard *et al.*, 2020:983; Alasaad & Gök, 2019:975; Bushe, 2019:10 & 14; Yee, 2018:10; Marx *et al.*, 2017:413–415; Skae *et al.*, 2014:28; Pogue, 2008; Hamilton & Micklethwait, 2006:11; Hayward, 2001:24).

A further potential sign of financial distress associated with the management of the company, is the sudden departure of key executive personnel or members of the board of directors of a company (Barnard *et al.*, 2020:982; Appiah *et al.*, 2015:473). Although the loss of leadership may lead to erroneous decision-making, the loss of key personnel is not necessarily a cause of financial distress. However, the loss of key personnel could be a signal that something is already wrong within an organisation and therefore, although resignations are a normal part of business, it is in the interest of the stakeholders to pay close attention when a key person leaves, especially if he or she has a very good reputation. (McClure, 2021; Correia, 2019:17-29; Dennis, 2018; Marx *et al.*, 2017:416).

- ix) **Fraud and accounting manipulation** is often a cause and/or a result of financial distress and failure (Marsden, 2013:22; Levenstein, 2009:10; Pogue, 2008; Hamilton & Micklethwait, 2006:11; Hayward, 2001:24). Hopkin (2012:52) and Hamilton and Micklethwait (2006:31) warn investors that financial accounts which seem to be too good to be true, thus where profits appear disproportionately high in relation to the perceived level of risk, need further investigation.

Financial accounts are subject to manipulation or 'window dressing' (Correia, 2019:5-30; Marx *et al.*, 2017:414; Pogue, 2008; Terry, 2007:41) and stakeholders should therefore be wary of financial statements that have been restated due to a change in depreciation policies (Cormier *et al.*, 1995:214), changes to provisions and reserves, changes in revenue

recognition policies, restructuring of financial statements, where the company engages in the write-down or sales of significant assets, and where the financial statements show an accounting income but either a tax loss or negative operating cash flows (Correia, 2019:5-36 & 5-38).

Well-known examples of corporate fraud include Parmalat, which went into bankruptcy in 2003 due to fictitious intercompany transactions, Steinhoff International, whose various fraudulent accounting entries led to the company's demise and the resultant reduction of the JSE's value with more than R200 billion in 2007 (Barnard *et al.*, 2020:397), and WorldCom's purposeful incorrect classification of ordinary operating expenses of \$7 billion as capital expenditure in 2002, which destroyed not only the company but its auditors as well (Brigham *et al.*, 2019:65; Correia, 2019:1-3).

- x) A **change in auditors** could be seen as an indicator of failure as auditors may, especially given the current litigious environment, resign when corporate distress or impropriety becomes apparent (McClure, 2021). Auditors may also choose to end relationships with clients where there are significant disagreements with the company's management, e.g. relating to accounting practices adopted by the entity. The issuing of a qualified audit report could also lead to a break-down in the relationship between a company's management and its auditors and it would therefore behove stakeholders to pay attention to notices received indicating that a change of auditors is set to occur (Correia, 2019:5-37).

Recently, in South Africa, PriceWaterhouseCoopers ended its contract with a fishing group, Oceana, with immediate effect, as a result of an apparent strained relationship between the two parties (West, 2022). At this point, it is not clear whether Oceana faces any financial problems, but there have been a number of governance issues, director resignations, and late publications of financial statements, that could all be potential indicators of financial distress.

- xi) The **size** of an entity may affect its ability to withstand adverse conditions (Brigham *et al.*, 2019:379; IFAC, 2013:561). Small entities often lack the resources to sustain operations, do not have the same levels of access to financing as larger companies, generally pay higher costs on funding acquired due to their perceived higher risk, are less able to withstand the loss of a principal supplier or major customer or even a key employee, have less cash available, have fewer internal controls, and may also not be able to acquire the right to operate under a licence or franchise. Thus larger companies are able to sustain

themselves for longer and size is therefore also a potential distinguishing factor between successful and failed companies (Correia, 2019:17-34; Du Jardin, 2015:290; Bruwer & Hamman, 2005:2; Charitou *et al.*, 2004:468; Becchetti & Sierra, 2003:2105; Morris, 1998:22; Foster, 1986:98; Ohlson, 1980:110).

Only Richardson *et al.* (1998:175) state that, although size can be considered for failure prediction models, size differences are much less significant in explaining the variation between successful and failed companies than some of the other measures mentioned here.

- xii) By the time a company's **share price** starts to decrease, it is usually already too late to attempt to disinvest or to try to change the company around (Platt & Platt, 2002:188). Nonetheless, a continuous decrease in a company's share price should put investors and analysts on alert. Significant decreases in share prices were identified in previous studies as evidence of financial distress (Barnard *et al.*, 2020:982; Karas & Režňaková, 2020:27; Ashraf *et al.*, 2019:4; Correia, 2019:17-29; Ahmad & Raza, 2016:5; Investopedia, 2015; Carlson *et al.*, 1998:27; Altman & Narayanan, 1996; Foster, 1986:558).

In contrast, again, Blum (1974:11) found that, much as one may suppose that the stock market would adjust an individual share's value downward in response to signals of failure, the stock market is not particularly adept at anticipating the time of failure, and although the failed company's share price may trade at a lower amount than the shares of a non-failed company, the sharp decreases expected of share prices of companies in financial distress often don't occur.

- xiii) There is a vast **array of indicators**, other than the ones already listed above, which may also help decision-makers to identify companies with a higher risk of being unable to continue as a going concern, including:
- Unexpected plant closings and employee layoffs (Kliestik *et al.*, 2020:77; Correia, 2019:17-29);
  - The proximity of strong and growing competitors (Ahmad Shiyuti *et al.*, 2021:7; Bushe, 2019:16; Becchetti & Sierra, 2003:2099);

- Over-dependence on a single or only a few key customers, as the failure of these customers could doom the company too (Correia, 2019:17-34; Hayward, 2001:24);
- Sudden and distinctive decreases in selling prices, which may indicate that the company is desperate to increase sales volume and get more cash into the business, regardless of the potentially detrimental impact of such a move over the long term on the company's profits or on its brand (McClure, 2021; Dennis, 2018; Marx *et al.*, 2017:414);
- A failure to adequately curtail costs, especially overheads, as high fixed costs imply a high break-even level, which makes it more difficult for a company to reach a sales level from where it can begin to generate profit (Bushe, 2019:12; Hayward, 2001:24);
- Increases in warrantee and guarantee claims and a failure to return calls, reflecting lower spending on product or service quality and slower delivery times (McClure, 2021; Hillyer Group, 2013);
- A failure by the entity to report timeously, whether internally to management or externally to shareholders. This could be because accounting entries have become so complex that the statements take time to prepare, or it could be a delaying tactic where management needs to communicate potentially bad news (Marx *et al.*, 2017:414; Howard, 2005:35);
- Significant increases in intangible assets (Dennis, 2018; CIMA, 1993:370): the company may increase the value of intangibles to make the asset side of the statement of financial position appear stronger – this measure should be used with caution as it is normal for companies in the technology industry to have large intangible assets;
- Very large contingent liabilities that do not appear on the financial statements;
- Offers received for a potential take-over of the company (Yee, 2018; Appiah *et al.*, 2015:473);
- JSE notifications and disclosures of directors' remuneration and share dealings in the financial statements of the company: if directors are selling off their shares in large

quantities – even though insider trading is technically not allowed – it is probably a reasonable sign for shareholders to disinvest quickly as well (Investopedia, 2015);

- Significant reductions in research and development and capital expenditure programmes (Correia, 2019:17-29); and
- Companies selling off core assets in a potentially disastrous attempt to alleviate cash flow problems or to temporarily boost income (Correia, 2019:5-36; Collins, 2009:96).

### **3.2 The international standard on auditing going concern**

One cannot discuss key factors that may indicate that a company is no longer regarded as a going concern, without also referencing the ISA 570 Auditing Standard related to the assessment by an auditor of a company's going concern status.

Although most of the financial indicators in the list below have already been discussed in the review above, the examples of events or conditions that, individually or collectively, may cast significant doubt about the going concern assumption as listed by the International Federation of Accountants (IFAC) in the Auditing Standard deserve separate mention due to their importance to the auditors of public companies. Despite the comprehensiveness of this list, IFAC cautions auditors that the list is still not 'all-inclusive', and to note that the existence of one (or even more than one) of these indicators, does not necessarily signify that the entity is definitely facing going concern issues – reasonable judgement by the auditor still needs to be applied in the assessment (IFAC, 2013:559–560).

The list of issues that the auditing standard advises auditors to take heed of, is as follows:



**Table 3-1: Factors to consider when assessing going concern status**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Financial</b></p> <ul style="list-style-type: none"> <li>• Net liability or net current liability position.</li> <li>• Fixed-term borrowings approaching maturity without realistic prospects of renewal or repayment; or excessive reliance on short-term borrowings to finance long-term assets.</li> <li>• Indications of withdrawal of financial support by creditors.</li> <li>• Negative operating cash flows indicated by historical or prospective financial statements.</li> <li>• Adverse key financial ratios.</li> <li>• Substantial operating losses or significant deterioration in the value of assets used to generate cash flows.</li> <li>• Arrears or discontinuance of dividends.</li> <li>• Inability to pay creditors on due dates.</li> <li>• Inability to comply with the terms of loan agreements.</li> <li>• Change from credit to cash-on-delivery transactions with suppliers.</li> <li>• Inability to obtain financing for essential new product development or other essential investments.</li> </ul> | <p><b>Operating indicators</b></p> <ul style="list-style-type: none"> <li>• Management's intentions to liquidate the entity or to cease operations.</li> <li>• Loss of key management, without replacement.</li> <li>• Loss of a major market, key customer(s), franchise, licence, or principal supplier(s).</li> <li>• Labour difficulties.</li> <li>• Shortages of important supplies.</li> <li>• Emergence of a highly successful competitor.</li> </ul> <p><b>Other indicators</b></p> <ul style="list-style-type: none"> <li>• Non-compliance with capital or other statutory requirements.</li> <li>• Pending legal or regulatory proceedings against the entity that may, if successful, result in claims that the entity is unlikely to be able to satisfy.</li> <li>• Changes in law or regulation or government policy expected to adversely affect the entity.</li> <li>• Uninsured or underinsured catastrophes when they occur.</li> </ul> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

(Source: IFAC, 2013:559–560)

### **3.3 The effect of an economic downturn on the ability to distinguish between successful and failed businesses**

More firms are likely to fail during economic downturns (Bushe, 2019:19; Yee, 2018:40; Du Jardin, 2015:287; Gitman & Zutter, 2014:722). Customers, also constrained by the recession and potentially exposed to higher unemployment rates, will spend less, leading to a reduction in turnover and cash flow for the company (Bushe, 2019:19; Marx *et al.*, 2017:66). If the company is unable to reduce its fixed costs and capacity in the short term, it may fail to reach break-even and suffer financial losses as a result (Hayward, 2001:24; Richardson *et al.*, 1998:169).

Credit will also not be available as freely and a company that is already in financial distress may find it impossible during a recession to re-finance maturing long-term debt, or may only be able to do so at very high interest rates, particularly as interest rate hikes are common during recessionary periods (McClure, 2021; Correia, 2019:17-34; Marx *et al.*, 2017:66; Gitman & Zutter, 2014:717; Charitou *et al.*, 2004:465–466; Hayward, 2001:24; Richardson *et al.*, 1998:169). This situation may be exacerbated by suppliers that may be less willing to extend credit in order to protect their own liquidity (Hahn, 2011:29–30; IAASB, 2009).

Companies that employ aggressive growth strategies during an economic upswing may find during a recession that the assets that were purchased or the acquisitions that were made as part of the growth strategy, cannot deliver the sales and returns required to maintain positive cash flows in the business. Furthermore, companies that spend large amounts of money on innovation, research and development, may not be able to recover their investments or reduce committed funds during economic downturns (Collins & Hansen, 2011:74–75).

Consequently, in recessionary times, free cash flow will reduce. A company that failed to build up cash reserves or to manage its inventory levels carefully, may not be able to withstand a recession (Richardson *et al.*, 1998:169). An inability to convert assets into cash within a reasonable period to ward off creditor claims, may therefore lead to bankruptcy and liquidation (Gitman & Zutter, 2014:716; Blum, 1974:3–4). That, of course, is supposing that the company has non-core assets available to sell, as the disinvestment from core assets will negatively impact on the company's ability to operate and survive.

Companies in distress may also have no choice but to curtail marketing or research and development costs, or may even have to consider employee retrenchments, which will further impact already constrained sales over the short term, and innovation and market share over the long term (provided of course that the company survives).

The effects of the reduced profitability, reduced cash flow and the reduced credit availability will be reflected in the financial statements of the company. Therefore, decision-makers should be more careful of interpreting financial ratios in and around recessionary times (Du Jardin, 2015:287). A decline in sales, for instance, may not be a sign of financial distress if every other company in the industry suffered worse levels of decline. Richardson *et al.* (1998:184–185) therefore write that '*quite different phenomena are associated with failing and non-failing company operations during recession and non-recession*'.

To avoid misinterpreting the financial ratios of successful and failed companies, this study will therefore avoid the two periods during which economic downturns were experienced, i.e. the global economic recession of 2008 and the pandemic lockdown of 2020 to 2021. The study will only incorporate financial information from listed companies before 2008, and between 2011 and 2019.

### **3.4 A conceptualisation of the variables which distinguish a successful company from a failed company**

The above literature review of the variables which distinguish successful companies from failed companies, and of factors that may both indicate the risk of a going concern problem and give rise to a going concern problem, e.g. a recessionary state, was done so that, for the purposes of this study, a concept could be developed based on an expectation of what an analysis of the financial statements of three sets of companies ought to reveal. These sets of companies are: (i) a group of successful companies, (ii) a group of companies that appear to be in financial distress, but which are still listed on the JSE, and (iii) a group of companies that have failed.

This study will then focus on items that deviate from the developed expectation – i.e. on those variables that are not part of the norm – which may give additional information to a decision-maker who uses the financial statements of a company, in assessing whether or not a company is in financial distress, and whether the financial statements based on internationally accepted accounting standards adequately disclose when a company can no longer be deemed to be a going concern.

The expectation is that a successful company will show the following:

- Arguably most importantly, **positive operating cash flows**, with which to ensure the ability to trade without interruption, to grow continuously and to enhance the future sustainability of the company;
- A **stronger capital structure**, which would imply lower debt levels (in comparison to both equity and assets), and in conjunction with the lower debt levels, higher interest coverage ratios and lower costs of debt;
- **Higher profitability levels**, as higher earnings are the driver over the long term of sustained operating cash flows, and as more successful companies probably would be operating from a position of strength, which would enhance its negotiating power, e.g. in dealings with financial institutions and suppliers;
- **Positive working capital and reasonable working capital ratios**, indicating the liquidity of the companies in question. These ratios may have a lower power to predict failure as the averages of the groups of companies will be used, without distinguishing between industries, and consequently the working capital ratios, e.g. relating to a manufacturing firm versus a service organisation, may have less consistency and predictive power in this analysis;
- **Share prices** that either grow, or decrease less than the average decline in market prices during a recessionary period, to indicate the market's perception of the company as either a growth company or a company delivering consistent value;
- **Trends** in financial accounting ratios that will either indicate **growth** or the maintenance of a strong position, in direct contrast to the unhealthy or failed companies which are expected to show weaker accounting ratios that deteriorate over time;
- **Size** differences with failing or failed companies – it is expected that the more successful companies will be larger in size;
- If accounting standards are useful to decision-making, a positive **declaration by management** on the going concern status of the company (and a negative statement for

the companies in distress), together with appropriate disclosure on the basis used for the preparation of the financial statements; and

- An **unqualified audit report**, on the basis that the auditor is complying with the principles of the international standard on auditing relating to going concern assumptions. In contrast, of course, the companies in distress should have either unqualified audit reports, but with an emphasis of matter paragraph, or qualified audit reports, where auditors believe that the company is no longer a going concern and that the financial statements can't reasonably be prepared on the basis of a going concern assumption.

This study will concentrate on investigating, analysing and discussing those attributes that are measurable with financial ratios.

### 3.5 Conclusion

Throughout at least the last seven decades, researchers have been attempting to identify the characteristics that distinguish successful companies from failed companies, in an effort to develop models and decision-making rules and techniques, which would assist the users of financial statements in making economically sound decisions.

The vision is to allow the management of a company to identify warning signals of potential financial distress as early as possible, so that corrective action may be taken timeously, and businesses, jobs and the economy, may be protected. Furthermore, being able to ascertain whether a company is heading towards financial distress, should also allow investors, whether private individuals or large organisations, to avoid unsound financial investments, thus protecting savings, livelihoods and pensions.

A thorough review of the available literature has led this study to conclude that the most important indicators of success and the potential early warning signs of financial distress, may be summarised as follows:

**Table 3-2: Indicators of success versus early warning signs of failure**

| Indicators of success                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Failure warning signs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• The availability of sufficient cash resources</li> <li>• A short cash conversion cycle</li> <li>• Lower levels of indebtedness</li> <li>• The ability to generate sustainable profit</li> <li>• Reduced variability in earnings, and thus a lower level of business risk</li> <li>• High market-to-book ratios</li> <li>• A high and sustainable growth rate</li> <li>• The ability to innovate and stay ahead of competitors</li> <li>• Larger, comparatively, than other companies (based on total assets)</li> <li>• Sufficient investment in marketing and building a recognisable brand name</li> </ul> | <ul style="list-style-type: none"> <li>• Insufficient cash resources and an inadequate inflow of cash</li> <li>• Poor working capital management</li> <li>• A high debt ratio</li> <li>• Returns (on assets and equity) that are low and unsatisfactory</li> <li>• A single, unfortunate event taking place</li> <li>• Falling share prices</li> <li>• Over-expansion and a growth rate that is too high</li> <li>• Failure to innovate and stay up to date</li> <li>• Smaller sized companies</li> <li>• The age of the company (either too young or too old)</li> <li>• Mismanagement and fraud, including a change in auditors</li> <li>• Unexpected plant closings, retrenchments, and reductions in research and development and marketing expenditure</li> </ul> |

(Source: Author compilation)

This study will focus on measurable or quantitative analysis, and will attempt to determine whether there is a key variable, or a group of such variables, which may clearly and concisely distinguish between successful/healthy companies and failed/unhealthy companies, to help the users of financial statements to make economic decisions that will prevent them from investing or continuing to invest in companies heading towards failure, and to assist the management and auditors of companies with assessing the going concern status of a corporation, and reacting appropriately and accordingly based on their assessment.

## CHAPTER 4 A BRIEF REVIEW OF THE GOING CONCERN PRINCIPLE

### 4.1 Introduction

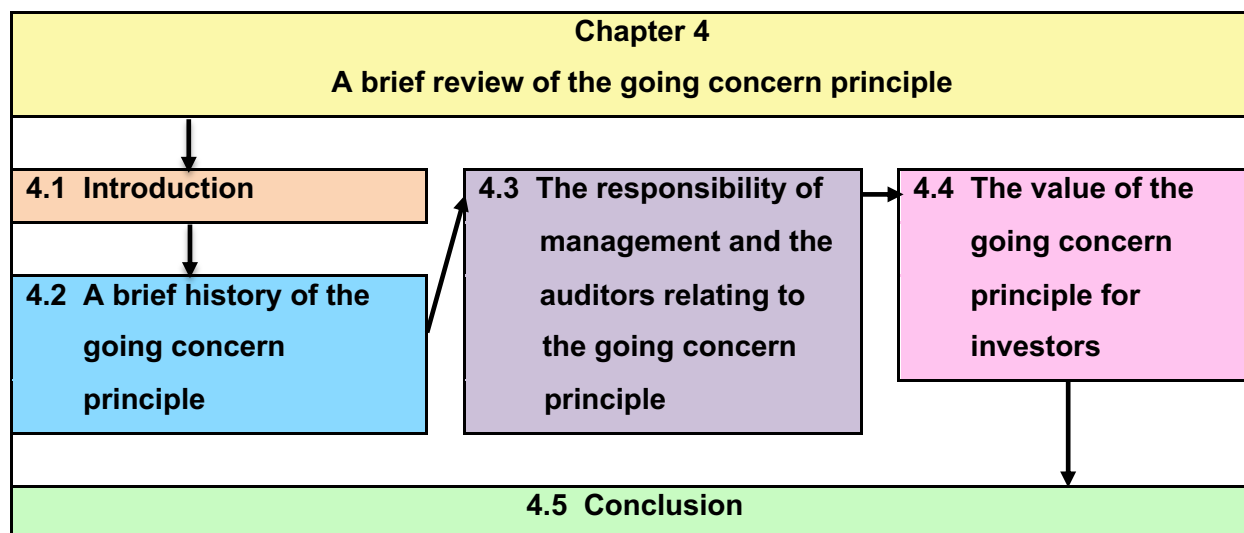
*The best way to predict the future is to invent it.*

*Alan Kay*

The literature review for Chapter 4 presents a brief history of the development and changes to the going concern principle. It also motivates the secondary objective of this study, which is to determine whether the going concern assumption is still a relevant and necessarily principle for the preparation of annual financial statements. If it does not add value to the economic decision-making of the users of the financial statements, and it does not alter the decisions that an investor or potential investor would make by its inclusion or exclusion, then it should no longer be accepted as an underlying principle of accounting.

This chapter consists of five sections. Figure 4.1 below presents an overview of the chapter:

**Figure 4-1: Overview of Chapter 4**



(Source: Author compilation)

Section 4.1 of the chapter presents an overview of the chapter, and states the reason why it is included in this study. Section 4.2 then considers how the going concern principle came into being, how it has changed over the years, and what the main criticisms of the going concern principle are. In Section 4.3, the difficulty with the demand for management and the auditors of

companies to express opinions on the going concern status of companies is explored, and in Section 4.4 the question is raised as to whether the principle still has value for investors. In Section 4.5, the method through which the secondary objective will be explored, is addressed. The answer to the researcher's deliberations will be contained in Chapter 7.

## **4.2 A brief history of the going concern principle**

The annual financial statements prepared by companies are founded on certain accounting principles, one of which is the going concern assumption. KPMG (2012) defines accounting policies as the specific principles, bases, conventions, rules and practices that an entity applies in preparing and presenting financial statements. The accounting policies are supposed to ensure that the financial statements are fair and reliable and therefore useful to decision-makers.

However, as a defining and underlying assumption, the meaning of 'going concern' for many years was vague and questionable. Sterling (1968:481) described the situation thus: *"The going concern is one of the most important concepts in accounting. Such status would lead one to believe that the concept would be well defined, its necessity as an axiom thoroughly discussed, and its connection to historical cost demonstrated. Anyone with such expectations is due for disappointment. Although Paton and Littleton, Moonitz, Grady, various AAA Statements, the Accountants' Handbook and practically all texts list it as a postulate, concept, etc., there is very little elaboration, justification, or development."*

The going concern assumption was first noted in law in 1620, when a court determined that a going-concern value was greater than the book value as the asset in question could be used to generate excess income through future operations (Hahn, 2011:28). In 1892, Lawrence Dicksee provided the first description and rationale for the going concern, which appeared in his book *Auditing*. Dicksee proposed that it was fair to value assets in a Balance Sheet on the assumption that a business would 'continue to carry on operations' as that was the primary objective of most ordinary undertakings (Storey, 1959:233). He used the words *"perpetual existence"* with respect to registered companies (Yu, 1971:43).

For many years, the going concern principle was primarily based on the concept that an entity should be able to continue with business for the foreseeable future and that, if there was no evidence to the contrary, 'continuity' as described by the American Institute of Certified Public Accountants (AICPA) in *The Basic Postulates of Accounting*, should be regarded as the norm (Fischer *et al.*, 2016:136; Hahn, 2011:27 & 28; Yu, 1971:44; Fremgen, 1968:649; Sterling,



1968:481). Van Severter (1969:131) found that the term 'continuity' was used interchangeably with 'going concern'.

By 1909, Henry Rand Hatfield called the going concern assumption a "*general principle which, with various applications, is now universally accepted*" (Sterling, 1968:481; Storey, 1959:235). The International Federation of Accountants also stated that the going concern assumption was a fundamental principle in the preparation of financial statements (IFAC, 2013:553). It was furthermore regarded as universally understood (Hahn, 2011:26). In 1959, Storey (1959:232) asserted that accountants generally agreed that the assumption of the going concern was an essential accounting convention or 'principle', which ruled out the use of liquidation values in statements and formed the basis of depreciation accounting (which means that fixed assets and intangibles should be amortised over their useful life rather than some shorter period).

However, over time, dissenting voices arose, and it became clear that there was not any general agreement attached to the meaning of the term, 'going concern' (Storey, 1959:232). Not only was the definition of the going concern assumption questioned, but increasingly so too was the validity of the assumption and its necessity as a principle for accounting (Yu, 1971:37; Fremgen, 1968:649; Sterling, 1968:481). Sterling (1968:497) went so far as to say that the principle ought to be "*purged*". The term was attacked on several fronts:

- The nonexistence of an item or concept – thus the absence of evidence to the contrary – is difficult to prove (Fremgen, 1968:650 & 656; Sterling, 1968:494). Proof, if required, could rather be obtained *for* the existence of the principle, e.g. by considering a company's strategy, long-term intentions, basic goals, the manner in which its resources are possessed and utilised, its short- and long-term plans, and its performance (Yu, 1971:48; Fremgen, 1968:656). Devine (1985:73) and IAS 1, Paragraph 24 (IFAC, 2007:1) even argue that the weight of evidence is sometimes so overwhelmingly for continuance that further attention to the matter is not profitable or even rational.
- Many new, small businesses fail within a year, despite having started with the full intention of having perpetual life – perpetual existence therefore cannot be assumed by the mere existence of a company (Fremgen, 1968:650).
- Legal personality *per se* cannot be sufficient to imply perpetual life, despite registered companies being granted perpetual existence by law, if they are not found to have infinite lives in practice (Storey, 1959:234). Sterling (1968:496–497) states that the 'continuity is

typical' justification is dependent upon the time span under consideration, the type of company, the economic environment, and other factors. Sterling (1968:495) further believes that it is not possible to calculate a mean life expectancy for the general population of companies as each firm is peculiar in some respects, which might have relevance for its continuity. Thus, an infinite life may be an unreasonable assumption.

Doherty (2012:30) comments on the bankruptcy of Kodak and states that this event is “a salutary reminder that nothing lasts forever”. Doherty (2012:30) also quotes Adam Bates of KPMG who stated that a key challenge involves determining the lifespan of companies: *“Thirty or 40 years ago the average FTSE100 company would live for 50 years. Today, that’s more likely to be 15 to 20 years. And by 2025 it might be five years. The reality is that a lot more companies will be emerging from obscurity to be successful, or will be declining”*. It is difficult to believe that any company, even a healthy company, can be said to be a going concern, when globalisation, international competition, pandemic lockdowns, new inventions, improved artificial intelligence and political upheaval may at any time change the company’s outlook. Thus the going concern principle should perhaps be re-classified as a ‘prediction’, rather than a premise (Sterling, 1968:496–497).

- A company cannot merely be solvent and liquid or able to survive, to be considered a going concern. If a going concern implies the ability to complete transactions and realise assets at reasonable values, then the company has to be successful and profitable. A company suffering continual losses cannot survive over the long-term. Consequently, going concern refers to a successful company, rather than a surviving company (Musvoto & Gouws, 2011:41; Devine, 1985:1; Yu, 1971:47; Fremgen, 1968:649; Sterling, 1968:483, 489 & 501; Graham, 1959:59).
- A realisation intent, even if it is far into the future, may negate a going concern assumption. As per the definition, only companies with (assumed) perpetual lives would be able to prepare their financial statements on the going concern principle. This could significantly impact on the financial reporting for a business that changes owners, or becomes involved in a merger or an acquisition. If a company’s management has, or develops the intention to liquidate, or the need to do so arises, the financial statements would have to be prepared on a different basis, such as the liquidation value method, which would need to be disclosed accordingly (Venuti, 2004:42; Yu, 1971:48).

- The 'foreseeable future' has, amongst others, been noted as twelve months from the balance sheet date, or twelve months from the date of the release of the financial statements (Finance Train, 2013) or an even shorter time frame in times of recession (Masocha & Weetman, 2005:158–159). Twelve months have been deemed both too restrictive, i.e. a longer period of time should be allowed to search for events that could cast doubt on a company's going concern status, and too long, as prediction becomes more hazardous and less reliable the longer the time frame (Fischer *et al.*, 2016:139). Focusing on a period of twelve months really only ensures that a company is capable of surviving in the short term, and does not take the long-term economic sustainability of the company into account (Chen *et al.*, 2018:77).

These uncertainties thus call into question the most appropriate period for which the going concern ought to be determined, and it appears as though there are several different opinions on this issue (Eickemeyer & Love, 2016:6). The International Auditing and Assurance Standards Board (IAASB, 2009) makes it quite clear that an auditor can only be held liable for an incorrect going concern assessment – which represents a prediction of the future – based on an analysis of the information that was available *at the time* that the opinion was formed (unless the failure to obtain the necessary information was due to negligence).

- Even successful companies, regarded as going concerns, may lose their going concern statuses during difficult times (Chen *et al.*, 2018:77). In 2009, the IAASB (2009) in addressing the auditor's responsibility to assess the going concern, noted that the credit crisis and economic downturn had led to a lack of available credit to entities of all sizes, which might have affected entities' ability to continue as going concerns. Fisher (2009:23) thus noted that going concern was often accepted without question when the economy was favourable, and only questioned when economically troubled times were signalled.
- The going concern assumption is provisional as the truth of the statement is dependent on subsequent events (Sterling, 1968:482). It can therefore only be proven months or even years after the assessment of going concern has been performed. The principle is thus based on potentially unreasonable expectations about an unknown future, and it is not truly required for accounting purposes (Sterling, 1968:497). Fremgen (1968:651–652) consequently opined that the going concern assumption had no clear effect on accounting principles, that the significance of the assumption was in doubt – if not non-existent – and therefore concluded that, "*unless it could be shown that the fact that a company is assumed*

*to have an indefinite life had a clear implication for accounting, accountants should cease to concern themselves with it.”* Hatting (2012:11) consequently also argued that accounting standard boards needed to reconsider the effect that ambiguous and potentially illogical standards could have on the reporting industry.

In later years, the term evolved, and more substance was added to its definition. According to Coopers & Lybrand (1995:2) and Kana (1995:5), the going concern principle assumed that an entity had neither the intention nor the need to liquidate, nor to curtail materially the scale of its operations. This view is supported by Musvoto and Gouws (2011:31), Fisher (2009:23) and Fremgen (1968:649). Venuti (2004:43) and the IAASB (2009) added that a going concern would also not need to seek protection from creditors pursuant to laws or regulations.

In 2008, further guidance was provided by the Companies Act 71 of 2008, which stipulates that a company satisfies the solvency and liquidity test if, having considered all reasonably foreseeable financial circumstances, the fair value of the assets of the company exceed its liabilities, and the company appears to be able to settle its debts as they become due during the ordinary course of business for a period of twelve months following the date of the solvency and liquidity test.

The arguments about the technical meaning of the going concern assumption were at least resolved when the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB), the two main accounting bodies that publish accounting guidelines, began to work together to eliminate differences between the two sets of standards (Finance Train, 2013). As a result, The International Federation of Accountants (IFAC, 2013:553) has defined the going concern assumption as follows:

*‘Under the going concern assumption, an entity is viewed as continuing in business for the foreseeable future. General purpose financial statements are prepared on a going concern basis, unless management either intends to liquidate the entity or to cease operations, or has no realistic alternative but to do so. ... When the use of the going concern assumption is appropriate, assets and liabilities are recorded on the basis that the entity will be able to realise its assets and discharge its liabilities in the normal course of business.’*

#### **4.3 The responsibilities of managements and auditors relating to the going concern principle**

The going concern principle (or possibly assumption) gained even more attention as, progressively, the onus was placed on the management of an entity to express a view on the liquidity and solvency of a company in the annual financial statements (Visvanathan, 2021:396; Yee, 2018; George-Silviu & Melinda-Timea, 2015:217; Dickinson, 2000). The King and Cadbury reports in the early 1990s first required management to assess the going concern status of the company and to add a declaration to the financial statements on the matter (Masocha & Weetman, 2005:159; Coopers & Lybrand, 1995:3). In 2013, the International Federation of Accountants (IFAC, 2013:553) explained management's responsibility in the following statement: *"Since the going concern assumption is a fundamental principle in the preparation of financial statements, ... the preparation of the financial statements requires management to assess the entity's ability to continue as a going concern, even if the financial reporting framework does not include an explicit requirement to do so."* IAS 1, Paragraph 24 (IFAC, 2007:1) states that a company's current and expected profitability, debt repayment schedules and potential sources of replacement financing need to be considered before the management of an entity are able to satisfy themselves that the going concern basis of reporting was appropriate.

If substantial doubt exists relating to the company's ability to continue as a going concern, this fact, along with management's plans to return the company to liquidity, solvency and profitability, must be disclosed in the financial statements (Visvanathan, 2021:398). Substantial doubt would exist when significant information exists that contradicts the assumption of the firm continuing normal operations, i.e. when a failure prediction model identifies the entity as a potential failure risk (McKee, 2003:573). The Board of Directors of a company, as the management thereof, run the risk of personal liability for losses if a company is deemed to have traded recklessly, i.e. if it continued with its operations whilst it was illiquid or insolvent (Darwin, 2009:18; Levenstein, 2004:11). This is especially true if the management of the company does not forewarn the users of the financial statements about the fact that the going concern status of the business is in jeopardy.

The particular problem here, however, is that management has the power to determine the nature of the speculations that are made under the going concern assumption (Musvoto & Gouws, 2011:38). The International Auditing and Assurance Standards Board (2009) notes that *"the extent of disclosures in the financial statements is driven by management's assessment of an entity's ability to continue as a going concern, coupled with the disclosure requirements of the applicable financial reporting framework."* Consequently, the expectations about future events

raised in the financial statements are highly dependent on the views of management, and numerous researchers have shown that management always seem to have a particularly positive outlook on the future of the company (Van Auken *et al.*, 2017:3; Sterling, 1968:482).

To provide a safeguard to protect the potential users of financial statements, and following a number of large corporate failures and accounting scandals, it also became a requirement for the auditors of a company to express an opinion on the organisation's status as a going concern, and the applicability of the principle in the preparation of the financial statements. Again, it was the King and Cadbury reports that first introduced the requirement for external auditors to express a view on management's going concern declaration by issuing a report on the matter (Masocha & Weetman, 2005:159; Coopers & Lybrand, 1995:3).

Subsequently, the international standard of auditing 570 (ISA 570) was introduced by IFAC and made effective for all audits of financial statements for periods beginning on or after 15 December 2009 (IFAC, 2013:551). According to the standard, an auditor must ensure that sufficient and appropriate audit evidence is obtained about the appropriateness of management's use of the going concern principle during the preparation of the financial statements, to conclude that there is not a material uncertainty about the entity's ability to continue as a going concern (IFAC, 2013:554). Furthermore, the auditor needs to remain alert whilst conducting the audit for any evidence of events or conditions which may cast significant doubt on the company's ability to continue as a going concern (IFAC, 2013:555; Rosman *et al.*, 1999:40). One of the procedures that auditors can use in determining whether or not a company is a going concern, or whether or not substantial doubt about the entity's continued existence exists, is the application of a bankruptcy prediction model (Rosman *et al.*, 1999:42; Cormier *et al.*, 1995:205; Foster, 1986:534, Scott, 1981:319).

If, after following the ISA 570 guidelines, there is substantial doubt that the company can continue operating for another year, or if management's disclosure regarding the company's financial distress and their plans to address it is inadequate, the auditor has to note these issues in the audit report and consider qualifying the report (Yee, 2018:66; Eickemeyer & Love, 2016:6; Fischer *et al.*, 2016:137). Unfortunately, the assessment of the going concern status of a company is not easy to effect (Yee, 2018). Moreover, it is often extremely difficult to determine the exact point where a company's going concern status is in so much doubt that it necessitates disclosure of a going concern risk by both the management and auditors of the company (Eickemeyer & Love, 2016:6). Consequently, a going concern assessment requires a tremendous time commitment from the auditors (Fischer *et al.*, 2016:138). Geiger *et al.* (2019:4) and Carcello and Neal

(2000:455) divulge that studies indicate that the going concern evaluation is amongst the most complex and difficult of audit assignments; the number of companies that have collapsed following unqualified audit reports, certainly seems to affirm this statement (Yee, 2018; Fischer *et al.*, 2016:140; Alareeni & Branson, 2013:113; Mosalakae, 2007:15).

Previous research has furthermore shown that different sets of auditors arrive at different conclusions about a company's going concern status – even when based on the same audit evidence – and that audit standards are understood and interpreted differently, which suggests that the going concern assessment involves a great deal of subjective judgement (Geiger *et al.*, 2019:4; Yee, 2018; Fischer *et al.*, 2016:140). Fischer *et al.* (2016:141) even go so far as to declare that “*going concern disclosures are wildly inaccurate*” and Yee (2018:67) advises users of financial statements to consider auditors' going concern opinions “*with some doubts*”. This illustrates why Karas and Režňaková (2020:25) advise that verifying the going concern assumption “*remains an issue*”.

As a result, the IAASB (2009) specifies very clearly that neither the management nor the auditor can be expected to predict future events or conditions that may cause an entity to cease to continue as a going concern. Nonetheless, the auditors are frequently blamed and held legally and/or financially responsible for not having warned the users of the financial statements – including the company itself – of any going concern uncertainty (Gutierrez *et al.*, 2020:1376; Zarei *et al.*, 2020:426; Geiger *et al.*, 2019:4; Chen *et al.*, 2018:79; Sultanoglu *et al.*, 2018:623; Yee, 2018; Eickemeyer & Love, 2016:8; De Beer, 2011:26; Terry, 2007:36; Venuti, 2004:42; Clulow, 2002:3; Cormier *et al.*, 1995:201). Indeed, Yee (2018) finds that numerous authors have argued that auditors ought to have warned the collapsed companies at the initial stages of financial distress, and that, had the auditors performed their jobs well, company collapses – which dented trust in the audit profession – could have been prevented.

Against the risk of not warning stakeholders of potential going concern problems timeously, stands the risk of warning stakeholders too soon: a risk exists that any qualification about the company's financial viability, however it is expressed, may precipitate the company's collapse, or cause it irreparable harm (Geiger *et al.*, 2019:4; Yee, 2018; Eickemeyer & Love, 2016:6; Fischer *et al.*, 2016:138; George-Silviu & Melinda-Timea, 2015:218; Fisher, 2009:23; Venuti, 2004:41; Carcello & Neal, 2000:454). Sultanoglu *et al.* (2018:625) also warn that auditors, as a result of the expectations of investors, creditors, the public and other users of financial statements, are exposed to a great deal of pressure not to err in issuing modified audit reports unnecessarily. Management and shareholders may feel that the company failed not as a result of the original

financial distress experienced by the company, but as the market's confidence was damaged by the modified audit report. This may lead to customers moving to competitors, suppliers refusing credit, landlords invoking break clauses, banks withdrawing funding facilities, lenders not granting or extending lines of credit or charging much higher interest rates, key employees seeking alternative employment, share prices decreasing significantly, and investors losing confidence (Besson-Levine, 2009:32; Dijkman, 2009:26; Tucker *et al.*, 2003:404). Venuti (2004:41) calls the potential unnecessary collapse of a company following a modified audit report related to the going concern assumption, "*a self-fulfilling prophecy*".

Consequently, the committee that wrote the Cadbury report, called for a need for balance in judgements, so that directors do not express unnecessarily cautious reservations that could of themselves jeopardise the business. Although the requirement that directors assess the company's going concern status stands, directors should not be expected to give a firm guarantee about their company's future viability, as there never can be complete certainty about future trading (Geiger *et al.*, 2019:4; Masocha & Weetman, 2005:158–159). Similarly, an auditor's qualified report is not a prediction of bankruptcy, but neither can an unqualified report be deemed a guarantee of a company's eternal survival (Yee, 2018:39).

Auditing risks are also higher in emerging economies than in developed countries (Zarei *et al.*, 2020:427). Zarei *et al.* (2020:427) and Hodge (2009:23) further find that the auditor's risk increases substantially during times of economic upheaval as a result of a credit crunch, or during a financial crisis, especially in terms of going concern assessments, valuations of financial instruments, and impairment issues concerning goodwill balances. As South Africa is an emerging country and further recessions and economic contractions are widely being predicted for this economy in the near future, there are significant risks of more companies going bankrupt and of the relevant auditors of those companies expressing inappropriate going concern opinions. The question may even be asked as to whether it is at all possible to make a reasonable assessment of going concern in the current circumstances. This has led many an investor, regulator and academic to question the usefulness of going concern opinions (Gutierrez *et al.*, 2020:1344; Fischer *et al.*, 2016:139).

#### **4.4 The value of the going concern principle for investors**

The going concern assumption is said to be a fundamental principle underlying the annual financial statements of South African companies, and the basis for determining asset values (Chen *et al.*, 2018:78). Unfortunately, there is clearly still little clarity in its application, and



researchers continue to argue its validity and veracity. Already in 1971, Yu (1971:49) stated, “*One of the disconcerting problems of accounting that we face today is not merely that we have not been able to create new basic concepts, but that we have failed to explain the relevance of the few we do have.*” Studies regarding the impact of going concern declarations on the ability of other failure prediction models to indicate financial distress more correctly and timeously have furthermore had mixed results (Gutierrez *et al.*, 2020:1345).

The purpose of the financial statements is to provide information that is useful to decision-makers. If the going concern principle does not influence the behaviour or choices of the users of the financial statements, it serves little purpose. Fischer *et al.* (2016:139) proclaimed that investors do not react as drastically to adverse going concern declarations as would be expected, and Brunelli *et al.* (2021:441) noted that past studies on the impact of going concern declarations on current and future shareholders did not achieve univocal results. Brunelli *et al.* (2021:462) and Visvanathan (2021:396) furthermore found that investors from two different market sectors, and institutional versus individual investors, reacted differently to new going concern disclosures – thus the value of these declarations, if any, are difficult to quantify.

Visvanathan (2021:396) debated whether going concern disclosures provide new and helpful information to the users of financial statements, or whether the disclosures were redundant and untimely, i.e. too late to be useful. It should be borne in mind, as previously discussed in Section 2.1.5.2., that investors and other stakeholders have access to far more information than just the annual financial statements and auditor’s report of a company. Investors who are interested in actively managing their portfolios, can also access information from company websites and declarations, newspaper articles, discussions by investors on the internet and social medial platforms, market information on stock prices and daily trade volumes, and reports from analysts. Given this wealth of other information, which may even be available more timeously than the annual financial statements, the impact of going concern declarations may be called into doubt.

Eickemeyer and Love (2016:6-7), who also noted that there is a vast quantity of data available to the users of financial statements that allow them to make reasoned determinations about the going concern status of a company, with more recent information than was examined by the auditor at the time that the financial statements was issued, consequently ask, “*What is the going concern issue’s importance in today’s information age?*”

## 4.5 Summary

Chapter 4 provided a brief overview of the history and evolution of the going concern principle. The going concern principle states that, unless there is evidence to the contrary, it may be assumed that a company is expected to be able to continue with its operations into the foreseeable future. Thus a company will be able to use and sell its assets and settle its liabilities and commitments through the ordinary course of its business. The responsibilities of management and the auditors of a company with respect to the financial statements of a company, were also highlighted. The section further described why some researchers believe that the going concern principle is no longer applicable and appropriate.

Although the main objective of this study is to assess the usefulness of financial statements in assisting the users thereof in distinguishing between successful, struggling and failed companies, the secondary objective is also to contemplate whether it is still justified to regard the going concern assumption as an underlying principle of financial accounting.

If it is found that companies that are successful are likely to have unlimited lives and therefore be regarded as 'going concerns', and that companies that failed, clearly (based on the results of the empirical tests) had limited lives and therefore could no longer be denoted as going concerns, then the principle may still have value as it should allow the users of financial statements and ratio analysis to better assess the results of their analyses, and to make more informed economic decisions.

In this study, the researcher is not going to assess the going concern declarations made by the management or auditors of the companies that were included in the selected sample of JSE-listed companies. Instead, the study will attempt to determine, by the judicious use of financial ratios, whether there were any indicators – or preferably even a single variable – in the financial statements of the companies that should have forewarned the users of the financial statements of a potential going concern issue. Given that seemingly successful companies may exhibit distress signs, or distressed companies may be deemed solvent and liquid, and thus that the assumption of unlimited life for corporate entities may no longer be valid and defensible, the study will then deliberate whether 'going concern' is still a meaningful accounting principle.

## CHAPTER 5 RESEARCH METHODOLOGY

### 5.1 Introduction

#### 5.1.1 Overview of Chapter 5

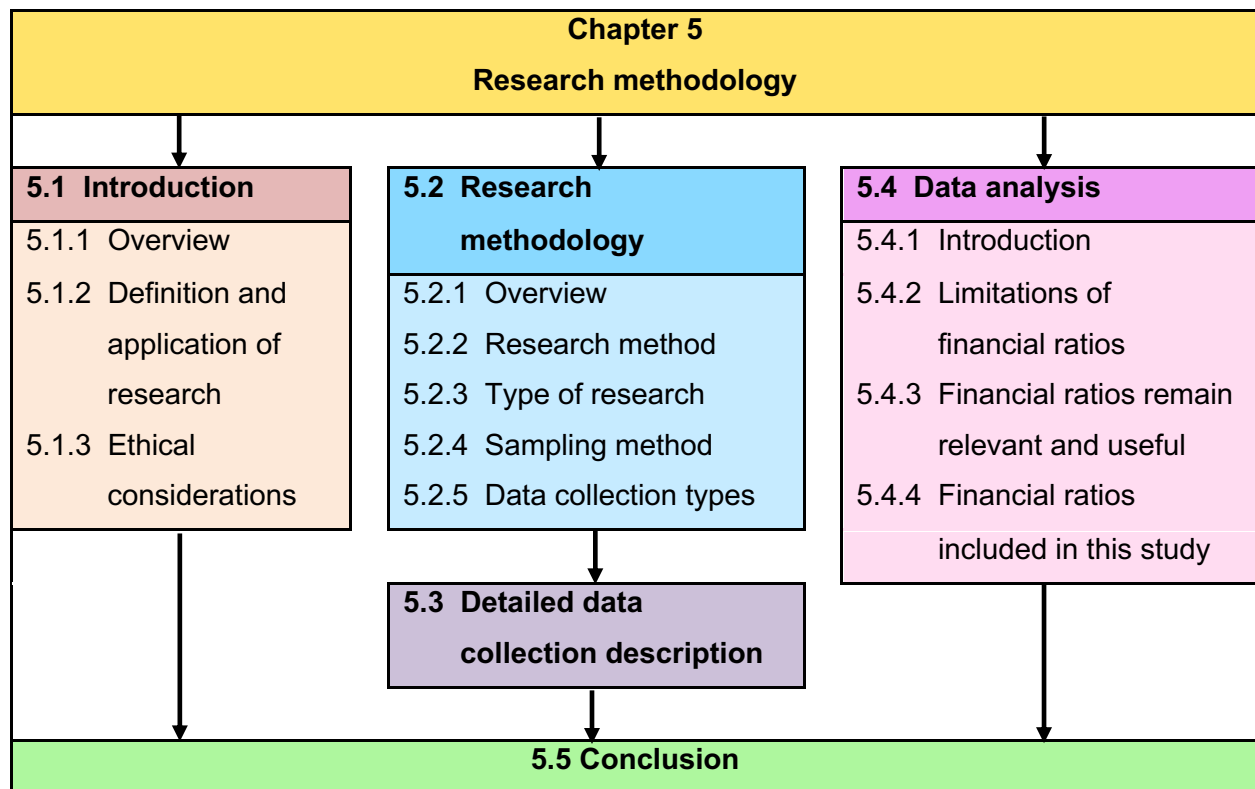
*If we knew what we were doing, it would not be called research, would it?*

*Albert Einstein*

The previous two chapters contained the literature review for this study. The literature review consisted of three sections: in Chapter 2 the usefulness of financial statements was evaluated by considering the goal, the potential users and the limitations of annual corporate financial statements; in Chapter 3, the indicators of success for a company were contrasted with the early warning signs of financial distress, and the characteristics of a successful company – which are examined further in the empirical study – were summarised and conceptualised. Chapter 4 provided a brief history of the going concern assumption, and explained why its validity as an underlying principle for accounting is being questioned, and how it impacts this study. The purpose of this chapter is to provide a detailed discussion of the research methodology followed by describing the research design to meet the research objectives.

This chapter consists of five sections. Figure 5.1 below presents a summary of the chapter:

**Figure 5-1: Overview of Chapter 5**



(Source: Author compilation)

Section 5.1 provides an overview of the chapter, and includes a brief reminder of the objectives of the study, as well as the ethical considerations that underpin the work performed. This is followed by an explanation of the research methodology that was applied to ensure that sufficient evidence was obtained to support the conclusions reached in Chapter 7. Section 5.3 gives a detailed description of the data collection process that was followed, and the decisions that were taken to ensure that appropriate data was collected and analysed. In Section 5.4, the data analysis process was explained, and the limitations and remaining relevance and usefulness of financial ratios for empirical research were examined. The specific financial ratios selected for this study, together with their formulas and the meaning of each ratio, were also disclosed in Section 5.4. The chapter ends with a conclusion on the research methodology process.

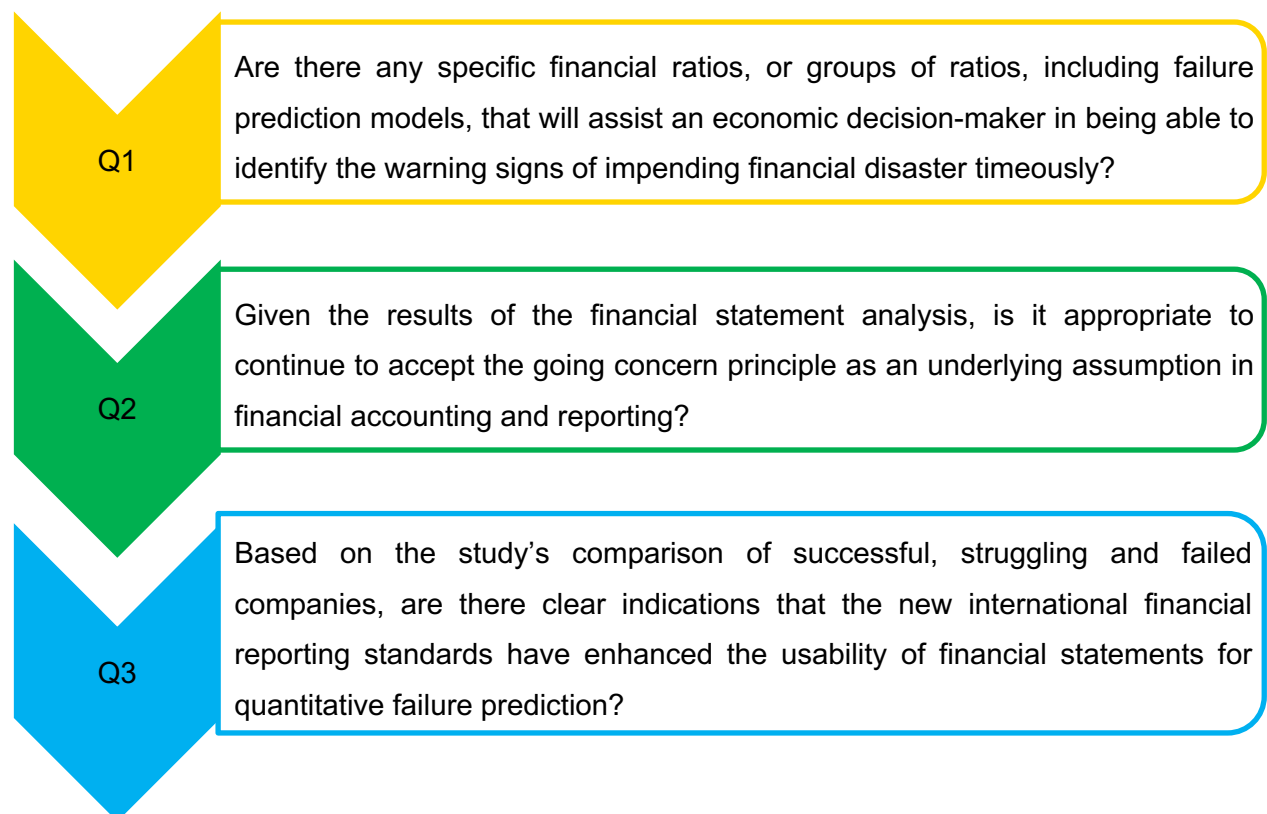
### **5.1.2 Definition of research and its application to this study**

In its most basic form, research can be said to be a process of asking (deliberate) questions, and looking for answers (Bezuidenhout *et al.*, 2014; Vale, 2013:680). Research is defined by Oxford Languages (2022) as *“the systematic investigation into and study of materials and sources in*

*order to establish facts and reach new conclusions*". Hampshire College (2022) expands on this definition to state that research is, in fact, a process: Mustafa (2011:24) explains that there are three stages to this process, i.e. the development of a research question, the collection of data, and the analysis and interpretation of the data. Critical information also needs to be documented, *"in accordance with suitable methodologies set by specific professional fields and academic disciplines"* (Hampshire College, 2022).

The start of any meaningful research is thus the creation of an interesting research question (Emerald Publishing, 2022; Saunders, 2016:46). This study asks three questions based on the primary and secondary objectives stated in Chapter 1:

**Figure 5-2: The three research questions**



(Source: Author compilation)

The answers to these questions are expected to contribute to the existing research around failure prediction, and may contribute new knowledge about the decision-usefulness of financial statements and the applicability of the going concern principle.

### **5.1.3 Ethical considerations**

Whenever research is conducted, it is of critical importance to ensure that the participants and the sites used for the study are respected and protected (Creswell, 2009:89).

The study will be conducted using information which is freely available to any student registered with the NWU, through the use of its Library and research resources. The data collected will not be used to discredit any entity selected in the sample. The study will be impartial to all entities, accounting boards, and any party mentioned in the information provided. The study will not contact any individuals or companies directly, and no questionnaires will be completed or distributed, negating the need for anonymity or confidentiality.

The ethical standards and procedures of the North-West University (NWU) will be honoured throughout this study. Consequently, this study poses a minimal risk regarding the ethics conditions of the EMS-REC committee.

## **5.2 Research methodology**

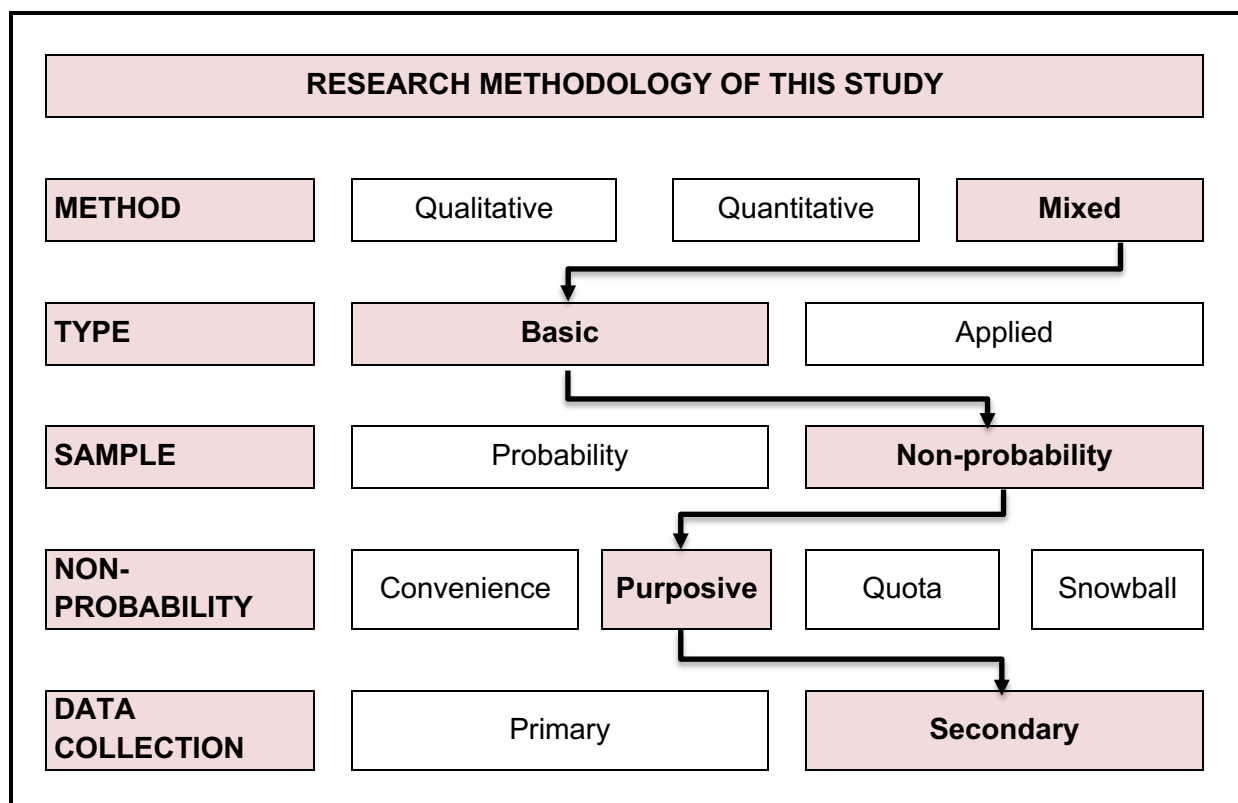
### **5.2.1 Overview**

Research methodology refers to the strategy, the plan of action and the process that the researcher will employ to be able to satisfactorily address the research question or questions (Cassim, 2021:99; Mbaka & Isiramen, 2021:28; Asenahabi, 2019:77; Marx, 2019:65–66; Sileyew, 2019; Abdul Rehman & Alharthi, 2016:52; Akhtar, 2016:68; Mustafa, 2011:24; Creswell, 2009:3). The research design is thus developed after the research problem has been identified and formulated (Cassim, 2021:99; Asenahabi, 2019:76).

The methodology is the step-by-step approach that the researcher will follow to ensure that valid and appropriate data are gathered to support the data analysis that will be performed, and to select the most appropriate data analysis tool to apply. The methodology therefore informs the researcher's choices in her journey towards being able to answer the research question and to deliver a relevant and reliable conclusion (Abdul Rehman & Alharthi, 2016:52; Akhtar, 2016:68). The selection of an appropriate research design is also based on the *“nature of the research problem, the researchers' personal experiences, and the audience for this study”* (Creswell, 2009:3).

The research methodology for this study was carefully selected to ensure that the research pathway was designed in such a way as to give the researcher the best opportunity to realise the research objectives. According to Sileyew (2019), research methodology can be broken down into the following selected steps: (i) research methods, (ii) research types, (iii) population and sampling of research, and (iv) data collection. The methodology selected for this study (for which the justifications follow in Sections 5.22 to 5.25 hereafter) is as follows:

**Figure 5-3: Research methodology of this study**



(Source: Cassim, 2021:116; Sileyew, 2019)

### 5.2.2 Research method

Three prominent research methods are the quantitative, qualitative and mixed research methods (Mustafa, 2011:24; Creswell, 2009:3). The mixed research method is a combination of qualitative and quantitative research (Marx, 2019:68). Research is seldom only either qualitative or quantitative, although most studies tend to lean more towards one or the other (Creswell, 2009:3).

As described in Chapter 1, this research follows a mixed research method. The study is based, as financial accounting is, on a positivistic approach. The data collected from IRESS exists independently of the researcher, who is not able to influence or change the data. The calculation of the totals and average balances and financial ratios of the sixty companies included in this study are quantitative in nature, and can be replicated in future studies. All of these factors are typical characteristics of a quantitative study.

However, knowledge will also be gained from the analysis of the financial ratios, which requires interpretation – to some extent, although the researcher stands independently of the data, the discussion of the results of the empirical tests may be *influenced*, if not changed, by her experience, perceptions and world views. These discussions of the results will be in words, not numbers, and will focus on an understanding and explanation of the phenomena being studied. Thus these attributes of the study indicate qualitative research, which flows from an interpretivism paradigm.

As indicated in Figure 5.2, this study made use of a mixed approach: it is positivistic in nature, with liberal sprinklings of interpretivism spread throughout the collection and interpretation of the underlying data.

### **5.2.3 Type of research**

Whether research is classified as basic or applied often simply depends on the purpose or use of the research (FormPlus Blog, 2020). When the aim of a study or research project is essentially to increase understanding, it requires the researcher to make different decisions in the design of the study, as to when the aim of the research is to bring about social change or a practical solution (De Gooyert & Grössler, 2018:575).

Basic research is also called fundamental or pure research (Lawrence Berkeley National Laboratory, 2022; De Gooyert & Grössler, 2018:575; Bentley *et al.*, 2015:690). The purpose of basic research is to satisfy the researcher's curiosity about a specific question. Through the research, knowledge on the researched topic is expanded and understanding of a particular phenomenon is enhanced (FormPlus Blog, 2020; Marx, 2019:68; Brown, 2018; De Gooyert & Grössler, 2018:575; Bentley *et al.*, 2015:690). Basic research generally does not lead to the development of a commercially viable solution to a problem; however, it can lead to the development of new theories, or the modification of existing ones (Lawrence Berkeley National Laboratory, 2022; Marx, 2019:68). Basic research is an investigation that is analytical and



exploratory in nature and is often performed in a library or laboratory, i.e. in a controlled research environment (FormPlus Blog, 2020). Moreover, basic research is generally based on a flexible timescale (De Gooyert & Grössler, 2018:577).

Applied research is also called strategic research (Bentley *et al.*, 2015:690). Applied research attempts to solve a persistent practical problem in order to improve the human condition, and is action-oriented and carried out in real-life settings (Lawrence Berkeley National Laboratory, 2022; FormPlus Blog, 2020; Marx, 2019:68; Brown, 2018). Applied research should lead to enhanced problem-solving and decision-making abilities, and is generally performed under tight time constraints (De Gooyert & Grössler, 2018:577).

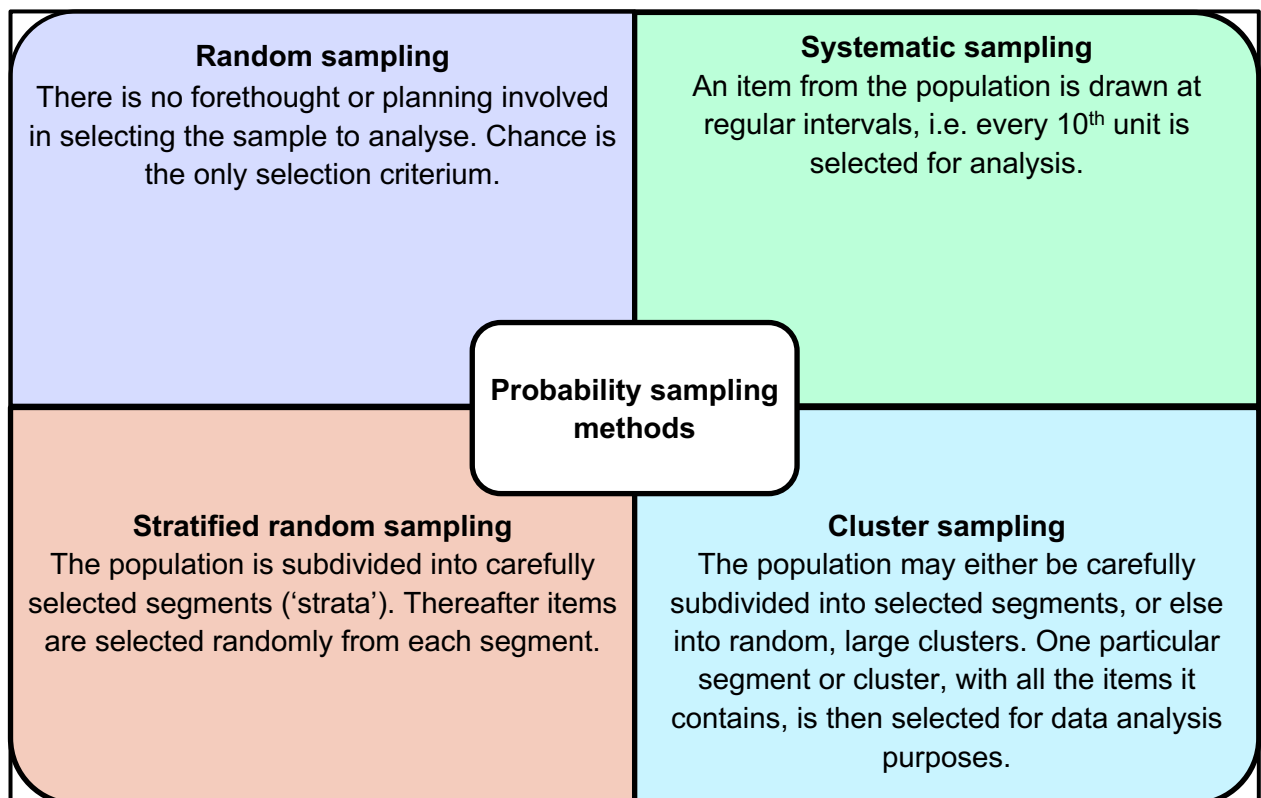
This study is considered to be, for the most part, basic research. Although the findings of this research may very well influence the economic decision-making abilities of the stakeholders of companies in South Africa, it is not carried out in a real-life setting. The study aims to increase the researcher's understanding of the distinguishing factors between successful companies and failed companies, and the financial ratios that could act as warning signals which may alert a company's management and investors to impending financial distress. It may lead to the re-consideration of the going concern assumption as an underlying accounting principle. The research is furthermore carried out in a virtual library: information is accessed from the NWU library database. Although, again, there are traces of applied research in this study, as the identification of suitable and appropriate ratios to help stakeholders identify companies that may require timely intervention, is aimed at preventing future financial losses and thus improving the human condition. The research may also assist the management of companies with making more immediate managerial decisions (De Gooyert & Grössler, 2018:577). However, at the core of this study, is a need for knowledge and understanding – it will therefore be classified as 'basic'.

#### **5.2.4 Sampling method**

Sampling is defined as *"a selection of a subset of the population of interest in a research study"* (Turner, 2020:8). It is important when selecting a sample of items to test, to ensure – by using a suitable technique – that a representative sample is selected from the chosen population so that selection is not biased (Mweshi & Sakyi, 2020:180). This will also allow for the sample to be generalised to the population as a whole (Saunders, 2016:56, Creswell, 2009:217). The two established bases for drawing a sample from a population that has been selected for a particular study are the probability and non-probability bases.

In a sample drawn on a probability basis, each unit within the population has an equal chance of being selected (Emerald Publishing, 2022; Mweshi & Sakyi, 2020:185; Turner, 2020:8; Marx, 2019:72). Probability basis can further be analysed into the following four specific sampling methods:

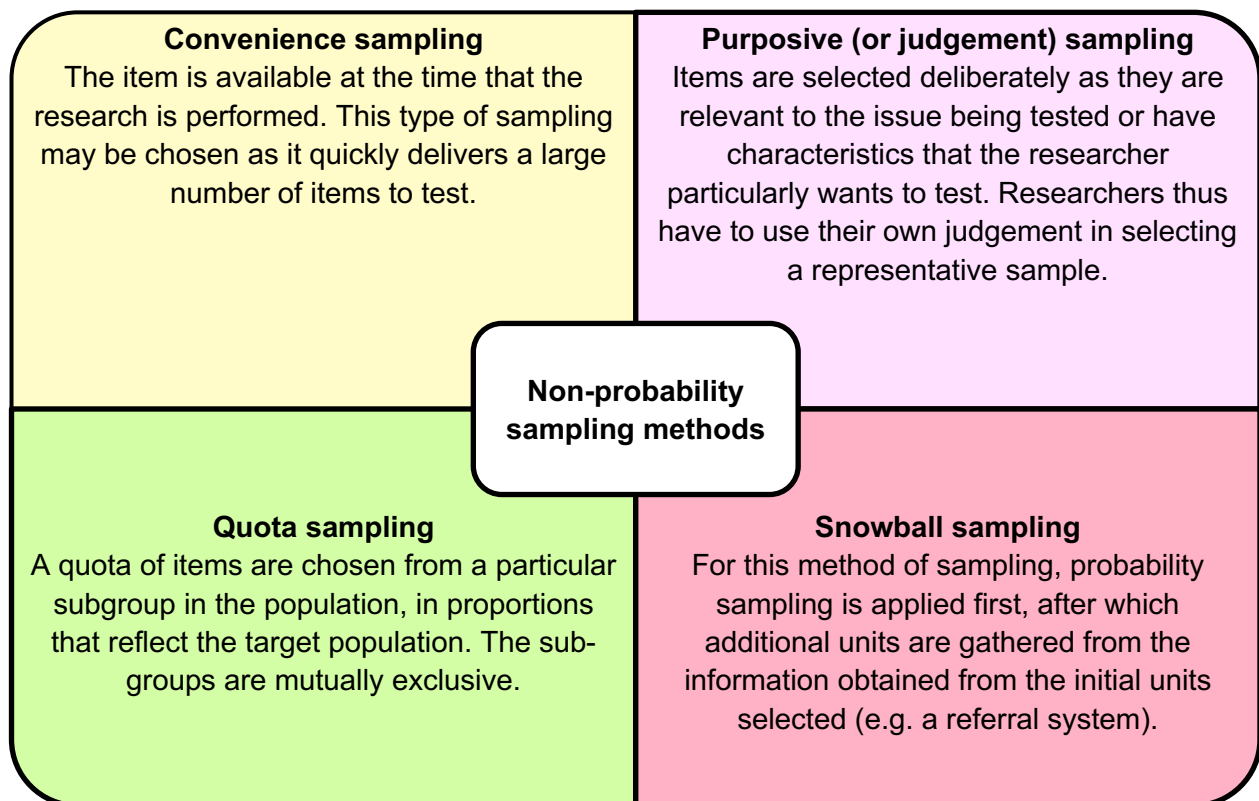
**Figure 5-4: Probability sampling methods**



(Source: Emerald Publishing, 2022; Mweshi & Sakyi, 2020:187–189; Turner, 2020:9–10; Marx, 2019:73; Saunders, 2016:57; Creswell, 2009:148)

Non-probability sampling is undertaken when the items in a population do not all have an equal chance of being selected, although researchers may find it difficult to determine the exact probability of a specific item being selected (Emerald Publishing, 2022; Mweshi & Sakyi, 2020:189; Turner, 2020:10; Marx, 2019:73). Selection then takes place on, for instance, using one of the following methods:

**Figure 5-5: Non-probability sampling methods**



(Source: Emerald Publishing, 2022; Mweshi & Sakyi, 2020:190–192; Turner, 2020:9; Marx, 2019:73; Saunders, 2016:58)

The deliberate steps that were followed to select the sample for this study will be explained in more detail in Section 5.3. However, in broad terms, the present study opted for judgement sampling. The companies selected to form part of all three groups to be analysed, over both time periods, were carefully selected according to specified criteria. For instance, the group of successful companies were selected for a specific year (the end-year of each time period) from a list of Top 100 companies that is published by the Sunday Times annually. The group of struggling companies had to be in existence for the full six years of analysis for each time frame investigated, and had to have two years where the 'Profit attributable to ordinary shareholders' line-item in the Statements of profit or loss, was a negative figure – preference was also given to companies that had losses in two subsequent years, and more so, to companies where the two subsequent years were in the final years of the analysis. Companies that had failed were selected from delisted companies that were either liquidated, taken over by another company, deregistered or placed under business rescue, with this perceived failure furthermore taking place in the final year of each time frame selected for analysis, or no more than one year thereafter. The researcher also

deliberately attempted to avoid selecting too many companies from the same sector of the JSE. All companies had to be either listed, or listed prior to failure.

### **5.2.5 Data collection type: primary versus secondary data**

Primary data are data collected first-hand by the researcher herself from the original source of information (Benedictine University, 2022; Cassim, 2021:105; Sileyew, 2019). It is therefore considered to be 'new' or 'raw' data (Cerar *et al.*, 2021:1366). Primary data often refers to real-time data, i.e. data that are available at the moment that the research is conducted (Benedictine University, 2022). Primary data may be obtained from interviews, experiments and surveys conducted by the researcher, and can be very expensive and time-consuming to collect.

Secondary data have been compiled for the use of prior or earlier studies, or for another purpose, and the researcher is therefore not involved in the data collection process (Benedictine University, 2022; Cassim, 2021:105; Sileyew, 2019). Secondary data are generally based on past data, and the sources may include literature available from books, reputable journals, scholarly articles, newspapers and reliable websites, and numerical information available from the annual reports of companies, data providers or financial software such as IRESS Expert (Benedictine University, 2022; Sileyew, 2019). Secondary data sources may provide interpretations, descriptions and aggregations of primary data (Cerar *et al.*, 2021:1366).

The study consists of both a literature review and empirical work. Empirical research and theoretical work are not mutually exclusive, and a consideration of the underlying theory supporting the research questions is therefore considered to be relevant to this study. Emerald Publishing (2022) notes that the '*link between research and theory is symbiotic: theory should inform research, and the findings of research should inform theory*'.

- A literature review was conducted to establish the goal, users, limitations and decision-making usefulness of financial statements, and to establish the key factors which have thus far been identified as the attributes of a successful (contrasted against a failed) company. The review was also performed to determine the definition and meaning of the term 'going concern', to gain an understanding of the nature of the assumption and the instances in which it may be regarded as applicable to a company under review.

The literature study for this research made use of a variety of resources and sources, including peer-reviewed articles published in journals and financial magazines, news sources such as the SABC news and the Sunday Times, the World Wide Web for definitions of buzzwords and explanations of common terminology, institutional websites for information related to auditing and accounting standards, articles from management accounting and accounting magazines, published textbooks regularly used for accountancy education, and books written by noted experts responsible for the establishment of failure prediction models. The literature review thus relied on existing or secondary data.

- An empirical study was conducted on financial data that were collected from IRESS Expert, which is financial software available from the North-West University library. The information is based on the financial statements of listed companies, that have been summarised and standardised by IRESS for use by analysts and researchers. The empirical data were therefore not collected from previous studies, but the data nonetheless are historic in nature, and were not extracted from the original financial statements of the selected companies by the researcher herself. Thus the empirical research also made use of secondary data.

### **5.3 Detailed description of the data collection process**

Data should be collected to answer the research questions effectively and efficiently (Marx, 2019:78). To answer the research questions, a comparison between the financial results of three groups made up of ten companies each, over two separate time frames – thus sixty companies in total – needed to be selected and analysed. The designated groups were companies that were deemed to be successful, companies that appeared to be struggling financially and that were potentially heading towards failure, and companies that had indeed failed.

According to Sileyew (2019), a population refers to the complete set of elements that have common attributes or characteristics in which the researcher may be interested. The researcher elected all companies that were listed on the JSE during the two separate time frames as the population for the study. The population for this study was purposefully limited to listed companies in South Africa only, as (i) the study is meant to assist economic decision-makers in South Africa with exercising the right choices, (ii) only JSE-listed companies are legally compelled to apply International Financial Reporting Standards (IFRS) in the compilation and presentation of published annual financial statements, which makes the data for these companies reliable and comparable; and (iii) for the sake of convenience, as the financial statements of unlisted and private companies – especially spanning a nearly twenty year time frame – are very difficult to

access. At the end of 2003, the final year of analysis of the first set of companies, 426 companies' equity instruments were listed on the JSE (JSE, 2003). By the end of 2018, the final year of analysis of the second set of companies, only 325 companies' equity instruments were listed on the JSE (JSE, 2018). The number of companies in each group for each time frame was limited to ten listed companies (or previously listed companies, in the case of the failed companies).

In terms of the two time frames for which the financial information of the three groups of companies were analysed, 1998 to 2003 and 2013 to 2018 were selected, for the following reasons:

- The first time frame, from 1998 to 2003, was selected as this period pre-dates the implementation of IFRS (early adoption was allowed from 2003, but listed companies were only legally obliged to introduce IFRS in 2005). This time frame is also purposefully set before the global recession and tumultuous conditions of 2008. As there is generally a progressive deterioration towards a global recession, information for all companies from 2006 to 2007 could be compromised by worse than average results – more companies are liquidated during a recession, as discussed in Chapter 3, than during stable economic periods – thus the selection of the 1998 to 2003 time period allows the financial ratios and failure prediction models applied to this study to yield more reliable results with improved explanatory and predictive ability.
- The second time frame, from 2013 to 2018, was selected for a period as close to the date of this study as possible. The ten successful companies for each time frame were selected from the Sunday Times Top 100 Companies list. This list is usually published in the second half of each calendar year, and includes all information until just a few months before the publication date. For instance, the results for the 2020 year were released in November 2020, and were based on the compound annual growth rate in the market capitalisation of listed companies up to and including 31 August 2020 (Sunday Times, 2020). As these results would already have incorporated the effects of the COVID-19 epidemic and its associated lockdown period, which brought most businesses to a standstill and negatively affected cash flows and profit, the 2020 list could not be used as representative of a normal business cycle. The Sunday Times Top 100 Companies list for 2019 was therefore used to extract the names of ten successful companies, and – as some companies would not have had their financial results published by 30 August 2019 (the cut-off date for the 2019 selection), possibly as their financial year-ends only occur during the last quarter of the calendar year – the last year for the potential time frame was set as 2018.

- The time frames each consist of a period of six years. The number of years was set as six as various studies have advanced that failure is detectable from approximately five years before liquidation takes place. According to Foster (1986:558) the financial ratios of failed companies exhibited behaviour different to those of successful companies as early as three to five years prior to liquidation. Beaver *et al.* (2005:100) state that poor profitability is evident in failed firms as early as four years prior to bankruptcy, and show a worsening trend over time. In this study a sixth year was included in the analysis to determine whether a decline was clearly visible from the period when results could reasonably still be expected to be healthy/successful, according to this study's definition of success as outlined in Chapter 3. Alternatively, the trend in the financial ratios of this group over six years could indicate that the results of the (eventually) failed companies were already less satisfactory than those of the successful companies. A period of more than six years is not advisable as Philosophov *et al.* (2008:186) find that five to seven years prior to failure, failed companies are virtually indistinguishable from successful companies.
- In summary thus, the period of the study should neither be too long, as the predictive value of the bankruptcy prediction models could be lost as a result, nor too short, as this would not allow for a proper pattern of struggle and failure to become evident.

As Du Jardin (2015:288) and Morris (1998:24) postulate, most companies do not fail in any one specific year; rather, deterioration is a gradual process. The researcher for this study wanted to compare companies that had deteriorated or succeeded over the exact same six-year time frame for each data set, and therefore it was important that the end date of each time frame had to be the date when the failed companies were liquidated. There are very few companies that fail in the exact same year, especially in light of the fact that the JSE consists of a limited and constantly declining number of companies (MyBroadband, 2022; Rowlings, 2016:4), and thus the number of companies per group were limited to ten companies each to ensure that there would be sufficient companies in the so-called failed group, that had failed in the final year of the analysis (i.e. either 2003 or 2018) or no more than one year subsequent to that date, that also had data available for the full six years of the analysis, to allow for a reasonable and consistent average to be calculated.

As the number of companies to be included in the failed group were limited to ten, the number of struggling companies and the number of successful companies were limited to ten each as well. This is in line with the findings of Joy and Tollefson (1975:725–726), who determined that the key consideration was to obtain a sufficiently large number of observations from the smaller group (the group of failed companies), rather than the larger group (the group of successful companies).

The total number of companies selected for each time frame is therefore thirty companies. At more than 7% and 9% (numerically) of all companies listed on the JSE per each respective time frame, the total sample is considered sufficiently large to be able to make reasonable inferences about the rest of the population.

The comparisons between the companies of each group within each time frame, were done based on average results for the group as a whole, and not on an individual matched pair sampling. This was purposefully done to see whether there was a particular indicator or financial ratio that could be said to distinguish between a successful and a failed company for any company listed on the JSE, irrespective of the specific sector or industry it is trading in, and independent of the size of the company in terms of its market capitalisation.

Numerous authors have, over the years, expressed their concerns about the use of a matched-pair design for the selection of companies to include in bankruptcy prediction research. Appiah *et al.* (2015:474), Platt and Platt (2002:184), Morris (1998:24), Foster (1986:561), Taffler (1982:343), Ohlson (1980:112) and Beaver (1966:76) argued that a matched-pair research design leads to bias, especially as some characteristics that could be typical of failed companies (e.g. the smaller size of the enterprise) are effectively excluded as potential indicators of distress when performing data analysis on a matched-pair basis. Furthermore, applying a matched-pair design in a small sample leads to over-fitting, which, according to Appiah *et al.* (2015:474) and Ak *et al.* (2013:554), means that a model is not stable over time, and its predictive accuracy is misleading. Veganzones and Severin (2020:209) further argued that a matched-pair design led to an overrepresentation of failed firms in the data relative to real-world populations. In South Africa, most listed companies are diversified into different industries, making matching virtually impossible (Correia, 2019:5-29; Farooq & Qamar, 2019:634; Helfert, 1994:72). The underlying working of the JSE and of financial statements are also not industry bound. A decision was therefore effected to work with an average result for ten companies per group, for comparison purposes, instead of individual figures.

The ten specific companies per group, thus sixty companies in total, were selected by applying the following common criteria:

- Any company included in any of the six groups of companies, had to have been listed on the JSE for the entire six years of analysis for the two separate time frames. This effectively eliminated start-up companies, which generally exhibit a higher than normal failure rate.



- The financial statements of the companies as well as market data related to the share prices of the companies, could be extracted from IRESS Expert, which is financial software available to registered students and academics at the North-West University. IRESS Expert is a reputable and reliable source of information. The particular advantage of IRESS is that the data contained in the database have been standardised, and therefore the financial statements of the various companies are easily comparable. The data is also available over a long period of time, and the required data for this study could be obtained for both time frames, i.e. for the six years from 1998 to 2003 and the six years from 2013 to 2018.
- Only companies that reported their results in South African rand were selected for this study.

To select the ten companies to be included in the group deemed to be successful for the time frame from 2013 to 2018, the Sunday Times Top 100 list for 2019 was consulted (Sunday Times, 2019). Ten companies were initially selected fairly randomly, with only two selection criteria used to guide the selection: (i) a concerted effort was made not to include two companies from the same industry, and (ii) the market capitalisation of the company as at 30 August 2019 must not have exceeded R999 billion. The second criterion was instituted to ensure that a single company selected for the group would not have the ability to disrupt or significantly and unduly influence the average figures that were calculated for the group as a whole. Consequently, companies like Naspers with a market capitalisation of R1 518 billion and Anheuser-Busch InBev SA with a market capitalisation of R2 440 billion, were excluded from the study.

The Sunday Times changed the way it determined the Top 100 companies in 2017. Prior to 2017, both share price growth and dividends paid were considered to determine the growth in shareholder wealth over a five year period. After 2017, the metric changed to the highest compound growth rate achieved in market capitalisation over a five year period (Sunday Times, 2019). Carlson *et al.* (1998:25) determined that financial statement readers found the compound annual growth rate to be useful for firm valuation purposes. As the compound annual growth in market capitalisation at least partially – if not substantially – correlates to the compound annual growth rate in the share price (*sans* the dividend payments), the Sunday Times Top 100 companies list for 2004 was again used to select the ten companies included in the successful group for the time frame from 1998 to 2003 (Melaia *et al.*, 2008:246), and the same criteria for selection as for the 2013 to 2018 time frame were applied again. The criterion for selection was then adjusted slightly to, where possible, select companies that appeared on both Top 100 lists (2003 and 2018), based on the consistency of action which they represent.

This study also includes ten companies for each of the time frames that were deemed to be 'struggling'. According to Veganzones and Severin (2020:218), insufficient attention has in the past been awarded to companies in financial distress, due to limitations in empirical research. For instance, accurately defining financial distress would be near impossible. Financial distress could range from insufficient – even if temporary – cash flow resources, to earnings losses, to a withdrawal of support from suppliers or customers. Yet such research could offer significant theoretical value and could be essential in the quest for identifying potential failure early enough to be able to implement effective turnaround procedures.

To select the ten companies each to be included in the groups deemed to be struggling during the two separate time frames, IRESS Expert was used to draw a list of all companies listed on the main board of the JSE, that showed a loss in the 'Profit attributable to ordinary shareholders' line in the Statement of Profit or Loss and other comprehensive income, for 2003 and 2018 respectively. In both cases, the information on the profit or loss attributable to ordinary shareholders was drawn for the full six years of the intended analysis. For the 2018 group, Steinhoff was excluded as a potential element due to the size of the group and the massive impact it had on the JSE when the company collapsed. To ensure that a company had not simply suffered a loss in 2003 due to the early adoption of the International Financial Reporting Standards, a criterion was set that a selected company preferably had to have had losses in at least two of the six years under analysis, and where possible, these losses should have taken place in subsequent years. The losses also preferably had to be in 2003 and 2004 or 2017 and 2018 respectively. The researcher's efforts were somewhat hampered by the fact that not many companies that were listed for the full six years of the analysis suffered accounting losses based on the two-year criterion. For 2003, 26 companies listed on the mainboard of the JSE suffered losses, of which only 10 suffered losses in two of the six years under analysis. For 2018, 64 companies reported losses attributable to ordinary shareholders, of which 34 companies (including Steinhoff) complied with all of the criteria for selection. Ten companies from this group were selected randomly.

The researcher considered 'Profit attributable to ordinary shareholders' as a reasonable basis for the selection of two sets of struggling companies. These companies do not necessarily meet the legal definition for failure, thus insolvency or illiquidity, yet, but are not consistently managing to produce profit which, as discussed in Chapter 3, is a requirement for the long-term survival of a company. Barnard *et al.* (2020:981), Karas and Režňaková (2020:27), Alasaad and Gök (2019:975), Bushe (2019:6), Dennis (2018), Marx *et al.* (2017:69), Rahim (2017:50), Gitman and Zutter (2014:716), Levenstein (2009:10), Beaver *et al.* (2005:100), Bernstein (1998:622) and

Ohlson (1980:110) are amongst several researchers who have noted that low returns, and especially consistent losses (i.e. negative values of retained profit for at least two consecutive periods), are potential indicators of financial distress. Although profit could be manipulated, to some extent, by the management of the company, it is unlikely that the managers would want to declare a loss, and therefore the risk is that the profit would be over-stated, rather than under-stated. Consequently, this study considers the 'Profit attributable to ordinary shareholders' to be a reliable indicator of potential distress.

Some consideration was given to using either the 'Cash flow from operations' or the 'Cash generated for the year' line items from the cash flow statements instead of the 'Profit attributable to ordinary shareholders' line item, in which case cash utilised or negative cash generated could have served as a potential indicator of distress. However, cash flow figures can also be manipulated, especially over the short term. For instance, a company could acquire an additional loan, which would increase the cash flows for the company for the year, but simultaneously raise the gearing and therefore the financial risk of the entity, or the company could sell some of its assets, which would also increase cash flow, but potentially harm or hamper future operational capacity and efficiency (Brigham *et al.*, 2019:51; Rowlings, 2016:17). Thus, after careful consideration, it was decided to use the 'Profit attributable to ordinary shareholders' as the base for the selection of the struggling companies instead.

To select the ten companies each to be included in the groups deemed to have failed during the two separate time frames, IRESS Expert was used to draw a list of all companies that had been delisted. Four lists were then drawn from the OpenCorporates website (OpenCorporates, 2022). These are South African public companies in provisional liquidation, South African public companies that have voluntarily liquidated, South African public companies that are in final liquidation, and South African public companies that have de-registered. The list of delisted companies was then compared to the four lists of liquidated and deregistered companies, and companies that appeared on both lists were identified as potential candidates for selection. This list was narrowed down further by considering the line item 'Profit attributable to ordinary shareholders' for all South African listed companies for periods from 1998 to 2005 and 2011 to 2020 respectively. Where a company that had previously been identified as a potential candidate stopped reporting its results to the JSE in either 2003 or 2004, and 2018 or 2019, but still had six years of information available from 1998 to 2002 and 2013 to 2018, the company was added to a list of suitable candidates. This list was further reduced by eliminating all companies that did not report in South African rand.

Internet searches and searches of JSE SENS (Stock Exchange News Service) announcements were then conducted for the remaining companies on the list, to ascertain why the companies had delisted, and companies that had delisted because it had liquidated as a result of financial distress, been taken over or acquired by another company following financial distress, that had entered into Business Rescue, or that had reached a compromise with its creditors in the form of a workout, were selected as failed companies. From this semi-final list, ten companies for each time frame were selected randomly. It was important for this study to consider only those companies that had failed in either 2003 or 2018, or at a maximum one year past those dates, to ensure that the financial figures used for the averages for the ratio analysis and the application of the bankruptcy prediction models, were specifically for the four to five years prior to the company's failure.

The steps taken above successfully resulted in the selection of ten companies for each group of companies that form part of this study, i.e. successful, struggling and failed, over the two time frames from 1998 to 2003, and from 2013 to 2018.

The companies included in the final six groups are the following:

**Table 5-1: Three groups of companies selected for the six years from 1998 to 2003**

| Companies selected for the six years from 1998 to 2003 |                                        |                          |                                  |                |                      |
|--------------------------------------------------------|----------------------------------------|--------------------------|----------------------------------|----------------|----------------------|
| Successful                                             |                                        | Struggling               |                                  | Failed         |                      |
| Company                                                | Sub-industry                           | Company                  | Sub-industry                     | Company        | Sub-industry         |
| Aspen Pharmacare                                       | Pharmaceuticals and biotechnology      | Adcorp Holdings          | Business training and employment | Aquila Growth  | Asset management     |
| AECI                                                   | Chemicals                              | African Rainbow Minerals | Industrial metals and mining     | Forim Holdings | Healthcare           |
| Barloworld                                             | General industrials                    | Datatec                  | Software and computer services   | Gencor         | Specialty finance    |
| Clicks Group                                           | Personal care, drug and grocery stores | Goldfields               | Precious metals and mining       | Inmins         | Industrial machinery |
| Harmony Gold Mining                                    | Precious metals and mining             | Growthpoint Properties   | Real estate investments          | Jigsaw         | Real estate          |
| Italtile                                               | Retailers                              | Kap Industrial           | General industrials              | Kelgran        | General mining       |
| Santam                                                 | Non-life insurance                     | Merafe Resources         | Metals and mining                | LA Group       | Apparel retailers    |
| Pick n Pay Stores                                      | Personal care, drug and grocery stores | Metrofile                | Business support services        | Moribo         | Gambling             |
| Truworths international                                | Retailers                              | PSG Group                | Financial Services and Education | Relyant        | Furniture retailer   |
| Woolworths Holdings                                    | Retailers                              | Trencor                  | Transportation                   | Sasani         | Media                |

(Source: Author compilation)

**Table 5-2: Three groups of companies selected for the six years from 2013 to 2018**

| Companies selected for the six years from 2013 to 2018 |                                        |                      |                                     |                          |                                     |
|--------------------------------------------------------|----------------------------------------|----------------------|-------------------------------------|--------------------------|-------------------------------------|
| Successful                                             |                                        | Struggling           |                                     | Failed                   |                                     |
| Company                                                | Industry                               | Company              | Industry                            | Company                  | Industry                            |
| Adcock Ingram Holdings                                 | Pharmaceuticals and biotechnology      | Adcorp Holdings      | Business training and employment    | Adrenna                  | Real estate holding and development |
| AECI                                                   | Chemicals                              | Avenge               | Construction and materials          | Assore                   | General mining                      |
| Barloworld                                             | General industrials                    | Chrometco            | Industrial metals and mining        | ComAir                   | Travel and leisure                  |
| Clicks Group                                           | Personal care, drug and grocery stores | Efora Energy         | Oil, gas and coal                   | Consolidated Investments | Construction and materials          |
| Harmony Gold Mining                                    | Precious metals and mining             | Hulamin              | Industrial metals and mining        | Esor                     | Heavy construction                  |
| Italtile                                               | Retailers                              | Impala Platinum      | Precious metals and mining          | Group 5                  | Heavy construction                  |
| Santam                                                 | Non-life insurance                     | Nutritional Holdings | Pharmaceuticals and biotechnology   | Orion Real Estate        | Real estate services                |
| The Spar Group                                         | Personal care, drug and grocery stores | PBT Group            | Software and computer services      | Phumulela Leisure        | Gambling                            |
| Truworths International                                | Retailers                              | Purple Group         | Investment banking services         | Rolfes Technology        | Specialty chemicals                 |
| Woolworths Holdings                                    | Retailers                              | South Ocean Holdings | Electronic and electrical equipment | Transhex                 | Diamond mining                      |

(Source: Author compilation)

## 5.4 Data analysis

### 5.4.1 Introduction

*“Any analysis of a firm by management, investors and other interested parties, should include an examination of the company’s annual financial statements”* (Correia, 2019:5-2). After all, the goal of financial statements is to provide information that is useful to economic decision-makers, particularly where such information can provide guidance regarding the probable future of an

entity and its likelihood of success. However, financial statements *per se* will not necessarily enhance the decision-making ability of the users. Some degree of interpretation of the figures and qualitative information is generally required first (Brigham *et al.*, 2019:70; Marx *et al.*, 2017:66; Firer, 2012:43; Mosalakae, 2007:5). *'A system without interpretation or analysis of the results serves no useful purpose and may encourage misinterpretation or misuse, to the detriment of the professional accountant, as well as the interested parties'* (Gouws & Lucouw, 1999:102).

The interpretation of financial statements often starts with the analysis and interpretation of financial ratios (Ak *et al.*, 2013:554; Foster, 1986:96). A financial ratio is a quotient of two numbers, and it expresses the relationship between one quantity and another (Barnard *et al.*, 2020:369; Bordeianu & Radu, 2020:53; Sriram, 2020:433; Veganzones & Severin, 2020:212; Correia, 2019:5-15; Besley *et al.*, 2015:34; Firer, 2012:49; Beaver, 1966:71–72). Large amounts of accounting information may thus be converted into easily comparable metrics (Beckham, 2021).

The use of financial ratios is advantageous as ratios are objective measures, based on publicly available information, that allow for size differences across firms and time to be ignored (Barnard *et al.*, 2020:356; Veganzones & Severin, 2020:212; Zarei *et al.*, 2020:431; Besley *et al.*, 2015:34; Firer, 2012:49; Balcaen & Ooghe, 2006:82; Foster, 1986:96). By using common size analysis, the effects of inflation on the financial results are also removed. Sriram (2020:432) and Veganzones and Severin (2020:211) postulate that financial ratios make financial information more interpretable, by presenting the information in a different or more user-friendly format.

Financial ratios may be used for a variety of purposes, but mostly ratios are employed to assess the financial position and past performance of the company by considering the outcomes of the decisions made by the management of the company related to its investments, financing, business operations and dividend policy, and the financial and operational risk that the company is exposed to (Beckham, 2021; Barnard *et al.*, 2020:355; Bordeianu & Radu, 2020:53; Kliestik *et al.*, 2020:75; Sriram, 2020:432; Zarei *et al.*, 2020:431; Correia, 2019:5-1 & 5-9; Kariyawasam, 2019:1898; Osadchy *et al.*, 2018:341; Sultanoglu *et al.*, 2018:623; Marx *et al.*, 2017:66; Gitman & Zutter, 2014:61; Helfert, 1994:71).

It has to be borne in mind that financial ratios are, by themselves, not necessarily meaningful (Correia, 2019:5-15; Skae *et al.*, 2014:281). Financial analysis can never be done in isolation – ratios only become meaningful when they are used for a specified purpose determined by the analyst, and compared to other figures, such as historical information, industry comparatives, the

ratios of key competitors or other divisions within the same company, management goals and budgets, and generalised norms based on statistical analysis (Barnard *et al.*, 2020:369; Bordeianu & Radu, 2020:53; Sriram, 2020:445; Brigham *et al.*, 2019:71; Correia, 2019:5-15; Marx *et al.*, 2017:66; Besley *et al.*, 2015:34; Gitman & Zutter, 2014:61; Skae *et al.*, 2014:281; Gouws & Lucouw, 1999:99–100; Helfert, 1994:72 & 109; CIMA, 1993:350; Beaver, 1966:71).

The required comparisons, to give meaning to economic and financial information, are made easier through the judicious use of financial ratios, which also enables users to concentrate on exceptions to the norms or industry averages. The users can do so by identifying irregularities in ratio relationships and highlighting areas that require further research (Beckham, 2021; Kliestik *et al.*, 2020:75; Brigham *et al.*, 2019:69; Gitman & Zutter, 2014:63; Berstein, 1998:645).

Thus financial analysis enables stakeholders and users of the financial statements to extract meaningful conclusions from the published information, to diagnose and make a prognosis about the financial health and returns of the company, and to forecast its future prospects, including whether it will continue to be sustainable and profitable, or whether it is headed towards decline and failure (Brigham *et al.*, 2019:70; Correia, 2019:5-9; Osadchy *et al.*, 2018:340 & 348; Marx *et al.*, 2017:66; Besley *et al.*, 2015:24; Kurunmäki & Miller, 2013:1109; Mazouz *et al.*, 2012:68; Berstein, 1998:645; Dimitras *et al.*, 1996:488; Altman, 1968:590; Merwin, 1942:90 & 105). Cause-and-effect relationships may also be identified, which should assist decision-makers with their choices (The Free Library, 2022; Dillard, 1991:11).

This study will attempt to assist the users of the financial statements by considering whether there are specific ratios that may address a company's going concern status, that hold true across different industries and different size companies. The average results of the ten companies in each of three groups across two time frames will be calculated per annum, for a six year period in each time frame. Failure prediction models will also be applied to the average results to search for noticeable differences between the three groups of companies per time frame. The results will be plotted graphically so that trends and differences may be established visually.

#### **5.4.2 Limitations of financial ratios**

As with financial statements, we have to bear in mind that financial ratios and ratio analysis may have certain inherent limitations as well.



For instance, an underlying flaw of all trend analysis is that it is based on a simple, but highly unlikely, assumption: *the future will reflect the past*. Ratio analysis is often used to make predictions about the future, based on trends observed in the financial ratios of the company over a period of time (Beaver *et al.*, 2010:114). However, anyone who has undergone the disruption brought about by the COVID-19 pandemic, will know that such an assumption does not hold true over the long-term. Life, and business, are unpredictable. Global competition and recessions, climate change and digital disruption, wars and catastrophic natural events, amongst others, will continue to change the way we live and transact. At best, a company can hope that some past trends will manifest again in future, and plan accordingly. All plans should, however, be flexible, to allow for alterations based on trajectories that change nearly overnight as a result of unexpected events, to be incorporated.

Furthermore, it takes skill and experience to be able to interpret financial statements (Barnard *et al.*, 2020:370; Correia, 2019:5-30; Pascual-Ezama *et al.*, 2018:29; Mosalakae, 2007:21; Gouws & Lucouw, 1999:99 & 117–118). Those investors who do not have a background in financial accounting or economics may struggle to make sense of the data in the annual reports. The fact that these financial statements are often quite voluminous and dense, and that previous research has found that they may be particularly difficult to read, do not ease the user's burden (Barnard *et al.*, 2020:356; Henderson, 2020:114; Pascual-Ezama *et al.*, 2018:30). Also, during the analysis of a company's financial statements, some ratios may indicate that a company possesses certain strengths, whereas other ratios may contrarily expose that weaknesses exist within the company. It is difficult then to objectively assess to what extent the strong points offset the weak points (Correia, 2019:5-30; Besley *et al.*, 2015:43; Situm, 2014:24; Skae *et al.*, 2014:316; Altman, 1968:590).

Financial ratios may thus not be the perfect way to analyse the performance of a company. In fact, some researchers find that ratios may simply be calculated because they are convenient and their use widespread (Gouws & Lucouw, 1999:100; Taffler, 1982:344). Various studies also concur that financial ratios alone cannot capture all the dynamics that cause or indicate financial distress and failures. Gutierrez *et al.* (2020:1345) and Veganzones and Severin (2020:214) consequently advocate the inclusion of alternative variables, such as the management's or the auditors' opinion on going concern, in the analysis as well.

At the very least, to make an informed and relevant decision, the users of the financial statements should include a review of the qualitative information contained in the annual reports, and of the company's strategic objectives within its environment and economy, in their analyses (Beckham,

2021; Barnard *et al.*, 2020:354 & 368; Veganzones & Severin, 2020:212; Correia, 2019:5-4; Yee, 2018; Besley *et al.*, 2015:24; Skae *et al.*, 2014:282; Balcaen & Ooghe, 2006:83–84).

The last word on the potential limitations of financial ratios belongs to the researcher whose study on failure prediction is considered to be the starting point of nearly all failure prediction research, William H. Beaver, who said: *“Even with the use of ratios, investors will not be able to completely eliminate the possibility of investing in a firm that will fail. This is a rather unfortunate fact of life, since the costs in that event are rather high”* (Beaver, 1966:91).

### **5.4.3 Financial ratios remain relevant and useful**

Despite the potential limitations of financial ratios, most researchers find that financial ratio analysis remains relevant and useful (Correia, 2019:5-30; Kariyawasam, 2019:1900; Yee, 2018:49; Besley *et al.*, 2015:43; Mosalakae, 2007:119; Berstein, 1998:645; Edmister, 1972:1477; Merwin, 1942:90). Financial ratios have been found to be useful for the following reasons:

- Financial ratios are designed to show relationships between financial statement accounts within firms (Besley *et al.*, 2015:34; Firer, 2012:49). Financial ratios consequently allow the users of financial statements, both internal and external, to judge the financial health and performance of a company (Beckham, 2021; Bordeianu & Radu, 2020:53; Sultanoglu *et al.*, 2018:628). Financial ratios may therefore assist the management of a company and its other stakeholders to recognise the company’s strengths, which can be exploited to create a competitive advantage, and its potential weaknesses, which may be resolved timeously to prevent financial distress in the long run (Kliestik *et al.*, 2020:74; Sriram, 2020:433; Skae *et al.*, 2014:280). By identifying potential weaknesses and threats to the corporate entity, users are also able to assess and address business and financial risk, audit risk, and the possibility of error and fraud (Bordeianu & Radu, 2020:58; Zarei *et al.*, 2020:428).
- Financial ratios may be presented in graphical format, which aids with the visualisation of the company’s evolution. A graphical presentation of the results of a financial analysis could make it easier to identify a trend in the financial results of a company. A graph of financial ratios within the same firm over time, may indicate a positive trend, and thus show that a company’s performance is improving, or it can present a negative trend, which might raise red flags for areas of concern – any significant year-to-year changes could be symptomatic of a major problem (Beckham, 2021; Brigham *et al.*, 2019:82; Besley *et al.*, 2015:41; CIMA, 1993:350).

These trends will indicate the direction of change, the rate of change, and the amount of the change. This, in turn, may assist users of the financial statements with more accurately predicting the future – including the company's financial position in the future, the expected levels of profitability, potential dividends to be paid, and even the sustainability of the company – on the assumption that the future operations and success of the company will mirror its past performance (Bordeianu & Radu, 2020:53; Sriram, 2020:432; Brigham *et al.*, 2019:82; Besley *et al.*, 2015:34; Skae *et al.*, 2014:280; Ak *et al.*, 2013:591).

- Benchmarking to other firms in the same industry, especially the top performers, also allows the management of a company to ascertain whether the company is performing better or worse than average within its own business sector, and to identify areas of potential improvement and development. Ratio analysis is therefore an essential part of a company's scoreboard (Bordeianu & Radu, 2020:53; Kliestik *et al.*, 2020:75; CIMA, 1993:350 & 368). Effective comparisons between companies may further assist investors with economic decision-making by allowing them to identify and avoid potentially hazardous investments, or by pointing them towards companies that create exceptional shareholders' value (Ak *et al.*, 2013:553).
- Research has particularly shown that financial ratios do, to some extent, have predictive power, and consequently financial ratios are widely used – and not only for their convenience! (Beckham, 2021; Karas & Režňaková, 2020:27; Kliestik *et al.*, 2020:75; Laurila, 2020:10; Zarei *et al.*, 2020:431; Kariyawasam, 2019:1898; Ak *et al.*, 2013:553; Jooste, 2007:11; Balcaen & Ooghe, 2006:82; Beaver *et al.*, 2005:118; Charitou *et al.*, 2004:483; Hajdu & Virág, 2001:28; Edmister, 1972:1477). From investors or potential investors' standpoints, predicting the future is the purpose of financial statement analysis as it allows them to determine the value of a share, and to make decisions about investments or disinvestments; from the management of the company's standpoint, financial statement analysis is useful both as a way to anticipate future conditions, and as a starting point for strategic and operational plans and actions that will influence the firm's future course of events (Yendrawati & Adiwafi, 2020:72; Besley *et al.*, 2015:34).
- The predictive power of financial ratios is especially important with regard to potential financial failures. Kliestik *et al.* (2020:75) and Veganzones and Severin (2020:212) find that financial ratios are the most used variable in financial distress prediction. Generally, the financial ratios of unsuccessful companies can be seen to have deteriorated significantly prior to failure, particularly in the year before discontinuance, and to be worse than the ratios

of non-failed firms for a period of at least five years prior to failure (Beaver *et al.*, 2005:100; CIMA, 1993:370; Beaver, 1966:81). Veganzones and Severin (2020:212) thus claim that the relation between financial information and corporate failure is irrefutable.

It may thus reasonably be argued, especially as financial statement analysis allows for the early identification, assessment and management of risks and signs of financial distress, that evaluating an entity's financial position and performance is critical in ensuring its financial sustainability (Marx *et al.*, 2017:66; Skae *et al.*, 2014:279; Platt & Platt, 2002:196–197). In retrospect, financial ratios can also be used to suggest why a firm has failed (CIMA, 1993:370; Merwin, 1942:99).

- Financial ratios may even increase the quality of annual financial statements and auditor reports, for instance by reducing information asymmetry and by strengthening corporate governance norms (Sriram, 2020:445; Zarei *et al.*, 2020:425). ISA 570, the Auditing Standard related to the assessment by an auditor of a company's going concern status, in fact advises auditors to heed 'adverse key financial ratios' in their assessment of the company's risk of discontinuance.
- Ratio analysis enables governments and standard-setters to assess the impact of changes to international financial reporting standards (Linares-Mustarós *et al.*, 2018:1). This study, by comparing data over two separate time frames – one before the adoption of International Financial Reporting Standards, and one thereafter – will attempt to identify whether the change in underlying policies and practices, have improved the decision-usefulness of financial statements.

It is therefore possible to conclude that financial ratios are useful in a variety of applications: it enables faster and more comprehensive research, it assists shareholders, debt-providers and managers with assessing a company's financial health and performance, it may help predict potential financial distress, and it can be used to explain share price movements (Linares-Mustarós *et al.*, 2018:1). If an analyst applies ratio analysis perceptively, ratios will provide useful insights into a firm's operations (Correia, 2019:5-30). Based on the proven usefulness of financial ratios, this study employed financial statement analysis for the empirical research, the results of which are presented in Chapter 6.

#### 5.4.4 Financial ratios included in this study: selection, formulas and meaning

Much research has been done on the potential of financial ratios and discriminant models to accurately predict the likelihood of failure for companies and other business entities (Veganzones & Severin, 2020:204; Bhandari *et al.*, 2019:11; Farooq & Qamar, 2019:632; Yee, 2018:42; Liang *et al.*, 2016:561; Rowlings, 2016:1; Du Jardin, 2015:286; Ak *et al.*, 2013:555; Mosalakae, 2007:6; Morris, 1998:23; Altman, 1968:590).

Although most researchers have found that ratios do have some predictive power, the most difficult decision for users of financial statements may be *which* ratios to select, and the weightings to apply to each ratio, to assess the performance of a company, particularly where the goal of such an assessment is to distinguish between successful and failed firms (Pascual-Ezama *et al.*, 2018:31; Ak *et al.*, 2013:554; Beaver *et al.*, 2010:117). To date, there has been little agreement amongst researchers about the most important financial ratios to use (Linares-Mustarós *et al.*, 2018:2; Beaver *et al.*, 2010:113; Helfert, 1994:71; Taffler, 1982:344; Edmister, 1972:1478; Altman, 1968:590; Beaver, 1966:91).

Helfert (1994:71) further states that an analyst may be very tempted, especially in light of the ease with which analysis may be performed on personal computers, to simply test every available and possible ratio, but that this would not necessarily add much to the interpretation of the financial figures. A few select ratios are more likely to yield the information that the analyst requires in order to gain useful insights and to deliver adequate decision support.

What is clear from a large volume of prior research though, is that whichever ratios are ultimately selected for the financial statement analysis, it would be inappropriate to use only a single year's data. One year's data and ratios cannot accurately predict a company's likely future survival or failure, especially as failure does not occur in a single year, but rather through a continuous – whether steady or sharp – decline in the company's performance (Ashraf *et al.*, 2019:1; Du Jardin, 2015:288; Dimitras *et al.*, 1996:488; Helfert, 1994:72; Foster, 1986:115; Edmister, 1972:1490). Therefore, the values of the ratios should be inspected over time to provide full information about the progress of a company. Nonetheless, the analyst should bear in mind that data for the latest year is probably the most important in the analysis of the financial statements, as it represents the company's most recent experience and is therefore likely to be the most relevant for the projection of future results (Berstein, 1998:585).

The two bankruptcy prediction research studies that have garnered the most attention over the last seventy odd years, and which are still considered to be seminal works, are the studies performed by William H. Beaver ("Beaver") and Edward I. Altman ("Altman").

- Beaver used univariate analysis for his bankruptcy prediction model. For univariate (or single variable) failure prediction models, a single, potentially important, financial ratio is selected and examined in isolation. The ratio is then compared against a benchmark such as a norm or industry ratio to determine its acceptability, thus its conformance to the norm (Balcaen & Ooghe, 2006:77–78; Morris, 1998:23). The significant advantage of univariate modelling techniques is that they are extremely simple to use, especially as the application thereof does not require any particular statistical knowledge (Pogue, 2008; Balcaen & Ooghe, 2006:65).

Beaver hypothesised that there ought to be a marked difference between the financial ratio of a surviving and a failing company (Pogue, 2008; Berstein, 1998:645). His study proved that symptoms of failure could indeed be detected as much as five years before actual insolvency, which illustrated that indicator analysis was a useful instrument in bankruptcy prediction (Yee, 2018:47; Pogue, 2008; Hajdu & Virág, 2001:28; Foster, 1986:54; Altman, 1984:172; Scott, 1981:320–321).

Beaver found that each of the six types of ratios he investigated had the power to predict potential financial failure, but that some ratios were better indicators than others. Interestingly, some of the ratios that delivered the worst results had previously been considered the most important failure indicators. Beaver determined that the cash flow to total liabilities ratio was the best predictor of corporate failure, with the lowest error rate, and that the ratio had predictive value even up to five years before. This ratio was also noticeably accurate in classifying *both* failed and non-failed firms correctly. The net income to total assets ratio was the second-best performer, and the total debt to total asset ratio gave the third-best results. The liquid asset test had the highest error rate, and therefore performed the least well, even in the final year before failure (Beaver *et al.*, 2010:116–117; Pogue, 2008; Berstein, 1998:646; Foster, 1986:542; Scott, 1981:320–321; Deakin, 1972:167; Wilcox, 1971:389; Beaver, 1966:89–90).

Beaver concluded that the results of his research showed that failed firms had far lower levels of cash flow than non-failed firms, while the current size of working capital was a less important factor, although failed firms also had smaller reserves of liquid assets.

Interestingly, although the failed firms had less resources to meet their obligations as they matured, they still tended to incur more debt than the non-failed firms (Beaver *et al.*, 2010:116–117; Jooste, 2007:1; Beaver, 1966:80). Furthermore, not only were the ratios of the failed firms weaker than the ratios of the non-failed firms over the full five year period of the analysis, but the deterioration in the means of the failed firms was very pronounced over the five-year period (Jooste, 2007:1; Beaver *et al.*, 2005:100; Bernstein, 1998:647; Deakin, 1972:167; Beaver, 1966:80–81).

Lastly, a further study by Beaver in 1968 signalled that the share prices of companies facing distress will often fall long before the actual failure of the company, as the market is slightly more adept at predicting financial failure than accounting ratios on their own, especially as the markets may have additional information from other sources at their disposal. Share price movements should therefore also be included in an evaluation of a company's future prospects (Veganzones & Severin, 2020:212–213; Rowlings, 2016:5 & 55; Scott, 1981:321).

This study will include Beaver's five ratios in the analysis of the average financial ratios applicable to the three sub-sets of companies over the two time frames, and will also include ratios based on year-end share price information.

- Altman developed the now famous Z-score, which is a bankruptcy prediction model that uses five important indicators (financial ratios) in a weighted basis (Barnard *et al.*, 2020:395).

Several past studies found that, although a single ratio may be used as a tool when assessing the likelihood of financial failure, the limitations of univariate failure prediction models are such that a single ratio on its own cannot be expected to deliver a definitive answer (BankruptcyCanada, 2022; Laurila, 2020:9; Gitman & Zutter, 2014:61; Beaver *et al.*, 2010:117; Jooste, 2007:11; Helfert, 1994:72; Foster, 1986:115; Edmister, 1972:1490). Consequently, the use of a multivariate, applied over time to point out changes in financial conditions and the performance of the company, was suggested to deliver improved results. With multivariate failure prediction models, several financial ratios are combined into one meaningful predictive model (Hajdu & Virág, 2001:29; Altman, 1968:591). Weights are assigned to the selected ratios to maximise the distance between the failed and non-failed companies, thus making it easier to distinguish between the two groups (Correia,

2019:5-28; Beaver *et al.*, 2010:118; Becchetti & Sierra, 2003:2100; Deakin, 1972:172; Altman, 1968:591–592).

The primary advantage of a multivariate failure prediction model is that the entire profile of characteristics common to the relevant firms, as well as the interaction of these properties, may be considered simultaneously, rather than one at a time as per the univariate models, thus removing ambiguities and misclassifications (Morris, 1998:23; Altman, 1968:592–593).

To make the Z-score model more useful for non-manufacturing companies and for companies in emerging markets, Altman modified the Z-Score model by eliminating the sales to total assets ratio, and replacing the market value of equity with the book value of equity (Chitakunye *et al.*, 2014:456). This model is known as the Z" Score. As South Africa is an emerging market, this study will include both the Z-score and the Z"-score in the analysis of the company financial information.

Techniques such as quadratic multivariate discriminant analysis, logit analysis, survival analysis, gambler's ruin models, neural networks and models such as Argenti's A-score, which focus on non-financial information, are beyond the scope of this thesis which aims to look for specific variables within the financial statements of companies that might cast light on their abilities to continue trading as going concerns. Based on a thorough review of the available literature the following ratios have been selected for this study to address the research questions posed in Section 5.1.2:



**Table 5-3: Ratios used during this research study**

| Name                                                                                                                                           | Calculation                                                                          | Meaning                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Capital structure (solvency) ratios</b>                                                                                                     |                                                                                      |                                                                                                                                                                                                                                                                                                                                                      |
| Solvency ratios measure an entity's ability to meet its long-term commitments and to accomplish its long-term expansion and growth objectives. |                                                                                      |                                                                                                                                                                                                                                                                                                                                                      |
| Solvency                                                                                                                                       | $\frac{\text{Total debt}}{\text{Total assets}}$                                      | The ratio indicates what percentage of a company's assets is financed with debt.                                                                                                                                                                                                                                                                     |
| Financial gearing                                                                                                                              | $\frac{\text{Long-term interest bearing debt}}{\text{Total long-term financing}}$    | The ratio indicates what percentage of total capital is debt capital.                                                                                                                                                                                                                                                                                |
| Debt-to-equity (based on book values)                                                                                                          | $\frac{\text{Long-term interest bearing debt}}{\text{Total shareholders' interest}}$ | The debt-to-equity ratio indicates the size of the company's liabilities in comparison to its owner-contributed funding.                                                                                                                                                                                                                             |
| Debt-to-equity (based on market values)                                                                                                        | $\frac{\text{Long-term interest bearing debt}}{\text{Market capitalisation}}$        | This ratio redefines the classic debt-to-equity ratio to consider more relevant forward-looking market information. It indicates to what extent the market capitalisation of the company exceeds or covers its total debt.                                                                                                                           |
| Retained earnings as a percentage of total assets                                                                                              | $\frac{\text{Retained earnings}}{\text{Total assets}}$                               | The ratio shows what percentage of the assets of a company is financed with equity retained in the firm. Also an indicator of the cumulative profit generated by a company based on the assets used. It may be a discriminator between new companies more likely to fail, and existing companies more likely to survive or avoid financial distress. |
| Interest cover                                                                                                                                 | $\frac{\text{Earnings before interest and tax}}{\text{Interest paid}}$               | The interest cover indicates how 'safe' interest payments are, by considering the company's ability to meet interest charges.                                                                                                                                                                                                                        |
| Cash interest cover                                                                                                                            | $\frac{\text{Cash flow from operations}}{\text{Interest paid}}$                      | A measure of how 'safe' interest payments are, by considering how well cash flows generated from normal operations cover interest charges.                                                                                                                                                                                                           |

| Name                                                                                                                                                                                              | Calculation                                                                        | Meaning                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cash flow ratios</b>                                                                                                                                                                           |                                                                                    |                                                                                                                                                                                        |
| Cash flow is an indicator of financial stability, and cash flow ratios often are early indicators of potential financial distress (i.e. when cash flow is insufficient to meet debt commitments). |                                                                                    |                                                                                                                                                                                        |
| Total repayment term                                                                                                                                                                              | <u>Total debt (short and long-term)</u><br>Cash flow from operating activities     | Considers the cash flow generated by the company's core business, to its total debt, to determine how long it would take, based on current operations, to settle all outstanding debt. |
| Free cash flow to debt                                                                                                                                                                            | <u>Operating cash flow – Capital investments – Dividend payments</u><br>Total debt | Considers debt serviceability based on free cash flow available from operations.                                                                                                       |
| Operating cash flow-to-current liabilities                                                                                                                                                        | <u>Operating cash flow</u><br>Current liabilities                                  | The ratio measures the ability of a firm's cash flow, generated by its day-to-day activities, to cover its short-term liabilities.                                                     |
| Efficiency of cash flow                                                                                                                                                                           | <u>Operating cash flow</u><br>Earnings before interest and tax                     | The ratio measures the 'quality of income' by estimating how much of the company's earnings is converted to cash per annum.                                                            |
| Price-to-cash flow ratio                                                                                                                                                                          | <u>Market capitalisation</u><br>Cash flow from operations                          | Measures how much investors are willing to pay per rand of cash flow generated.                                                                                                        |

| Name                                                                                              | Calculation                                                                 | Meaning                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Liquidity ratios</b>                                                                           |                                                                             |                                                                                                                                                                                                                                                                                                                     |
| Liquidity measures the company's ability to settle its short-term liabilities as they become due. |                                                                             |                                                                                                                                                                                                                                                                                                                     |
| Current ratio                                                                                     | $\frac{\text{Current assets (including cash)}}{\text{Current liabilities}}$ | Indicates the extent to which the claims of short-term creditors are covered by assets that can be converted into cash in the short-term.                                                                                                                                                                           |
| Acid test (or quick ratio)                                                                        | $\frac{\text{Current assets less inventory}}{\text{Current liabilities}}$   | Indicates whether short-term liabilities may be settled with short-term assets that can be converted into cash quickly and without too much loss in value. Inventory balances, which may include obsolete or damaged stock items, and which is hardest to convert to cash quickly, is eliminated from the equation. |
| Net working capital-to-total assets                                                               | $\frac{\text{Net working capital}}{\text{Total assets}}$                    | Measures the percentage of total assets that is made up of short-term assets. A low ratio could be an indicator of low liquidity levels.                                                                                                                                                                            |

| Name                                                                                                                                                                                                                                                                                    | Calculation                                                             | Meaning                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Profitability and return ratios</b>                                                                                                                                                                                                                                                  |                                                                         |                                                                                                                                                                                                          |
| <p>The profitability ratios consider the return that is generated for ordinary shareholders, as well as management's effectiveness in utilising assets to generate an acceptable return.</p> <p>Profitability ratios can also indicate a company's ability to control its expenses.</p> |                                                                         |                                                                                                                                                                                                          |
| % Change in income                                                                                                                                                                                                                                                                      | $\frac{\text{Change in income}}{\text{Income prior year}}$              | Measures the change in the total income to see whether a trend is present – income should increase with more than the inflation rate to be meaningful.                                                   |
| Net profit margin                                                                                                                                                                                                                                                                       | $\frac{\text{Net profit after tax}}{\text{Turnover}}$                   | Measures the profit per rand of sales.                                                                                                                                                                   |
| Earnings per share                                                                                                                                                                                                                                                                      | $\frac{\text{PATOS}}{\text{Total number of issued shares}}$             | An indication of the profit generated by the company for each share issued.                                                                                                                              |
| Asset turnover                                                                                                                                                                                                                                                                          | $\frac{\text{Sales}}{\text{Total assets}}$                              | The ratio illustrates the ability of the company's assets to generate revenue.                                                                                                                           |
| Return on assets                                                                                                                                                                                                                                                                        | $\frac{\text{Earnings before interest after tax}}{\text{Total assets}}$ | Interest is excluded to focus attention on the investment decision. The ratio considers the return generated by the net investment in assets before returns were paid to long-term providers of capital. |
| Return on equity (book values)                                                                                                                                                                                                                                                          | $\frac{\text{PATOS}}{\text{Total equity (book value)}}$                 | The return that shareholders generated through their investment in the company.                                                                                                                          |
| Return on equity (market values)                                                                                                                                                                                                                                                        | $\frac{\text{PATOS}}{\text{Total equity (market capitalisation)}}$      | The return that shareholders generated through their investment in the company, measured in terms of current market prices of shares.                                                                    |

| Name                                                                                                                                                    | Calculation                                                                | Meaning                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Market ratios</b>                                                                                                                                    |                                                                            |                                                                                                                                                                                                                 |
| Market ratios analyse the performance of the entity from the perspective of the financial market, and could also indicate capital investment potential. |                                                                            |                                                                                                                                                                                                                 |
| Market-to-book ratio                                                                                                                                    | <u>Market capitalisation</u><br>Total equity (book value)                  | An indicator of the market's perceptions regarding the company: the ratio recognises that a company is worth more than the book values of its equity.                                                           |
| Price-earnings ratio                                                                                                                                    | <u>Market capitalisation</u><br>PATOS                                      | The P/E ratio indicates the number of years it would take an investor to recoup his investment at the current earnings level, or how much investors are willing to pay per rand of reported earnings.           |
| Dividend yield                                                                                                                                          | <u>Ordinary dividends paid</u><br>Market capitalisation                    | The percentage return an investor receives, by way of dividends, on his investment.                                                                                                                             |
| Dividend cover                                                                                                                                          | <u>PATOS</u><br>Ordinary dividends paid                                    | Indicates how safe ordinary dividend payments are, by considering how many times the available earnings per share cover the dividend per share that was paid to investors.                                      |
| % Change in share price                                                                                                                                 | <u>Change in market capitalisation</u><br>Market capitalisation prior year | As the share price is seen as forward-looking and indicative of market perceptions, this ratio measures whether the market assessed the company as risky (based on a decrease in share price) prior to failure. |
| Number of personnel                                                                                                                                     | Total number of personnel in the company's employ per annum                | The number of personnel in a company's employ may be an indication of the size of the company.                                                                                                                  |

| Name                                                                                                                                | Calculation                                                                                                                                                                                                                                                                                                                        | Meaning                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Failure models</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                   |
| Failure prediction models may indicate that a company is at risk of entering financial distress or becoming illiquid and insolvent. |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                   |
| Altman's Z-score                                                                                                                    | $Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5$ <p> <math>X_1</math>: Working capital/Total assets<br/> <math>X_2</math>: Retained earnings/Total assets<br/> <math>X_3</math>: EBIT/Total assets<br/> <math>X_4</math>: Market value of equity/Book value of total debt<br/> <math>X_5</math>: Sales/Total assets </p> | <ul style="list-style-type: none"> <li>• <b>Z-score less than 1.8:</b> a high risk of failure within two years.</li> <li>• <b>Z-score between 1.8 and 3.0:</b> a grey area where the company is at risk, but eventual failure or non-failure is uncertain.</li> <li>• <b>Z-score greater than 3.0:</b> the company has a low probability of failure and is considered relatively safe.</li> </ul> |
| Z-score for emerging markets                                                                                                        | $Z'' = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$ <p> <math>X_1</math>: Net working capital/Total assets<br/> <math>X_2</math>: Retained earnings/Total assets<br/> <math>X_3</math>: EBIT/Total assets<br/> <math>X_4</math>: Equity (book value)/TL </p>                                                                             | <ul style="list-style-type: none"> <li>• <b>Z''-score less than 1.1:</b> the distress or fail zone.</li> <li>• <b>Z-score between 1.1 and 2.6:</b> a grey area or danger zone.</li> <li>• <b>Z-score greater than 2.6:</b> the company has a low probability of failure and is considered relatively safe.</li> </ul>                                                                             |
| Springate model                                                                                                                     | $Z = 1,03X_1 + 3,07X_2 + 0,66X_3 + 0,4X_4$ <p> <math>X_1</math>: Net working capital/Total assets<br/> <math>X_2</math>: EBIT/Total assets<br/> <math>X_3</math>: EBIT/Current liabilities<br/> <math>X_4</math>: Sales/Total assets </p>                                                                                          | <ul style="list-style-type: none"> <li>• <b>Z-score less than 0.862:</b> a company is classified as failed.</li> <li>• <b>Z-score greater than 0.862:</b> the firm is classified as healthy.</li> </ul>                                                                                                                                                                                           |

*Clarification of abbreviations:*

|       |                                              |
|-------|----------------------------------------------|
| PATOS | Profit attributable to ordinary shareholders |
| EBIT  | Earnings before interest and tax             |
| TL    | Total liabilities                            |

(Sources: Barnard *et al.*, 2020:372–395; Kliestik *et al.*, 2020:77; Laurila, 2020:14; Brigham *et al.*, 2019:72–82; Correia, 2019:5-15–5-26; Marx *et al.*, 2017:70–80; Rowlings, 2016:94–98; Besley *et al.*, 2015:35–40; Gitman & Zutter, 2014:64–74; Skae *et al.*, 2014:283–288 & 302; Firer, 2012:50–62; Mazouz *et al.*, 2012:71; Beaver *et al.*, 2010:116–117; Mosalakae, 2007:61–65; Beaver, 1966:89–90).

## **5.5 Conclusion**

Chapter 5 of this study started with a reminder of the research purpose of this study. This study attempts to determine whether financial statements are useful in assisting decision-makers with timeously distinguishing between healthy/successful and unhealthy/failed companies and, subject to the results of the primary objective, whether the going concern assumption is still deserving of its status as an underlying principle of financial accounting and reporting. The study will also attempt to discern whether the changes in the accounting standards from generally accepted accounting principles to International Financial Reporting Standards have contributed to the meaningfulness of financial statements, especially when considering financial distress and the likelihood of failure.

Hereafter, the research process applied to this study was explained. To a large extent, the research design for this study is informed by the nature of the data that were gathered for the data analysis, the results of which are discussed in Chapter 6. The research process is based on a realist approach, with an objectivist perspective. In this study, an empirical analysis of the financial statements of JSE-listed companies is conducted, and meaning afforded to the results that are obtained from the analysis. Consequently, in terms of the research paradigms, a mixed approach is adopted, as the study contains elements that are both positivistic/quantitative (the gathering of the financial data and the calculation of the financial ratios) and interpretivist/qualitative (the analysis of the financial ratios).

Next, the research methodology was illustrated. The specific steps taken to identify the population and the sample selected from that population, using a non-probabilistic but purposive sampling method, were detailed, and the reason for the two separate time periods, and the dates covered

by these time periods, were explained. The process of gathering the secondary information obtained for the analysis of these companies' performance, was relayed. It is the belief of this researcher that the design of the research for this study, and her reasoning about the results of the data analysis, form a suitable basis for generating credible knowledge.

Finally, the chapter considered the use of financial ratios to determine the classification statuses of the selected companies. The limitations and continued usefulness of financial ratios were explored, and the section concluded by listing and explaining the financial ratios that were selected for the empirical analysis conducted for this study. In the next chapter, the results of the empirical analysis will be presented.



## CHAPTER 6 RESULTS OF THE EMPIRICAL STUDY

### 6.1 Introduction

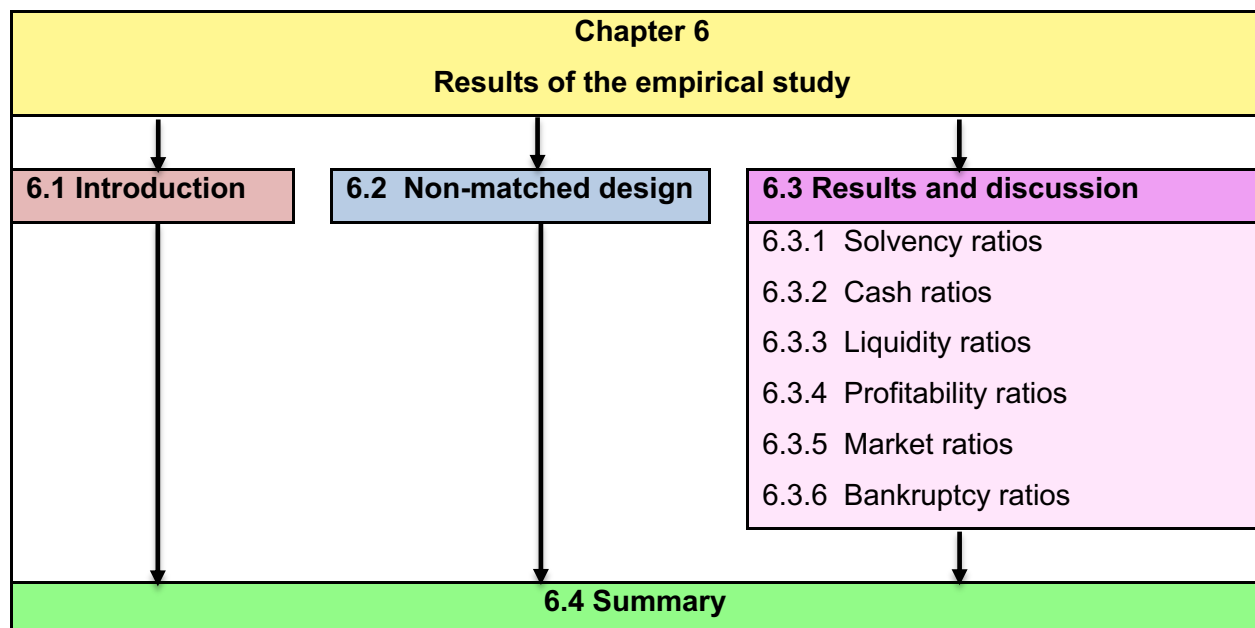
*Prediction is very difficult. Especially about the future.*

*Niels Bohr*

In Chapter 3, the indicators of success for a company were contrasted with the early warning signs of financial distress, and the characteristics of a successful company were summarised and conceptualised. In Chapter 5, the research methodology followed for this empirical study was described, as well as the uses and criticisms of financial ratios. The principle of what denotes a company as a going concern was discussed, and the ratios selected for this study were listed and briefly explained.

The purpose of this chapter is to provide both a brief explanation regarding the non-matched design of this study, and a detailed discussion of the results of the empirical study. The chapter concludes with an overview of the ratios that were found to be useful and significant in distinguishing between successful and failed companies, and as initial indicators of potential financial distress. This chapter consists of four sections. Figure 6.1 below presents a summary of the chapter:

**Figure 6-1: Overview of Chapter 6**



(Source: Author compilation)

Section 6.1 provides an overview of the chapter. This is followed, in Section 6.2, by a condensed review of the non-matched design of this study, which explains why companies within certain parameters were selected at random rather than attempting to match the companies according to size and industry. Section 6.3 provides a detailed analysis of the results of the financial ratios which were selected for this study in an attempt to find a single, or a few key ratios, which could assist the users of the financial statements with the early recognition of companies that may be heading into financial distress. The chapter ends with Section 6.4, where a conclusion on the financial figures and ratios is offered. This is based on the results of the calculation and interpretation of the ratios presented in Section 6.3, which are deemed relevant and significant in allowing the users of financial statements to identify signs of financial distress, and to distinguish between successful and failed companies, as early as six years prior to the collapse of the failed companies.

## **6.2 Non-matched design**

This study will analyse the financial statements of sixty companies and attempt to draw reasonable conclusions, based on the results achieved through the use of a selection of appropriate financial ratios. However, a matched pair design will not be followed. According to Taffler (1982:343), valid inferences can only be drawn from sample groups employed in the analysis of the financial statements, if they are representative of their underlying populations. Matching continuing firms with failed firms is thus incorrect, as it does not provide for the non-failed set to be a random sample of all presently continuing firms, especially as some industries are more failure-prone than others. Any attempt to perfectly match all of the companies in the six sets of companies analysed for this study, could thus lead to over-modelling, which means optimising the fit of the model to the presented problem. As a result, the predictive results of such a matched pair design could be misleading, as the failure prediction models might be unstable and sample-specific (Balcaen & Ooghe, 2006:71–72).

A further problem identified in previous studies of matched sets of companies, is that firms selected as part of the sample of non-failed enterprises, are not necessarily successful or financially healthy. In fact, they may even resemble bankrupt companies in terms of their financial characteristics (Taffler, 1982:343). As this would reduce the discriminatory power of the calculated financial ratios, emphasis was placed on selecting a random sample of companies, for the successful groups of companies, from the Sunday Times Top 100 companies in South Africa, rather than attempting to select a company identical in size and industry, as a company from either the failed or struggling sets of companies. The six sets of companies selected were deemed

appropriate as a base for this study – the companies are or were all JSE listed companies, and therefore had to comply with both the stringent JSE listing requirements and the generally accepted accounting practices (1998 to 2003) or the new International Financial Reporting Standards (2013 to 2018) for the preparation of the annual financial statements. All of the companies selected for this study would also have been subject to annual audits, and therefore reliance may be placed, to some extent, on the reasonableness of the disclosed financial figures.

As the goal of financial statement analysis is not necessarily to identify a firm that has already failed, but rather to examine the financial health and sustainability of a company so that corrective actions may be implemented where necessary, to successfully modify ultimate outcomes (Platt & Platt, 2002:196–197), the data set for this study includes a group of ‘struggling’ companies, i.e. listed companies with two or more years of financial accounting losses. The other two groups are successful and failed companies, with sub-sets to each group of results from 1998 to 2003 and results from 2013 to 2018. Averages of the ten companies per each set will be used for the financial analysis, as averaging is expected to smooth the ratios and to result in more representative figures than those that would be calculated from a single company or from only the most recent financial statements (Edmister, 1972:1481).

The purpose of this study is to identify financial ratios with values which differ markedly between surviving, struggling and failed companies, so that the results may subsequently be used to identify companies that exhibit similar features to previously failing or failed companies (Pogue, 2008). The financial ratios applied in this study were thus selected on the basis of the effectiveness of the ratios applied in previous studies, as the most effective are expected to have the best discriminatory power in this study as well (Taffler, 1982:344). As explained in Chapter 4, this study also purposefully considers the financial ratios over two sets of time periods (from 1998 to 2003 and from 2013 to 2018) to avoid known disruptors in the global markets, such as the implementation of IFRS in 2005, the global recession in 2008 and the COVID-19 pandemic in 2020. Each time period stretches over six years, as Beaver’s seminal study and several subsequent studies based on his work, have found that financial ratios are able to predict potential financial failure from as early as four years prior to bankruptcy. This study will therefore test Beaver’s assumption that the mean ratios of the bankrupt firms will demonstrably deteriorate as the year of bankruptcy approaches (Beaver *et al.*, 2005:100).

## **6.3 Results and discussion**

### **6.3.1 Solvency ratios**

#### **6.3.1.1 Introduction**

A company's capital structure consists of the long-term sources of financing that are used to operate and grow the company (Skae *et al.*, 2014:283). Although a variety of combinations are possible, all companies will have equity (or shareholders' interest) on their books, and most will have some form of long-term debt.

Companies are established when the first authorised shares are issued to the initial owners and financiers of the enterprise. Equity is expected to increase over time as the company generates profit, especially where the entire profit is not paid out to the ordinary shareholders in the form of dividends. Over time, companies may issue additional ordinary shares to raise more capital for further expansion, albeit organically or through mergers and acquisitions, or to meet the JSE listing requirements.

Equity may be preferred over debt as it is considered to be relatively 'safe' from a company's point of view. Equity does not ever have to be repaid – it is permanent in nature – and ordinary dividends are not compulsory (Berstein, 1998:606). An all-equity financed company will also experience greater stability in its returns than a geared company (Correia, 2019:5-19; Graves & Waddock, 2000:406).

However, equity does have the disadvantage of being an expensive form of financing: shareholders require the highest return from companies in return for the risk that they take. Shareholders do not have any preferential rights relating to the repayment of capital or the payments of dividends – in fact, they are very last in line to receive any form of payment, whether annually or in case of a company's liquidation (Gitman & Zutter, 2014:68). This high required rate of return will furthermore escalate when financial risk, through external debt financing, is introduced into the organisation. The return for ordinary shareholders consists of both dividends and capital growth (i.e. an increase in the share price).

The cost of equity is also higher than other forms of financing, as the ordinary dividends are not tax deductible, whereas interest on debt financing is, provided the financing was obtained to acquire an asset that is utilised in the production of income.

Debt may be prioritised over equity as it generally has a lower cost than equity, and also assists the ordinary shareholders as (i) they will not need to contribute all of the financing required to set up, operate and grow the business (Brigham *et al.*, 2019:74; Marx *et al.*, 2017:76; Besley *et al.*, 2015:38; Gitman & Zutter, 2014:68), (ii) they do not suffer the dilution in control that a share issue would have caused (Correia, 2019:5-19; Besley *et al.*, 2015:38), (iii) loans provide more confidentiality than an issue of new shares, and (iv) ordinary shareholders may benefit from the financial leverage created by debt. A provider of debt, particularly one that demanded security or insisted on restrictive covenants, is exposed to less risk of losses than an ordinary shareholder, and will therefore demand a lower rate of return. If the debt financing is used to earn a return on assets that is higher than the cost of the debt, positive gearing is created, and wealth can be created more rapidly as the difference between the yield and the cost of debt accrues as profit to shareholders, which boosts the return on equity (Brigham *et al.*, 2019:74; Besley *et al.*, 2015:38; Johnson & Soenen, 2003:365). Financial leverage is thus the magnification of both return and risk through the use of fixed-cost financing (Correia, 2019:5-19; Besley *et al.*, 2015:39; Gitman & Zutter, 2014:68).

Unfortunately, debt financing also brings about additional financial risk to a company and its shareholders. Debt repayments and regular interest payments must be met. The firm is committed to a stream of contractual payments over the long run (Marx *et al.*, 2017:76; Gitman & Zutter, 2014:68; Skae *et al.*, 2014:286). A company that fails to adhere to the terms and conditions of the financing or that misses any payments, may be forced into liquidation. The more debt a firm has, the greater its risk of being unable to meet its contractual debt payments and become bankrupt (Correia, 2019:5-19; Marx *et al.*, 2017:76; Gitman & Zutter, 2014:68; Skae *et al.*, 2014:297; Vigario, 2002:176; Bernstein, 1998:606). With high leverage, even a small decline in a company's performance might cause the firm's value to fall below the amount it owes to creditors; therefore, a debt provider's position becomes riskier as leverage increases (Brigham *et al.*, 2019:74; Bernstein, 1998:619).

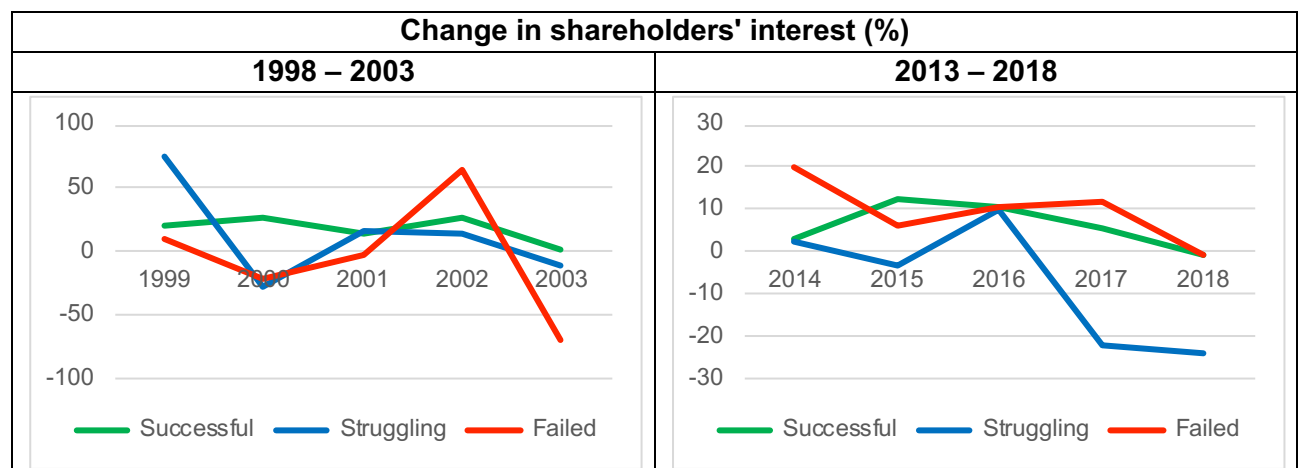
Although the prediction of possible financial failure may be difficult, high levels of debt are still regarded as one of the most important factors for distinguishing between successful and struggling or failing companies (Vigario, 2002:176). It is therefore up to the financial manager or management of a company to find an optimal and appropriate balance between too much debt, which exposes the company to additional risk, and too little debt, which is potentially costly (Besley *et al.*, 2015:38; Skae *et al.*, 2014:286). The ideal combination of debt and equity is referred to as a company's target capital structure.

The appropriateness of a company's target capital structure may be assessed through solvency and coverage ratios (Firer, 2012:52). Determining a company's ability to meet its debt obligations is most meaningful when a review of past profit and cash flow patterns is made over a long enough period of time to indicate the major operational and cyclical fluctuations that are normal for the company and its industry (Helfert, 1994:103–104). Solvency ratios should also be compared to and analysed in conjunction with cash flow ratios, as it is not necessarily the acquisition of debt that leads to a company's demise, but rather its inability to repay debt and meet interest obligations using operating cash flows (Besley *et al.*, 2015:38; Skae *et al.*, 2014:286; Charitou *et al.*, 2004:468).

### 6.3.1.2 Year-on-year changes

As a starting point to the analysis of the financial statements and ratios of the companies selected for this study, the year-on-year changes in the major capital components of the study sample were considered in an effort to identify a single ratio that could best be used to predict the likelihood of financial failure. Based on the results, as evidenced by the graphs provided below, the only possible, but unreliable, predictor of financial distress may be the change in ordinary shareholders' interest.

**Graph 6-1: Percentage change in shareholders' interest**



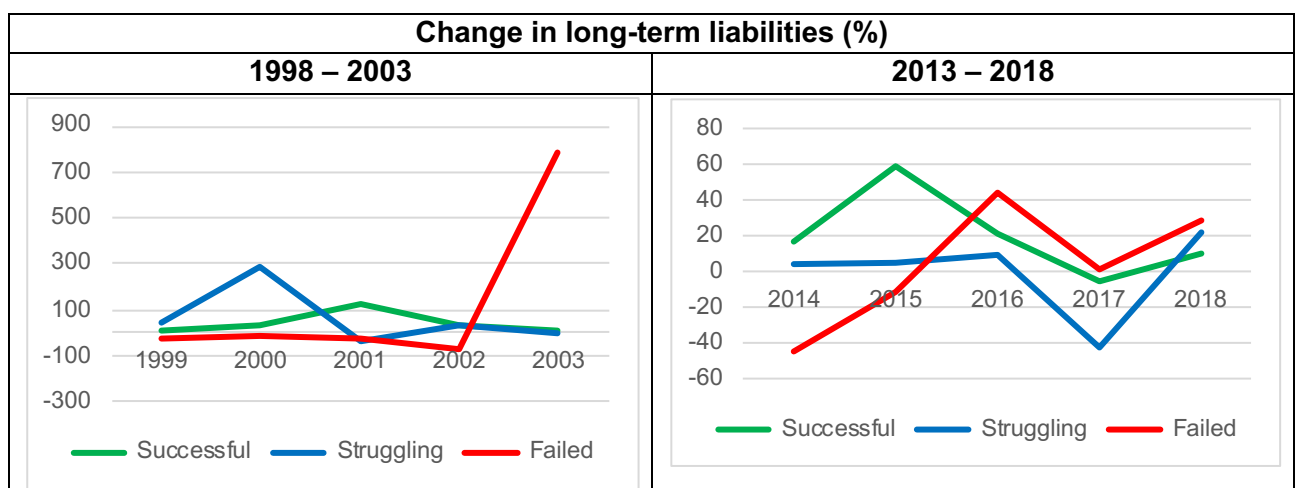
(Source: Author compilation)

The percentage change in the shareholders' interest graph above indicates that successful companies (indicated by the green line) manage a fairly stable level of growth in their shareholders' interest. Consequently, it means that the shareholders' interest – albeit with some

small changes – grow at a fairly consistent pace. The growth in the shareholders' interest of struggling companies (as evidenced by the blue line) and failed companies (denoted by the red line) are far more volatile, with frequent and significant changes in the growth percentages. Both struggling and failed companies showed clear declines in the latter years of the analysis of both time series, mostly as a result of escalating retained losses. As will be further evidenced by the analysis presented below, the one characteristic that may frequently be associated with less successful companies, across all years and various financial measures, is volatility.

Although the percentage change in shareholders' interest is not useful for distinguishing between successful, struggling and failed companies, a downward trend in the ratio may be seen as indicative of potential future financial problems.

**Graph 6-2: Percentage change in all long-term liabilities**



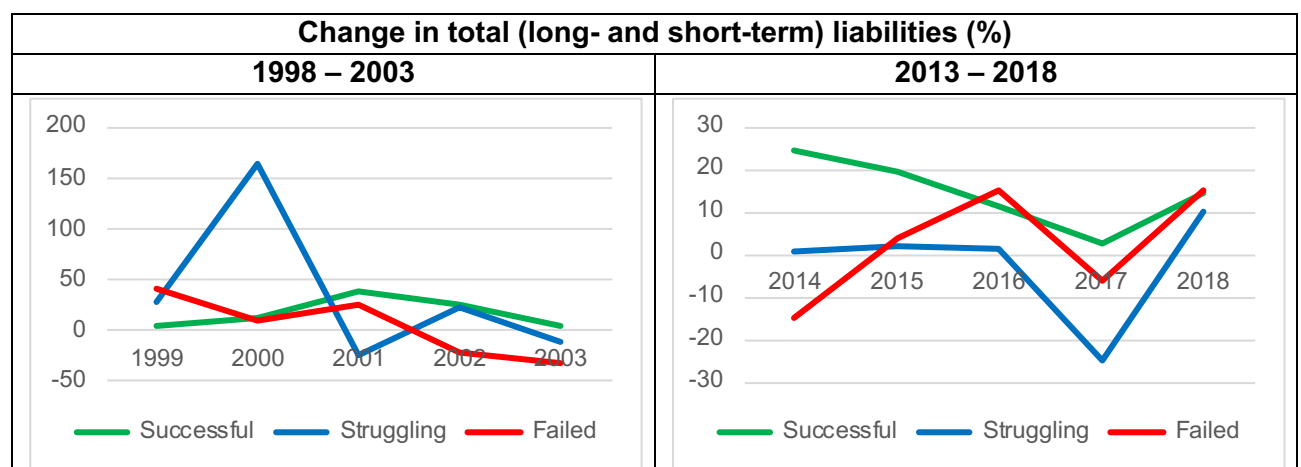
(Source: Author compilation)

The rate of change in the balance of long-term liabilities in the financial statements of a company may be influenced by many factors, such as the state of the economy, the availability of external financing and the cost thereof, the tax laws and regulations regarding interest payments, and a company's operational risk and existing exposure to external financing. Consequently, the change in long-term liabilities held little predictive power.

It is interesting to note, however, and is also a feature that often becomes apparent from the line graphs presented in this study, that changes in the trends associated with struggling and failed companies often lag – generally with one year – behind the changes in the trend of successful companies. It would therefore appear as though struggling and failed companies either frequently

copy the moves made by stronger financial entities, or that struggling and failed companies only realise and respond to changing conditions later than the larger and more successful companies. For instance, when considering the 2013 to 2018 time frame, all companies had an increase in long-term liabilities, but the failed companies only one year after the successful companies, and the struggling companies at a much smaller scale, which could be as a result of their existing levels of indebtedness. This phenomenon may occur because the struggling and failed companies are so focused on managing their debt obligations, that they do not spend sufficient time developing and implementing appropriate strategies to secure their companies' effective financial turn-around, operations and growth. It could also be due to the fact that the struggling and failed companies are likely to have less negotiating power and perhaps a weaker management team than the successful enterprises. As a result, to phrase it colloquially, the struggling and failed companies simply regularly 'miss the boat'.

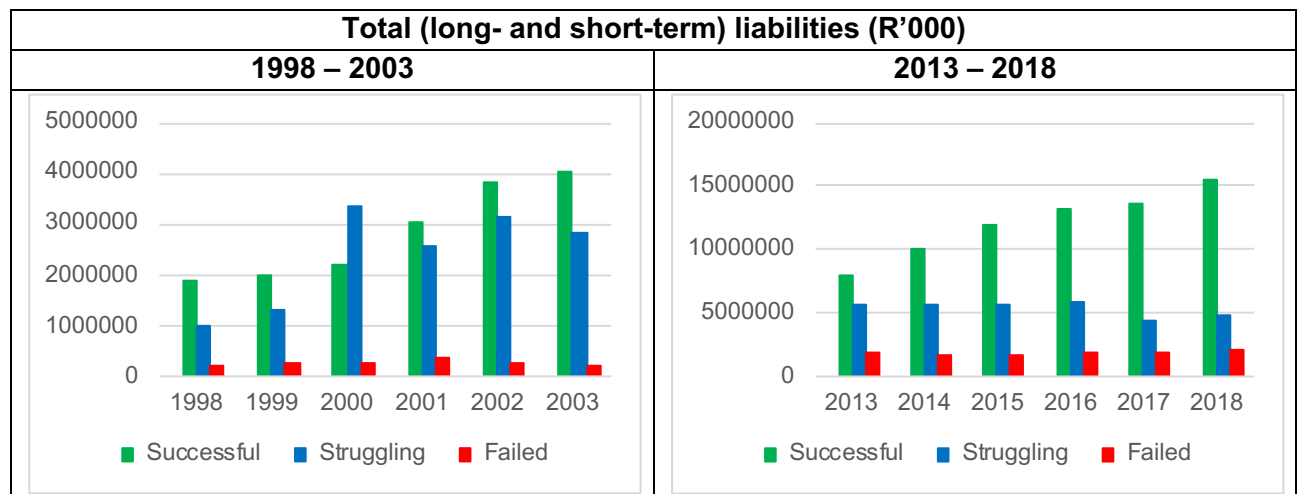
**Graph 6-3: Percentage change in total (long- and short-term) liabilities**



(Source: Author compilation)



**Graph 6-4: Total long- and short-term liabilities per annum**

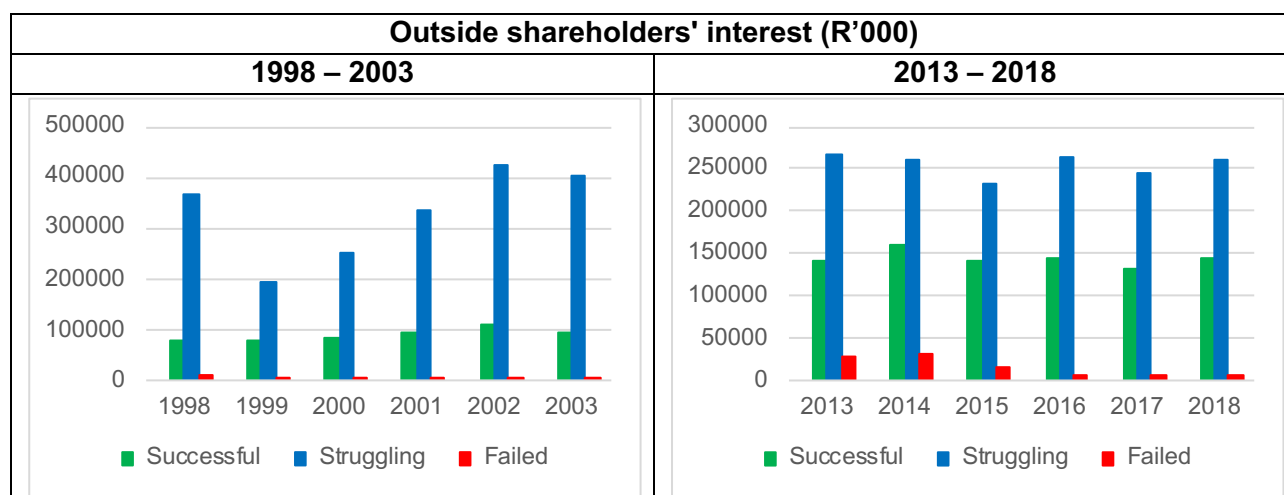


(Source: Author compilation)

Although it is generally inappropriate to compare the Rand amounts of different size companies to each other, the rate of change graphs are sometimes difficult to analyse. A decline in the growth rate still implies that a company is growing, albeit at a slower rate than before. A company only starts to decline when the growth rate decreases below zero. Therefore, it is also useful to look at the Rand balances of certain accounts, provided one bears the likely size differences of the companies in mind.

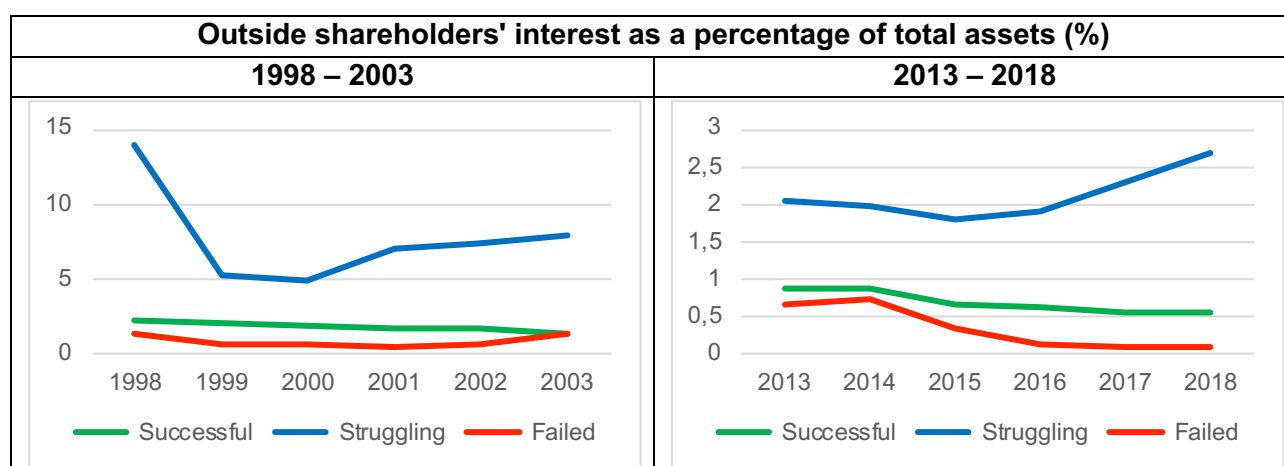
The total liabilities graph, which includes the balances of both non-current and current loans and debt, is particularly interesting to consider. It is clear from the graphs for both time periods, that successful companies make use of more debt financing than unsuccessful companies, and also display continuously growing external financing liabilities. Whether this is as a result of a particular financing strategy (based on the belief that, from a company's point of view, debt financing is less expensive than equity financing), or simply because the larger companies have access to more, larger, and less expensive financing options, is less clear. It may simply be in response to growing levels of equity, in an attempt to maintain a certain target capital structure. Nonetheless, it may lead an observer to speculate that increasing and high debt levels are not necessarily the reason for financial failure. Rather, it could be the mismanagement of cash resources that contributes to a company's untimely demise.

**Graph 6-5: Outside shareholders' interest balances over time**



(Source: Author compilation)

**Graph 6-6: Outside shareholders' interest expressed as a percentage of total assets**

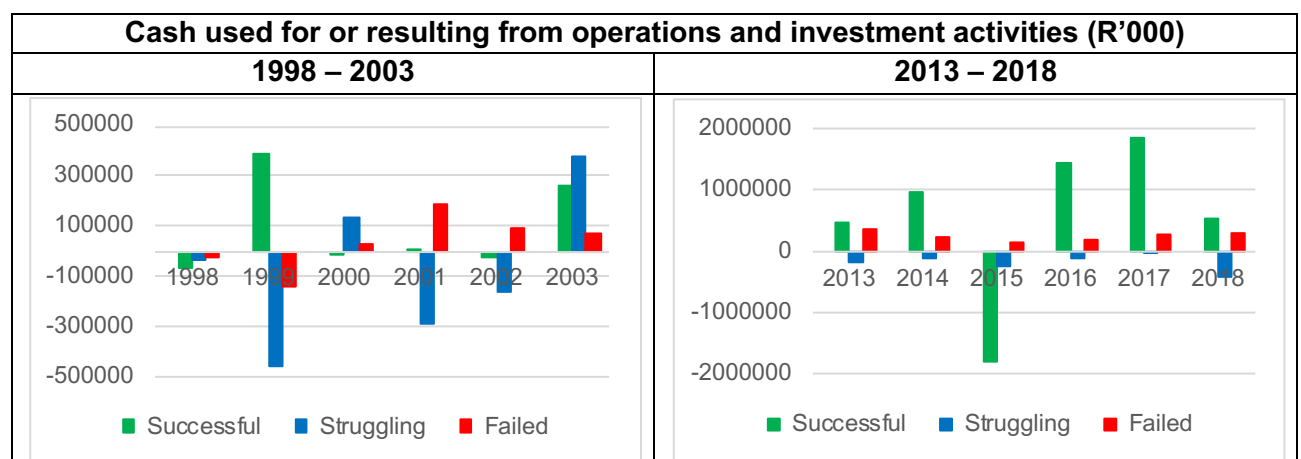


(Source: Author compilation)

A very interesting phenomenon was noted in respect of the use of outside or minority shareholdings. An outside shareholders' interest is created when a company establishes or acquires a significant interest in a subsidiary company, but does not provide all the equity financing for the subsidiary. Consequently, there are shareholders not associated with the holding company, that do have a stake in the subsidiary company; however, they do not have control over its operations or strategic decisions. The holding company, as the majority shareholder, will likely determine the direction and actions of the subsidiary. Outside shareholders therefore also provide additional financing to a company, and will have a required rate of return that must be satisfied.

The graphs above indicate that, whether the balances of the outside shareholders' interest on a Rand basis or as a percentage expressed in relation to the total assets of the company are considered, companies that struggle financially are far more likely to make use of outside shareholders' financing than successful or failed companies. This may show that struggling companies have reached their current financial situation as a result of an aggressive growth or acquisition strategy. Companies that grow too quickly, i.e. that over-trade, often end up with liquidity or solvency problems as they fail to secure the long-term financing that provides stability to the company's operations. Successful companies may be more conservative in their long-term decision-making and investments. Failed companies appear not to have grown fast enough – this could be due to a lack of strategic planning, or as a result of a failure to secure the necessary funding with which to finance acquisitions and expansions.

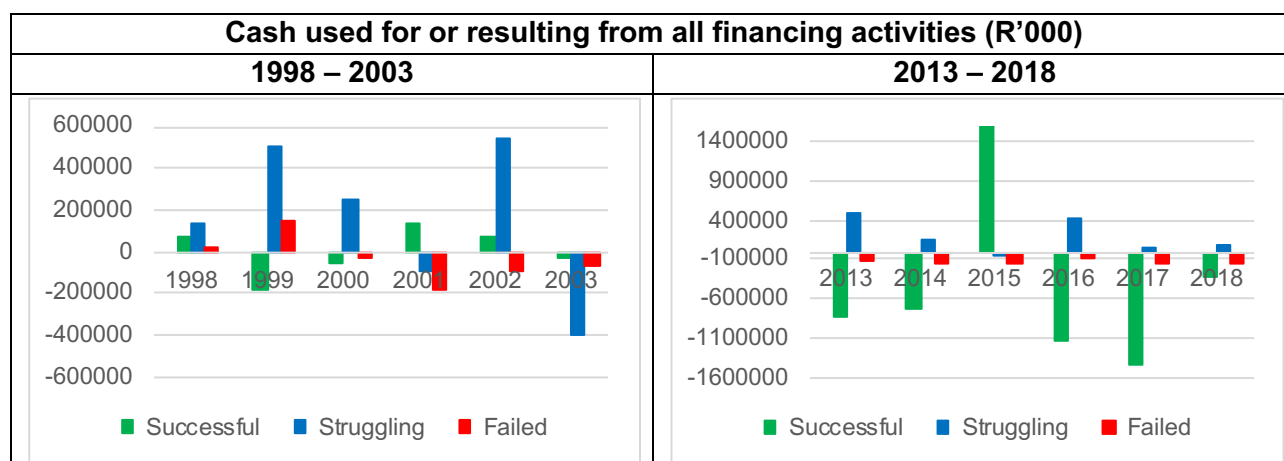
**Graph 6-7: Cash used for or resulting from both operations and investment activities**



(Source: Author compilation)

Graph 6.7 depicts the cash available from operations after investment cash flows (either the acquisition or disposal of non-current assets) have been taken into account. Most companies have to regularly invest in new non-current assets to at least ensure that old and less technologically advanced fixed assets are replaced timeously. The cash thus generated by a company is available to meet its long-term capital requirements, including the timely repayment of debt. Unfortunately, there are few discernible trends in the above graphs, with most of the companies displaying erratic and volatile cash movements. Only the cash flow from the successful companies between 2013 and 2018 can be seen – aside from the one anomaly in 2015 – to be growing and a positive inflow.

**Graph 6-8: Cash used for or resulting from the financing activities of the companies**



(Source: Author compilation)

Graph 6.8, depicting the cash generated from or used for financing activities (including dividends paid), shows the result of the companies' financing policy decisions. Amounts exceeding zero show cash raised from financing activities, e.g. acquiring debt, issuing shares, or increasing short-term liabilities. Negative amounts indicate reductions in share capital, debt – whether short-term or long-term – that has been repaid, as well as payments made to ordinary and preference shareholders.

Although the graphs once again do not provide much information in respect of discernible trends that could assist a user of the financial statements to draw reasonable conclusions about the risk of failure for the respective companies, it is particularly interesting to note in the 2013 to 2018 time period, when comparing Graphs 6.7 and 6.8, how well matched the operating and investment activities of the successful companies were with their financing activities. In 2013 and 2014, the successful companies generated positive operating cash flows; after having provided funding for the investment activities that would assist these companies with continuing to operate at their current levels or to expand, the remaining positive operating cash flows were used to decrease debt and to make large payments to the ordinary shareholders, who are the owners of the company. The companies' good fortune was thus 'shared' with its financiers. In 2015, when the successful companies invested large amounts of money in new assets, long-term financing of a nearly equal amount was raised, without cutting dividends to shareholders – a later graph will show that the dividends to ordinary shareholders continued to grow annually. The successful companies thus appropriately matched their spending on long-term assets with financing from long-term sources. The same matching pattern is upheld in subsequent years.

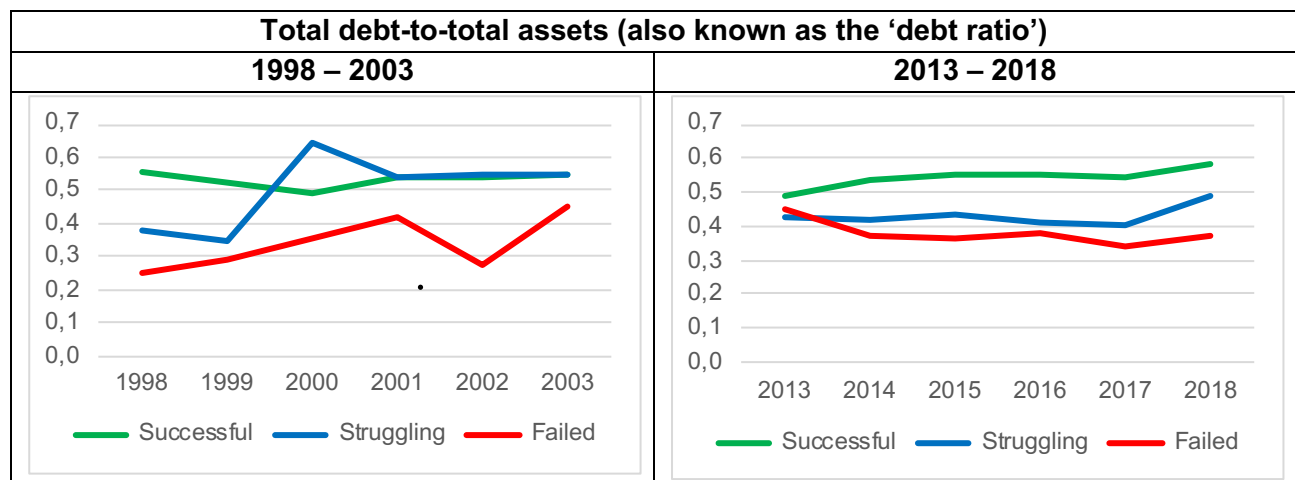
Interestingly, the failed companies exhibit the same pattern in both time periods. The amounts are smaller, but positive amounts in operating and investment activities are matched to negative amounts in financing activities, and vice versa. This is just done at a much smaller scale than the successful companies. The negative amounts would make sense, as creditors and the suppliers of debt financing were probably less interested in supplying these companies, that would have been struggling at the time, with additional debt facilities. Rather, the financiers were most likely beginning to insist on debt commitments being met and loans being repaid, with threats relating to the loss of security provided for the external financing or of being forced into liquidation, motivating the soon-to-be-failed companies to comply. The average statements of cash flows for the failed companies do indicate consistent repayments on long-term interest-bearing liabilities over the 2013 to 2018 time period. However, surprisingly, the cash flow from financing activities for the failed companies is also negative as these companies continued to pay ordinary dividends, despite their financial and liquidity difficulties, until the final liquidation dividends were declared. The information content of dividends is thus called into doubt – a steady or increasing dividend can no longer be said to be a sign of management's confidence in the company's ability to continue trading as a success well into the future, unless management is seriously deluded. It may rather be seen as a sign of management's attempts not to raise the alarm with its shareholders and the general market.

The cash flows for the struggling companies, as depicted in Graphs 6.7 and 6.8, represent two noteworthy phenomena: (i) the operating and investment activity cash flows are infrequently met by opposite and size-comparable cash flows from investing activities; and (ii) the cash flows are extremely erratic. The levels of cash flow generated by operating and investment activities are never stable, and cash is nearly consistently being raised from financing activities – debt levels are therefore constantly increasing. Not only are the struggling companies increasing their long-term interest-bearing debt, but in the latter years of the 2013 to 2018 period, reliance is also placed more frequently and in larger amounts on short-term interest-bearing debts.

The disadvantage of short-term interest-bearing debts is, of course, that these commitments must be met quite quickly (generally within less than a year) when the company may not yet have had the opportunity to raise sufficient cash through its operations to meet the liabilities when they become due. The increasing short-term debt levels put the struggling companies in immense danger of liquidation and are therefore possibly a sign of financial distress. Unfortunately, these acts of desperation may just be what leads to an otherwise feasible company being placed in a position where it has no realistic hope of recovery.

### 6.3.1.3 The solvency ratio

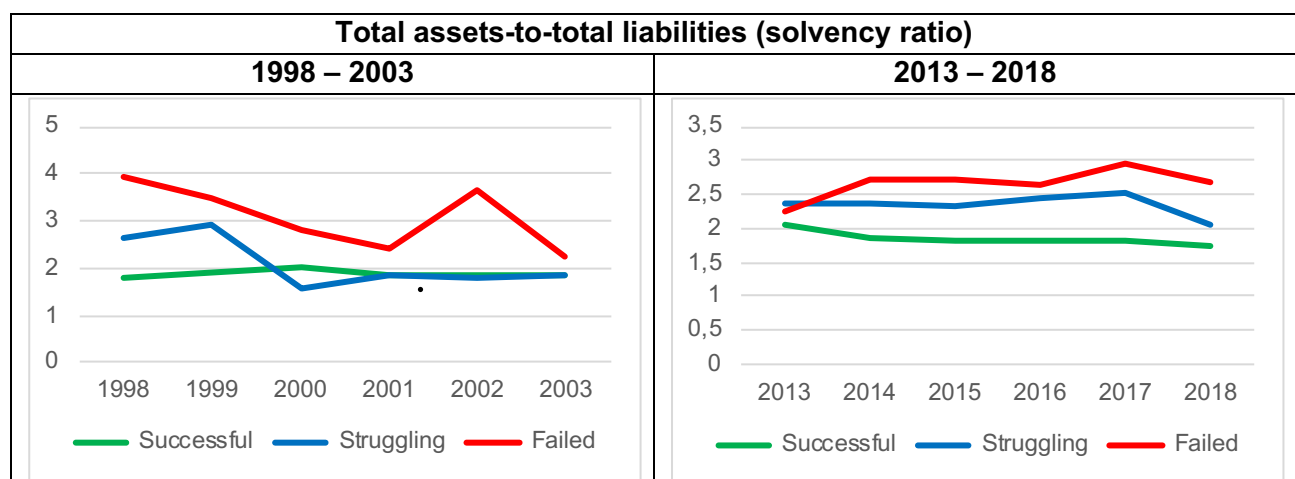
**Graph 6-9: Total debt-to-total assets ratio**



(Source: Author compilation)

The total debt-to-total assets ratio indicates what percentage of a company's assets is financed with debt (Correia, 2019:5-19; Besley *et al.*, 2015:39; Gitman & Zutter, 2014:69; Skae *et al.*, 2014:298; Beaver *et al.*, 2005:98–99). Most providers of debt financing would prefer a low debt ratio as the risk of potential losses in the event of a liquidation is curtailed (Besley *et al.*, 2015:39; Skae *et al.*, 2014:298).

**Graph 6-10: Total assets-to-total liabilities ratio**



(Source: Author compilation)

The total assets-to-total liabilities ratio is referred to as the solvency ratio. It is the inverse of the debt ratio depicted in Graph 6.9, and it indicates to what extent a company's assets exceed its total liabilities. According to Bernstein (1998:621), asset coverage is an important element in the evaluation of long-term solvency, as valuable assets provide protection to debt financiers both due to their earning power and due to their liquidation value. Additionally, assets represent the basis upon which an enterprise can obtain any additional financing that may be desperately needed during financially trying times.

Beaver *et al.* (2010:119), Charitou *et al.* (2004:486), Becchetti and Sierra (2003:2105) and Merwin (1942:92) postulate that the debt ratio is positively associated with the probability of failure, and may be the most significant variable in a multivariate failure prediction model. The medians of the debt ratios are also expected to differ significantly between successful and failed companies, and the median of failed companies' debt ratio is likely to increase as the failure year approaches (Beaver *et al.*, 2005:100; Charitou *et al.*, 2004:481; Becchetti & Sierra, 2003:2115).

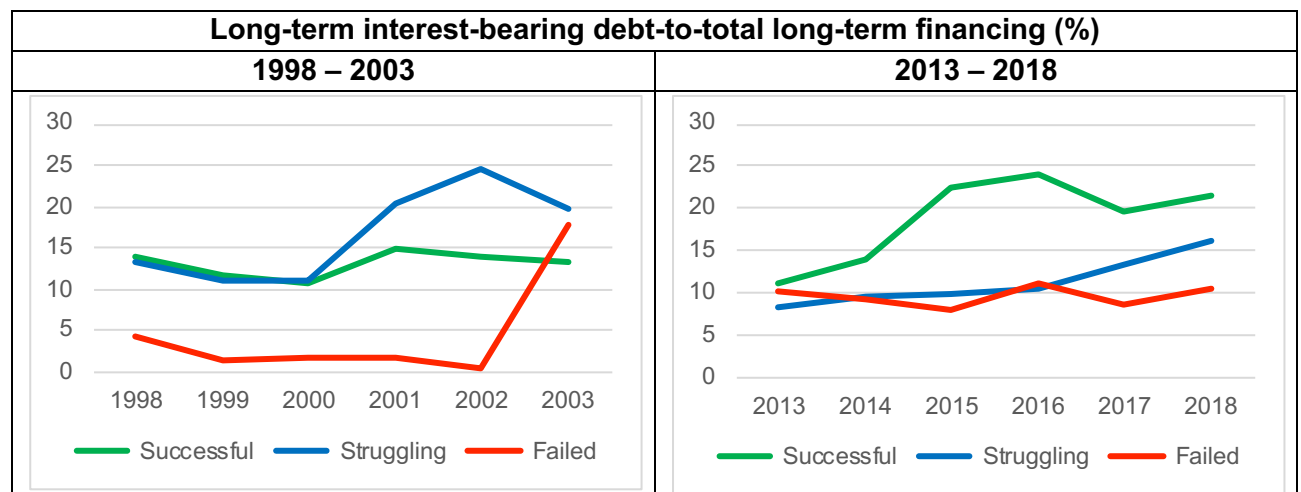
Somewhat bizarrely, this study's financial ratio calculations show the opposite result from the findings of previous studies and the expectations of the author. The results for the debt ratio for the 1998 to 2003 period are too volatile to draw reasonable inferences, but the results from 2013 to 2018 are relatively stable. It is unclear whether this is as a result of changes in the economy, or improvements in the disclosure of assets and liabilities according to the International Financial Reporting Standards. From the debt ratio, it is quite clear that failed companies consistently had lower debt levels than successful or struggling companies. This may indicate that the conventional wisdom that higher degrees of indebtedness correlate with higher financial risk and a higher risk of financial failure, may not apply to South African companies or companies in emerging economies. Potentially, the debt levels of successful or active firms may also simply reflect higher levels of creditworthiness and thus easier access to less expensive forms of debt financing (Becchetti & Sierra, 2003:2105).

In terms of the solvency ratio, and given the importance of solvency in terms of the Companies' Act definition of a business in distress, it is of course (as the ratio is the inverse of the debt ratio) also quite clear that the failed firms in fact had higher levels of assets to cover their debt obligations than successful companies. Whereas a greater level of solvency is generally associated with a smaller chance of becoming insolvent, one might question whether – given a generally accepted norm of 2:1 for solvency ratios – the companies that would eventually fail perhaps did not make sufficient use of external and especially long-term financing to stimulate growth and prosperity. Debt is less expensive than equity and may give rise to positive financial

gearing if applied judiciously. The successful companies in both periods under review did consistently maintain a 2:1 solvency ratio.

#### 6.3.1.4 Financial gearing

**Graph 6-11: Financial gearing (long-term interest-bearing debt as a percentage of total long-term financing)**



(Source: Author compilation)

The financial gearing ratio indicates what percentage of total capital is debt capital. It is quite clearly strongly linked to the solvency and debt ratios. In Chapter 3 of this study, this study noted that a strong capital structure would imply lower debt levels and thus lower debt and gearing ratios. Charitou *et al.* (2004:481) and Foster (1986:545–546) find that the financial leverage variable possesses a strong discriminatory power, consistent with the argument that one of the major reasons for company failure is an inability to meet heavy debt burdens. Furthermore, Beaver *et al.* (2005:100) claim that the mean ratios of failed firms deteriorate as the year of bankruptcy approaches.

For the 1998 to 2003 time series, it would appear as though those companies that struggled, i.e. the ones that delivered losses to ordinary shareholders, made the most use of long-term interest-bearing debt in comparison to all the sources of long-term financing employed. That said, the ratio is not particularly high – at its highest point, only 18.16% of the total financing for the struggling companies comprised external debt. The ratios for the failed companies were even lower throughout 1998 to 2003. South African companies generally have very low debt-equity levels (Correia, 2019:14-1), which might also serve to explain why the solvency and debt ratios were

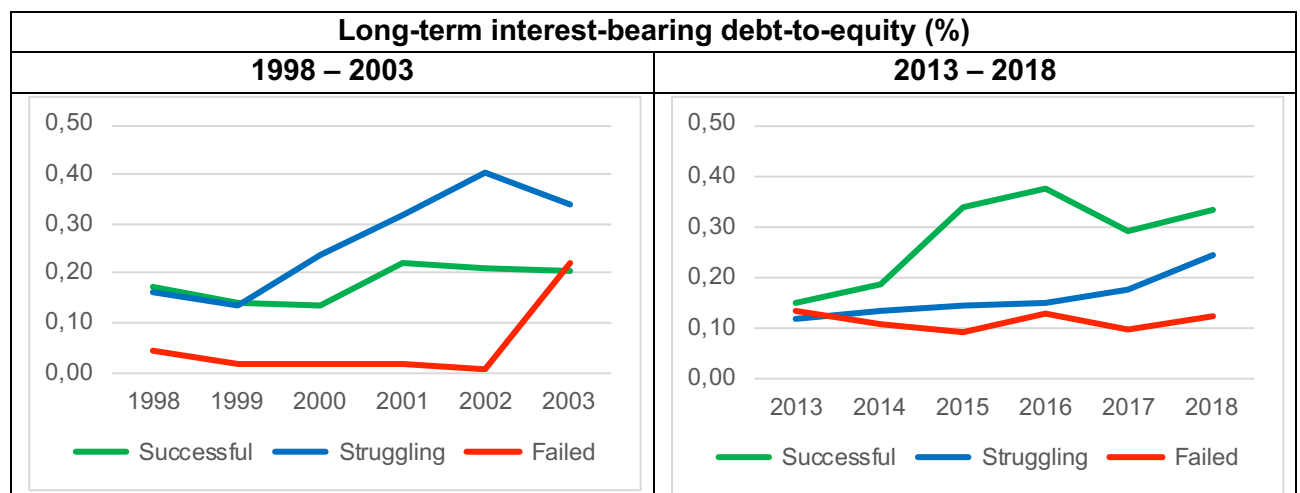


not able to offer much in terms of distinguishing between successful and failed companies, or in allowing for reasonable predictions to be made relating to potential financial failure.

During the 2013 to 2018 time period, the successful companies made use of more debt – up to 24.02% – in their capital structures. The oft-touted maximum limit for the financial gearing ratio is 50.0%, but it is clear that South African companies do not have such an aggressive risk appetite. One may again theorise that the successful companies have higher debt levels based on their larger size (shown in the number of personnel employed and total market capitalisation figures), which affords them more negotiating power and access to more reasonably priced external financing sources.

### 6.3.1.5 Debt-to-equity ratios

**Graph 6-12: Long-term interest-bearing debt to total shareholders' interest (debt-to-equity)**



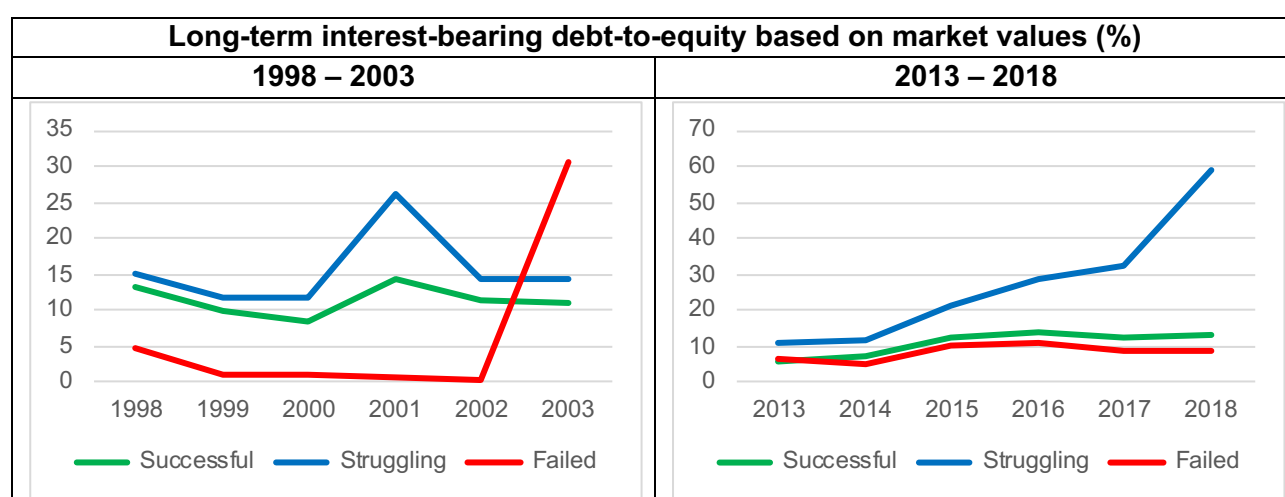
(Source: Author compilation)

The debt-to-equity ratio indicates the size of the company's liabilities in comparison to its owner-contributed funding (McClure, 2021). Although the acceptable debt-to-equity ratio will vary per industry and across different countries, the norm (or maximum limit) has historically been 1:1, which implies that external financing can't exceed the amount of total shareholders' interest, or 50% of the total long-term financing employed by a company. Any increase in the debt-to-equity ratio may indicate looming financial distress and is cause for serious concern (Collins, 2009:76; Platt & Platt, 2002:193). The larger the ratio, the more severe the situation (Platt & Platt, 2002:196).

As South African companies are not very heavily indebted, the trend lines for the long-term interest-bearing debt to equity ratio quite heavily mimic the long-term interest-bearing debt to total long-term financing trend lines. Again, as with the arguments relating to the debt and gearing ratios, the trend figures here are not in line with the findings of previous studies relating to corporate failure, and the debt-to-equity ratio does not seem to hold much value in assisting the users of financial statements in accurately predicting the potential for financial loss.

One other study, that of Blum in 1974 (1974:10), found that the equity to total debt ratio, based on book values (i.e. the inverse of the debt-to-equity ratio), illustrated the arbitrariness of the rankings ascribed to financial ratios with respect to the successfulness thereof in terms of failure prediction. Blum (1974:10) ascribed the relative lack of value of the equity to total debt ratio to the questionable nature of the book or accounting value of shareholders' interest, and deemed the results of the application of the ratio as – at best – mediocre, until three years prior to failure.

**Graph 6-13: Long-term interest-bearing debt as a percentage of market capitalisation**

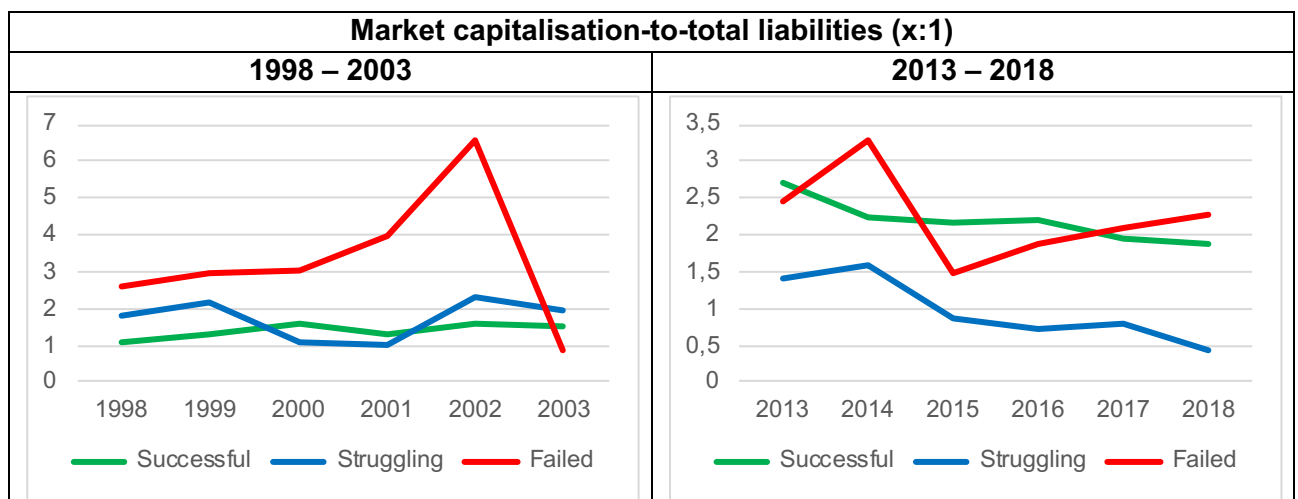


(Source: Author compilation)

The classic debt-to-equity ratio may be restated to consider more relevant forward-looking market information by exchanging the book value of the ordinary shareholders' interest with the market capitalisation of the company. Even in the time period of 1998 to 2003, it is clear to see that this particular ratio contains far more predictive power than the ratios based on book values. Clearly, during the economic boom of 2000 and 2001, many companies engaged in more risky financing behaviour, buoyed up by claims that global economic growth had been exceptional and was expected to continue to grow (The Economy, 2001).

The collapse of several dot-com companies and the ensuing global recession, together with the financial crisis of 2007 and 2008 (CFI Team, 2022), led to a significant reduction in available credit. Consequently, the long-term interest-bearing debt amounts compared to the total market capitalisation of the successful and failed companies selected for this study, were far lower and more stable during the 2013 to 2018 financial period than in the previous time period. The only notable exception here is the trend displayed by the struggling companies. The struggling companies clearly show a marked increase in the long-term interest-bearing debt-to-market capitalisation ratio over the six-year period. Although it thus seems as though this ratio may be useful in predicting when a company may be heading towards financial trouble, it unfortunately fails to distinguish adequately between successful and failed companies.

**Graph 6-14: Market capitalisation-to-total liabilities**



(Source: Author compilation)

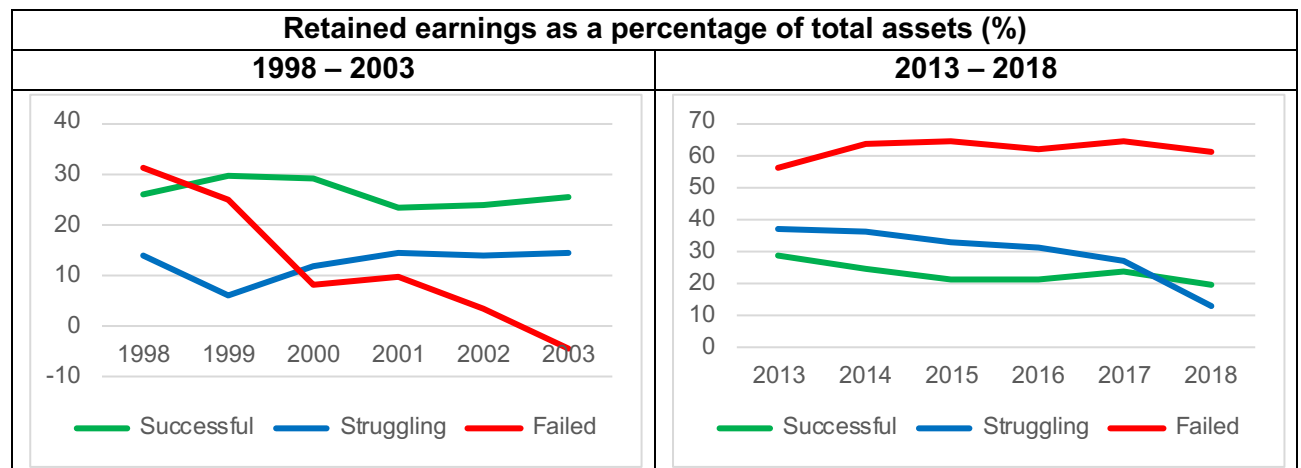
The market value of equity (or market capitalisation)-to-total liabilities (MVE:TL) ratio measures by how much a company's assets can decline before it is deemed to be insolvent as a result of its liabilities exceeding its assets (Altman, 1968:606). It can also be said to indicate the extent to which interest-bearing debt is covered by shareholders' funds (Correia, 2019:5-19). Mazouz *et al.* (2012:70) found that failed firms tended to have lower average MVE:TL ratios than non-failed firms, which seemed to suggest that firms heading towards failure had a higher risk of not meeting their total debt obligations when due.

As with the previous debt management ratios, the results for this study's selection of companies over the two separate time periods are contrary to expectations. In a South African context, based on an averaging of financial ratios for thirty companies over two time periods, the MVE:TL ratio

for failed companies fairly consistently exceeded the MVE:TL ratio for non-failed or successful companies. Thus the market capitalisation-to-total liabilities ratios are not likely to assist with distinguishing successfully between failed (or failing) and successful companies.

#### 6.3.1.6 Retained earnings as a percentage of total assets

**Graph 6-15: Retained earnings as a percentage of total assets**



(Source: Author compilation)

Retained earnings are the accumulated portions of a company's profit after taxation and preference dividends that have not been distributed to the ordinary shareholders of the company as dividends. Retained earnings have thus been reinvested in the company. The retained earnings to total assets (RE:TA) ratio therefore shows what percentage of the assets of a company is financed with the equity retained in the entity. It is also an indicator of the cumulative profit generated by a company based on the assets it has used. Retained earnings as a percentage of total assets imputes into the ratio such factors as the age of the firm, its dividend policy and its profitability record over time (Altman *et al.*, 1977:35).

Charitou *et al.* (2004:481), Becchetti and Sierra (2003:2115), and Altman *et al.* (1977:35) found that the retained earnings to total assets ratio achieved a remarkably high correct classification of failed companies in the first year prior to failure – consistent with the heterogeneity of results across studies conducted in different periods and in different countries – and thus postulated that financial leverage variables possess a strong discriminatory power and consequently suggested that leverage indices have a predominant role to play in the assessment of the probability of failure. It may also be a discriminator between new companies that are more likely to fail, and existing companies that are more likely to survive or avoid financial distress.

Companies with low RE:TA ratios are financing capital expenditure through borrowings rather than through retained earnings, whereas companies with high RE:TA ratios are likely to have a history of profitability and thus display an ability to survive challenging financial conditions (McClure, 2022; Mazouz *et al.*, 2012:70). The higher the RE:TA ratio is, the less reliant a company is on other common types of long-term financing, including debt financing.

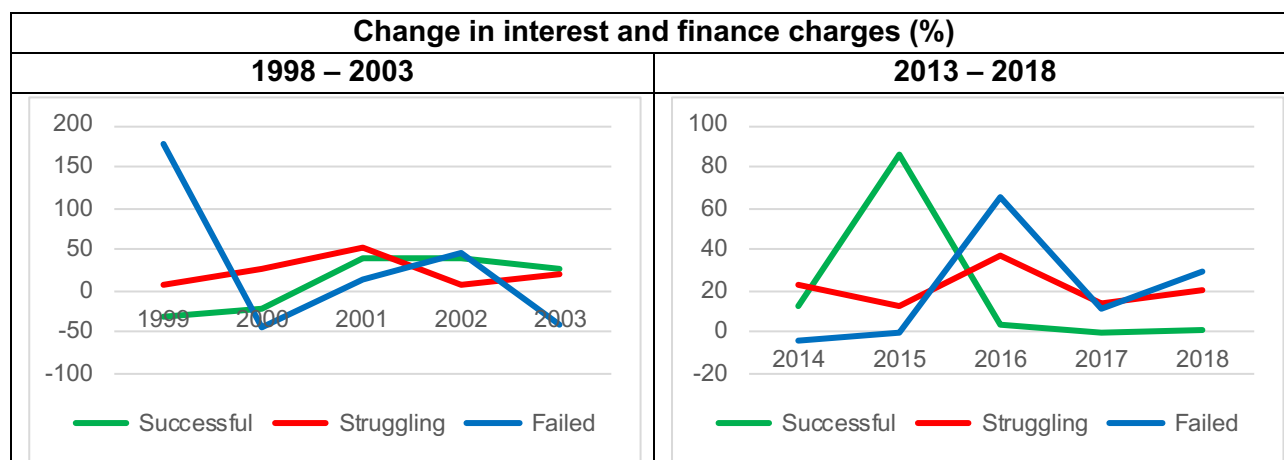
For the 1998 to 2003 time period, the graph depicting the retained earnings to total assets ratio concurs with the statements above. The trend line for failed companies is clearly decreasing as the companies near the date of bankruptcy – the failed companies' accumulated retained earnings most likely decreased as a result of continuous accounting losses. The successful companies have a higher and relatively stable RE:TA ratio, as do the struggling companies, albeit slightly lower than the successful companies. The RE:TA ratio could therefore have been said to be a reliable determinant of the likelihood of financial failure based on these findings.

Unfortunately, the trend lines for the 2013 to 2018 time period are not as accommodating. Although the lines are mostly stable, with a decreasing trend for the struggling companies, the RE:TA ratios are higher than the trend line for successful companies, for both the struggling and the failed companies. This phenomenon may once again be linked to the relatively low use of external financing by South African companies. The results of this study are not sufficiently conclusive to state whether an inverse RE:TA ratio result may be the norm for South African companies, but it certainly would be worthwhile investigating this ratio further in future studies, over even longer time periods.

#### **6.3.1.7 Interest cover**

Before analysing the interest cover ratio, it might be interesting to consider the change in the total interest and finance charges of the companies selected for this study, to see whether a discernible pattern could arise from the averages calculated for each sub-set of companies. A comparison of the interest and finance charges as a percentage of total interest-bearing debt over the six years of each time period may also reveal whether increases in the costs charged to the different groups of companies correlate with their use of external financing.

**Graph 6-16: Percentage change per annum in the total interest and finance charges as a per the statements of profit or loss**



(Source: Author compilation)

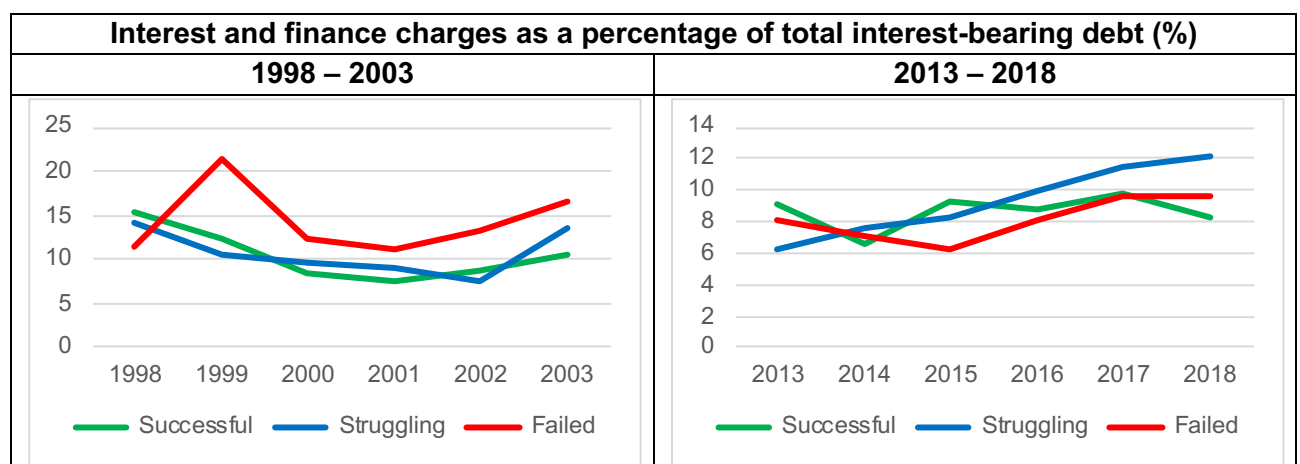
The percentage change in interest and finance charges graphs do not provide information that would be useful for identifying a discriminating pattern for failure prediction purposes. However, some interesting observations are still possible. It is noteworthy, as stated before, that the trend lines of the failed, but also especially of the struggling companies, seem to track the trend lines of the successful companies. However, there is quite often a discernible lag – as can be clearly witnessed in the 2013 to 2018 presentation contained in Graph 6.16. It might be possible, especially given a number of other financial ratios that display the same trend, to hypothesise that the struggling companies tend to copy the actions and activities of the more successful and larger companies but, as they do not have the first-mover advantage or the size to benefit from economies of scale and enhanced negotiating powers, they are not able to execute these actions and activities as well as the successful companies do.

Furthermore, there does appear to be a spike in interest and finance charges towards the end of a failed company's life. A short-lived but significant increase in the interest and finance charges of struggling companies is likely to affect the net profit of the companies in question, as well as their ability to meet their (shorter-term) interest commitments. The increase in the finance costs could be (i) as a result of acquiring additional debt financing, perhaps in a last-ditch effort to recapitalise a poorly-performing entity, (ii) as a result of escalating debt financing costs, with the suppliers of external financing having become aware of the increased financial risks they are facing as a result of the company's reduced profitability and weakened liquidity, (iii) due to changes to the economy that impacted on general lending rates, or (iv) because companies,

having failed to meet their interest or even debt repayment commitments, are also subject to penalties, increased interest rates, or the effects of compound interest.

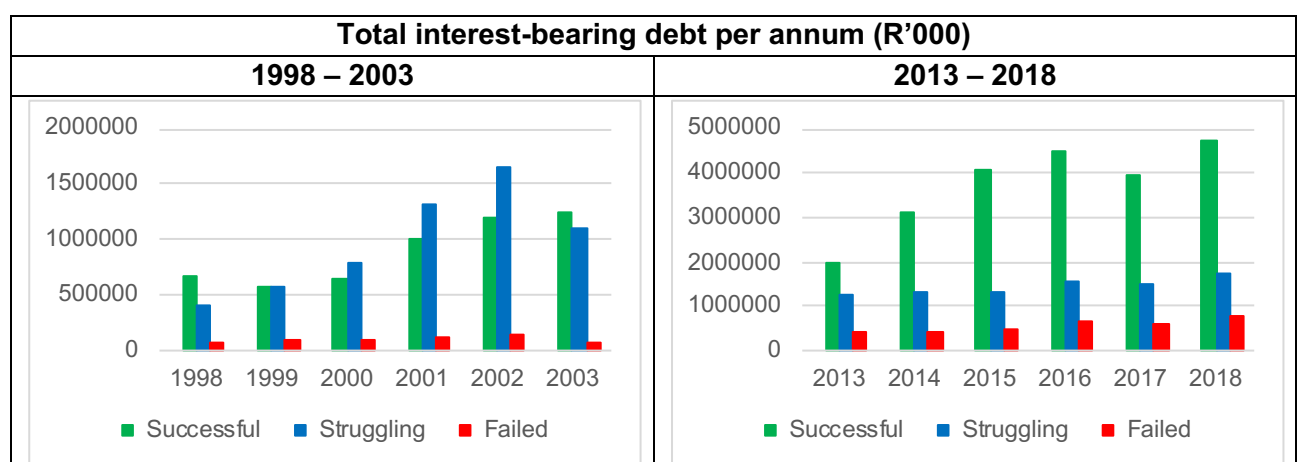
A cautious investor may not be able to use the percentage change in interest and finance charges trend lines to assess a company's financial risk, but should look out for and be aware of sudden, potentially unexplained, increases in the interest and finance charges presented in the statements of profit and loss of companies which he or she may be invested in, or may be considering investing in.

**Graph 6-17: Interest and finance charges as a percentage of total interest-bearing debt**



(Source: Author compilation)

**Graph 6-18: Total interest-bearing debt per annum**



(Source: Author compilation)

For the time period from 1998 to 2003, Graphs 6.17 and 6.18 indicate that, in line with expectations in this regard, the financing cost of the failed companies in relation to the total interest-bearing debt employed, was much higher than the financing cost of successful companies. This may be due to the fact that the companies in question have been assessed by the suppliers of external financing as having a high risk for not meeting their debt obligations when due, or because the companies are smaller and have fewer financing options, necessitating the use of relatively expensive external financing sources. It is also useful to remember that short-term debt generally carries a higher interest rate than long-term debt, and consequently an increase in short-term liabilities – e.g. as a result of a rapidly expanding bank overdraft – may have given rise to the increased financing charges as well, as the graph above is based on total interest-bearing debt and not only long-term interest-bearing debt.

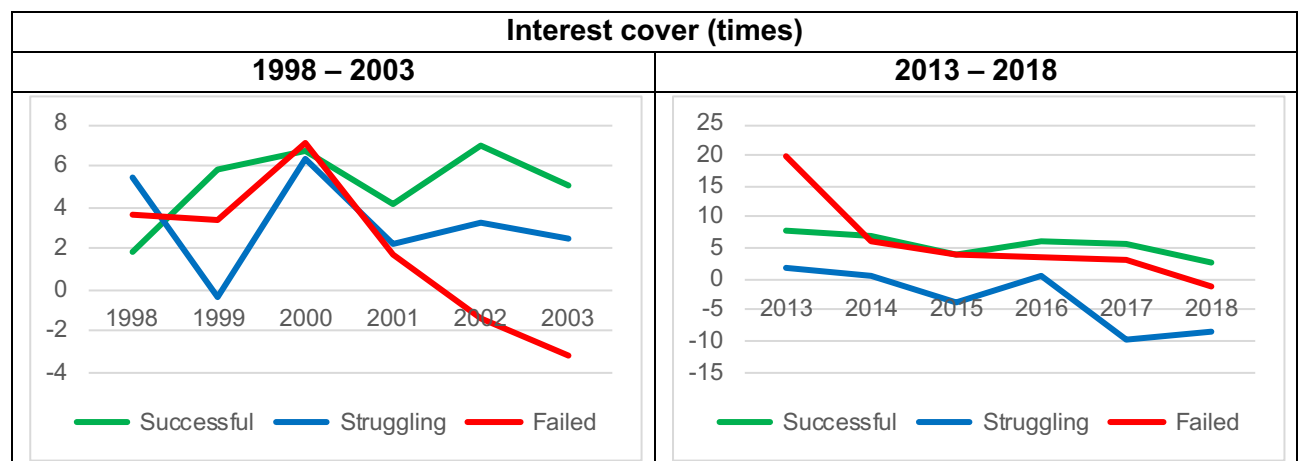
Nonetheless, although this may be as a result of the sampling and non-matching selection technique employed for this study, the failed companies in the 1998 to 2003 time period do still seem to make use of far less debt financing than the successful companies, as noted previously. In addition, as speculated in terms of Graph 6.6 (*Outside shareholders' interest expressed as a percentage of total assets*), the companies that struggled to generate accounting profits over a number of years, increased their debt financing levels considerably and rapidly over a relatively short time frame, which supports the speculation that this may be as a result of pursuing an overly aggressive growth and acquisition strategy. As a result, when the debt financing levels peaked in 2002, the suppliers of debt financing reacted swiftly by increasing the interest charges on the outstanding loans and debt commitments, as can be seen in the spike in interest cost as a percentage of total interest-bearing debt in Graph 6.17. This escalation of the finance costs may, in turn, have resulted in the struggling companies seeking to reduce their debt commitments, as evidenced in the decrease in total interest-bearing debt in 2003, as depicted by the blue bars in Graph 6.18.

For the 2013 to 2018 time period it is clear, even if sampling bias may exist, that it is a distinguishing factor that failed companies have lower debt levels than the successful companies, that also – in line with the results presented for the 1998 to 2003 time period – can be seen to increase their external financing levels consistently over the six year time period, most likely to benefit from the magnifying effect of financial leverage. Despite the increase in outstanding debt, the interest cost in comparison to the outstanding debt at year-end remains stable over the six year period. The increasing levels of debt therefore seem to have little effect on the financial risk assessment of the successful companies.



Despite the balances for the struggling and failed companies only increasing marginally over the 2013 to 2018 time period, the interest rates charged on outstanding debt at year-end increase at a fairly consistent and noticeable rate. This could indicate a shift towards more short-term financing, or to the fact that the companies are being assessed as higher financial risks for the suppliers of debt financing. Of all of the ratios analysed thus far, this is the first ratio that has the potential to predict the potential for failure but, unfortunately, the trend will only really be discernible over a longer period of time, which may negate its usefulness as a timely indicator of financial distress. It is unlikely that the management of a company or its other stakeholders will be able to use this ratio, where the possible reasons for changes to the rates are multiple, to discern between successful and failed companies.

**Graph 6-19: Interest cover**



(Source: Author compilation)

The interest cover indicates how 'safe' interest payments are by considering a company's ability to meet interest charges (GoCardless, 2020). The interest cover ratio, also known as the 'times interest earned' ratio, thus indicates the likelihood of an entity to default on loan interest payments, or the extent to which earnings can decline before the company becomes unable to meet its interest cost (Correia, 2019:5-20). A high ratio shows that the entity can easily repay its loan obligations. A low ratio indicates an increased risk of defaulting (Averkamp, 2022; Marx *et al.*, 2017:78; Gitman & Zutter, 2014:69; Skae *et al.*, 2014:298). Conversely, too high a ratio may result in unnecessarily low risk and return, which will result in a company not achieving its primary goal of increasing shareholders' wealth (Gitman & Zutter, 2014:69).

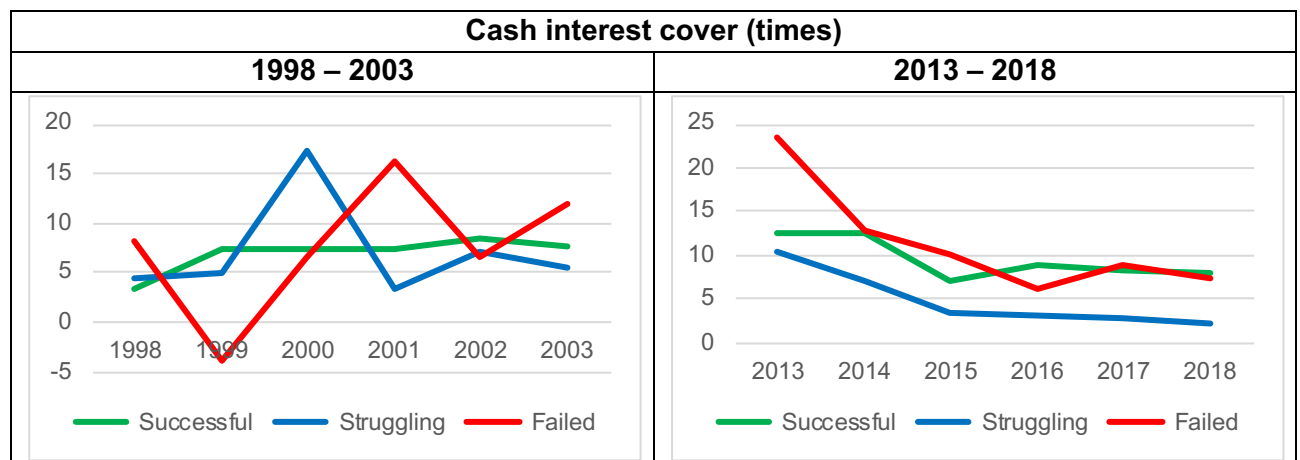
The times interest earned must also be viewed in conjunction with the statement of cash flows, or a cash interest cover ratio should be calculated. It is possible for an entity to have a high interest cover ratio based on its accounting profits, which would suggest a strong solvency and liquidity position for the company, but simultaneously record negative cash flows, and thus the company would in fact be unable to meet its interest commitments when due (Averkamp, 2022; Skae *et al.*, 2014:298).

The interest cover trend lines in both periods meet expectations. The successful companies have higher interest covers and are more able to afford their debt commitments, which also explains why these companies may have made use of more debt financing than their counterparts. For both time periods, the interest cover for the successful companies lies above three times, which is considered ideal (Khude, 2021; GoCardless, 2020). The failed and unsuccessful companies have lower interest covers, that in the former's part furthermore decline rapidly as the company nears its bankruptcy and liquidation dates. One year before failure, the interest covers are negative, which indicates that the companies in question are unable to meet their short-term interest commitments, and therefore fall under the Companies' Act definition of a business in distress. The ratios are quite volatile in the 1998 to 2003 time period, although the trend lines do follow similar peaks and troughs, indicating that it is possible to extract valuable information from average, unmatched samples and data.

As depicted by Graph 6.17, the trend lines in the 2003 to 2018 time period follow a nearly classical pattern of decline, in line with increased use of external financing, and increasing interest and finance charges. From approximately three years prior to failure, the failed as well as the struggling companies' interest covers dipped below the interest coverage norm of three. Based on the results achieved over the two separate time periods, it is possible to reason that the interest cover ratio is a reliable predictor of potential financial distress, with a decline in interest cover and a result below 3, being considerable causes for concern.

### 6.3.1.8 Cash interest cover

**Graph 6-20: Cash interest cover**



(Source: Author compilation)

The cash interest cover, similar to the interest cover, also measures how ‘safe’ short-term interest payments are, but contrary to the traditional interest cover ratio, uses cash flows (or sometimes earnings before interest, tax, depreciation and amortisations [EBITDA] as a proxy for cash flows from operations) instead of operating profit. Cash flows are regarded as more reliable, as they are less subject to manipulation than accounting profit. In addition, as noted above, a company that generates profit may still not have sufficient cash flow available to meet short-term obligations. Thus the cash interest cover may be a more reliable measure of the company’s ability to meet its interest obligations when due (Correia, 2019:5-21).

The trend lines for both financial periods bear a remarkable resemblance to the trend lines depicted in Graph 6.19, which denotes the interest cover for the sample companies over the two time periods. This is especially true for the 2013 to 2018 period, which seems to indicate that all companies that form part of this study were able to convert a fair portion of their earnings into cash. For both time periods, the cash interest cover ratios for the successful companies are somewhat stable, and relatively high, for the most part comfortably exceeding five times. The cash cover ratios for the failed and struggling companies are much weaker across both time periods and – as is especially characteristic of the results of the struggling companies – far more volatile than the coverage achieved by the successful companies. For the 2013 to 2018 period, the cash interest cover ratios also show a distinctly decreasing trend, with very low ratios being easily discernible in the year to two years prior to the companies’ financial collapse. It may

therefore be postulated that the cash interest cover ratio is a reliable indicator of potential financial distress, especially if viewed over a medium to long period.

### 6.3.2 Cash ratios

*Profit is an opinion; cash is a fact.*

*Stewart Hamilton*

#### 6.3.2.1 Introduction

All companies require positive operating cash flows with which to ensure the ability to trade without interruption, to grow continuously, to meet their immediate obligations, and to enhance the future sustainability of the company. A company cannot continue to operate as a viable going concern if it is not generating positive cash flows (Correia, 2019:5-24; Skae *et al.*, 2014:284; Kelly & O'Conner, 1997:28). In fact, a company that constantly uses cash in its business activities, instead of generating cash through its operations, is heading for financial distress, and will be forced ultimately to either curtail or cease operations (Correia, 2019:5-24; Bruwer & Hamman, 2005:1).

Although, in the long-term, a company must be profitable to be able to generate cash, profit in itself will not keep a company afloat – a company must generate sufficient cash flow to meet its obligations as they become due in order to survive (Charitou *et al.*, 2004:472).

As discussed in Chapter 3, earnings can be manipulated by managers, for instance through arbitrary allocations, the application of different accounting policies and subjective estimations, and thus earnings or profit figures are less reliable than actual cash flows (Bruwer & Hamman, 2005:8; Roos, 2005:18; Charitou *et al.*, 2004:472; Prinsloo & Rosenberg, 2004:12; Kelly & O'Conner, 1997:29). Companies like Enron and LeisureNet were profitable until their ultimate financial failures occurred (Terry, 2007:33). Furthermore, earnings per share are also historical in nature, and therefore do not necessarily reflect future expectations and a company's ability to continue trading (Roos, 2005:18).

Collins (2009:104) and Morris (1998:230) assert that, whilst low and declining levels of profit may be signals of financial distress, companies are able to survive losses provided that they have sufficient cash, or access to cash resources, to put them in a strong liquidity position. Any

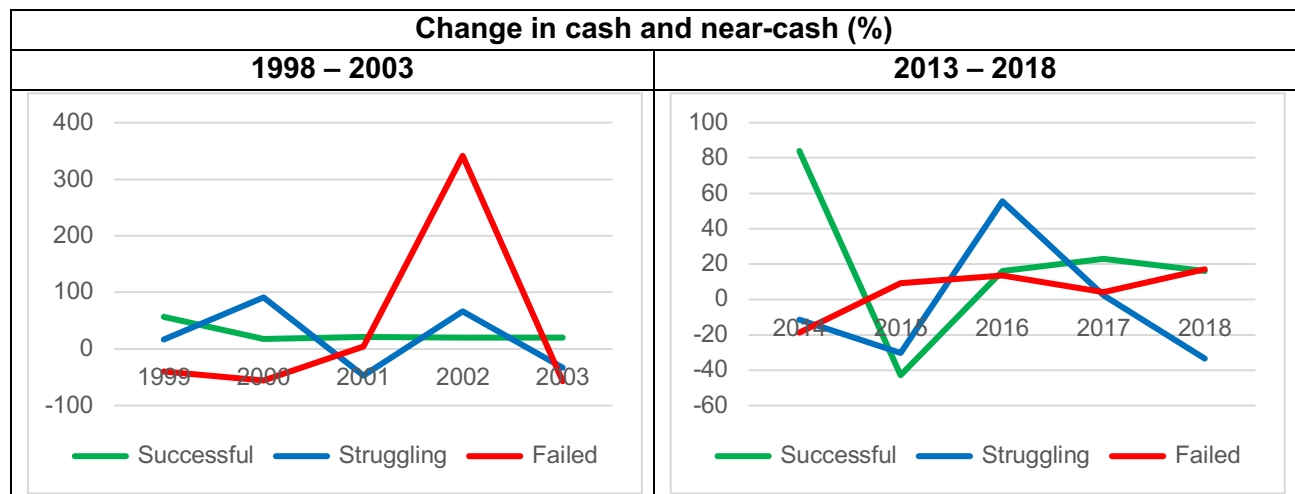
company with low reserves of liquid assets are potentially vulnerable if an unexpected setback, like a fire, a pandemic, a loss of a key person, an incident of crime, or a natural disaster, occurs.

Positive cash flows are therefore an indicator of financial stability. Insufficient cash resources, inadequate inflows of cash, and cash flow ratios are often early indicators of potential financial distress (McClure, 2021; Correia, 2019:5-36; Jooste, 2007:1; Charitou *et al.*, 2004:481; Platt & Platt, 2002:193). ISA 570, the auditing standard related to the assessment of a company's going concern status by an auditor, highlights negative operating cash flows as a warning sign of potential illiquidity and insolvency (IFAC, 2013:559–560).

One of the best sources of information about a company's generation and application of cash flow, is of course the statement of cash flows. Statements of cash flows have a number of applications, for instance, to gauge the quality and impact of management decisions over time (Berstein, 1998:587), to evaluate management's responses to changing economic conditions and especially adversities (Berstein, 1998:590), and to assist analysts in assessing the likelihood of financial distress (Foster, 1986:536). McClure (2021) advises analysts to simultaneously keep an eye on a company's cash position in the statement of financial position, as bank balances may run low or become negative if a company continues to deliver negative cash flows. If a company cannot meet its debt obligations over the short-term, it will be deemed to be illiquid and consequently in financial distress.

As a starting point to the analysis of the statements of cash flows of the companies selected for this study and before delving into the cash ratios, the changes in cash balances and the net cash movements according to the statements of financial position were considered. The statements of financial position revealed the following:

**Graph 6-21: Percentage change in cash and near-cash balances over time**

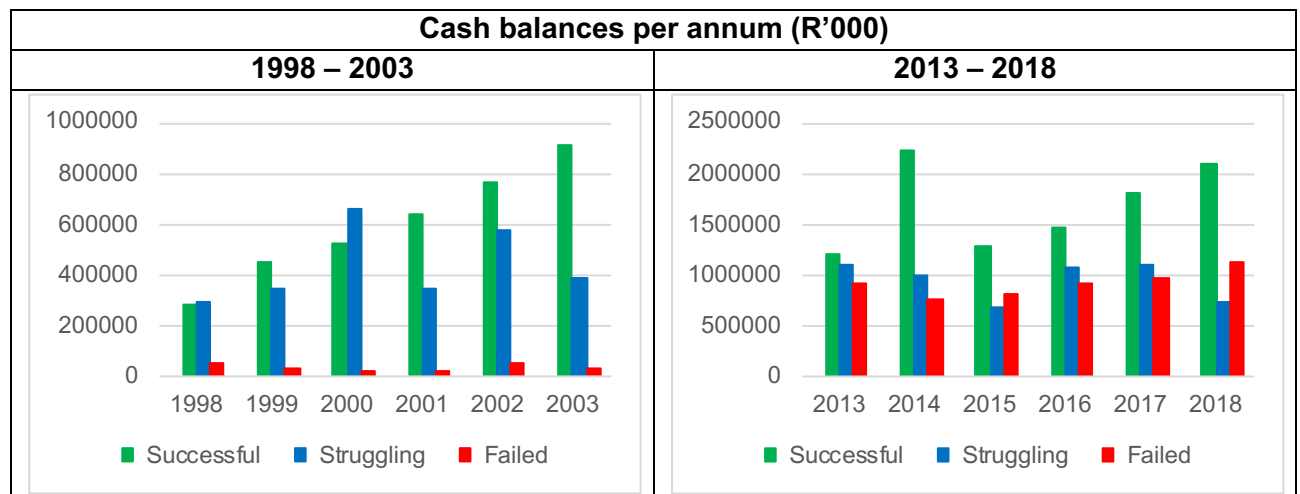


(Source: Author compilation)

The percentage change in the average cash and near-cash balances on the statements of financial position of the companies selected for this study indicate far more volatility for the struggling and failed companies than for the successful companies.

In the 1998 to 2003 time period, for the changes in cash balances, the trend line of the successful companies showed very little movement – however, this is deceiving as the graph is dominated by the very sharp spike in the cash balances of the failed companies. A look at the cash balances per annum in Graph 6.22 (bearing the size differences of the companies in mind), clearly reveals that the successful companies managed to grow their cash balances continuously and at a reasonable pace.

**Graph 6-22: Cash balances per annum**



(Source: Author compilation)

In contrast, the cash balances of the struggling companies were extremely erratic during the 1998 to 2003 time period. This could be because the management of struggling companies act in a very reactive way – when their companies' cash flows dip, they respond by issuing more shares, raising more debt, or selling off assets. Although temporarily successful, these drastic actions can have a negative effect on the long-term operations and the sustainability of the companies in question.

The failed companies during the 1998 to 2003 time period showed declining balances until just before their demise. As Graph 6.22 shows, the cash balances of the failed companies increased dramatically during 2002. It would be possible to speculate that this may be as a result of a last, desperate attempt at recapitalising the companies (which may be confirmed by considering the number of shares in issue later in this chapter), but it seems unlikely given the dire circumstances and financial position of the companies. It is, in this author's opinion, far more likely that the spike in cash was as a result of assets that were sold to meet the obligations of these companies as they entered liquidation. This is especially true as the study selected companies that had been liquidated during 2003 and 2004, by which time the companies would already have been noted as failed.

The cash balances of the successful companies in the 2013 to 2018 time period decreased suddenly, as evidenced in Graph 6.21, after a particularly significant increase in 2014. It would seem, however, as though the 2014 results are abnormal, and may be as a result of a sudden windfall or a once-off change in economic conditions. If the 2014 green bar is removed from the

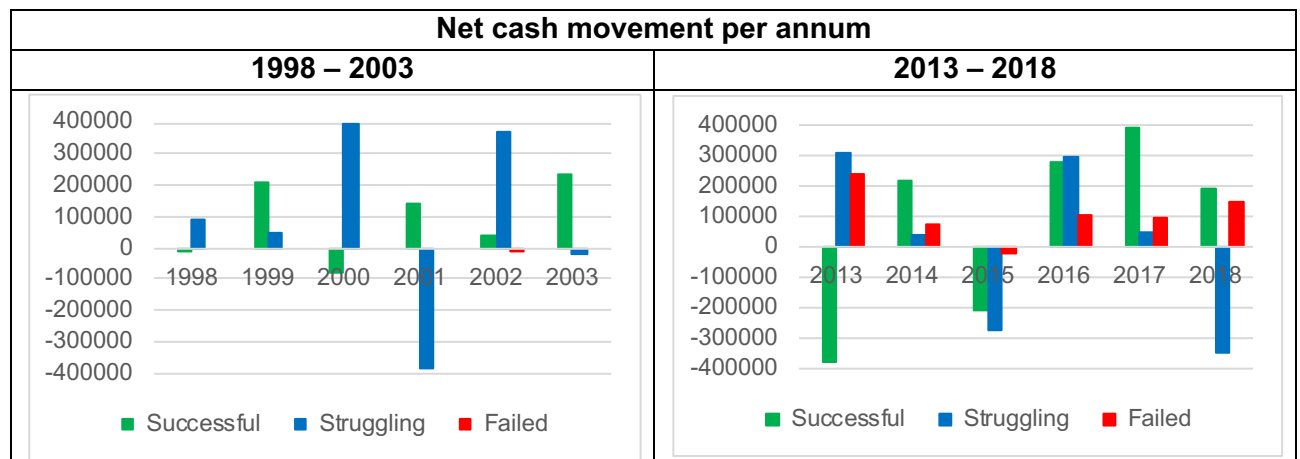
relevant graph, it is again quite clear that the cash balances of the successful companies offered a steady and measured increase over time. It would seem as though the management of the successful companies were interested in running their businesses well, and growing organically, rather than chasing growth aggressively.

The struggling companies for the 2013 to 2018 period may, however, have been guilty of excessive growth targets. This statement is borne out by the volatility in their cash balances and in the percentage change per annum, which is once again erratic. The changes may also be as a result of increased financing activities, as witnessed in Graph 6.8 (*Cash generated by or used for the financial activities of a company*). If there is one characteristic that may be attributed to struggling companies, it is that their results hardly ever allow for future predictions that are based on results achieved in the past – there simply isn't enough of a pattern or a trend to be able to infer that past conditions will continue to hold true in the future. This volatility and erratic behaviour will make planning for struggling companies more complicated and riskier, which the author believes is evidenced by the poor results achieved. It may also indicate that the companies do not have clear strategic visions, or may raise concerns about the strength and skill of the respective management teams.

The failed companies, even taking size differences into account, have relatively low cash balances and thus limited cash resources, in comparison to the successful companies. For the 2013 to 2018 time period, the changes in the cash balances are less extreme than for the 1998 to 2003 time period, but it is interesting to note that the cash balances do seem to increase steadily over time, albeit at a very low rate, which is contrary to the expectations which the author had for these financial figures. It would therefore seem as though an increasing cash balance is not necessarily a safeguard against financial losses, and an analyst should not use the cash balances or changes in the balances as a single, absolute measure of potential financial distress. The trend lines should only be considered in conjunction with other financial distress indicators.



**Graph 6-23: Net cash generated or used per annum**



(Source: Author compilation)

Negative cash flows occur when a company's cash payments exceed the cash that it generated through its activities (McClure, 2021). Companies that exhibit low or negative cash flows, and low or negative cash flow growth, are more likely to suffer financial distress and to be forced into liquidation than companies with positive and growing cash flows (Bruwer & Hamman, 2005:1; Charitou *et al.*, 2004:468; Platt & Platt, 2002:193; Beaver, 1966:80). This is especially true where the low or negative cash flows are maintained over a sustained period of time (McClure, 2021; Correia, 2019:5-36).

The only author who found that statements of cash flows held little predictive power and were not amenable to any form of statistical analysis, was Taffler (1982:344). Unfortunately, the results of this study also cannot attribute much prediction power to the net cash movement per annum of the three sets of companies studied over the two separate time periods.

Whilst it is certainly true that the successful companies over both periods mostly had positive cash flows, there were also years when their cash flows were negative. One has to bear in mind that a negative cash flow is not necessarily a problem if a company has significant cash reserves. Then the negative cash flow in one particular year may simply reflect significant capital investments which will bolster future sales and operating returns, which were merely self-funded.

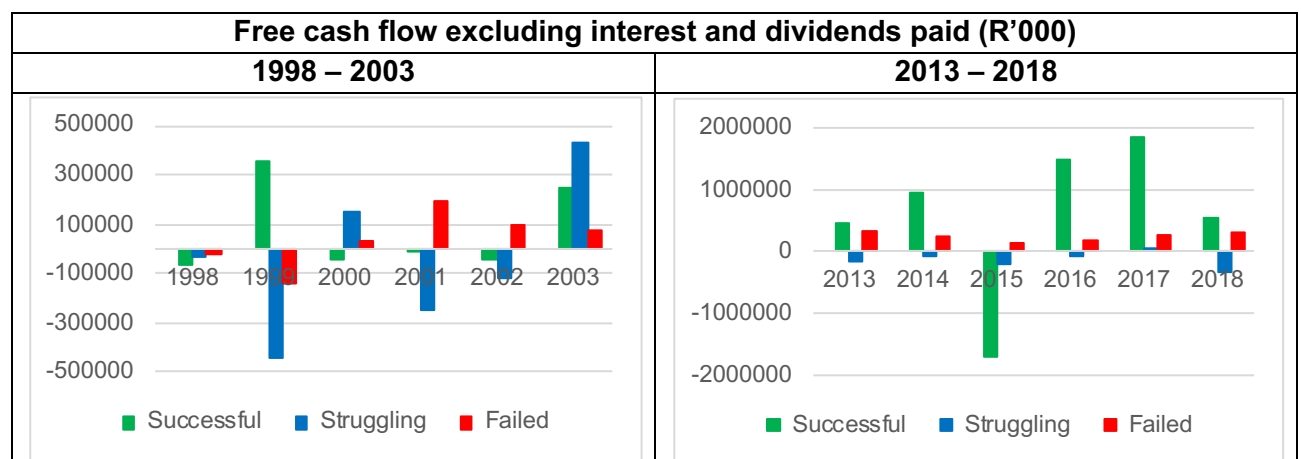
Similarly, the failed companies in the 2013 to 2018 period consistently had positive cash flows – the problem is that a net cash movement does not allow an observer to determine whether the positive cash flows are the result of suitable and successful operations, or strategic investments to grow future operations, or conversely, financing activities that steadfastly cast the companies

into ever-increasing levels of financial difficulty. The cash flow figures should therefore, again, not be used in isolation – the cash and bank balances, the cash flows generated from operations, and the liquidity ratios, at the very least, need to be analysed and investigated as well.

The one trend that is, again, clear from Graph 6.23, is that the cash flows of the struggling companies in both periods, as has been the case with so many other ratios, are extremely volatile. Whilst negative cash flows may be indicative of investments that allow for future growth, they may also reflect the results of excessive growth and possibly – less ethically – of management or shareholders' attempts to move cash out of the failing business.

### 6.3.2.2 Free cash flow

**Graph 6-24: Free cash flow excluding interest and dividends paid**



(Source: Author compilation)

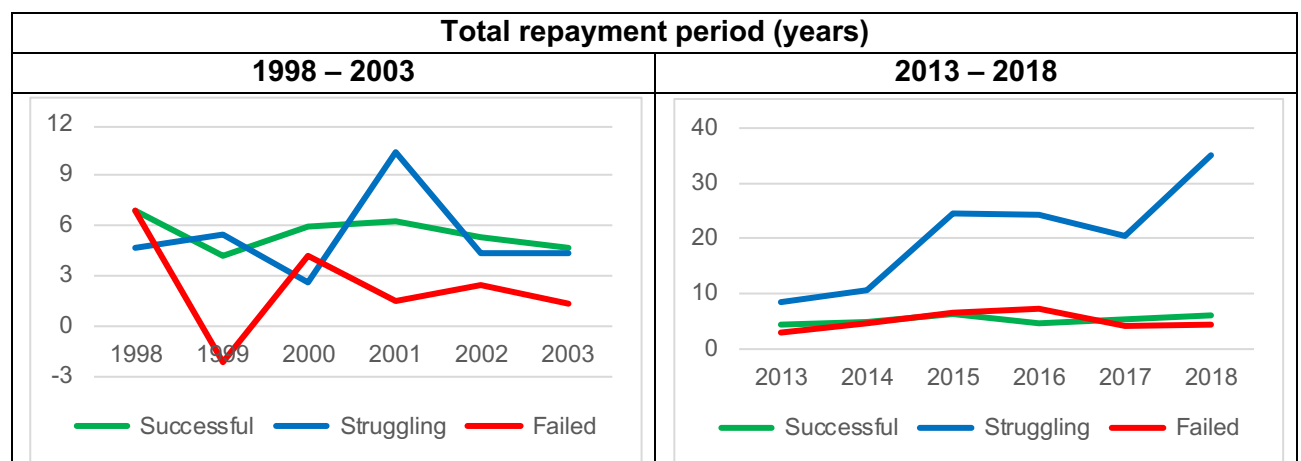
Free cash flow is increasingly being used as a key indicator of a company's liquidity (McLoughlin, 2005:21). However, the definition of free cash flow is not always clear. In the formula 'free cash flow to debt', free cash flow is defined as the amount available for use after all operational requirements and investment needs have been met and dividends have been paid. However, free cash flow to operations, as used in the popular valuation technique, is defined as cash flows sans any cash flows relating to financing activities, thus before interest payments, dividends payments, and tax relating to interest payments.

Based on the latter definition, which in the author's opinion is more meaningful to gauge a company's ability to meet debt and interest payments (which must be met before distributions to shareholders), the free cash flows from all three sets of companies in the 1998 to 2003 time period

can be seen to be highly erratic. Perhaps due to improvements in accounting standards, the cash flows for the 2013 to 2018 time period are more in line with expectations, although an analysis thereof will still not allow a decision-maker to distinguish between failed and successful companies. The struggling companies did, however, throughout the latter period, consistently demonstrate negative cash flows, which is in line with expectations, and certainly more reliable than the net cash movements per annum depicted in Graph 6.23. Due to the potential size differences between the companies, it cannot be said with certainty that the free cash flows of the successful companies were necessarily much higher than the free cash flows of the failed companies, but it is interesting to note that both groups generated positive free cash flows and should, depending of course on the level of indebtedness, potentially have been able to meet their debt obligations.

### 6.3.2.3 Total repayment term

**Graph 6-25: Total repayment period**



(Source: Author compilation)

In his seminal and ground-breaking study, William Beaver found that the cash flow to total debt ratio, also known as the total repayment period, was the most useful single ratio to predict company failure. The total repayment period measures the cash flow generated by a company's core business in comparison to its total debt, to determine how long, based on current operations, it would take (in years) to settle all outstanding debt.

Since Beaver's work, a vast number of studies have tested his theory, and the majority have found that, if not necessarily the most important financial ratio across all years preceding a company's failure, the total repayment period remains a strong tool for the evaluation of long-term solvency

and a reliable indicator of financial distress (Correia, 2019:5-24–5-25; Beaver *et al.*, 2010:119; Charitou *et al.*, 2004:481; Becchetti & Sierra, 2003:2115; Vigario, 2002:176; Hajdu & Virág, 2001:36; Bernstein, 1998:635; Foster, 1986:545–546; Wilcox, 1971:389). This ratio is inversely correlated to the probability of business distress and thus a low ratio indicates that a company should be able to cover its total debt (Skae *et al.*, 2014:310). Charitou *et al.* (2004:481) further asserted that the medians of total liabilities to cash flow ratios (thus the inverse of the total repayment period) for a failed group of companies revealed a decreasing trend as the year of failure approached, whereas the medians of the healthy companies did not follow any specific pattern – the expectation is thus that the medians of the failed companies in this study, based on the total repayment period ratio, would increase as the companies neared their liquidation dates.

It should just be acknowledged that some studies noted that the total repayment period only became a particularly useful tool for the prediction of potential bankruptcy two to three years prior to the demise of a company (Blum, 1974:10). Before that, the application and analysis of the ratio was somewhat less successful.

For the 1998 to 2003 time period, the results hold little predictive value. It is interesting to note that the results for the struggling companies once more trail the successful companies by one year (a decrease in the ratio for the successful companies for 1999 is followed by a decrease for the struggling companies during 2000, an increase for the successful companies in 2000 is followed by a drastic increase for the struggling companies in 2001, and a levelling out for the successful companies in 2001, is copied by the struggling companies in 2002) and are also once again just far more widely dispersed than the results for the successful and failed companies.

For the 2013 to 2018 time period, the results for the successful and the struggling companies are in line with expectations. The results for the failed companies are stable, but much lower than would be projected. The results of the ratios over the six years (2013 to 2018) are as follows:

**Table 6-1: Total repayment term (total debt-to-operating cash flows) in number of years**

| <b>Total repayment term</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> | <b>2018</b> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Successful</i>           | 4.53        | 4.86        | 6.24        | 4.76        | 5.43        | 6.18        |
| <i>Struggling</i>           | 8.40        | 10.62       | 24.53       | 24.38       | 20.51       | 35.13       |
| <i>Failed</i>               | 2.94        | 4.72        | 6.51        | 7.40        | 4.24        | 4.50        |

(Source: Author compilation)

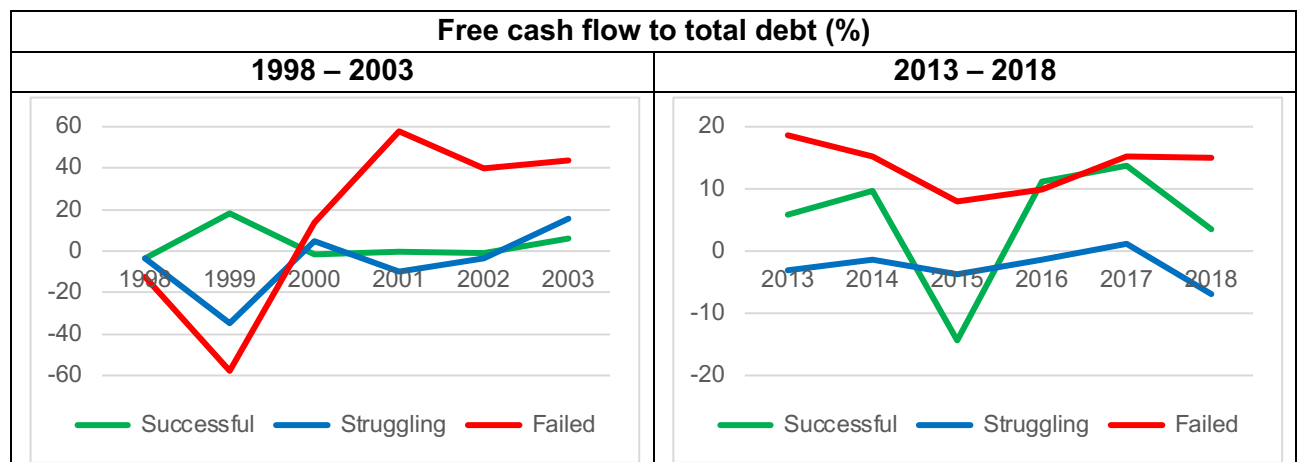
For the 2013 to 2018 time period, the successful companies maintained a fairly stable balance, despite the increase witnessed in the total debt in Graph 6.4 (*Total long- and short-term liabilities per annum*), which indicates that debt levels are being actively monitored and managed. The ratios for the successful companies also always fall within the four to seven year range, which is generally considered to be ideal. If the total repayment term falls below four years, analysts and shareholders reason that the capital structure of the company is not as effective as it potentially could be, as the company is failing to make use of sufficient debt to effect positive financial leverage and realise a resultant increase in shareholders' wealth. If the total repayment term is more than seven years, financiers would be hesitant to extend further debt financing to the company, as it would be unlikely that the company would be able to meet its debt obligations.

As can be seen from the table above, the failed companies achieved similar results to the successful companies, and only during 2003 achieved a ratio of less than four. Contrary to the results of previous studies, the total repayment term is therefore not able to discriminate effectively between successful and failed companies. If this is as a result of the unmatched nature of the sample selected for this study, it might be possible to postulate that it is not the level of indebtedness, or possibly even the level of operating cash flows generated, that serves as the best indicator of the likelihood of success or failure; instead it is the size of the company that is the determinator. This may also serve to explain why the struggling companies appeared to chase growth so intensely.

The results of the struggling companies are nearly textbook perfect in representing the total repayment term of companies heading towards imminent disaster. Not only do the ratios exceed – and substantially so – the four to seven year norm, the average ratio of the struggling companies also increases drastically as the term progresses. A ratio of 35, as achieved in 2018, means that it will take the companies, based on their current results and operations, 35 years to settle all of their debt obligations. Clearly, no financier would be willing to wait that long for repayment, and the risk of insolvency is therefore astronomical. Unless the struggling companies obtain a strong capital injection from their shareholders and are able to renegotiate their credit and loan terms as part of a business re-engineering or rescue process, the chances for survival are slim.

### 6.3.2.4 Free cash flow to debt

**Graph 6-26: Free cash flow to debt**



(Source: Author compilation)

The free cash flow to total debt ratio attempts to improve on the total repayment term by using free cash flows, instead of operating cash flows. Thus the cash flows used in the ratio make provision for the capital investments that the company may need to make in order to survive, to continue to operate, and even to expand or improve. This shows the cash, prior to dividend payments, that is available to pay interest or settle debts.

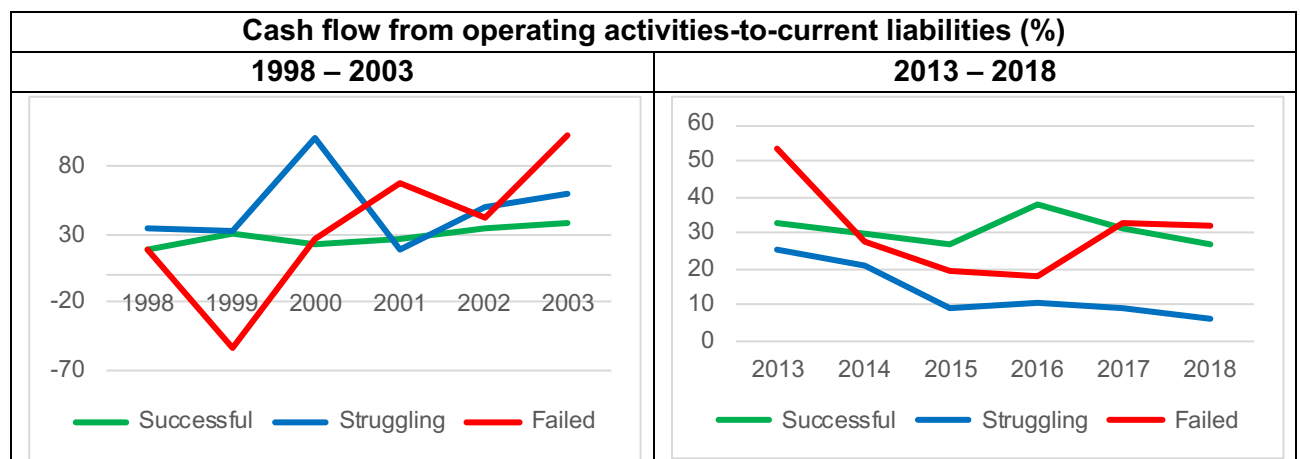
For the successful companies, the ratio is again mostly stable across the two time periods. However, a ratio of nearly zero (from 2000 to 2003) may be cause for concern, as it implies that the companies did not have any free cash flows available with which to repay debt, which could explain why the debt levels of the successful companies rose continuously throughout this period. For the 2013 to 2018 time period, the free cash flow of the successful companies is generally 10% – or even more – of total debt. If the free cash flow to debt ratio is inverted, it indicates a repayment term of approximately ten years for the successful companies. Given that this ratio is based on the free cash flows and not the operating cash flows, ten years is a reasonable term. The only anomaly is during 2015, when this study already noted from Graphs 6.7 (*Cash used for or resulting from operations and investment activities*) and 6.8 (*Cash generated by or used for the financial activities of a company*) that the successful companies acquired substantial new capital investments. The sudden decrease in the free cash flow to debt ratio for 2015 is therefore unlikely to be a cause for concern and, ignoring this outlier, the ratio appears to improve annually.

The low and even negative free cash flow to debt percentages of the struggling companies across both time periods are also to be expected. These trends correspond with the total payment periods provided in Section 6.3.2.3. The free cash flow to debt percentages in both periods are also lower than the percentages achieved by the successful companies, clearly indicating that the struggling companies were under-performing throughout both time periods.

However, again, the results of the failed companies are surprising. As these trends are based on twenty different companies (ten for each time period), it is apparent that the results are not isolated, once-off events, and despite the different sizes and industries within which these companies operated, they achieved higher free cash flow to debt ratios than the successful companies. Although the companies may have generated additional cash in their final years of operation due to the sale of assets as part of a liquidation process, this would not explain the positive results achieved from 2013 to 2015, or why the ratios are so much higher than those of the successful companies. If one can be certain that the data provided by IRESS are trustworthy, the results may indicate a heretofore unrealised and surprising phenomenon that definitely deserves further and more in-depth analysis in future studies.

### 6.3.2.5 Operating cash flow-to-current liabilities

**Graph 6-27: Operating cash flow-to-current liabilities**



(Source: Author compilation)

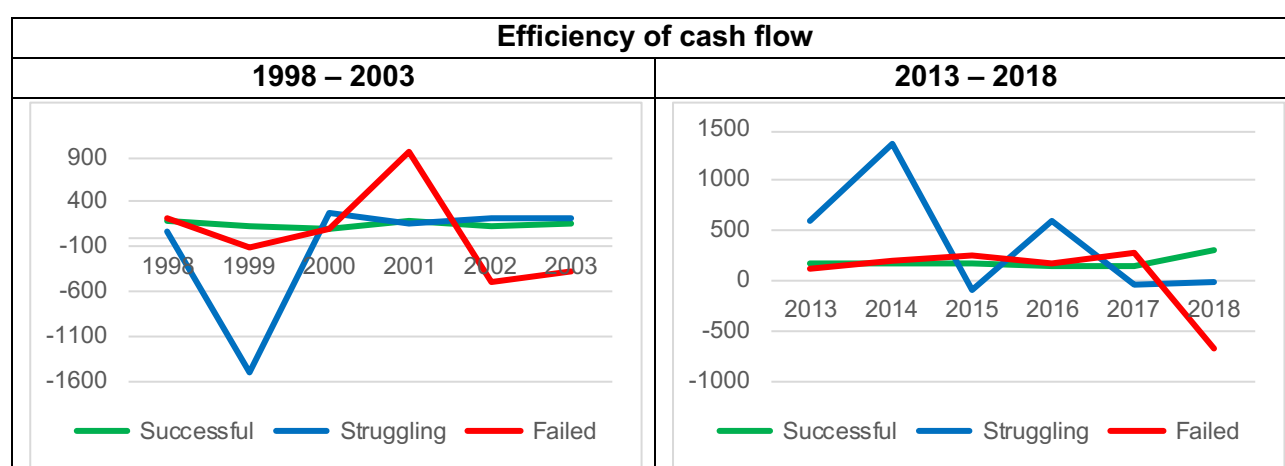
The cash flow from operations-to-current liabilities ratio measures the ability of a firm's cash flow to cover its short-term liabilities (Skae *et al.*, 2014:302; Mazouz *et al.*, 2012:71). Charitou *et al.* (2004:481) found that this ratio correctly classified two-thirds of observations and thus had a good univariate predictive ability.

The results of the 1998 to 2003 ratios are very widely dispersed, and therefore it would be difficult to build a decision-making rule on these results, except if the rule was that stability denotes success. The trend line for the successful companies is indeed very stable, although a ratio of approximately 30% is not particularly comforting. Even the successful companies would not be able to settle their short-term liabilities with the cash that they are able to generate through their normal annual operations. The companies are therefore dependent on the conversion of inventory and debtors into cash in the short term to be able to meet their obligations.

For the 2013 to 2018 results, the trend lines move in line with expectations. Whether this is the result of better financial planning, less debt being incurred, a focus on the reduction of current liabilities, or because financial standards have improved financial reporting, is not clear and would require further investigation, which falls outside the scope of this study. Suffice it to say that the ratio does seem to have some predictive power. The trend lines of the struggling and failed companies are indeed below the trend line of the successful companies – therefore they offer less coverage of the current liabilities with the cash that the companies are currently able to generate from their day-to-day operations - and are also decreasing over time. It would be worthwhile to test this ratio in more depth in further studies. The sudden increase in the trend line for the failed companies in 2017 is also expected, as the assets of the companies were most likely sold as part of a liquidation process.

#### 6.3.2.6 Efficiency of cash flow

**Graph 6-28: Efficiency of cash flow ratio**



(Source: Author compilation)



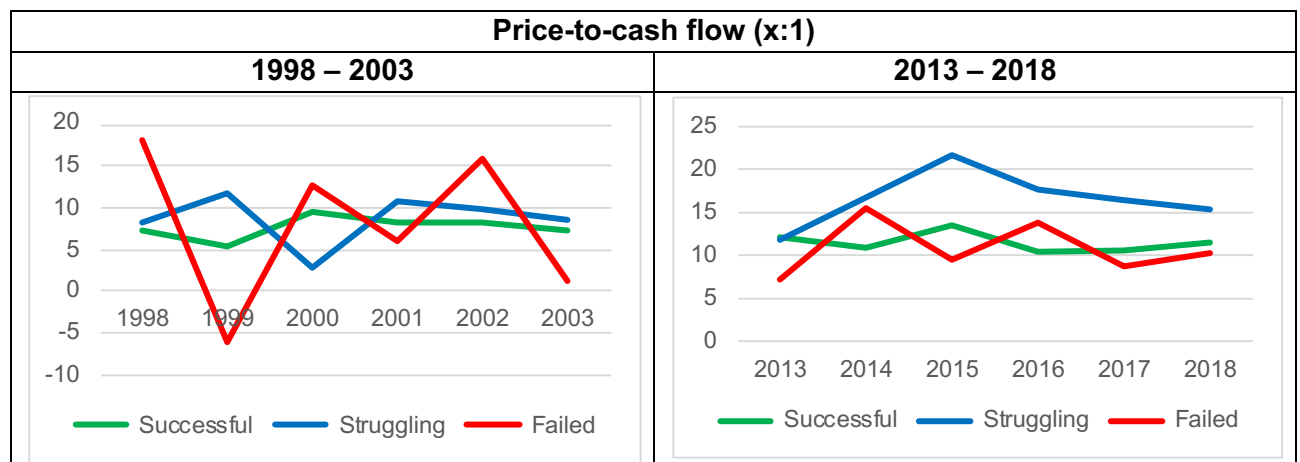
The efficiency of cash flow ratio expresses the operating cash flow of a company as a percentage of its earnings before interest and tax. It measures the 'quality of income' of a company by estimating how much of the company's earnings are converted to cash per annum, i.e. it indicates a company's success at converting its earnings into cash (Jooste, 2007:1).

All entities are only able to operate as viable going concerns if they generate positive cash flows over the long-term. If revenue is not efficiently converted into cash, the company will have no choice but to increase its financial risk by borrowing the cash that it needs to operate (Skae *et al.*, 2014:293). Of course, this increases the financial risk of the company and the possibility that it may run into financial distress (Skae *et al.*, 2014:284). Prinsloo and Rosenberg (2004:12) also found that in many instances where accounting scandals occurred, there had been a mismatch between the entity's earnings and its cash flows, and thus the efficiency of cash flow ratio may even act as an early warning signal of potential accounting manipulations.

The distinguishing factor that carries through in both time periods is the stability of the trend line for the successful companies. Although the line is not very high, it is always positive, and it is always constant. The trend lines for the failed and struggling companies again vary substantially in the 1998 to 2003 time period. As noted previously, the results of the successful and failed companies in the 2013 to 2018 time period are very similar, and thus do not allow the analyst to differentiate successfully between these two groups of companies. However the struggling companies once again display very volatile results, and one may therefore postulate that such extreme variability is an indicator of potential future financial distress.

### 6.3.2.7 Price-to-cash flow ratio

**Graph 6-29: Price-to-cash flow ratio**



(Source: Author compilation)

The price-to-cash flow ratio divides the total market capitalisation of an entity with the cash flow from its operations. It thus measures how much investors are willing to pay per rand of cash flow generated. Unfortunately, the only two reasonable conclusions that may be drawn from this particular ratio, as measured in this study, are that successful companies have fairly stable and sustained results; and that struggling and failed companies exhibit a lot of variance and volatility. Based on the close relation between the results for the failed and successful companies for the 2013 to 2018 time period, it is not possible to use this ratio to discriminate between companies that are likely to be sustainable and to succeed in future, and companies that are heading towards financial failure.

### 6.3.3 Liquidity ratios

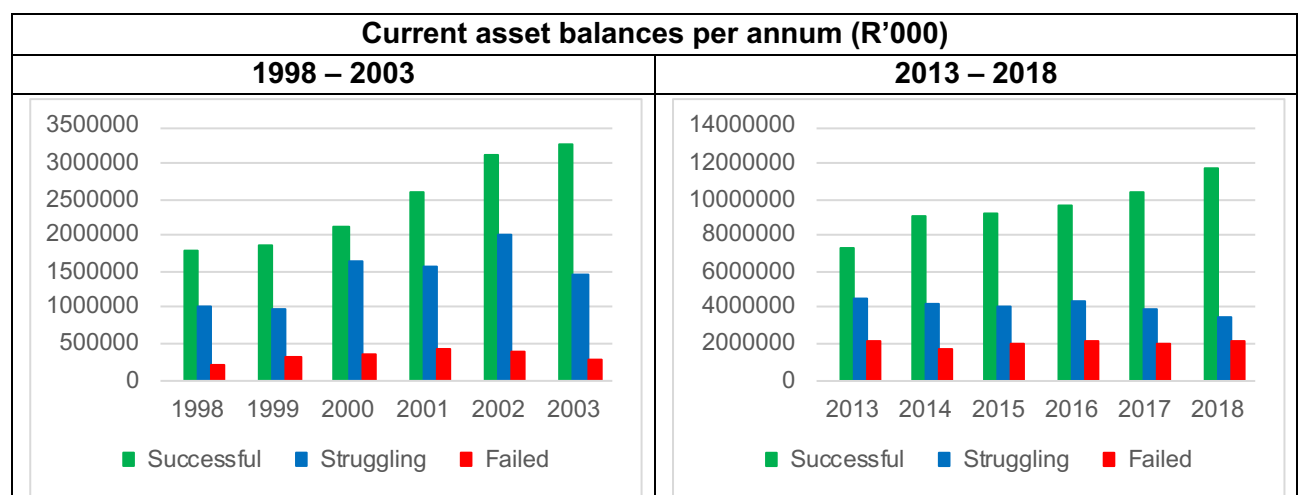
#### 6.3.3.1 Introduction

Liquidity ratios measure the company's ability to settle its short-term liabilities as they become due, without undue stress (Marx *et al.*, 2017:65; Besley *et al.*, 2015:36; Gitman & Zutter, 2014:64; Skae *et al.*, 2014:283; Firer, 2012:50; CIMA, 1993:361; Foster, 1986:61). Converting current assets (mostly inventory and accounts receivable) to cash is the primary means by which a company obtains the funds it needs to pay its current liabilities (Besley *et al.*, 2015:36; Skae *et al.*, 2014:286).

Thus, as the working capital of a company directly affects its short-term cash flows from the ordinary course of business, effective working capital management is closely linked to positive liquidity (Skae *et al.*, 2014:283). Any part of the current assets of a company that is not financed by its current liabilities will necessarily have to be funded by long-term debt or equity, which are respectively risky and expensive forms of financing (Marx *et al.*, 2017:72). The ability of a company to maintain its short-term debt-paying abilities is therefore important to all users of financial statements: if the company is not able to maintain its short-term debt-paying ability, it will also not be able to maintain its long-term debt-paying ability, nor will it be able to satisfy its shareholders (Gibson, 1995:178).

Poor working capital management and low and declining liquidity ratios are often seen as precursors to financial distress and bankruptcy (Gitman & Zutter, 2014:64; Becchetti & Sierra, 2003:2115).). Thus conversely positive working capital and reasonable working capital ratios are likely to indicate appropriate liquidity levels and the ability of a company to successfully avoid failure. Liquidity ratios are generally higher for successful than for failed firms (Becchetti & Sierra, 2003:2105).

**Graph 6-30: Current asset balances per annum**



(Source: Author compilation)

Current assets are assets that are in the form of cash, or that can be converted into cash in the short term, or that conserve the use of cash within the operating cycle of a business or for one year, whichever is longer (Gibson, 1995:178).

Although it is generally accepted, as noted before, that increasing working capital ratios imply improved liquidity, the analyst or user of financial statements should bear in mind that too much growth in current assets, or too little in current debts, is not ideal either. If inventory increases at a growth rate higher than sales, it may indicate that the company is continuing to produce inventory for which the demand in the market has fallen, or that economic conditions are curtailing consumer spending. The inventory may also be obsolete and difficult to sell. Similarly, increases in accounts receivable (or debtors) that are equally not matched by an increase in turnover, could mean that customers are not paying their accounts, which could lead to increased bad debts and irrecoverable accounts. Credit may have been granted too leniently, perhaps in an effort to drive sales, but unless the accounts are converted into cash, the actions have not been successful.

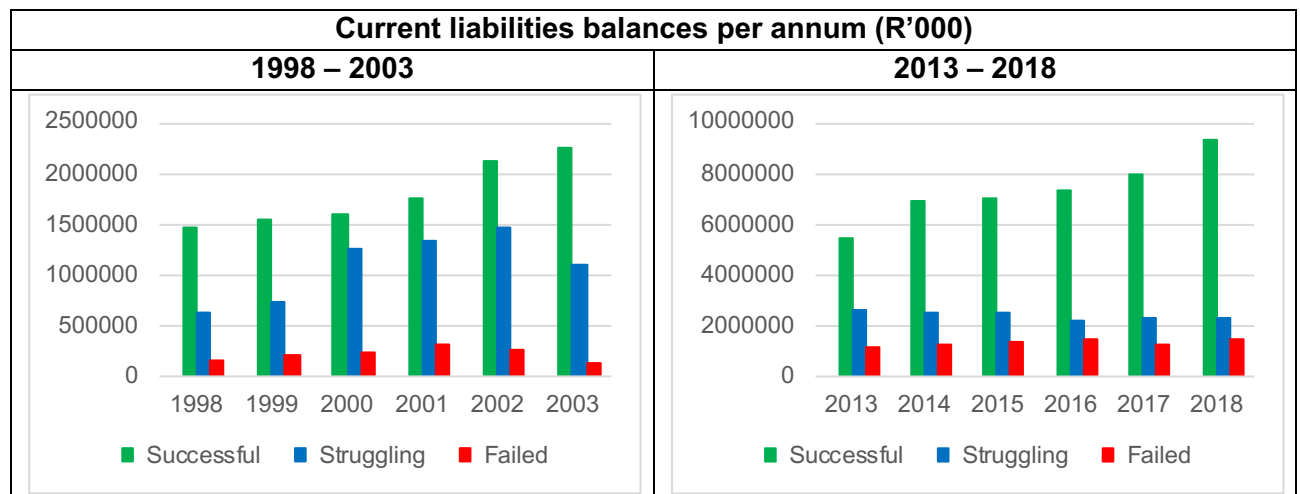
That said, increases in inventory and accounts receivable could also be due to increases in consumer confidence, expectations of higher future sales, or a deliberate attempt by the company to improve its liquidity, and thus any measures relating to current assets and current liabilities should be analysed carefully, and in conjunction with other financial ratios or historical trends.

The above graph indicates the amount invested in current assets by the companies selected for this study. It is clear from both time periods that the successful companies generally have higher levels of current assets (although, of course, size differences do need to be borne in mind), and that these investments are continuously growing, probably as the companies grow and expand organically.

The current assets of the failed companies are at much lower levels than those of the successful companies, which could be as a result of size differences (which again underlines that larger companies may tend to be more successful and able to weather storms), and also do not display any significant increases over the two respective time periods. In fact, the ratios are quite flat, indicating that the companies are not growing, expanding, or investing more in liquid assets.

The current asset balances of the struggling companies are again quite volatile in the 1998 to 2003 time period and can furthermore be seen to decline in the 2013 to 2018 period. It would therefore appear as though growth in current asset balances may be an indicator of liquidity and potentially of financial success. However, this ratio should not be judged in isolation; the current liabilities of the companies and their investments in fixed assets must be simultaneously investigated.

**Graph 6-31: Current liabilities balances per annum**



(Source: Author compilation)

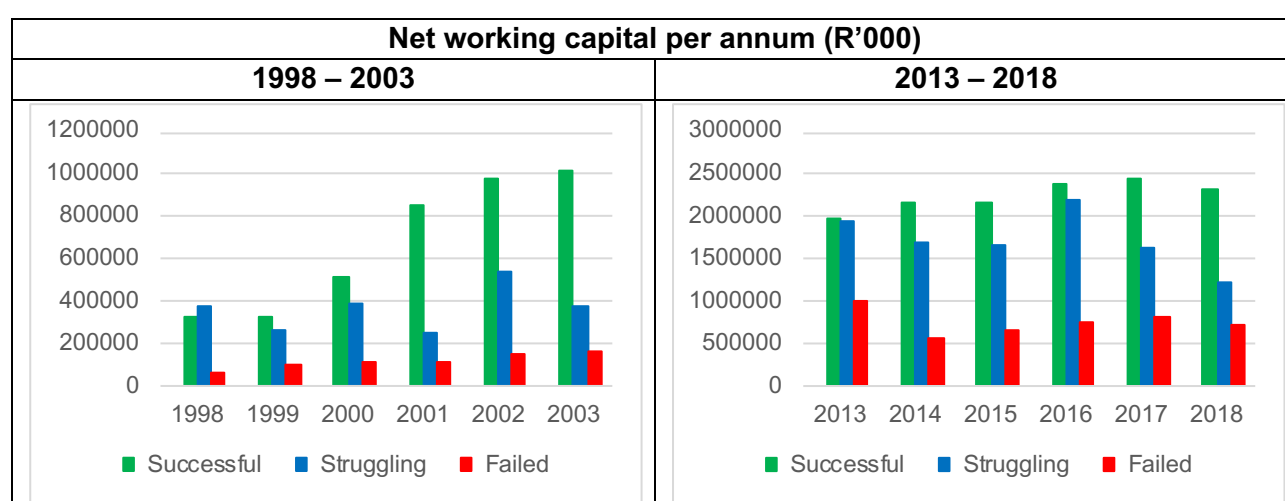
Increasing current liability balances are not necessarily indicative of financial problems. To avoid placing excessive reliance on long-term borrowings, companies should attempt to match their short-term and long-term financing. Although generally the expectation is that the current assets should exceed the current liabilities, this is not necessarily always true; it depends very much on the industry within which a company trades, as well as the company's relative size and negotiating power, which may allow it to obtain very favourable supplier credit terms.

As the sales of a company increase, the expectation is that inventory will increase as well (to match the higher demand for products), and consequently, accounts payable (creditors) should increase fairly spontaneously too (as more inventory is purchased). It is therefore important not to view any increases in current liabilities in isolation. These balances or growth rates need to be compared to the growth rates in current assets and turnover, as well as industry averages and norms, before judgement on the liquidity position of the company may be passed.

That said, it should also be acknowledged that companies that experience financial distress are likely to increasingly slow down the payments of their bills and accounts payable. Thus current liabilities will also increase, leading to a reduction in liquidity and worsening current ratios (Brigham *et al.*, 2019:77; Besley *et al.*, 2015:36). Furthermore, short-term debt is likely to carry high interest rates, as the debt is generally unsecured, and is riskier from a company point of view, as the company has less time within which to generate the funds it requires to settle the liability. Short-term liabilities should therefore be managed with circumspection.

The above graphs so closely mimic Graph 6.30 (*The current asset balances per annum*) that they deserve a second look. In all instances, the current liabilities follow a growth pattern remarkably similar to the growth achieved in current assets and yet, simultaneously, are lower than the total current assets for the companies in question. Technically, these represent nearly ideal liquidity ratios, which will be confirmed by an analysis of the current and acid test ratios. It does seem to underscore the previous supposition that it is neither the levels of indebtedness, nor the cash flows generated by the companies, that determine the likelihood of failure, but rather the sizes of the respective companies.

**Graph 6-32: Net working capital per annum**



(Source: Author compilation)

When the current liabilities are set off against the current assets, it is clear that the successful companies still maintain, for the most part, a growing net working capital balance over both time periods, although the increases for the 2013 to 2018 time period are less dramatic. The slight decrease in the net working capital balances in 2018 may be explained by the low economic growth and difficult operating environments in South Africa, which forced companies from 2016 to 2018 to focus on reducing their investments in working capital to adapt to lower levels of demand and to be able to continue generating positive cash flows (Correia, 2019:11-1).

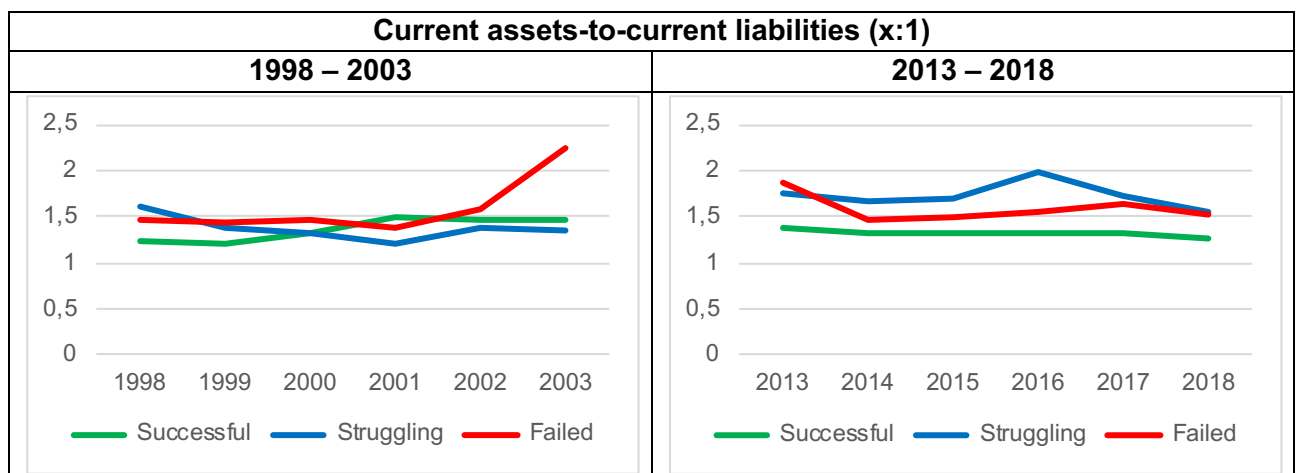
Successful companies should just guard against liquidity ratios that are too high, as such conditions may signify slack management practices, where managers are encouraged to *'take it easy, expand their perks, or empire-build'* with money that ought to be returned to the owners (i.e. shareholders) of the company (Johnson & Soenen, 2003:365–366).

As with previous ratios, the working capital balances of the failed companies are lower than for the successful companies, but the balances are still positive and growing, except for one significant decrease in 2014, and a slight dip in 2018. These ratios will also need to be analysed further, as this study cannot unreservedly state what the reasons for these movements are (e.g. obsolete stock versus operational growth for an increase in inventory), but an attempt to gain more insight will be made through the analysis of the current and acid test ratios presented hereafter.

Much in accordance with the expectations developed thus far, the net working capital balances for the struggling companies are erratic and do not seem to follow any discernible trend. There can be no doubt now that volatility in all ratios, including gearing, cash and liquidity ratios, are indicative of companies heading towards financial failure.

### 6.3.3.2 The current ratio

**Graph 6-33: The current ratio**



(Source: Author compilation)

The current ratio (also known as the current asset ratio) indicates the extent to which the claims of short-term creditors are covered by enough assets that can be converted into cash in the short-term (Brigham *et al.*, 2019:77; Correia, 2019:5-15; Gitman & Zutter, 2014:64; Skae *et al.*, 2014:298). This ratio is of particular interest to analysts and the suppliers of short-term financing, including trade creditors, as they would wish to know whether a company will be able to meet its maturing, short-term financing obligations (Correia, 2019:5-15; Skae *et al.*, 2014:298). Liquidity ratios, such as the current ratio, are potentially important indicators of potential financial distress,

and a current ratio of less than 2:1 or a declining current ratio, may well raise doubts about a company's liquidity and ability to continue as a going concern (Brigham *et al.*, 2019:77; Besley *et al.*, 2015:36; Firer, 2012:50; Collins, 2009:76; Platt & Platt, 2002:193; Bernstein, 1998:646; CIMA, 1993:369; Merwin, 1942:92). Although the generally accepted norm for the current ratio is 2:1, one again has to bear in mind that this ratio is industry-specific (Marx *et al.*, 2017:73; Firer, 2012:50), and large and successful retailers like PicknPay, for instance, have current asset ratios closer to 1:1. A higher current ratio usually indicates a greater deal of liquidity, but exactly how much liquidity a company needs depends on a wide variety of factors, including the company's size, its access to short-term financing sources like overdrafts and the volatility of its business (Gitman & Zutter, 2014:64; Platt & Platt, 2002:196).

There are three cautionary notes that need to be heeded in an analysis of current ratios:

- As stated above in Section 6.3.3.1, a company with a high current ratio is not necessarily in a good position. Although a high liquidity ratio is generally preferred, it may also indicate that a company has over-invested in debtors, inventory, or even cash (Marx *et al.*, 2017:73). Holding too much cash would reduce profitability and shareholders' wealth, as cash does not earn a high level of return. It also makes a company a potential target for a company that requires cash. Thus a high current ratio could either reflect excellent liquidity, or an inefficient use of cash and other short-term assets (Skae *et al.*, 2014:299; Firer, 2012:50).
- Current assets and liabilities can – and do – change fairly rapidly, and consequently the results achieved in one year may not be a reliable guide of what is to be expected in future (Firer, 2012:50). This lessens the current ratio's ability to predict future financial distress.
- Liquidity ratios can be manipulated relatively easily. As the management of companies are aware that liquidity ratios are frequently used by suppliers of external financing to assess companies' ability to meet their short-term debts, they may be incentivised to misrepresent the companies' current conditions. This again lessens the reliability of current and acid test ratios in the prediction of potential financial distress and failure (Wilcox, 1971:389–390).

The trend lines for both the 1998 to 2003 and 2013 to 2018 time periods are quite stable and show very little variation. The averages for the current ratios of all six sets of companies across the two time periods are approximately 1.5:1. Although these ratios are below the 2:1 norm, the results are not necessarily a cause for concern, as the ratios are industry specific. As both manufacturing companies, for which the 2:1 ratio may more likely apply, and service companies,

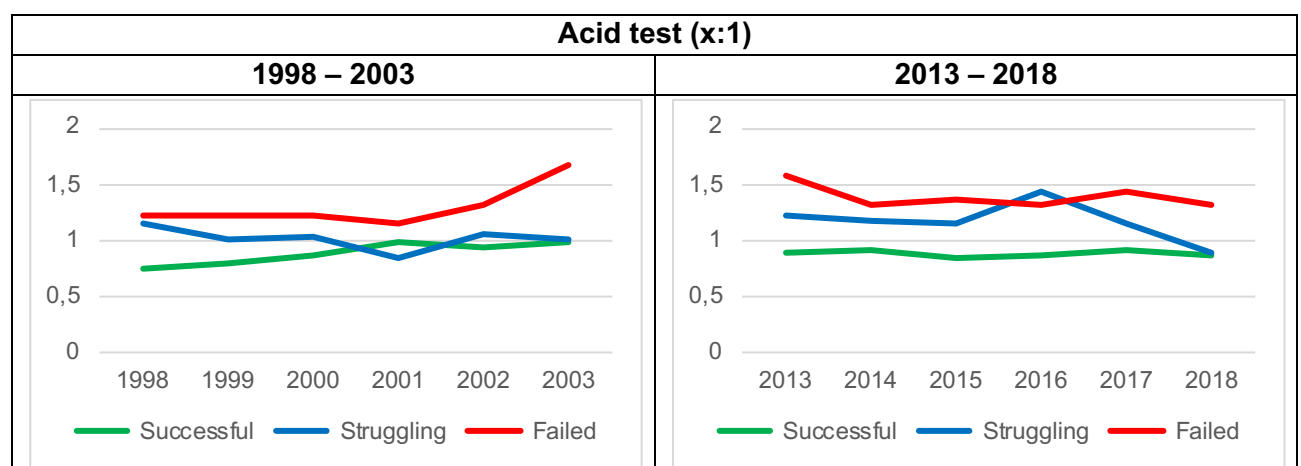


which would not be expected to hold much inventory and which would therefore have far lower current ratios, were included in this study, the results are in line with expectations.

It was also noted in Section 6.3.3.1 that the successful companies matched their current assets very closely to their current liabilities, and so we would not necessarily expect a 2:1 ratio to be upheld. However, it is again surprising that both the struggling companies and the failed companies perform better in terms of this liquidity ratio, i.e. by exhibiting higher current asset ratios than the successful companies. This may again be because the struggling companies and the failed companies have less access to financing than the successful companies, who therefore may be inclined to use more short-term liabilities, which are generally less expensive and more flexible than long-term forms of financing, to fund their current assets. Unfortunately, although the ratios are stable, they therefore do not allow us to discriminate adequately between successful and failed companies.

### 6.3.3.3 The acid test

**Graph 6-34: The acid test (or quick ratio)**



(Source: Author compilation)

The acid test, also known as the quick ratio, indicates whether a company's short-term liabilities may be settled with short-term assets that are either cash, or that may be converted into cash quickly and without too much loss in value (Brigham *et al.*, 2019:78; Besley *et al.*, 2015:36). Inventory balances, which may include obsolete or damaged stock items, and which are hardest to convert to cash quickly, are thus eliminated from the equation (Firer, 2012:51). The norm for the acid test, although this is again very much dependent on the industry within which a company operates, is 1:1 (Correia, 2019:5-16; Marx *et al.*, 2017:74; Gitman & Zutter, 2014:65; Skae *et al.*,

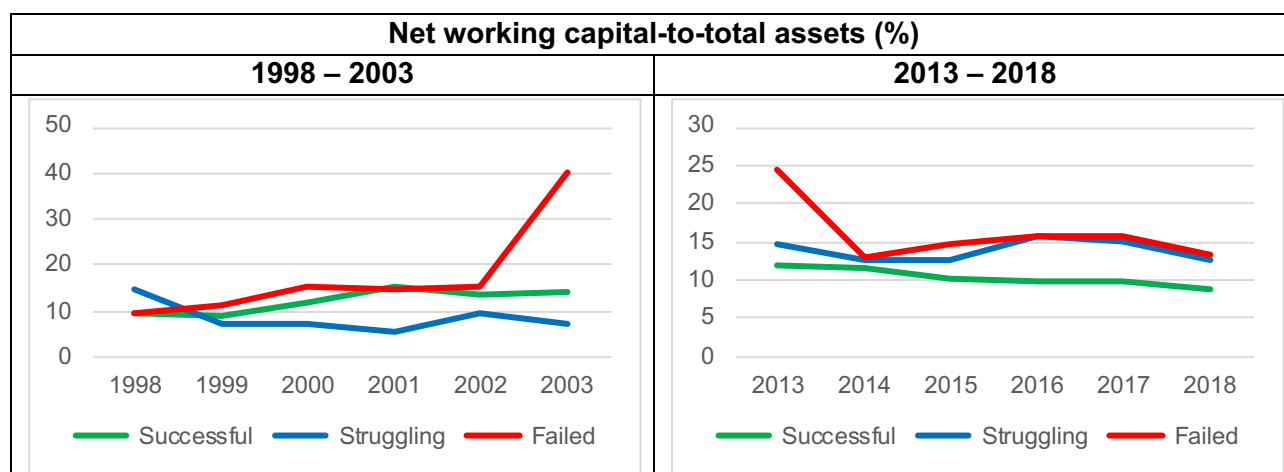
2014:299; Firer, 2012:50). The ratio is negatively correlated to the potential for financial distress and therefore a ratio below 1:1, or a decreasing ratio, could be cause for concern (Hajdu & Virág, 2001:36; CIMA, 1993:369; Blum, 1974:10).

Particularly large levels of inventories could even be a sign of financial trouble, although it may be temporary, as a firm could have overestimated sales and consequently either purchased or else produced too much inventory. In such a case, a firm would have too much of its cash invested in a relatively slow-moving asset (Firer, 2012:51). To exclude the effects of an over-investment in inventory, the quick ratio divides the sum of cash and accounts receivable (and other short-term assets) with the current liabilities of the company.

The results of the acid test ratios are very much in line with the results of the current ratios for all three sets of companies across both time periods. Once again, the average values yield fairly stable trend lines that are quite close to the norm of 1:1. It may therefore be said that the companies that form part of this study, should all have been able to meet short-term debts with the liquid short-term assets at the companies' disposal. Interestingly, the failed and struggling companies once more outperform the successful companies according to the traditional definition of the acid test. Because the same pattern is witnessed across both time periods, where the failed companies' acid test ratios exceed the acid test ratios of both the struggling and successful companies, and do so very nearly without exception, it may be postulated that, in a South African context, the inverse of the acid test should apply when predicting potential financial distress. However, this rather subversive claim would have to be tested far more rigorously on a far larger sample before a definitive conclusion could be put forward. For now, it may be necessary to conclude that this ratio is also not noticeably useful for the discrimination between successful and failed or struggling companies.

### 6.3.3.4 Net working capital-to-total assets

**Graph 6-35: Net working capital as a percentage of total assets**



(Source: Author compilation)

The net working capital to total assets ratio measures the percentage of total assets that is made up of net liquid assets. A low ratio could be an indicator of low liquidity levels, and a decline in the ratio may be indicative of a company experiencing operating losses (Mazouz *et al.*, 2012:70). Sustained operating losses generally lead to financial distress. Several past studies have concluded that the net working capital to total assets ratio is a reliable indicator of the possibility of business failure (Hajdu & Virág, 2001:36; Bernstein, 1998:646; Merwin, 1942:92 & 99). Merwin (1942:99) contends that the net working capital to total assets ratio provides the most definite indications of ultimate discontinuance of all of the available financial ratios, and notes that, in each industry, its downward movement was sharp and virtually uninterrupted.

The sample for this study was also drawn across a variety of industries in South Africa. Nonetheless, the movement in the ratio as it relates to the failed companies is definitely not a sharp decline. In fact, for the most part, the trend line for the failed companies across both time periods is again higher – albeit not by much – than the trend lines of the struggling and the successful companies. The trend lines for the struggling and the successful companies also trade places between the two respective time periods and, consequently, the net working capital to total assets ratio will also not fulfil the goal of this study, i.e. to find one, or a few, financial ratios, that across different sizes and industries, may reliably be able to distinguish between successful and failed companies.

### 6.3.4 Profitability ratios

#### 6.3.4.1 Introduction

The profitability ratios consider the return (or earnings) that is generated for ordinary shareholders, a company's ability to control its expenses, and management's effectiveness in utilising assets to generate an acceptable return (Marx *et al.*, 2017:69; Skae *et al.*, 2014:283; Graves & Waddock, 2000:401–402; Gibson, 1995:295). Profits, and especially increasing profits, are considered by many to be the most important measure of a company's performance (Kelly & O'Conner, 1997:28; Gibson, 1995:295).

Profit is the base from which dividends are paid to ordinary and preference shareholders, and from which cash is generated so that debt obligations may be met. According to Bernstein (1998:597–598) and Kelly and O'Conner (1997:28), earnings and earning power, which also implies the recurring ability of an entity to generate cash from its daily operations, are some of the most important and reliable indicators of financial strength and company performance available. Increasing levels of profit should also give rise to an increase in the market prices of shares (particularly if the risk levels of the company do not also increase), which leads to capital gains for the shareholders (Gibson, 1995:295). Capital gains and dividends together make up the shareholders' return.

Unfortunately, as noted before, a company's profit may be manipulated by an unscrupulous management team. One year's profit could, for instance, be increased by reducing expenditure like marketing fees, research and development expenses, and depreciation (by not investing in replacement plant and equipment). Although the strategy will be successful over the short term, it will eventually lead to the company producing poorer quality products, not being able to keep up with technology, losing brand recognition, experiencing more production delays, and losing its competitive advantage (Correia, 2019:1-10). Consequently, CIMA (1993:475) states that, *'it can be argued, with justification, that the profit figure does not always give a useful picture of a company's operations'*. The analyst should bear this, and the numerous accounting scandals that have clouded recent corporate history, in mind, when using profitability figures and ratios for failure prediction purposes.

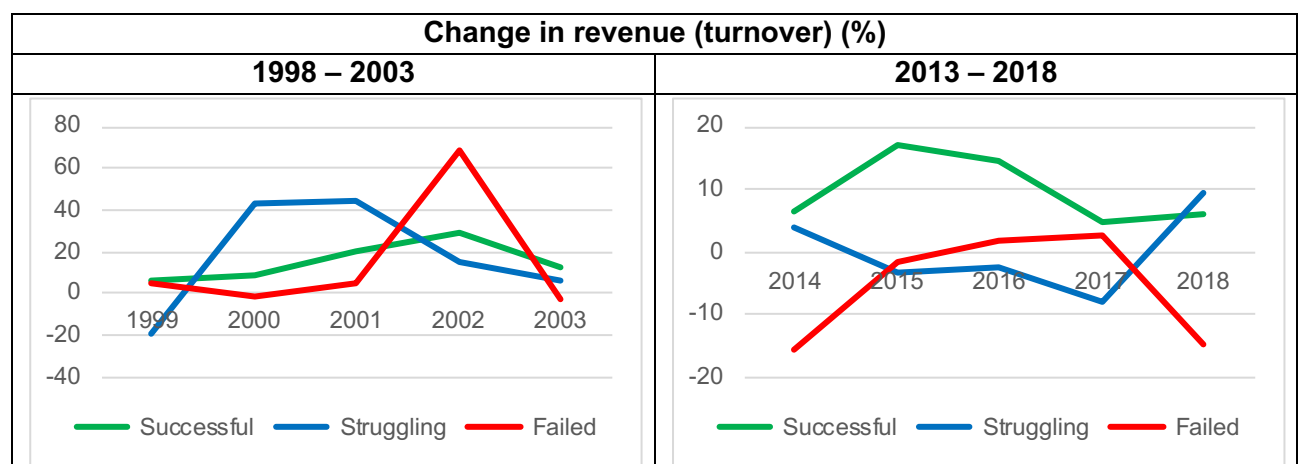
Nonetheless, numerous researchers still consider the profitability ratios valuable, despite the uncertainties involved in calculating these figures, and ascribe high overall classification to the profitability ratios (Charitou *et al.*, 2004:481; Kelly & O'Conner, 1997:28). As always though, when profitability ratios are calculated, they should not be viewed in isolation as they only truly gain

meaning when they are compared to the company's past history, the industry within which it operates, the results of its direct competitors, and the budgets it might have set for itself (Skae *et al.*, 2014:283). Profit figures also contain more information when they are compared to productive assets, the owners' and debt suppliers' capital employed, and the sales from which the earnings are residual (Gibson, 1995:295). As profitability is the result of a vast array of decisions, including regarding policies and strategy, profitability ratios will show the combined effect of liquidity, asset management, and debt management on a company's operating results (Correia, 2019:5-21).

Although accounting profit figures may not always be fully trustworthy, it must also be acknowledged that a company that does not generate sustained and sustainable profits is likely to fail eventually (Marx *et al.*, 2017:69; Collins, 2009:76; Becchetti & Sierra, 2003:2115). Most companies would be able to absorb a year or two of losses, which may, for instance, have occurred due to very high depreciation write-offs, but over the long-term, as noted above, profit forms the base from which cash is derived and success is achieved (Berstein, 1998:622).

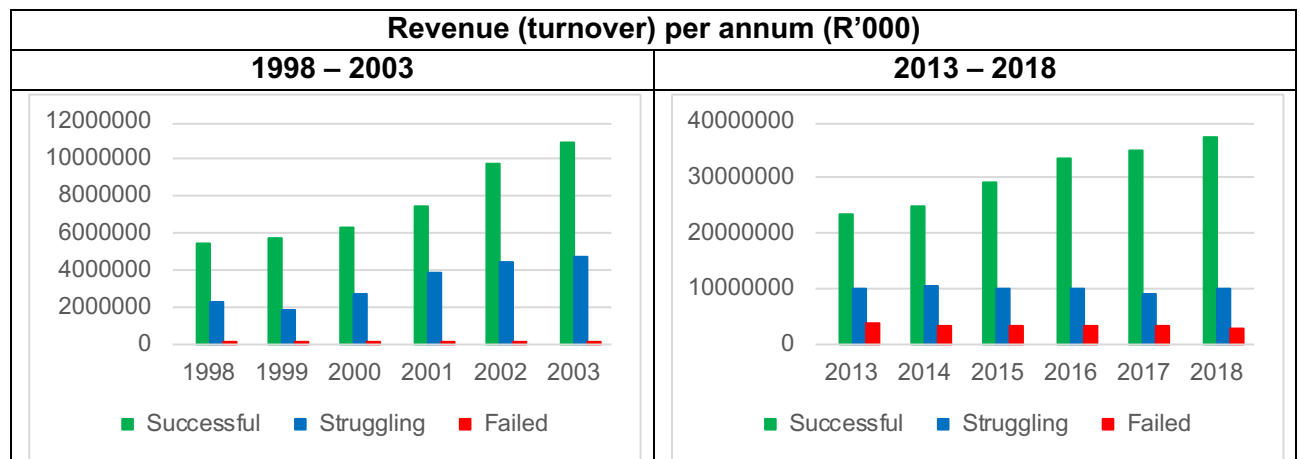
#### 6.3.4.2 Percentage change in net income

**Graph 6-36: Percentage change in revenue**



(Source: Author compilation)

**Graph 6-37: Revenue per annum**



(Source: Author compilation)

The percentage change in revenue graphs have to be interpreted with care. A lower growth rate does not mean that a company is not growing any more – it simply means that the rate of growth has slowed down. A company may be delivering maturing products, or a market may become saturated. Although a new strategy may be required to re-energise a company, it does not mean that the company is struggling, failing, or even performing poorly. It is therefore useful to consider the revenue (or turnover) of the companies in the sample for this study at the same time as the growth ratios.

It is evident from the graphs for both 1998 to 2003 and 2013 to 2018 that successful companies continue to grow and generally do so at a rate in excess of the inflation rate. Companies have to grow at a rate higher than inflation to achieve real growth and to prevent a loss of market share (Skae *et al.*, 2014:292). Sustained growth is generally considered to be a sign of success (Correia, 2019:5-44), and that certainly seems to be the case for the companies in this study.

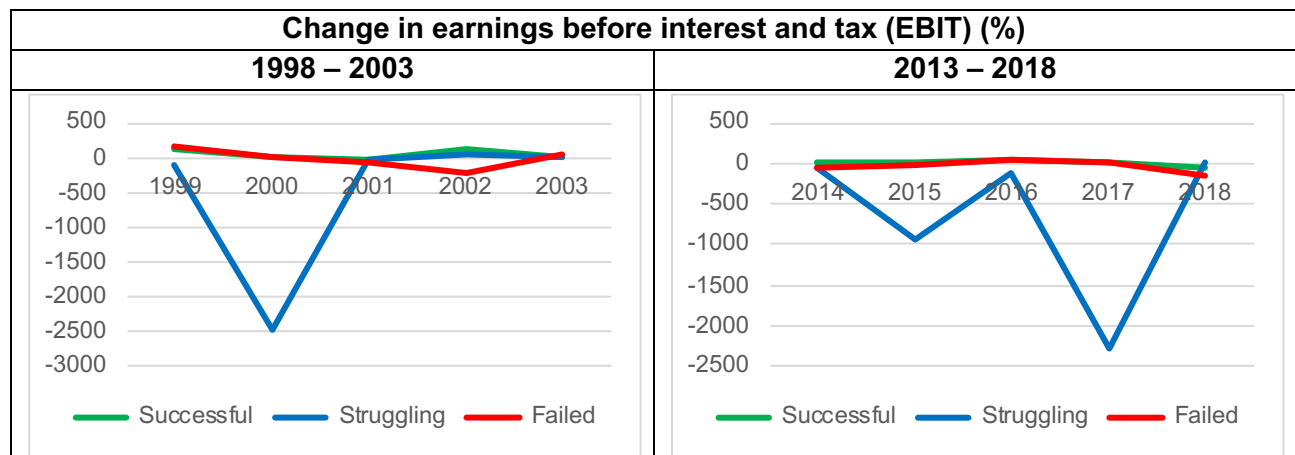
As always, the struggling companies are more volatile in terms of the rate of change ratios and trend lines. However, it is necessary to take cognisance of the fact that these trend lines can be misleading – as explained above – and if the revenue per annum is considered, it is clear that the struggling companies from 1998 to 2003 managed to achieve growth, although it was at a lower rate than the successful companies. The growth achieved was nonetheless far higher than the failed companies, in some instances even exceeding 40%. Such extreme growth may, however, not be a positive sign, as excessive growth could be an indication of overtrading, which often leads to bankruptcy or a takeover (Correia, 2019:5-44). The suggestion has been put forward

previously that this may be what has caused the erratic behaviour in the struggling companies' other trend lines as well, and therefore the growth in revenue seems to support this supposition.

Another question that needs to be asked in relation to the high growth rates is whether the companies were able to extend the high growth in revenue to high growth rates in earnings before interest and tax (i.e. operating profit) as well. A growth in turnover is meaningless if the growth in cost of sales or operating costs exceeds it. In the 2013 to 2018 revenue per annum graph, the struggling companies' revenues were fairly stable until 2017, when growth turned negative – these companies were therefore not necessarily unsuccessful in being able to survive (they managed to continue generating revenue), but they were unsuccessful in their attempts to thrive, as they did not manage to grow, keep up with inflation, or gain any market share.

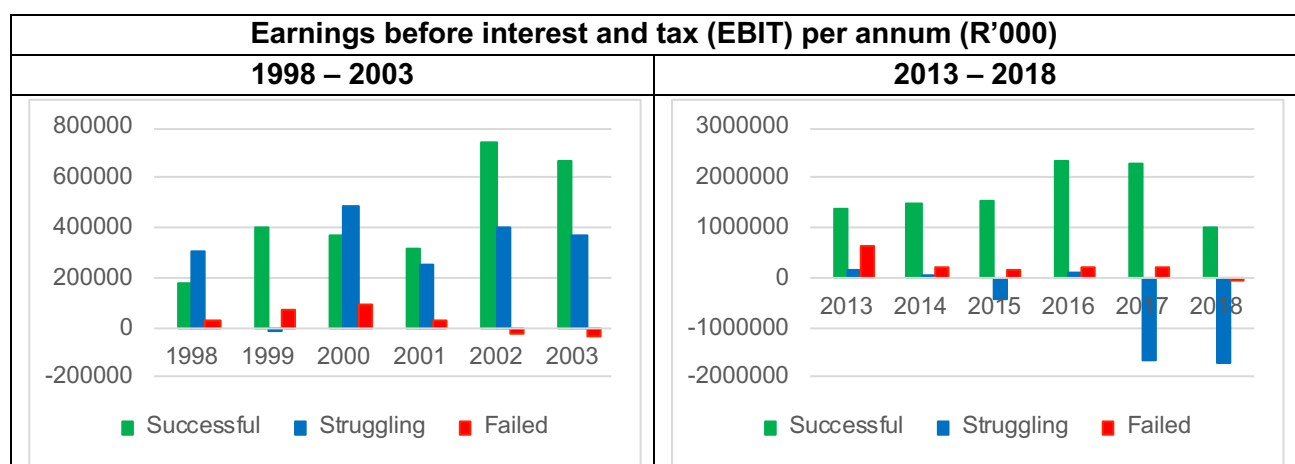
As can be seen from Graph 6.35 (*Percentage change in revenue*), the failed companies had much lower growth rates than the successful companies, with the only exception being in 2002, when there was a very sharp increase. This may be as a result of assets that were sold prior to liquidation – it depends on how revenue was defined according to the previous generally accepted accounting practices – usually the sale of an asset would not be included in turnover as it would be considered an extraordinary item. It seems to be that the more likely explanation here, however, as a sudden increase in sales for companies that may already have been publicly heading towards failure is unlikely. The growth rates for 2013 to 2018 for the failed companies are also very low, being just above zero and lower than the inflation rate, which shows that the companies were slowing down and losing market share. The fact that the growth rates also dipped below zero, shows that in some years the companies even suffered negative growth. These trend lines very much conform with the expectation of no or low growth for failed companies.

**Graph 6-38: Percentage change in earnings before interest and taxation**



(Source: Author compilation)

**Graph 6-39: Earnings before interest and tax per annum**



(Source: Author compilation)

Ohlson (1980) found the percentage change in earnings variable to be significant in failure prediction (Beaver *et al.*, 2010:119). A company with highly volatile earnings is seen as a risk for both investors and lenders – uncertainty and doubt make it harder to project the future and gauge a company's ability to meet debt obligations and generate a suitable return for investors. Earnings volatility is affected, perhaps even exacerbated, by general economic conditions, high fixed costs, competitive pressures, and operating inefficiencies (Johnson & Soenen, 2003:366).

Although the earnings for all of the companies in the sample tend to fluctuate, the earnings before interest and tax or operating profit of the successful companies were at least always positive and

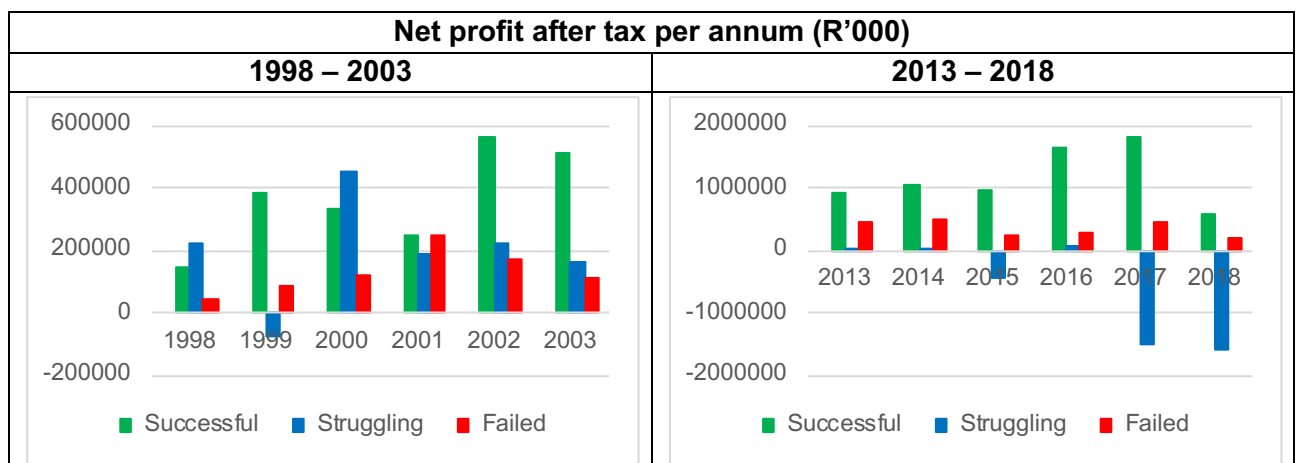


in general seemed to be increasing over the long term (despite some short-term volatility). The same cannot be said for the failed companies that in the 1998 to 2003 time period clearly suffered losses in their final years of operations – this also conforms with the expectation that companies that are heading into decline will be unable to generate sufficient revenue to cover operating costs, especially where the fixed costs of production are high.

The struggling companies in the 2013 to 2018 time period also suffered losses, in fact no less than three times in the six-year time period, and particularly in the two final years of the analysis. Thus an inability to control operating costs is clearly a leading indicator for failure – in fact, an inability to effectively manage operating costs is very often stipulated as a particular characteristic of overtrading, which may explain why the struggling companies exhibited such erratic changes in earnings percentages. It may thus be asserted that negative change in revenue or income and change in earnings figures and trends are clear indicators of financial distress, and that this assertion holds true across industries and over time – therefore, these ratios are useful for failure prediction.

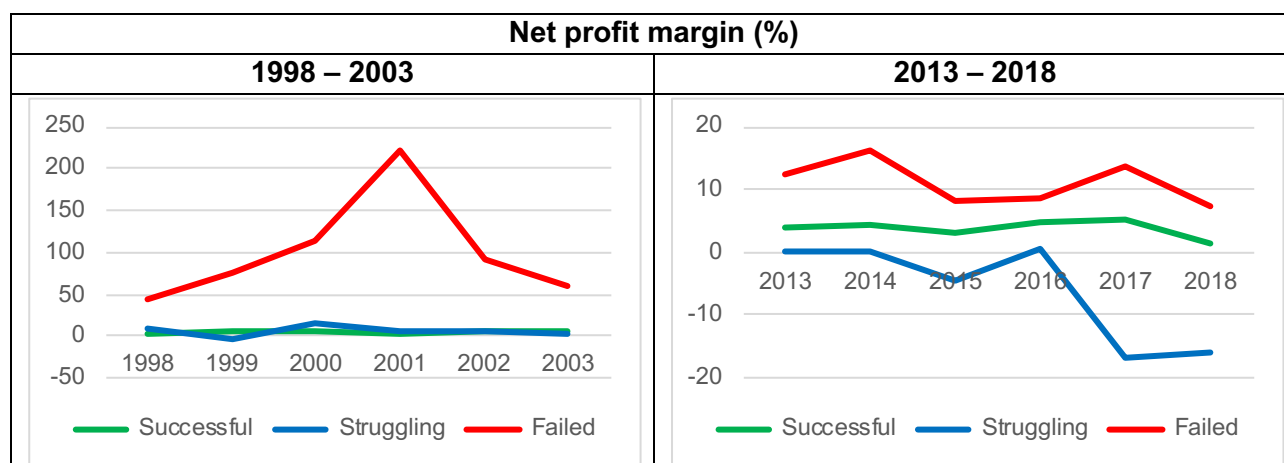
#### 6.3.4.3 Net profit margin

**Graph 6-40: Net profit after tax (NPAT) per annum**



(Source: Author compilation)

**Graph 6-41: Net profit margin**



(Source: Author compilation)

**Table 6-2: Average net profit margin for 1998 to 2003**

| Net profit margin (%) | 1998  | 1999  | 2000   | 2001   | 2002  | 2003  |
|-----------------------|-------|-------|--------|--------|-------|-------|
| Successful            | 2.60  | 6.58  | 5.22   | 3.25   | 5.75  | 4.70  |
| Struggling            | 9.52  | -4.19 | 16.89  | 4.75   | 5.04  | 3.48  |
| Failed                | 42.76 | 75.80 | 113.70 | 220.80 | 91.67 | 60.64 |

(Source: Author compilation)

**Table 6-3: Average net profit margin for 2013 to 2018**

| Net profit margin (%) | 2013  | 2014  | 2015  | 2016 | 2017   | 2018   |
|-----------------------|-------|-------|-------|------|--------|--------|
| Successful            | 3.95  | 4.24  | 3.31  | 4.88 | 5.13   | 1.49   |
| Struggling            | 0.25  | 0.17  | -4.36 | 0.57 | -16.58 | -16.12 |
| Failed                | 12.40 | 16.01 | 7.97  | 8.39 | 13.61  | 7.34   |

(Source: Author compilation)

The relationship of net profit after taxes to sales, i.e. the net profit margin, indicates the ability of a company's management to operate the business with sufficient success, not only to recover the cost of the goods sold or the services rendered, the expenses of operating the business (including

depreciation), and the cost of borrowed funds, but also to leave a margin of reasonable compensation to the owners for putting their capital at risk (Helfert, 1994:78).

Several studies have found that profitability ratios, particularly the net profit margin, are useful in failure prediction (Collins, 2009:76; Charitou *et al.*, 2004:481; Bernstein, 1998:646). Graves and Waddock (2000:401–402) state that financial performance is a measure of how a company ‘treats’ its shareholders and that visionary companies treat their owners exceptionally well by delivering net profit margins on average 2.79 percentage points higher than those companies that are ‘not built to last’. Growth in profitability is also considered an important part of financial success (Correia, 2019:5-44), and Marx *et al.* (2017:70) state that *‘the higher the net profit margin, the better’*.

However, there are also many authors who question the usefulness and even the veracity of net profit amounts and net profit margins. Becchetti and Sierra (2003:2115) note that the current profit or loss to sales ratio was only useful for failure prediction in a single year of their study. Skae *et al.* (2014:295) consider the net profit margin a poor financial indicator, as different entities apply different accounting policies, which makes it difficult to compare companies’ results to each other. Yu (1971:56) believes that the net profit figure is oversimplified, and that it is far from conclusive in helping analysts and shareholders to understand the business practices and conduct of companies. He writes, *‘A going concern is such a complex organisation that its motivation and behaviour simply cannot be totally understood by looking at one single figure’*.

The net profit after tax figures of the selected companies again show considerable volatility. The successful companies have results that fluctuate without any seeming regularity in the 1998 to 2003 time period. However, in the 2013 to 2018 time period, the successful companies do exhibit an increasing trend in net profits, except for the single anomaly of 2018. As the South African economy suffered severe setbacks during this period, the result is perhaps not unexpected, although it is disappointing. However, when compared with the low profits of the failed companies and the losses incurred by the struggling companies, the successful companies still performed better than their competitors.

The net profit margins for the successful companies during the 1998 to 2003 time period roughly averaged 4.68%, which again indicates that the successful companies were able to deliver results in excess of the official South African inflation rate – the struggling and failed companies were not able to achieve similar results. Of course, the higher the net profit margin, the more profit is available to the ordinary shareholders. The margins were lower during the 2013 to 2018 time

period, but if the 2018 outlier is ignored, the average over the first five years was still 4.30%. Based on the decline of the average net profit margin from the first to the second time period, and the low net profit margin in 2018, it would seem as though even successful companies are beginning to struggle to succeed in a floundering South African economy, and this does not bode well for the country in future.

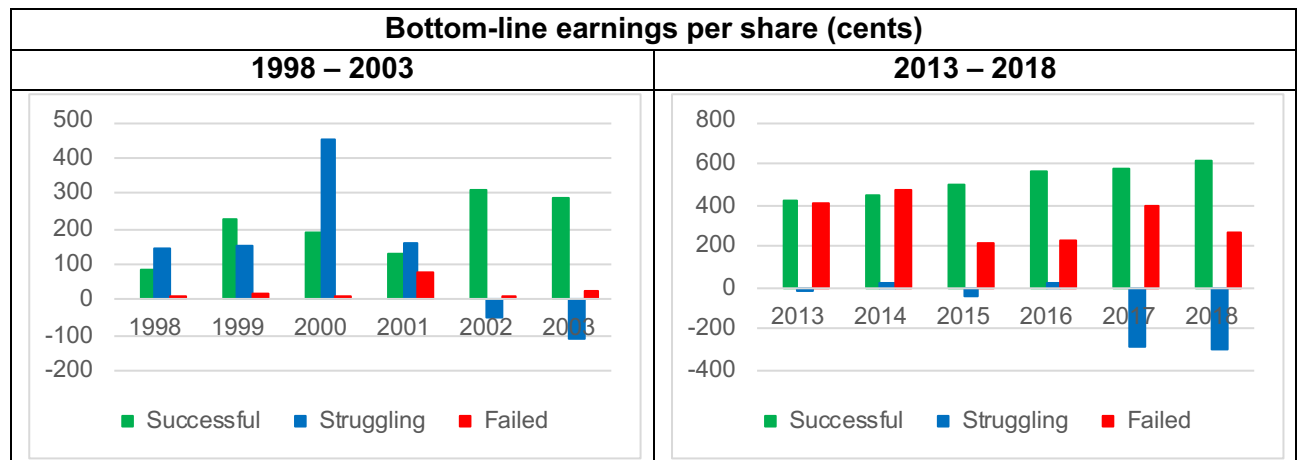
The struggling companies deliver very volatile net profit margins. During the 1998 to 2003 time period, losses as low as -4.19% of sales were recorded for 1999, with profit margins as high as 16.89% realised just one year later. During the 2013 to 2018 time period, the struggling companies were not able to deliver net profits, with significant losses recorded for 2015, 2017 and 2018 instead. These frequent losses do cast doubt on the companies' ability to continue as going concerns in future.

The results of the failed companies are puzzling. Very high net profit margins are recorded for nearly all of the periods under review. Although one might reason that in the year or two prior to failure, this is as a result of once-off or abnormal items, e.g. profits realised on assets or subsidiaries sold (perhaps as part of a restructuring effort, or in an attempt to raise much-needed cash flows), the consistency of the high net profit margins cast doubt on the veracity and reliability of the underlying data provided by IRESS. The only other logical explanation may be that these figures present very low profits, but as they are measured against exceptionally low revenues, the margins are high. The decreases in the net profit after tax figures from 2001 to 2003 and from 2017 to 2018 are in line with expectations.

Given the above graphs and financial results, this study has to conclude, as did Skae *et al.* (2014:295), Becchetti and Sierra (2003:2115) and Yu (1971:56), that, except for the very last year of analysis, the net profit margin does not provide information that is useful in failure prediction or for distinguishing between successful and failed companies.

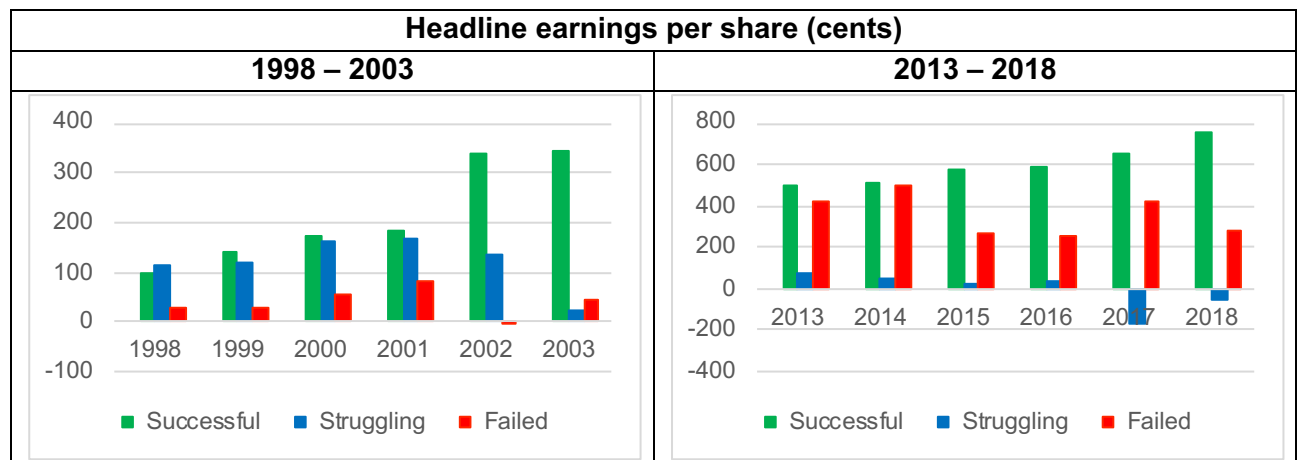
#### 6.3.4.4 Earnings per share

**Graph 6-42: Fully diluted earnings per share**



(Source: Author compilation)

**Graph 6-43: Headline earnings per share**



(Source: Author compilation)

Earnings per share indicate the profit available for distribution or generated on behalf of each issued ordinary share (Marx *et al.*, 2017:78; Gitman & Zutter, 2014:72; Skae *et al.*, 2014:295). Earnings per share, and any changes to this measure, are often used as a basis for valuations, to track the performance of a company, as a goal for companies to achieve, and as an indicator of a company's ability to meet its debt obligations (Berstein, 1998:597–598 & 622; Helfert, 1994:92). Nonetheless, earnings per share are based on historical information, and therefore may not accurately reflect a company's future expectations (Roos, 2005:18).

Both the bottom-line and the headline earnings per share are presented here. The bottom-line earnings per share is based on the actual net profit generated by a company, including once-off and abnormal items. The headline earnings per share exclude exceptional items such as write-offs, profits or losses realised with the sale of assets or the termination of divisions, products, or related businesses, and thus deliver a better representation of what the core activities of a company operating at its usual capacity level, may generate. Although the headline earnings per share is considered a less volatile measure of earnings than bottom-line earnings, it is necessary to bear in mind that headline earnings may also be manipulated, as a company or analyst will be able to choose or apply judgement regarding which amounts to include or exclude from the headline earnings, and the management of a company would especially be more likely to exclude losses than profits.

For both the 1998 to 2003 and 2013 to 2018 periods, once the volatility has been removed, the headline earnings per share of the successful companies can be seen to increase continuously, if not at a steady pace. The results are also slightly higher than those of the struggling companies in 1998 to 2003, and considerably higher than the results achieved by the struggling companies in the 2013 to 2018 time period, as well as the earnings per share delivered by the failed companies in both periods, especially in the last three years of analysis of each respective time period.

The headline earnings per share for the struggling companies are also less volatile during 1998 to 2003, and follow a more discernible pattern. In at least the last two years of the analysis, the headline earnings per share of the struggling companies decrease at a rapid pace.

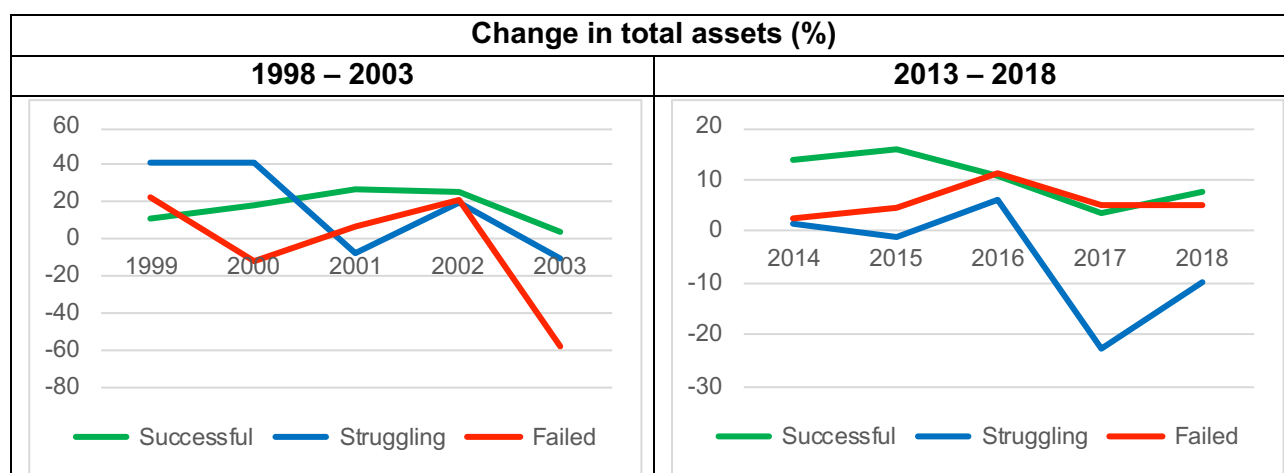
The results for the failed companies do not vary much between the bottom-line and the headline earnings, which is surprising, especially as it seemed as though the revenue and profit increased specifically as a result of once-off transactions, such as the sale of assets, to ward off an impending liquidation. It would be interesting to investigate the method used by IRESS to classify the 'core' activities of a company, but that falls outside the scope of this study. With the information at hand, it is still possible to see that the headline earnings per share for the failed companies are considerably less than the headline earnings per share of the successful companies, and that there is a definite decrease in the headline earnings per share at least two years (1998 to 2003) and possibly even four years (2013 to 2018) prior to the demise of the company.

It is therefore possible to theorise that headline earnings per share is an adequate discriminator between failed and successful companies, and a potential significant financial ratio for the

prediction of business failure, at least two years prior to the liquidation or takeover of an unsuccessful company.

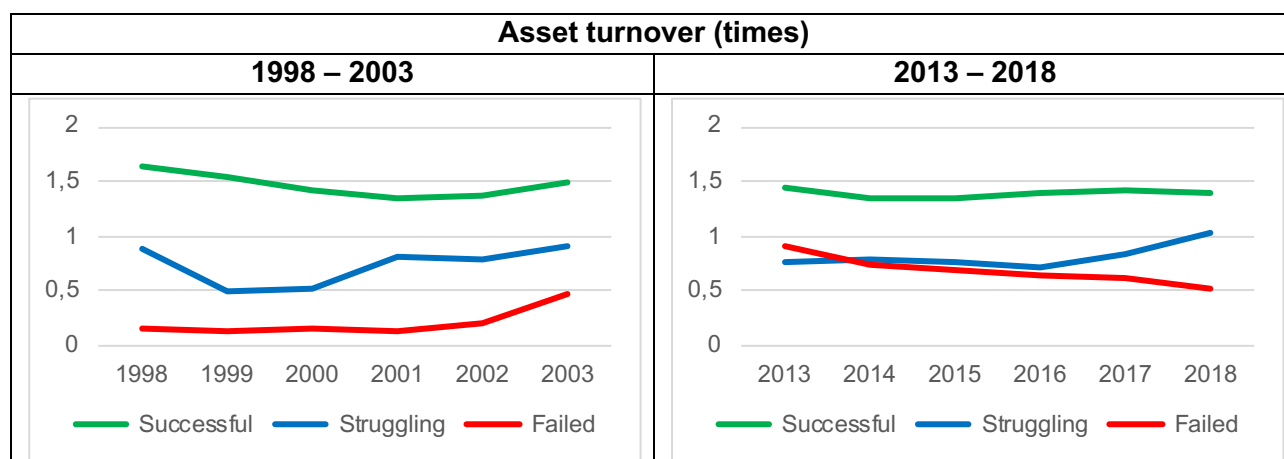
#### 6.3.4.5 Asset turnover

**Graph 6-44: Percentage change in total assets**



(Source: Author compilation)

**Graph 6-45: Asset turnover**



(Source: Author compilation)

The asset turnover ratio illustrates the ability of the company's assets to generate revenue, i.e. how effective a company is in managing its assets (Besley *et al.*, 2015:37; Firer, 2012:54). The

expectation is therefore that successful companies would have higher asset turnover ratios than unsuccessful or struggling companies (Mazouz *et al.*, 2012:70; Becchetti & Sierra, 2003:2105).

When companies over-invest in assets, their profits will be depressed as too much cash will be tied up in investments that are not delivering sufficient returns to cover the expenses incurred (such as interest) in acquiring the asset and to meet shareholders' expectations. Conversely, if assets are too low, the companies may not be able to produce sufficient quantities of their products for which demand exists, or may not be able to do so fast enough, and profitable sales will be lost as a result. A point worth bearing in mind is that trends in this ratio can give some indication of overtrading (Els, 1996:18–19).

It is interesting to first consider the change in total assets, before discussing the asset turnover ratio. It is clear that successful companies' total assets do not vary with a large percentage over time, although there is consistent growth in the investment made into both short-term and long-term assets. Against the successful companies' trend lines, the percentage of change for the struggling and failed companies over both time periods are far more volatile. As can be seen from the 1998 to 2003 graph, the investment in assets dropped below zero (in other words the total assets diminished) for the failed companies at least one year before their ultimate failure. Similarly, the struggling companies also have a growth rate below zero for the 2013 to 2018 time period, whilst this is never the case with the successful companies.

Selling off assets or reducing investment in plant, equipment and subsidiaries, therefore seems to be typical of companies heading towards financial distress. Of course, the problem with selling off assets is that it might relieve a company's cash flow problems in the short term, but it hampers its production and growth capacity and therefore the company's sustainability in the long run.

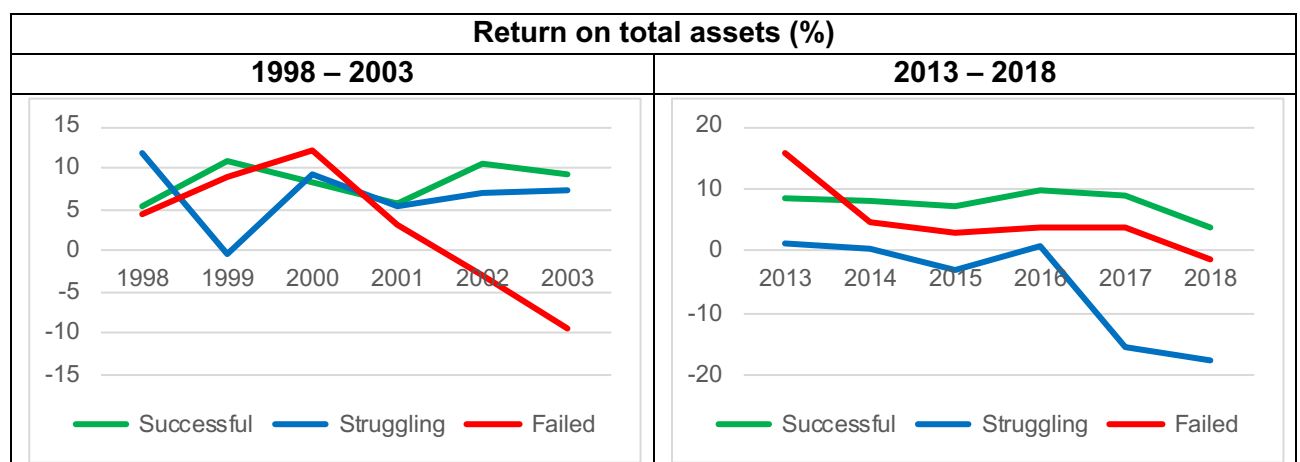
The asset turnover ratio distinguishes between successful and failed companies across both time periods. Interestingly, Altman (2002:12) did not consider the asset turnover ratio to be a significant or successful predictor of failure as a univariate ratio. In this study, however, the conclusion may well be reached that the asset turnover, which eliminates the effect of size variances between companies, may indeed be a reasonable indicator of management's success at using the assets of the company productively, and of the likely future success and sustainability of a company. It also discriminates efficiently between successful companies (with a high asset turnover) and failed or struggling companies (that exhibit a low asset turnover).



On a cautionary note, it would again be sensible for the analyst not to consider the asset turnover ratio in isolation, but rather to pair the asset turnover ratio with the percentage change in total assets, as was done here. The significant disinvestment by struggling companies in the 2017 financial year, for instance, can then clearly be identified as the reason for the increase in the asset turnover ratio from that particular year – although the asset turnover improves, the effects are not sustainable, and by using the two ratios in conjunction, the analyst is not misled.

#### 6.3.4.6 Return on assets

**Graph 6-46: Return on total assets**



(Source: Author compilation)

The return on total assets ratio compares the profit (or earnings) generated by a company through its daily operations, before interest and taxation, with the assets that are employed by the company to deliver a return (Brigham *et al.*, 2019:73; Correia, 2019:5-22; Firer, 2012:58; Beaver *et al.*, 2005:98–99; Altman, 1968:589). Interest is purposefully excluded from the earnings figure to focus attention on the success of the company's investment strategy.

The return on asset ratio is a performance measure, as it helps the users of the financial statements to assess management's success and effectiveness in generating profit with the assets that they have available, which were funded by both shareholders and suppliers of debt financing (Besley *et al.*, 2015:40; Gitman & Zutter, 2014:73; Els, 1996:18). The returns should therefore be sufficient to meet the needs of both the owners and the debt providers of the company.

A higher return on asset ratio would generally imply that a company has a better chance of continuing to operate as a viable going concern, as failed firms tend to have a low or negative return on asset ratio (Marx *et al.*, 2017:70; Mazouz *et al.*, 2012:70; Johnson & Soenen, 2003:365). A high ratio would normally indicate that a company has managed to increase its revenue without investing in any new asset, or else was able to deliver the same return, whilst decreasing its asset base – the utilisation of assets was therefore improved (Skae *et al.*, 2014:304–305).

The only problem with the return on total assets ratio is that the ratio will automatically increase over time, even if the company is only maintaining its current performance and not in fact improving, because the asset base will decrease as a result of depreciation being charged against the book values of the assets (Skae *et al.*, 2014:305). The figure on its own can therefore be misleading and the ratio should best be paired with a ratio or trend line considering a company's investment in new assets.

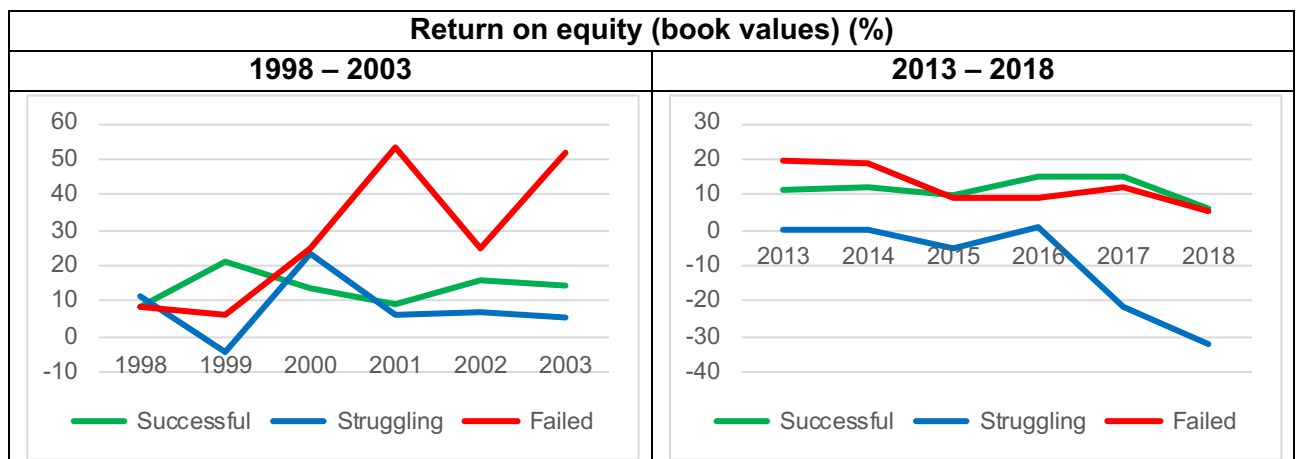
According to Graves and Waddock (2000:401–402) and Wilcox (1971:389), successful and visionary companies consistently outperform companies that are less likely to be sustainable in terms of the return on asset ratio. Becchetti and Sierra (2003:2115) also noted that operating profits to total assets was a significant financial ratio in at least two periods of a three-year failure prediction model, which suggested that profitability indices have a predominant role to play in the assessment of the probability of failure.

The return on total assets ratio holds little predictive value for the 1998 to 2003 time period. The trend lines are far clearer and in line with expectations – based on prior studies – and the improvement in the usefulness may be as a result of advances in financial accounting standards. It is clear from the graph for the 2013 to 2018 time period that the successful companies outperform the failed and struggling companies and that, although the returns for all companies decreased in 2018, potentially due to particularly difficult trading conditions, the rate of decline for the successful companies is much less than the rates of decline experienced by the failed and struggling companies. The struggling companies' results are again quite volatile, and the returns even become negative after 2016, indicating that the companies were not able to generate positive operating earnings, even before financing costs were considered. Companies that do not generate sufficient returns to continue operating, let alone to meet debt obligations and taxes, will not be sustainable in the long run.

Based on the results achieved, the return on assets ratio should be useful for failure prediction across several industries and sizes of companies for at least two to three years prior to a company's demise.

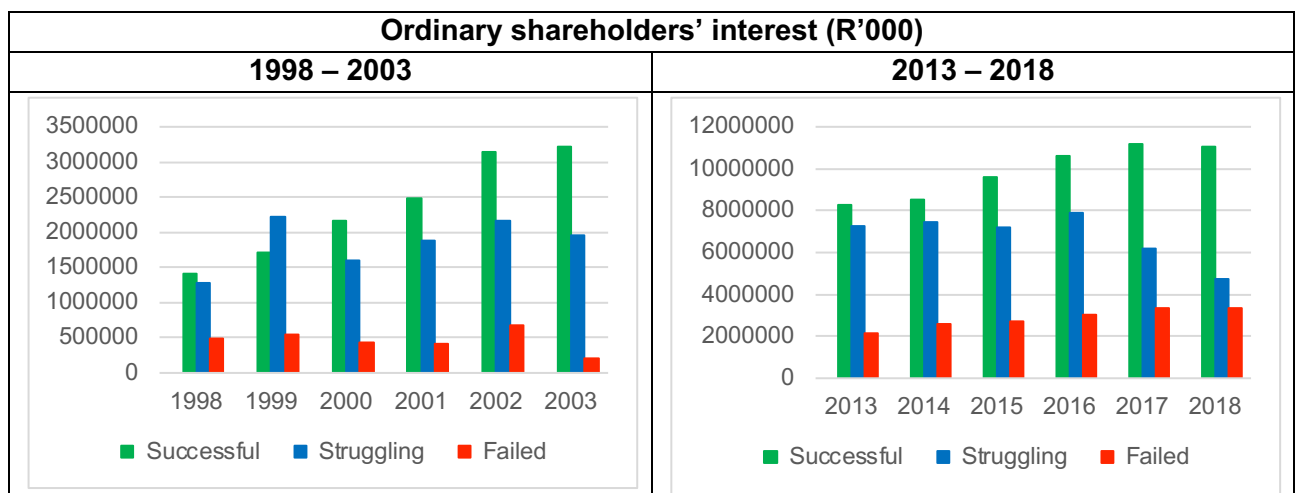
#### 6.3.4.7 Return on equity (book values)

**Graph 6-47: Return on equity, where equity is represented by the total shareholders' interest as per the statement of financial position**



(Source: Author compilation)

**Graph 6-48: Ordinary shareholders' interest**



(Source: Author compilation)

The return on equity may be described as the return that ordinary shareholders generated through their investment in the company, or as a measure of the return that the company generated (on behalf of the ordinary shareholders) by applying the funds provided by the owners of the company (Marx *et al.*, 2017:71; Besley *et al.*, 2015:40; Skae *et al.*, 2014:304; Helfert, 1994:89). According to Firer (2012:58), the return on equity is the '*true bottom-line measure of performance*', as the maximisation of shareholders' wealth – thus the return that is generated for the ordinary shareholders – is the ultimate goal of the company. Of course, the higher the return on equity, the better the owners have fared (Gitman & Zutter, 2014:73).

The expectation is therefore that the return on equity for successful companies will be higher than the return on equity generated by struggling and failed companies – Graves and Waddock (2000:401–402) noted up to a 9.8% difference between visionary companies and those that were 'not built to last' – and that the return on equity will be a useful financial ratio in the prediction of potential business failure (Berstein, 1998:646).

As the return on equity ratio will also increase if the denominator in the equation decreases, one cannot truly interpret the ratio without also considering the ordinary shareholders' interest. The graphs show that the successful companies across both time periods maintained fairly constant and consistent returns for their shareholders. The average return on equity from 1998 to 2003 was 13.70%, and the average for the 2013 to 2018 time period was 11.53%. Although a 'good' return on equity is generally regarded as 15 to 20%, this norm is heavily industry-specific. Companies that require more investments in fixed assets tend to have lower returns and, consequently, the achievement of the successful companies in a South African context is satisfactory, especially when the returns are based, as evidenced in Graph 6.48, on ever-increasing shareholders' interests.

For the struggling companies, the return on equity in 1999 decreased to below 0%, indicating that wealth was destroyed for shareholders, which is also evidenced by the decrease in ordinary shareholders' interest in 2000. The sharp increase in the return on equity is not as a result of the companies having performed better, but rather because the base from which the return was generated, was much lower. As the ordinary shareholders' interest consists of the ordinary share capital, share premium, and distributable and non-distributable reserves, the equity decreased as a result of increasing financial losses. The average return on equity for the 1998 to 2003 time period was 8.12% – substantially less than the returns generated by the successful companies. What is truly shocking, however, is the fact that the return on equity in the next time period, and especially between 2016 and 2018, decreased for the struggling companies, despite the fact that

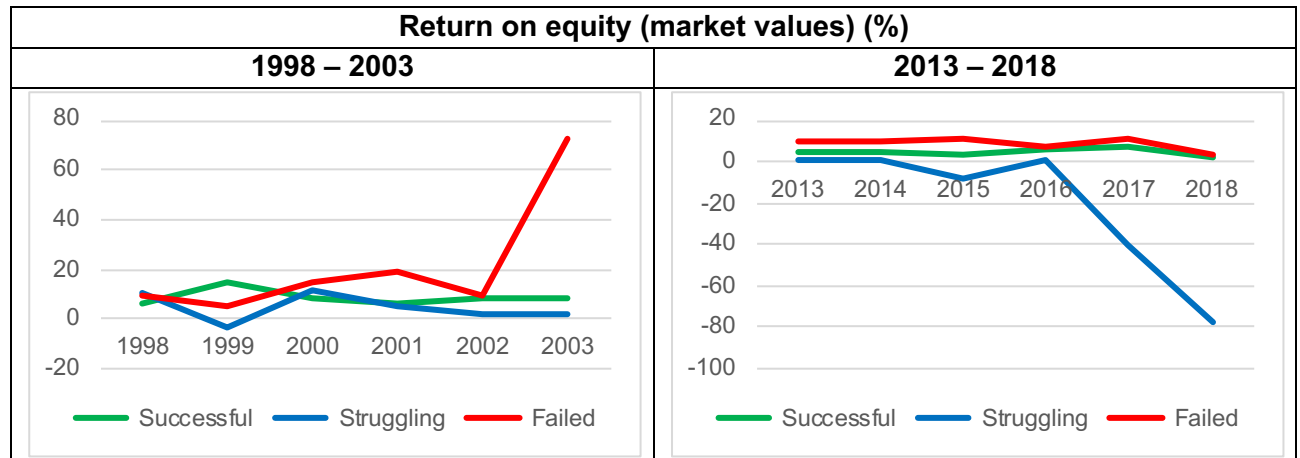
the ordinary shareholders' interest decreased as well. With a shrinking base, the return should have improved – the fact that it does not indicates how very poorly these companies performed in the last few years of the analysis. In fact, the average return on equity for the struggling companies over this time period was a disappointingly negative 9.16%. It is evident that a decrease in the return on equity, and moreover a negative return on equity, should serve as strong incentive for an ordinary shareholder to disinvest from a company.

The failed companies' return on equity in the 1998 to 2003 time period escalated sharply in 2001 and 2003, but this may be attributed to two reasons, both of which unfortunately have little to do with improved performance: (i) the ordinary shareholders' interest decreased substantially in 2000 to 2001 and again in 2003, likely as a result of increasing accounting losses decreasing the companies' distributable reserves, and (ii) the returns generated may have been the result of the sale of assets and subsidiaries, either in a last-ditch effort to stave off creditors' claims, or alternatively as part of liquidation procedures. The increasing return on equity for 1998 to 2003 – which on average was 28.01% – is thus misleading, unless one pairs it with the ordinary shareholders' interest for the same period. Potential investors should also be wary of returns that are much higher than industry averages! For the 2013 to 2018 time period, the returns on equity for the failed companies decreased steadily. As the ordinary shareholders' base nonetheless increased slightly over the same time period, it is evident that the companies underperformed. The average return on equity for this time period was 12.23%, but this figure should be interpreted with caution: although the average percentage is higher than for the successful companies over the same time period, it is as a result of a high initial recording in 2013 to 2014, and users of financial statements should rather consider the trend over the six year period, which clearly denotes the steady decline of these companies.

The return on equity ratio, based on book values, is therefore useful for failure prediction, although it does not necessarily distinguish unequivocally between successful and failed companies. Declines in the ratios are evidenced from at least two to three years prior to a company's failure. However, the ratio must be interpreted in conjunction with information pertaining to the total ordinary shareholders' interest.

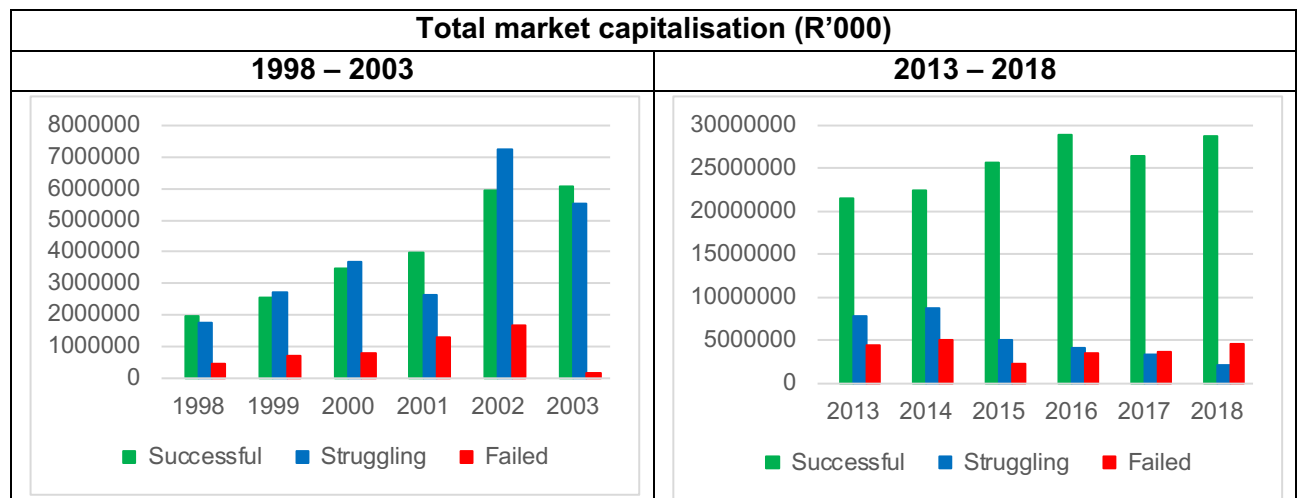
#### 6.3.4.8 Return on equity (market values)

**Graph 6-49: Return on equity, where equity is represented by total market capitalisation**



(Source: Author compilation)

**Graph 6-50: Total market capitalisation (number of shares x market value per share)**



(Source: Author compilation)

The return on equity based on market values measures the return that ordinary shareholders generated through their investment in the company, relative to the current market prices of shares. Foster (1986:545–546) found that bankrupt firms had lower mean returns for ordinary shareholders, and more variability in the returns than successful companies. Again, this ratio is best interpreted by simultaneously considering the total average market capitalisation for the companies.

The return on equity ratios and the trend lines for the successful companies across both time periods once again remain fairly stable – it may be postulated that a sign of success is ‘consistency in action’. Surprisingly, in both time periods, the returns on equity for the failed companies exceeded those of the successful companies – it may be as a result of the low market capitalisations of the companies in question. The sudden increase in the return on equity ratio for the failed companies in 2003 is a result of the significant decrease in the market capitalisation for the affected companies in the same year. There can be little doubt that this is the result of the total collapse of the share values due to the companies entering liquidation. As with the returns on equity based on book values, the trend line for the struggling companies during the last three years of the 2013 to 2018 time period shows a massive deterioration despite the decrease in the denominator (i.e. the market values of the companies) over the same time period.

Although it is therefore possible to state that analysts and users of financial statements, especially ordinary shareholders, should pay close attention to decreasing return on equity ratios, whether based on book or market values, the return on equity based on market capitalisation ratio does not allow us to distinguish clearly between successful and failed entities. It would behove these same stakeholders to carefully note changes in market values for the ordinary shares as well.

Decreasing market values for ordinary shares may reflect the financial condition and performance of a company, but they could also serve as early indicators of companies heading towards financial failure.

### **6.3.5 Market ratios**

#### **6.3.5.1 Introduction**

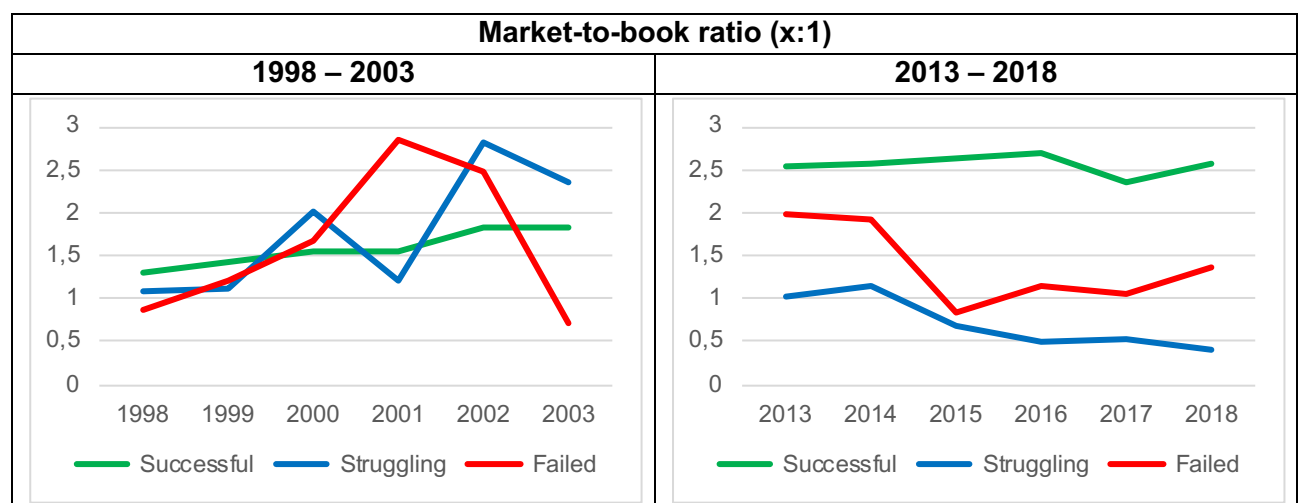
Market value ratios are indicators of investors’ and analysts’ perceptions regarding a company’s past performance, the level of risk that it is exposed to, and its future prospects (Correia, 2019:5-25; Marx *et al.*, 2017:65; Gitman & Zutter, 2014:74; Skae *et al.*, 2014:284). As such, market ratios may indicate the investment potential of a company – if the company’s solvency, liquidity, profitability and asset management ratios are all acceptable, or preferably higher than the industry’s and competitors’ ratios, the shares of the company will be valued highly and the market value ratios will be high (Correia, 2019:5-25; Skae *et al.*, 2014:284).

Market ratios express a company’s value, as measured by its market capitalisation, in relation to accounting values like book values, earnings, cash flows and dividends (Gitman & Zutter, 2014:740) – this presents the users of financial statements with more relevant and up-to-date

information, as the statements of financial position are mainly historical (they report past transactions and occurrences), whereas the share market is forward-looking (Brigham *et al.*, 2019:73 & 80–82). These ratios also therefore allow for effective comparisons of one company's performance relative to that of another, based on the market's assessment of each company's future potential, especially its ability to earn a satisfactory return for its ordinary shareholders and its sustainability.

### 6.3.5.2 Market-to-book ratio

**Graph 6-51: Market-to-book ratio**



(Source: Author compilation)

The market-to-book ratio is an indicator of the market's perceptions regarding the company: the ratio recognises that a company is expected to be worth more than the book (or accounting) values of its equity (Gitman & Zutter, 2014:74; Skae *et al.*, 2014:310). Thus the ratio gives the management of a company an indication of how investors view the company's past performance, and what their expectations for the future are; the shares of companies that deliver high rates of return, improve profits and increase their market share, or that are able to keep up with innovation and launch new and successful products, should sell at higher multiples than those with low rates of return (Brigham *et al.*, 2019:82; Besley *et al.*, 2015:40; Gitman & Zutter, 2014:75). The market-to-book ratio is also considered to be a measure of a company's growth opportunities (Johnson & Soenen, 2003:365).

Companies with low market-to-book ratios, or ratios less than one, would therefore not have been successful in creating value for their shareholders, and such low ratios most likely will restrict a



company's ability in future to issue more shares or even raise more debt capital (Firer, 2012:60; Bernstein, 1998:617–618).

**Table 6-4: Market-to-book ratio for the 2013 to 2018 time period**

| <b>Market-to-book ratio</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> | <b>2018</b> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Successful</i>           | 2.55        | 2.57        | 2.63        | 2.69        | 2.34        | 2.57        |
| <i>Struggling</i>           | 1.04        | 1.14        | 0.67        | 0.51        | 0.53        | 0.41        |
| <i>Failed</i>               | 1.97        | 1.93        | 0.84        | 1.15        | 1.07        | 1.36        |

(Source: Author compilation)

The market-to-book ratios for the 1998 to 2003 time period do not offer much in terms of prediction values, as the figures are extremely volatile. Whether this is as a result of an unstable economic market, less reliable accounting standards, sampling bias or due to the dot-com collapse of 2009 to 2011, is not determinable with the information at hand.

It may thus be more useful to focus attention on the results of the 2013 to 2018 time period. Here, the results are less volatile and more in line with expectations and the results of previous studies. The successful companies in all years of the analysis delivered returns far in excess of two times the market-to-book value: a weighted average (weighted in terms of time, with the highest weighting accorded to the last year of the analysis), delivers a result of 2.55 for the successful companies. Thus the market perception seems to be that these companies have performed well in the past, have appropriate risk management strategies, and are expected to continue to perform well and deliver satisfactory results to their ordinary shareholders in future.

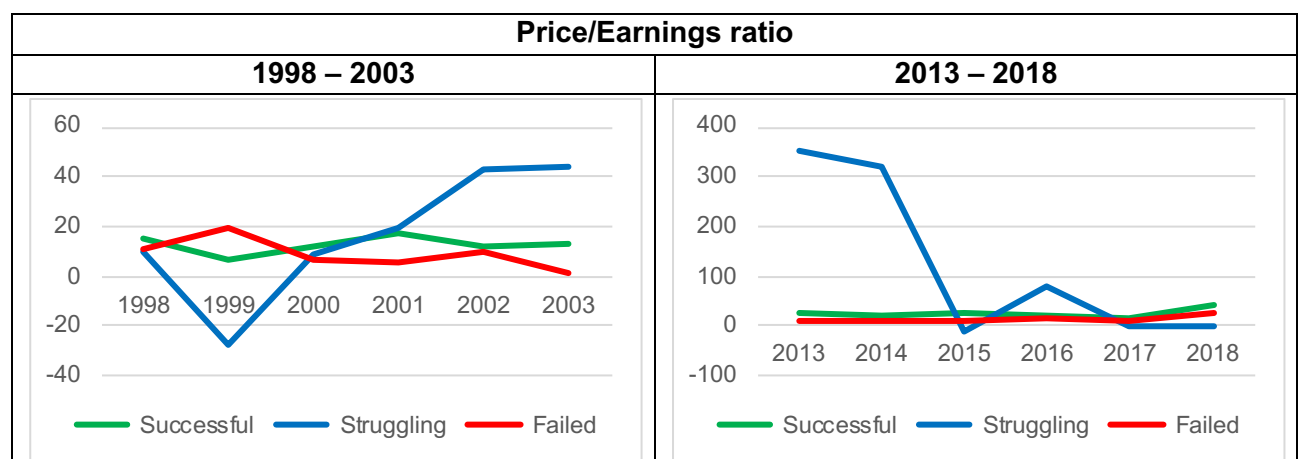
The weighted average market-to-book ratio for the failed companies, by comparison, is only 1.26. These companies therefore barely manage to add value to the cost prices of their original investments – they are able to yield a slight return for shareholders, but it is far less than what the successful companies are capable of achieving. It is possible that this is again due to the relative size difference between the companies: the successful companies have got better negotiation power, are able to realise more economies of scale, and can invest in larger projects than the smaller, less successful enterprises. They are also, purely through sheer size, able to weather storms better than smaller businesses.

The surprising result is that of the struggling companies. Although they appear to be heading towards financial distress, the expectation would still be that these companies would be outperforming the failed companies, which – as can be seen from Graph 6.51 and noted from the weighted average market-to-book ratio of the struggling companies of 0.59 – is simply not the case. Not only are their results worse than both the failed and successful companies and worse than the rating of one (1) that Firer (2012:60) noted as the minimum to be achieved to at least not be destroying shareholders' wealth, but the trend line clearly shows that the results are worsening over time.

Based on the results of the analysis of the market-to-book ratios, it seems fair to say, acknowledging that size differences may influence these results to some extent, that successful companies have far higher market-to-book ratios than unsuccessful companies, that falling market-to-book ratios are definite indicators of potential financial distress, and that a ratio of less than one (1) should be a significant concern for a (potential) investor. The users of financial statements should just bear in mind that the share prices of companies generally include the reactions of investors to all publicly available information – by the time the ratio begins to decrease, it may already be clear that the companies are in financial distress and, consequently, it may be too late to withdraw equity funds from the company to attempt to prevent financial losses.

### 6.3.5.3 Price/Earnings ratio

**Graph 6-52: Price/Earnings (P/E) ratio**



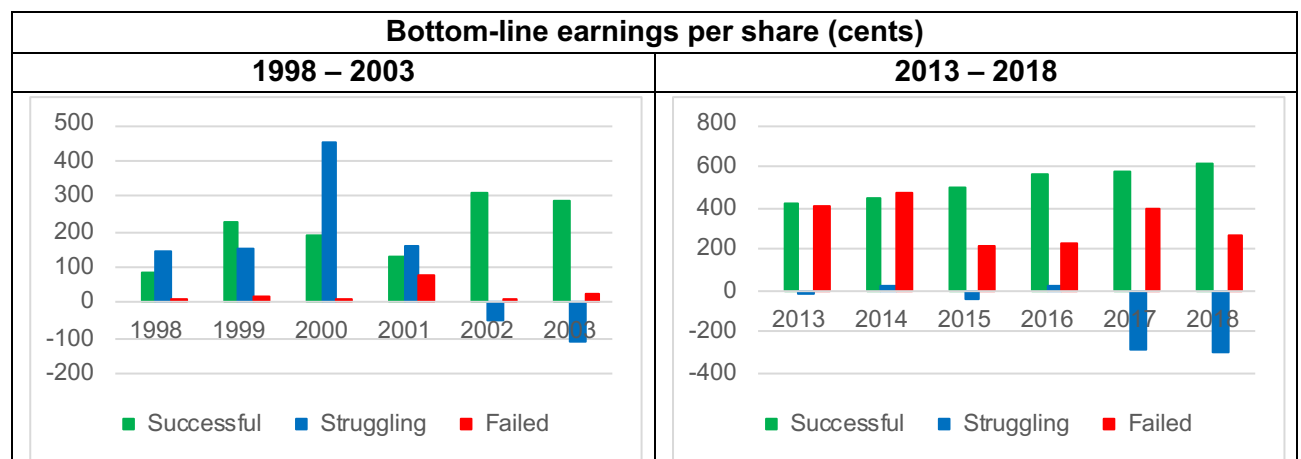
(Source: Author compilation)

The price/earnings (P/E) ratio indicates the number of years it would take investors to recoup their investments at the company's current earnings level or, alternatively, how much investors are

willing to pay per rand of reported earnings (Brigham *et al.*, 2019:80; Correia, 2019:5-25; Marx *et al.*, 2017:80; Besley *et al.*, 2015:40; Gitman & Zutter, 2014:74; Skae *et al.*, 2014:307). As with the market-to-book ratio, the P/E ratio reflects the market's perception of the company. A company with good earnings prospects and high growth rates will exhibit a higher P/E ratio, whereas a company which is exposed to higher levels of risk will have a lower P/E ratio. Thus, the higher the P/E ratio, the greater the investor confidence (Brigham *et al.*, 2019:81; Correia, 2019:5-26; Besley *et al.*, 2015:40; Gitman & Zutter, 2014:74; Skae *et al.*, 2014:288 & 307; Helfert, 1994:96; CIMA, 1993:149; Foster, 1986:74). The ratio, in itself, is not particularly meaningful – to be useful, it must be compared with the results achieved by the company's competitors, the industry average, and the market average.

There is one important caveat to bear in mind – a firm with very little or no earnings may have a high P/E ratio as it takes the market time to react to the poor results, or because the market believes that the company will be able to recover in future, i.e. that the poor results are an anomaly (Firer, 2012:59). The ratio should thus not be analysed without simultaneously considering the earnings per share. For ease of comparison, the graph is repeated here:

**Graph 6.42: Fully diluted earnings per share (repeated)**

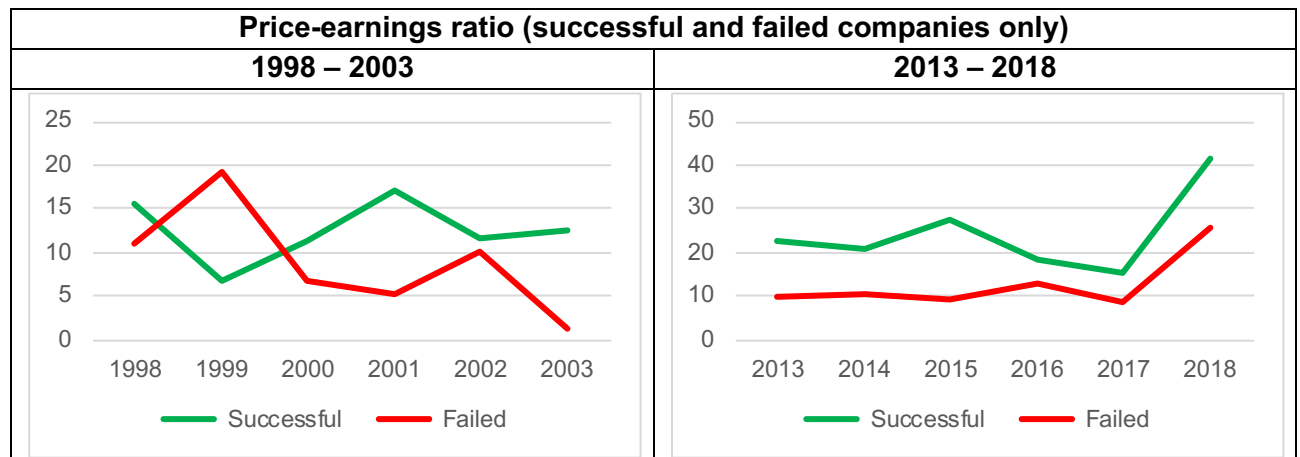


(Source: Author compilation)

The P/E ratio trend lines of the struggling companies in both time periods are very volatile. The high P/E ratios in 2013 and 2014 make sense as the earnings of the companies were very low or negative, but it does mean that the ratios are not particularly useful for comparison purposes.

To isolate the differences between the price-earnings ratios of the successful and failed companies, the trend lines of the struggling companies were removed for Graph 6.53:

**Graph 6-53: Price-earnings (P/E) ratio, excluding struggling companies' results**



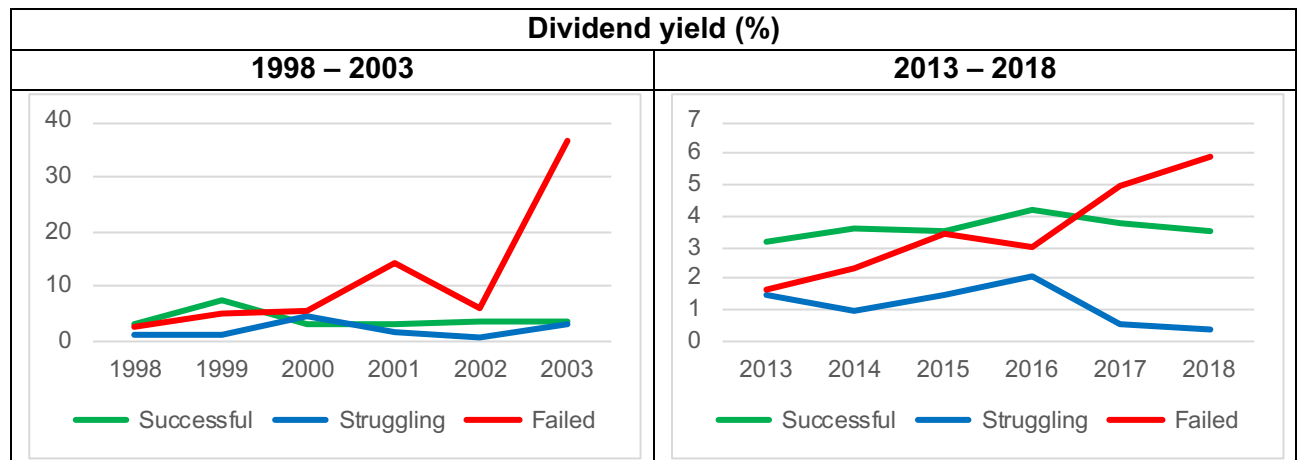
(Source: Author compilation)

Without the volatile results of the struggling companies, the P/E ratios of the successful and failed companies better fit the expected patterns. The high P/E ratios of the failed companies during 1999 may be as a result of global market upheavals (1999 was the start of the dot-com crash, which affected share markets across the world), or may reflect that the markets had particularly high hopes for the failed companies during that time period – perhaps they were less invested in technology than other companies. It does mean that a high P/E ratio does not always denote a successful company. After 2000, and for the 2013 to 2018 time period, the P/E ratios for the successful and failed companies follow discernible and more orthodox patterns. The successful companies have higher P/E ratios than the failed companies, and the failed companies only display increases in the trend line in 2018 when the average earnings per share of the companies crashed.

It is therefore possible to conclude that the price-earnings ratio might be able to distinguish between failed and successful companies, but that an increase in the P/E ratio should be analysed with caution, and always in comparison to the industry's performance and together with the companies' earnings per share results. The P/E ratio is not a successful univariate indicator of financial distress.

### 6.3.5.4 Dividend yield

**Graph 6-54: Percentage dividend yield**



(Source: Author compilation)

The return for ordinary shareholders on their investment (based on market values), consists of capital gains, as measured by the growth in share price, plus any ordinary dividends paid by the company (Marx *et al.*, 2017:80; CIMA, 1993:142). The dividend yield measures the percentage return which the investor receives by way of dividends (Correia, 2019:5-25). When a company makes the decision to pay dividends, it should keep the legal requirements (e.g. for solvency and liquidity) in mind, as well as the shareholders' preferences towards income or capital growth. The more a company retains its earnings and thus does not pay dividends, the more it can fund growth internally, which should hopefully lead to a higher share price (Skae *et al.*, 2014:310).

The dividend yield of successful companies over both time periods is fairly consistent and averaged between 3.6% and 4.1%. It would suggest that successful companies adhere to the dividend signalling theory and thus believe that the ordinary dividends that are paid to shareholders convey to the shareholders that the companies are performing well, can afford to make dividend payments, and are likely to continue doing so in future.

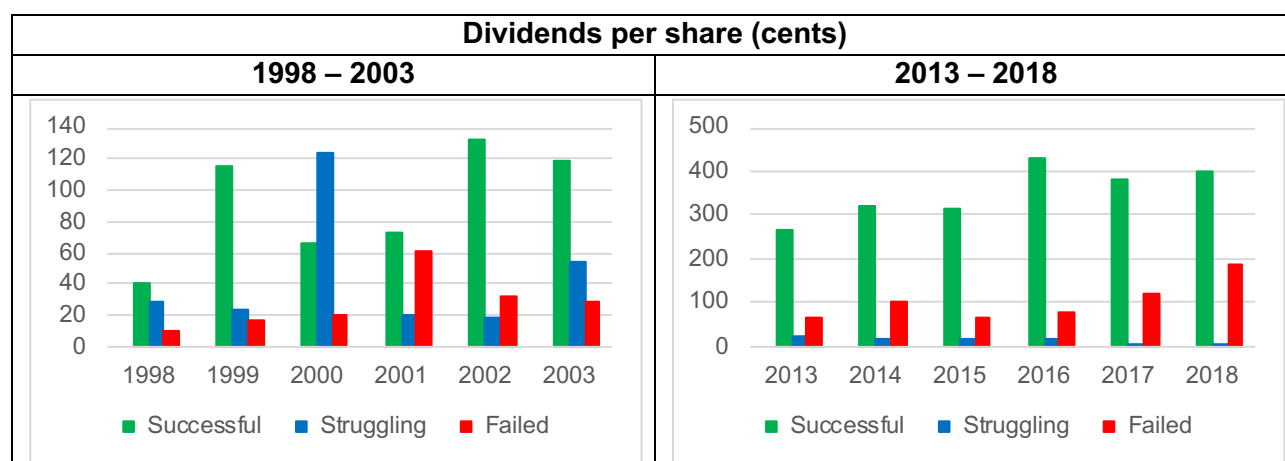
The dividend yield for the struggling companies is much lower, with an average 2.1% yield during the 1998 to 2003 time period, and an average 1.16% dividend yield during the 2013 to 2018 time period. The struggling companies therefore seem to believe that dividends are important to their shareholders, which is why they continue to pay dividends, even when the companies are clearly heading towards financial difficulty, and the wiser decision probably would have been to retain as much earnings and cash in the companies as possible.

The failed companies exhibit markedly higher dividends in the last few years of the analyses of both time periods, which most likely would be the result of final liquidation dividend payments, and not as a result of dividends paid in the ordinary course of business. The dividend yields were likely not particularly influenced by a decrease in the market values per share, as Graph 6.50 (Total market capitalisation) indicated that the market capitalisations of the failed companies did not vary considerably in either time period.

Although the dividend yields for the successful companies in most years exceeded the dividend yields of the failed and struggling companies, the delineation is not clear enough to allow us to use this ratio as a single predictor of potential failure, or as a clear distinguisher between failed and successful companies.

#### 6.3.5.5 Dividend cover

**Graph 6-55: Dividends per share (cents)**



(Source: Author compilation)

**Table 6-5: Dividend cover for the 1998 to 2003 time period**

| Dividend cover | 1998 | 1999 | 2000 | 2001 | 2002  | 2003  |
|----------------|------|------|------|------|-------|-------|
| Successful     | 2.09 | 1.98 | 2.86 | 1.74 | 2.32  | 2.41  |
| Struggling     | 4.97 | 6.46 | 3.63 | 7.60 | -2.48 | -1.98 |
| Failed         | 0.09 | 0.89 | 0.63 | 1.27 | 0.29  | 0.72  |

(Source: Author compilation)

**Table 6-6: Dividend cover for the 2013 to 2018 time period**

| <b>Dividend cover</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> | <b>2018</b> |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Successful</i>     | 1.58        | 1.41        | 1.57        | 1.32        | 1.51        | 1.53        |
| <i>Struggling</i>     | -0.03       | 1.28        | -2.78       | 1.56        | -81.15      | -163.27     |
| <i>Failed</i>         | 6.18        | 4.44        | 3.14        | 3.01        | 3.25        | 1.40        |

(Source: Author compilation)

The dividend cover is the inverse of the dividend pay-out ratio, and indicates how 'safe' the ordinary dividend payments are, by considering by how many times the available earnings per share cover the dividend per share that was paid to the shareholders. It therefore reflects the ease with which dividends can be paid out of the earnings that were generated during a year (Skae *et al.*, 2014:305). A high dividend cover indicates that a large percentage of the earnings of the company is being retained to fund future growth (Correia, 2019:5-26; Skae *et al.*, 2014:305). However, high dividend cover ratios could also be because the preference of the ordinary shareholders is for capital growth, or alternatively, it may be due to a company experiencing cash flow problems and thus being unable to maintain or grow dividend payments (Foster, 1986:75). ISA 570, the auditing standard related to the assessment of a company's going concern status by an auditor, highlights dividends in arrears and the discontinuance of dividends as warning signs of potential illiquidity and insolvency (IFAC, 2013:559–560).

The dividend cover ratios for 1998 to 2003 for the successful companies averaged roughly 2.23 times. That means that approximately 45% of successful companies' earnings was paid to shareholders in the form of dividends, and 55% was retained to fund internal growth. As noted in Graph 6.4 (*Total long- and short-term liabilities per annum*), the successful companies used the most and ever-increasing quantities of external debt financing, and thus the fact that they were willing to pay out approximately half of their earnings as dividends is not entirely surprising. The average dividend cover for the successful companies decreased to about 1.49 times for the 2013 to 2018 time period. This is rather surprising – despite the fact that the successful companies make use of growing levels of debt financing – as many banks and other suppliers of debt financing tightened their credit terms and reduced their exposure levels after the financial crisis of 2008. Conditions in South Africa have also become more challenging, and consequently, it would have seemed prudent to retain more funds to finance organic growth and to ensure future flexibility for financing new projects. Perhaps the reason for the lower dividend cover can be tied to the financial crisis, except that it led to behaviour that was appropriate but contradictory to what was expected – large companies may have realised that, as a result of the difficult conditions that

shareholders were facing, their discretionary income had reduced, and consequently they were more dependent on income from investments to survive and to thrive – companies may therefore have purposefully paid out more dividends than usual, in an effort to allay the financial concerns of their owners and suppliers of capital. A more sombre option is that companies, having realised that growth opportunities in South Africa are limited and that the economy and the outlook for the country are becoming increasingly bleak, may have paid out more of their retained earnings to shareholders as dividends as they no longer require the earnings to fund future investments.

As with several previous ratios, the dividend cover ratios for the struggling companies offer very volatile results. The dividends per share do not seem to follow a predictable pattern, and the dividend cover varies from extremely high (up to 7.60 times) to ridiculously low (-163.27 times). The negative coverage would be the result of negative earnings divided by dividends paid – the question that really needs to be asked here is why the management and shareholders of companies that are delivering volatile results and that may be heading towards financial failure, would allow the payment of dividends when the companies are generating losses, rather than earnings. There is even a possibility that the directors of the particular companies could be held personally responsible for the liabilities of the company if they are found to have acted recklessly by not imposing appropriate solvency and liquidity tests prior to the dividend payments. In the 2013 to 2018 time period, though, it is clear that the dividends per share for the struggling companies diminish over time, which is in line with the ISA 570 auditing standard that advises auditors to reflect on reducing dividend balances as a potential sign that a company may not be, or not be able to continue as a going concern.

The very low dividend covers of the failed companies for the 1998 to 2003 time period, with an average dividend cover of a mere 0.65 times, is not unexpected, although the ethicality and ingenuity of continuing to pay dividends when a company is in dire financial straits, are questionable. A dividend cover below one (1) means that the companies were paying more dividends than they had generated earnings, in other words the companies were either using capital, or obtaining loans (e.g. an increasing bank overdraft) to make the payments. A company that acquires debt financing should do so to acquire an asset that produces an income that will allow the company to repay the debt and the interest thereon – using debt, that comes at a cost, to pay dividends, that deliver no further future income, seems disingenuous at best. These dividend payments could then, to some extent, explain the increase in total long- and short-term liabilities for failed companies, as depicted in Graph 6.4 (*Total long- and short-term liabilities per annum*). For the 2013 to 2018 time period, the average dividend cover of 3.57 seems more reasonable when considering the financial condition and cash flow abilities of the failed

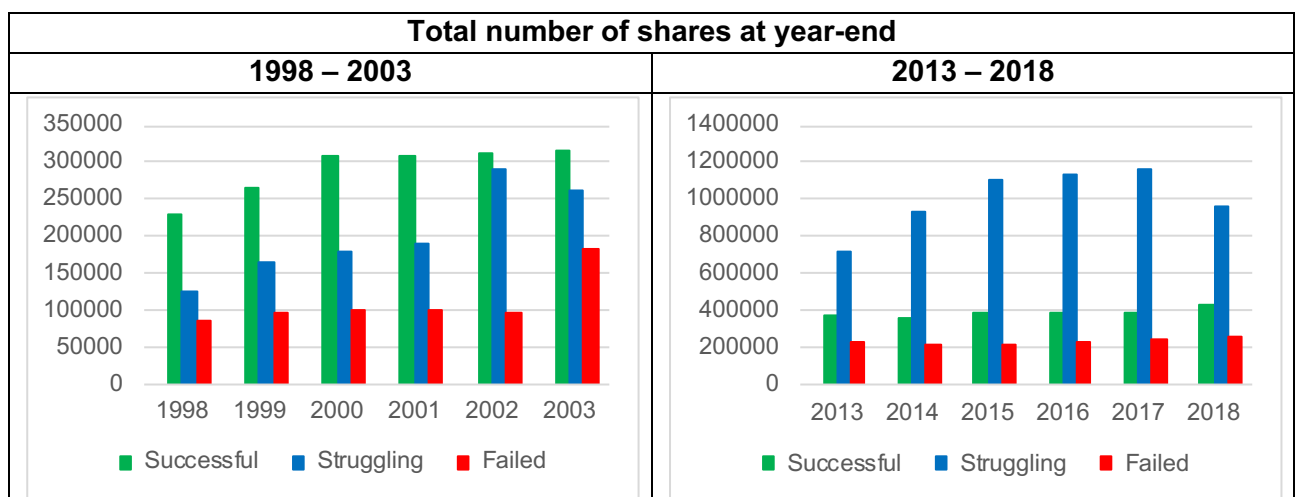


companies. Less than a third of earnings was thus paid out to the ordinary shareholders in the form of dividends. It may yet be argued that no dividends ought to have been paid, to allow the companies a chance of recovery, but it is likely that some of the dividends noted here, especially in the final few years of the analyses, are liquidation dividends.

Given the varying results over the two time periods, the dividends per share and the dividend cover are not useful in distinguishing between successful and failed entities. However, analysts and shareholders should pay attention to volatility and dividend covers below one, as these may indicate companies heading towards financial distress.

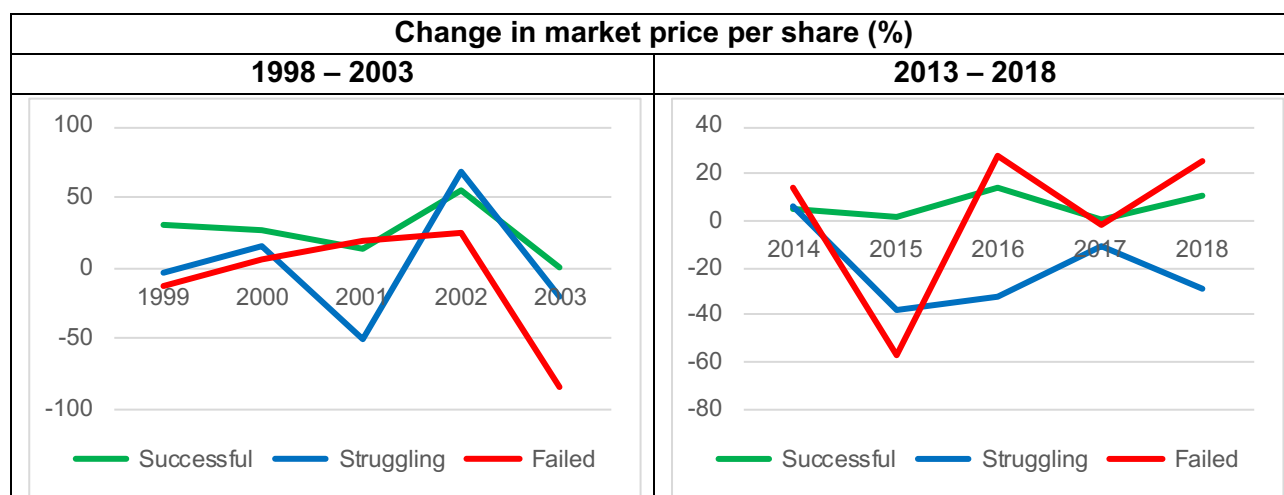
### 6.3.5.6 Change in share price

**Graph 6-56: Total number of shares at year-end**



(Source: Author compilation)

**Graph 6-57: Percentage change in market price per share**



(Source: Author compilation)

**Table 6-7: Market price per share (in cents) for the 1998 to 2003 time period**

| Market price per share | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  |
|------------------------|-------|-------|-------|-------|-------|-------|
| Successful             | 1 196 | 1 553 | 1 959 | 2 234 | 3 442 | 3 430 |
| Struggling             | 2 362 | 2 285 | 2 630 | 1 314 | 2 197 | 1 738 |
| Failed                 | 394   | 345   | 365   | 432   | 536   | 80    |

(Source: Author compilation)

**Table 6-8: Market price per share (in cents) for the 2013 to 2018 time period**

| Market price per share | 2013  | 2014  | 2015  | 2016   | 2017   | 2018   |
|------------------------|-------|-------|-------|--------|--------|--------|
| Successful             | 8 343 | 8 798 | 8 969 | 10 190 | 10 222 | 11 343 |
| Struggling             | 1 654 | 1 764 | 1 089 | 735    | 654    | 463    |
| Failed                 | 4 036 | 4 581 | 1 995 | 2 538  | 2 507  | 3 153  |

(Source: Author compilation)

As the share price is seen as forward-looking and indicative of market perceptions, the change in share price measures whether the market assessed the company as overly risky, or as a good investment based on earnings growth prospects (Skae *et al.*, 2014:309). Companies that are perceived as risky would be expected to suffer a decrease in the market price per share, whereas

companies that are growing and delivering consistent value should exhibit share prices that either grow, or decrease less than the average decline in market prices over a similar period of analysis. In Chapter 3, falling share prices were identified as a distinguishing feature of companies in distress.

Graph 6.56 (*Total number of shares at year-end*), together with Tables 5.8 and 5.9, containing the market prices per share, on average, for the successful companies, indicate that, despite the fact that more shares were issued by the successful companies over the respective time periods, the share prices increased consistently, in line with the expectations for successful companies. The growth rate for 2013 to 2018 of 6.34%, was nonetheless much lower than the growth rate for 1998 to 2003 of 23.46%. The effects of the struggling South African economy and pessimism surrounding the country's ability to effectively deal with unemployment, corruption and escalating input costs, are evident in these figures.

For the struggling companies, the increase in the number of shares during 2002, as well as in 2013 and 2014, may indicate that the companies were attempting to raise additional equity capital to address poor liquidity within the companies and in an effort to ward off potential liquidation. However, it is also possible that additional shares were issued, especially in 2002 when there was a dramatic increase, in an attempt to either effect or else ward off a potential takeover. A struggling company which has the potential for a successful turnaround, that has access to specific markets, licences, distribution channels or other competitive advantages, may be very appealing to a predator company, especially when share prices are low as a result of the financial difficulties that the company is experiencing. One would expect a sharp drop in the share price when new shares are issued – instead this study's averages show a remarkable increase. If confidence is placed in the veracity of the underlying data of this study, the increase may be because the fully diluted earnings were calculated for 2001, whereas the full effect of the increased number of shares was only evident in 2002, although the reverse results would rather have been expected. If the additional number of shares was as a result of a takeover offer, the increase in share price may be as a result of the financial market appreciating the potential synergies that a merged company could realise. For the 2013 to 2018 time period, the struggling companies' share prices decreased annually. Although the rate of decline is lower in 2017 than in prior years (leading to an upward change in the trend line), the average prices at year-end were still lower than the average prices of 2016.

For the failed companies from 1999 to 2003, the market prices are considerably lower than for the successful companies, and also clearly have a downturn in the last two years of analysis,

most likely as a result of the liquidation of the companies in question. It is interesting that the companies still managed to achieve growth in their share prices over most of the six-year time period (an average annual growth rate of 8% from 1998 to 2002), although this growth rate was considerably lower than the growth rate achieved by the successful companies over the same period. The market prices per share of the failed companies for the 2013 to 2018 time period show a very large decrease in 2015 – interestingly at the same time as the struggling companies, perhaps for the same economic reasons – and yet a rather surprising increase in 2018. The only plausible reason for the increase in 2018 must be that takeover offers were made for the failed companies, that were positively viewed and accepted by the ordinary shareholders in the failed companies, and that the financial markets accordingly assessed the companies as less risky and more likely to continue as going concerns, thus raising the share prices, at least over the short-term.

The conclusion here is that, although it may be difficult to distinguish clearly between failed and successful companies in terms of the growth rate for share market prices, a decrease in the share price, a decrease in the rate of growth of share prices, lower growth rates than the industry or general financial market, and volatile share prices, are all indicative of companies that may be in financial distress, or that may be heading towards financial failure.

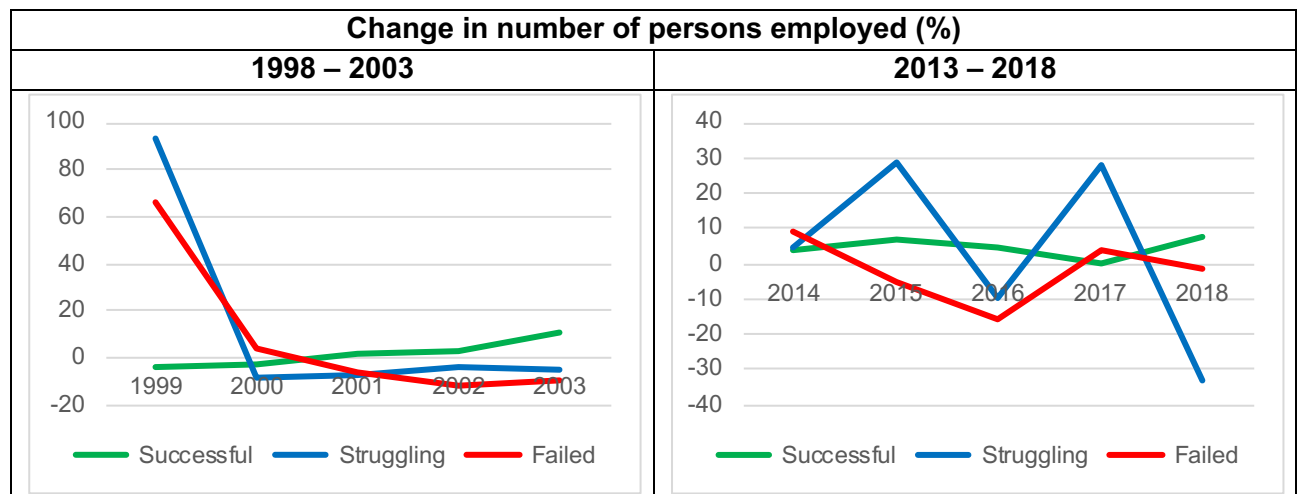
### 6.3.5.7 Number of personnel

**Graph 6-58: Number of persons employed**



(Source: Author compilation)

**Graph 6-59: Percentage change in the number of persons employed**



(Source: Author compilation)

The number of personnel in a company's employ may be an indication of the size of the company (Blum, 1974:6–7). The above graphs reveal that the successful companies had more personnel in their employ over both six-year time periods than the struggling and failed companies, and that the failed companies had the least number of employees. Therefore, it would seem as though the larger companies were, as previously noted, more successful than the failed companies, if the assumption is made that the number of personnel is indeed an accurate reflection of relative size.

Previous studies have also shown that returns on equity are negatively related to size and that these returns are similar for financial and non-financial firms (Johnson & Soenen, 2003:365). Although the similarity of financial and non-financial firms allows this study to use average figures for a number of non-matched companies, the results of this study are not that returns are negatively related to size. As evidenced in Graph 6.47 (*Return on equity, where equity is represented by the total shareholders' interest as per the statement of financial position*) the return on equity for the failed companies was only higher than the returns generated by the ordinary shareholders as a result of the low book values of the ordinary shareholders' interest in the companies following years of financial losses, and that the returns for the struggling companies were always lower than those of the successful companies. Consequently, this study finds, in a South African context, that larger companies tend to perform better than smaller enterprises.

Larger companies also have more stable personnel numbers – there is little change in the number of personnel over the two separate six-year periods (consistently remaining around the 12 000

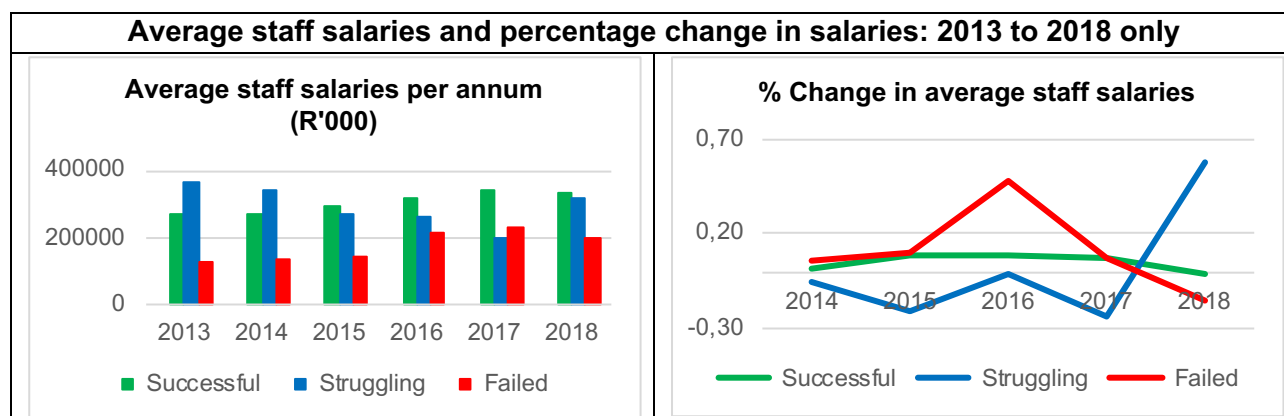
personnel mark) – and where increases in personnel numbers do take place, these increases are very gradual and considered.

Struggling companies have less personnel, but also seem to regularly appoint more personnel than what may be required, as frequent downscaling (possibly through retrenchments) is also evident, i.e. in 2000 to 2003, and in 2016 and 2018. This once again supports the theory that the struggling companies may be guilty of overtrading. The struggling companies, flushed with their recent successes, may have appointed additional personnel whilst growing at a rapid pace. When these companies began to suffer financial distress, they may have had no choice but to close divisions and scale down operations to address liquidity problems. The problem with reducing personnel numbers, especially in a South African context, is that these reductions may have led to trade union action, leading to production stoppages, a damaged reputation for the companies in question, and high retrenchment fees. The remaining personnel, already suffering from lower morale as a result of the retrenchments, may have been overburdened as a result of the reduced staff complement, which may have led to burn-out and more absenteeism.

The failed companies had low staff numbers in comparison to the other groups of companies, but nonetheless also had staff reductions, particularly in the three years prior to failure (for both time periods). This may be as a result of retrenchments, but could also be as a result of personnel realising that the company was heading for trouble, and leaving for better and safer opportunities with other companies. This may have led to a loss of experience and important industry knowledge at the exact point in time when the companies could least afford to lose the skills of key employees.

Although not necessarily a very reliable indicator of financial distress, analysts may look at the number of personnel for signs of overtrading (sharp increases) and failure (continuous decreases).

**Graph 6-60: Average staff salaries and changes in staff salaries over the 2013 to 2018 time period**



(Source: Author compilation)

Just for interest's sake, the average staff salaries for the selected companies over the 2013 to 2018 time period were also plotted (the information was not available for the previous time period). It was interesting to note that the struggling companies had initially paid much larger salaries than the successful and failed companies – again indicative of overtrading – and that the successful companies increased salaries at a very steady pace over the six-year period. The failed companies had very large increases in average salaries two to three years prior to failure – given the probable financial condition of the companies at that point, and possible losses of skilled employees, the failed companies may have had no choice but to increase salaries (which up to that point had been lagging behind the salaries of other companies) in an effort to retain staff to assist the companies with staving off liquidation and to effect turn-around strategies. Unfortunately, it may have been a case of '*too little, too late*' as the companies entered liquidation not long thereafter. Although the above is based purely on conjecture and speculation, it may be interesting to consider in future statistical studies, whether the average salaries of employees of listed companies could act as a potential indicator of financial success or failure.

### 6.3.6 Bankruptcy ratios

#### 6.3.6.1 Introduction

Failure prediction may be used as an early warning device which directs attention towards the potential for bankruptcy. This would fulfil the goal of financial statements, i.e. to provide information to the users of the statements so that more informed economic decisions may be taken. If companies and analysts become aware of the potential for financial distress, more

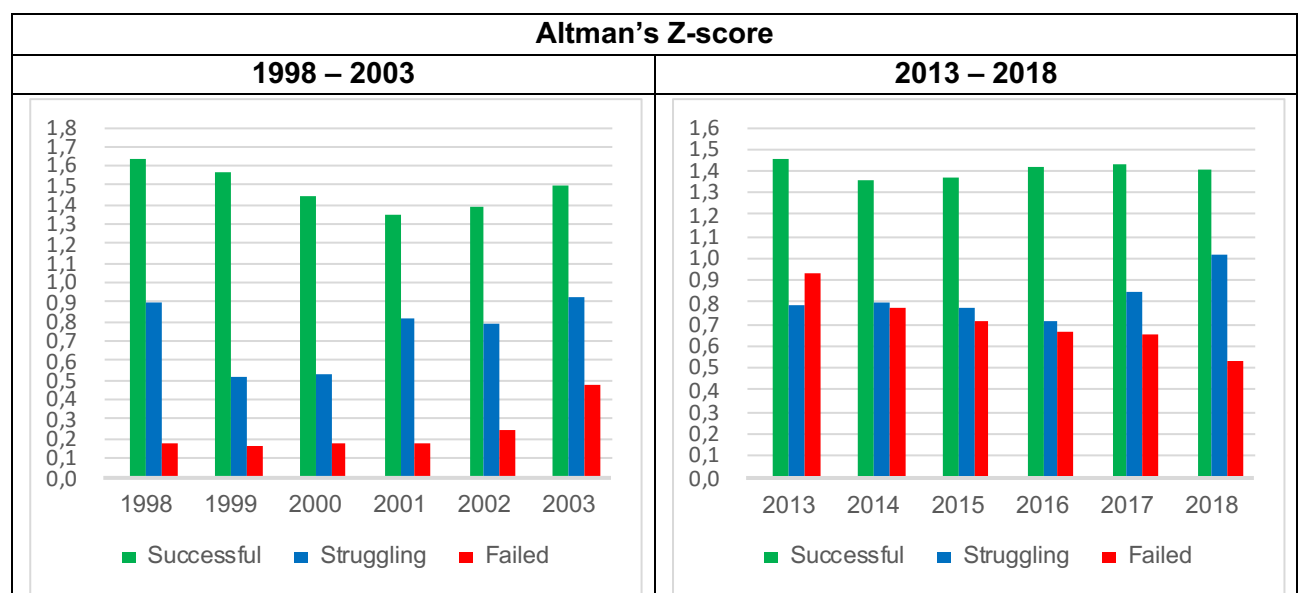
thorough and detailed analyses can be carried out and corrective measures can be taken that may even prevent the failure and liquidation of the entity concerned (Skae *et al.*, 2014:311).

Financial ratio analysis, as can be seen from this study, is subjective and the interpretation of the financial ratios depends on the skill, viewpoint, character and preconceived notions of the analyst. The advantage of failure prediction or bankruptcy ratios is that they deliver more objective results, as the classifications of the companies are based on observable company characteristics (Correia, 2019:5-28).

The major concern with bankruptcy ratios is that these ratios may become ‘self-fulfilling prophecies’. Companies that are assessed as being at risk of financial failure may find it difficult to recapitalise the organisation, or to access the funding that they require to be able to continue operating until they have managed to resolve their profitability or cash flow problems. Consequently, the companies, which may have had an opportunity to recover if not assessed as a failure, will head into liquidation.

#### 6.3.6.2 Altman’s Z-score

**Graph 6-61: Altman’s Z-score**



(Source: Author compilation)



Altman's Z-score is a multivariate predictor (Skae *et al.*, 2014:311) that is based on the following formula:

$$Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5$$

Where:

- X<sub>1</sub>: Working capital/Total assets
- X<sub>2</sub>: Retained earnings/Total assets
- X<sub>3</sub>: EBIT/Total assets
- X<sub>4</sub>: Market value of equity/Book value of total debt
- X<sub>5</sub>: Sales/Total assets

The model has been developed so that a score of 3.0 or more denotes a company that has a low probability of failure (i.e. the company is considered to be relatively safe), whereas a score of 1.8 or less indicates a high risk of failure within two years. The area between 1.8 and 3.0 is regarded as a '*zone of uncertainty*', where the company is at risk, but eventual failure or non-failure is uncertain (Correia, 2019:5-28; Beaver *et al.*, 2010:118; Els, 1996:18–19; Altman *et al.*, 1977:35; Altman, 1968:594–595). The accuracy of the Z-score diminishes substantially as the lead time increases, which reduces its predictive power and application (Els, 1996:20; Altman, 1968:604). Nonetheless, several studies have found that the Z-score is useful for failure prediction and that a deteriorating trend as bankruptcy approached was almost always observable.

According to the results depicted in Graph 6.61 (*Altman's Z-score*), all South African companies are at risk of financial failure. Although one might immediately reason that the Z-score is not accurate in its application to the average ratios of non-matched, randomly selected companies, it perhaps behoves us to spend some time contemplating whether, in fact, the results may not be absolutely accurate – in a South African context, where the leadership is changeable, corruption is rife, instability is the norm, and unemployment is *de rigueur*, is it not perhaps true that most companies are constantly at risk of financial failure?

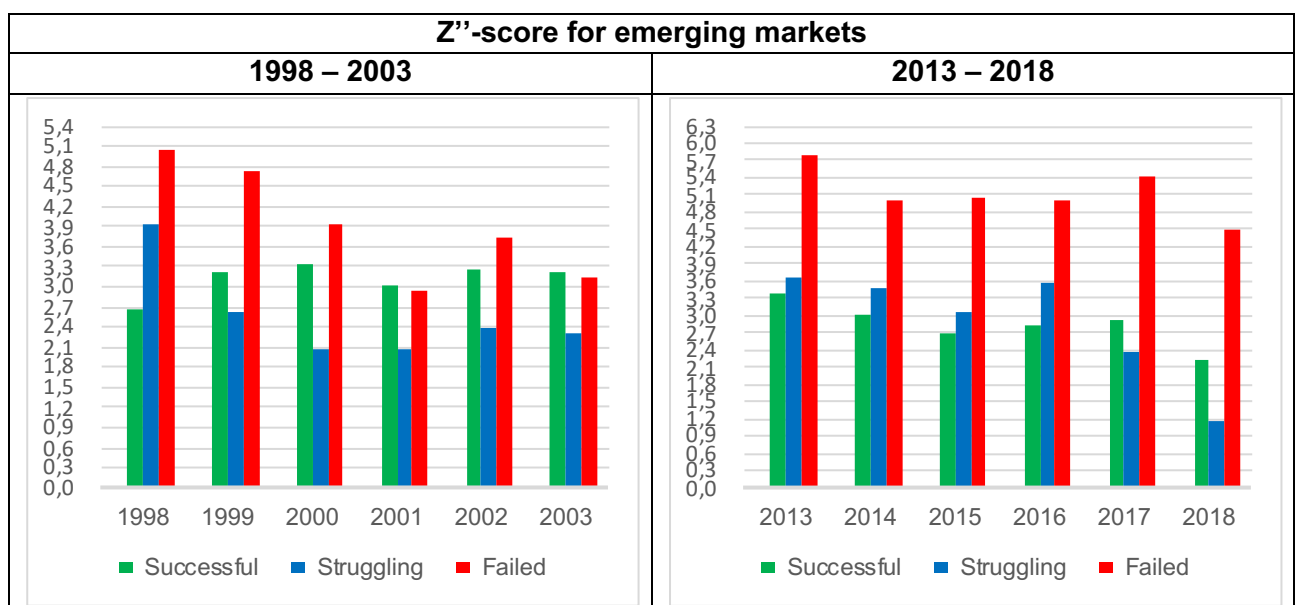
That said, despite the fact that the results indicate that all of the companies in this study (on average) have Z-scores below 1.8, the Z-scores may still well be useful for the purpose of distinguishing between successful and failed companies. It is clear from the graph presented above that the successful companies achieved noticeably higher Z-scores than the failed and struggling companies. It may even be said that the successful companies stood '*head and shoulders*' above the competition. The failed companies had very low Z-scores in the 1998 to 2003 time period, and low and declining Z-scores in the 2013 to 2018 time period. The struggling

companies, as always, had volatile results, although they tended to outperform the failed companies, which would be in line with the expectations developed for the results of the application of Altman's Z-score.

Consequently, this study finds that Altman's Z-score is useful for the comparison of companies, and for distinguishing between successful and failed companies, but that the analysis should not be matched to Altman's pre-determined Z-scores. It is in the comparison to other companies that the value of Altman's Z-score lies. Volatile Z-scores should also concern analysts and users of financial statements, as such scores may indicate companies that are over-trading, or potentially heading towards financial disaster.

### 6.3.6.3 Altman's Z''-score for emerging markets

**Graph 6-62: Altman's Z''-score for emerging markets**



(Source: Author compilation)

**Table 6-9: Altman's Z''-scores for 1998 to 2003**

| <b>Z''-score</b>  | <b>1998</b> | <b>1999</b> | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Successful</i> | 2.6708      | 3.2232      | 3.3542      | 3.0164      | 3.2683      | 3.2088      |
| <i>Struggling</i> | 3.9291      | 2.6232      | 2.0768      | 2.0797      | 2.3981      | 2.3058      |
| <i>Failed</i>     | 5.0292      | 4.7373      | 3.9519      | 2.9526      | 3.7151      | 3.1230      |

(Source: Author compilation)

**Table 6-10: Altman's Z''-scores for 2013 to 2018**

| <b>Z''-score</b>  | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> | <b>2018</b> |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Successful</i> | 3.3913      | 3.0126      | 2.6864      | 2.8486      | 2.9063      | 2.2279      |
| <i>Struggling</i> | 3.6837      | 3.4782      | 3.0622      | 3.5936      | 2.3913      | 1.1836      |
| <i>Failed</i>     | 5.7889      | 5.0237      | 5.0639      | 5.0074      | 5.4101      | 4.5032      |

(Source: Author compilation)

Altman modified the Z-score and devised the Z''-model to evaluate and better fit companies in emerging markets. The sales/total assets ratio was excluded, and the market value of equity was replaced by the book value of equity. This model has previously been successfully applied in South Africa and other emerging economies. The Z''-model is set out as follows:

$$Z'' = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

Where:

- X<sub>1</sub>: Net working capital/Total assets
- X<sub>2</sub>: Retained earnings/Total assets
- X<sub>3</sub>: EBIT/Total assets
- X<sub>4</sub>: Book value of equity/Total liabilities

A Z''-score higher than 2.60 indicates a safe zone, where financial failure is unlikely, a Z''-score between 1.10 and 2.60 denotes a grey or danger zone, and a Z''-score less than 1.1 implies a high likelihood of failure or distress (Correia, 2019:5-29).

Unfortunately, the Z''-score that was developed particularly for application to emerging markets such as South Africa, does not deliver results that could be used to distinguish between

successful and failed companies, or to identify companies heading towards financial distress. Quite interestingly, in fact, nearly all of the Z-scores are the inverse of what was expected.

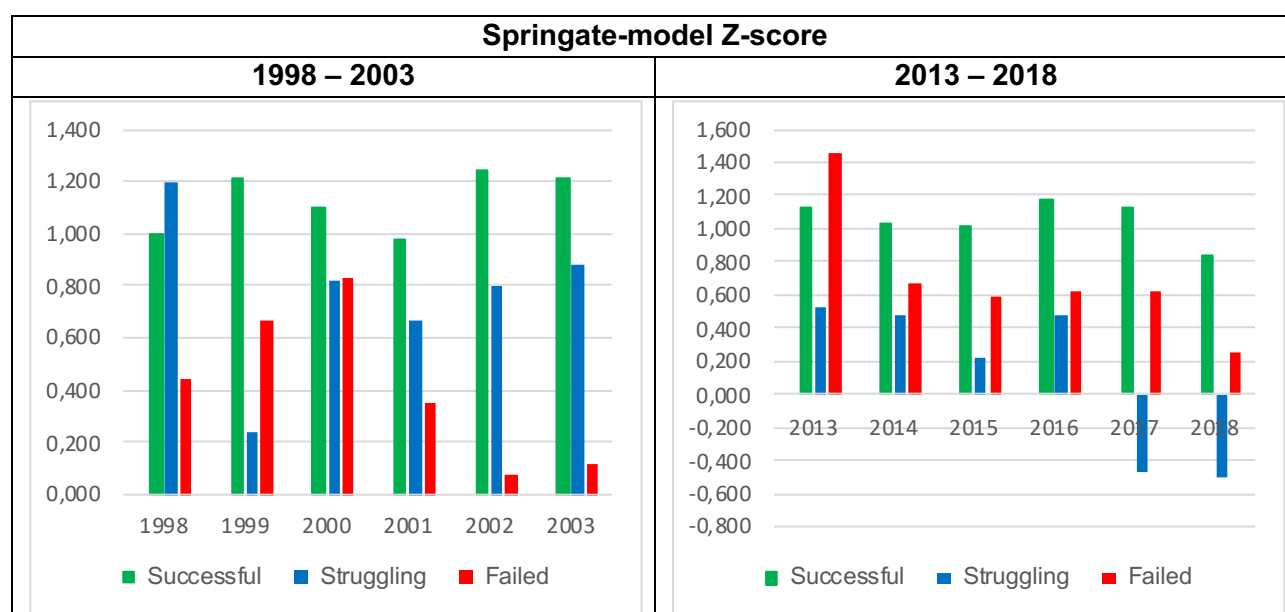
From 1998 to 2003, both the successful and the failed companies had Z"-scores in excess of the 2.60 threshold, indicating 'safe' investments, with the failed companies vastly outperforming the successful companies. Although the results for the struggling companies in the same time period fluctuate considerably, it is also only in 2000 and 2001 that the average Z"-scores decrease to a level less than 2.60, placing the struggling companies in the 'grey' zone during this period. The struggling companies' Z"-scores are at least less than the Z"-scores of the successful companies, which fit with expectations.

Very much the same can be said for the 2013 to 2018 time period, with the failed companies once again performing the best of all three sets of companies, with results far in excess of the 2.60 threshold. The successful companies exhibit more volatile results, but appear to be following a decreasing trend, which does not fit with the rest of the analysis that found that these companies were performing well and were likely to be able to continue as going concerns well into the future. The struggling companies outperformed the successful companies in the first four years of the analysis as well.

Consequently, it is possible to unequivocally state that, perhaps as a result of sampling bias, the Z"-score does not deliver reliable results within a South African context and is not able to distinguish between successful and failed companies, or to act as early warning indicators of potential financial failure. The reasons for these anomalies could form the base of a future study.

### 6.3.6.4 The Springate-model Z-score

Graph 6-63: The Springate-model Z-score



(Source: Author compilation)

Table 6-11: The Springate-model Z-scores for 1998 to 2003

| Springate Z-score | 1998   | 1999   | 2000   | 2001   | 2002   | 2003   |
|-------------------|--------|--------|--------|--------|--------|--------|
| Successful        | 0.9976 | 1.2121 | 1.1002 | 0.9805 | 1.2389 | 1.2123 |
| Struggling        | 1.1963 | 0.2421 | 0.8226 | 0.6665 | 0.7988 | 0.8831 |
| Failed            | 0.4387 | 0.6693 | 0.8274 | 0.3525 | 0.0796 | 0.1179 |

(Source: Author compilation)

Table 6-12: The Springate-model Z-scores for 2013 to 2018

| Springate Z-score | 2013   | 2014   | 2015   | 2016   | 2017     | 2018     |
|-------------------|--------|--------|--------|--------|----------|----------|
| Successful        | 1.1265 | 1.0354 | 1.0079 | 1.1742 | 1.1316   | 0.8328   |
| Struggling        | 0.5305 | 0.4707 | 0.2211 | 0.4843 | (0.4722) | (0.5041) |
| Failed            | 1.4572 | 0.6752 | 0.5827 | 0.6217 | 0.6223   | 0.2562   |

(Source: Author compilation)

The Springate-model Z-score formula is as follows:

$$Z = 1,03X_1 + 3,07X_2 + 0,66X_3 + 0,4X_4$$

Where:             $X_1$ : Net working capital/Total assets  
                      $X_2$ : EBIT/Total assets  
                      $X_3$ : EBIT/Current liabilities  
                      $X_4$ : Sales/Total assets

The Springate-model does not have a grey zone. If a company scores less 0.862 with this model, it is classified as failed, whereas a score greater than 0.862 indicates that a firm may be classified as healthy (Yendrawati & Adiwafi, 2020:73).

Of the financial distress models, the Springate-model definitely delivers the most accurate results in terms of distinguishing between successful and failed companies. The Springate-model Z-score correctly classified successful companies in all six years over both time periods, and correctly classified the failed companies in eleven of the twelve years, with only the Z-score for 2013, the first year of the analysis for the 2013 to 2018 time period, not classifying the failed companies correctly. Moreover, the model correctly established a declining trend line for both time periods for the failed companies, and showed that the successful companies, although their results may also vary per annum, firmly delivered results that outperformed the other companies in nearly every year of the analysis.

In terms of the struggling companies, the results are yet again volatile. However, the Z-score classifies the struggling companies as at risk of failure in all years except 1998 and 2003, which, given the other results discussed for the struggling companies in the analysis above, is most likely accurate. It is doubtful whether the companies that were identified as struggling will be able to survive in the long term, and a subsequent study to determine the success or failure of these companies, could be enlightening.

Therefore, it may be stated at the conclusion of this chapter, that the one ratio that gives a convincing and consistent result, which should allow the users of financial statements to distinguish between successful and failed companies, is the Springate-model Z-score. It would be in the interest of South African investors, analysts and the management of companies, if this ratio was far more widely used and acknowledged.

## 6.4 Conclusion

Financial ratios remain relevant and useful for the analysis and interpretation of the performance and financial position of companies, including those listed on the JSE. Although the analysis of financial ratios may be subjective, and based to some degree on the skills and experience (and potentially biases) of the analyst, some financial ratios clearly are better at allowing the users of financial statements to predict potential financial distress in a timely manner than others.

This study, which for two different time periods analysed the average data of selected samples of successful, struggling and failed companies, has found that there are financial ratios that outperform others in their ability to assess the likelihood that a company may become illiquid or insolvent, and be forced into some form of failure, whether that failure is defined as liquidation, becoming a target for a takeover, or having to be significantly restructured in order to survive.

Aside from the Springate-model of financial distress, which proved to be remarkably accurate in its ability to distinguish between successful and failed companies, and which could be used as a stand-alone indicator of a company at risk of failure, the following ratios had strong discriminatory power:

- The headline earnings per share in the last two to three years prior to failure. A decline in the headline earnings, and earnings that are far lower than market averages, may be signs of financial distress. However, as the results were only really reliable a few years prior to the collapse of a company, the analysis of headline earnings per share may not give the management of a company sufficient warning of impending problems to be able to take corrective action.
- The return on assets, measured as the earnings before interest and tax divided by long- and short-term assets. In the latter time period, the successful companies delivered higher returns than both the struggling and the failed companies, in the five years preceding the bankruptcy of the failed firms. Although this ratio may not be an exact predictor of failure, it certainly indicates which companies are performing better in utilising the assets under their control and, by implication then, should be better able to generate shareholders' wealth in the long run.
- Hand-in-hand with the return on assets ratio, the asset turnover ratio, which indicates the sales revenue a company is able to generate with the assets it has at its disposal, was also

an excellent discriminator between successful and failed companies, with successful companies having far higher asset turnover ratios than unsuccessful ones.

- Interest and finance charges as a percentage of long-term interest-bearing debt, but only when viewed over a long period of time. The interest and finance charges of the unsuccessful companies probably increase as these companies are increasingly assessed as high risk, possibly as a result of having missed payments or having to renegotiate credit terms, and because they only have access to more expensive forms of financing, based on their relatively smaller size than the successful companies. Over time, it is possible to see that the struggling and failed companies are increasingly subjected to higher interest rates than are successful companies.
- Operational cash flows to current liabilities also proved to be a relatively good indicator of potential financial distress. However, care should be taken when analysing this ratio, as sales of operating and other current and non-current assets in the final years of a failed company's existence, may skew the ratio. Cash flows from abnormal activities are not necessarily excluded from operational cash flows in published financial statements, and therefore an improvement in this ratio does not prove that a company is performing better or is less at risk of financial failure.
- The change in net income ratio, which is the year-on-year change in the revenue generated by the company, was also useful in distinguishing between successful and failed companies. It also became clear, just by studying the Rand amounts of the revenue generated per annum, that successful companies were able to grow their revenue, mostly at rates higher than the inflation rate in South Africa, and even during tough trading conditions. Struggling companies delivered unexciting and consistent revenues which, in real terms, indicated a decline in turnover and thus market share, whereas failed companies' revenues decreased annually. Without sufficient turnover, a company cannot hope to generate the operating income it requires to continue to trade effectively and efficiently.
- Finally, the market-to-book ratio was also accurate in distinguishing between failed and successful companies in nearly all instances. Care has to be taken, though, in interpreting the ratio. The ratio indicates the expectations of the market of the company in future, in relation to the relative riskiness of an investment in the company. However, the market price will change based on information that becomes available to the general public – thus, by



the time the market prices have dropped, the market will already be aware that a company may be in financial trouble. Although the ratio can then assist an investor in spotting a company that may be in financial distress, it probably will not allow management or users of financial statements to spot the trend before other users do so, and therefore cannot be said to provide information on a timely enough basis to be able to react successfully to the change.

Ratios that delivered moderately successful results in distinguishing between failed and successful companies, or indicating potential financial failure, include the following:

- Altman's Z-score model was able to clearly distinguish between failed and successful companies in most years of the analysis. However, the Z-score also did indicate that all South African companies are at risk of financial failure. The ratio should thus only be applied when companies are compared to each other and not in relation to the thresholds that were set by Altman.
- The interest cover and the cash interest cover – declines in these ratios should definitely be of interest to shareholders, management and analysts, as they could indicate probable financial failure. Again, the ratio should just be applied cautiously, as it did not classify companies correctly as failed or successful in all instances, and could be influenced by abnormal sales transactions.
- The cash balance of companies could possibly be useful in predicting financial distress, as this study's analysis clearly showed that successful companies over time, grew their cash balances whilst struggling, and failed companies were unable to do so with the same rate of success. However, a cash balance could easily decrease for a very legitimate reason, e.g. the acquisition of a very productive asset, investment in a lucrative project, or the take-over of a profitable competitor. This ratio should therefore not be used in isolation, or without verifying the reasons for changes by considering the qualitative information that is provided in the financial statements and the financial press.
- The return on equity formula was moderately successful in distinguishing between successful and failed companies, and decreases in the returns should certainly worry investors and the management of the company. However, this ratio should also be used in conjunction with other financial figures, as a multitude of factors – even including manipulation of the accounting records – could affect the final result.

- The percentage change in the shareholders' interest over the long-term, although not necessarily distinguishing successfully between failed and successful companies, did show that extreme volatility could be an indicator of financial distress. Volatility was found throughout this study to especially denote companies that were struggling to remain successful or to avoid failure, and could also be reasoned to be an indicator of the results of overly fast growth, i.e. overtrading.
- Both the long-term interest-bearing debt to market capitalisation ratio and the outside shareholders' interest as a percentage of total assets ratios seemed to indicate that struggling companies were guilty of overtrading and could therefore be used to assess the reasonability of the growth rates achieved by companies.

In all instances, aside from the Springate-model Z-score, it bears repeating that the financial ratios should not be assessed individually. If a sample of the ratios mentioned above is used in conjunction to form an overall picture of a company's financial health and its ability to earn a reasonable return for its shareholders, and this analysis is enhanced with a review of qualitative information, the financial statements of a company should be useful in providing the users thereof with information that will assist in economic decision-making, particularly with regard to the assessment of a company's ability to continue as a going concern over the long term.

Ratios that have often been touted as excellent predictors of financial failure, which were found in this study not to be particularly meaningful, include the percentage increase in total liabilities (especially as successful companies apparently use the highest levels of debt financing without experiencing any financial difficulty), the retained earnings as a percentage of the total assets ratio, the total repayment period (which was only able to classify the struggling companies correctly), the free cash flow to debt ratio, the efficiency of cash flow ratio, the net working capital to total assets ratio, the net profit margin, the Z''-score for emerging markets, and the changes in share price ratio.

Most interestingly, the debt-to-equity ratio, the total debt-to-total assets (or solvency) ratio, and the acid test, all delivered results that were the inverse of what was expected, and did so fairly consistently. It would be interesting in future studies to try to determine the reasons for these apparent anomalies, and to determine whether the inversed ratios may be used for failure prediction.

## CHAPTER 7 CONCLUSION AND RECOMMENDATIONS

### 7.1 Introduction

*Forgiving failure is one thing, forecasting it another.*

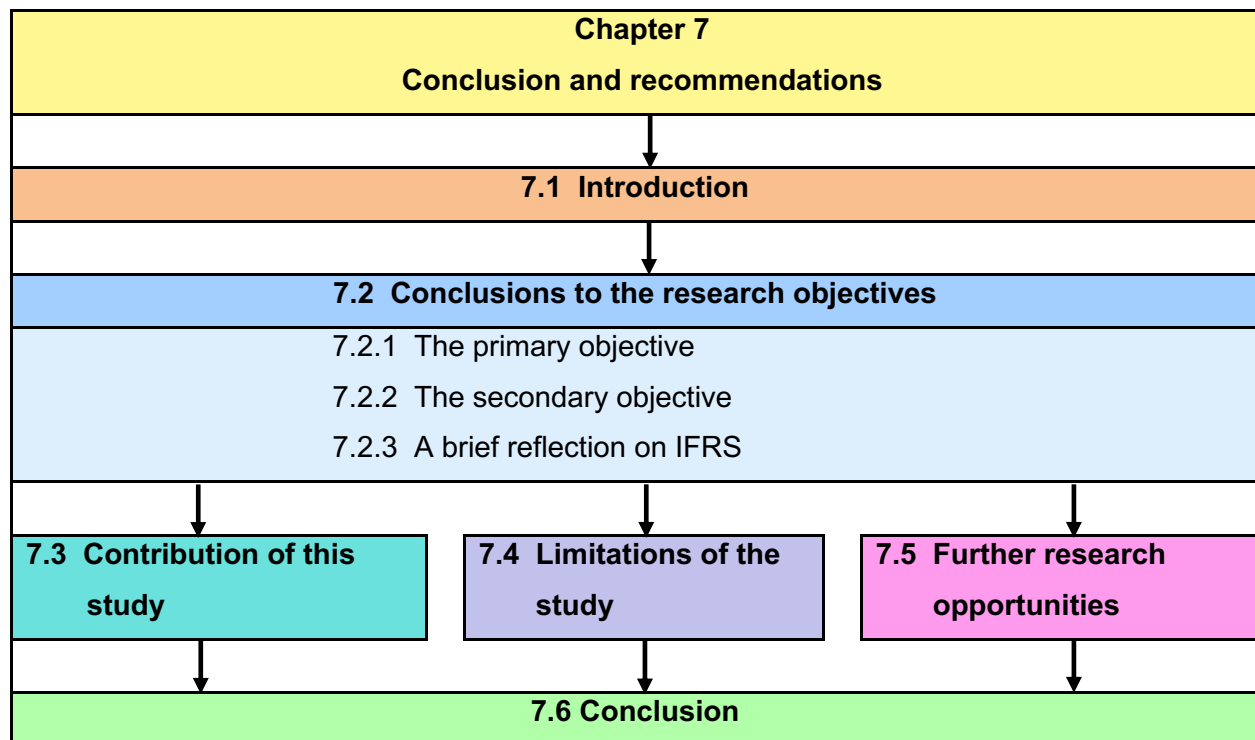
*Kurunmäki & Miller (2013:1104)*

In Chapter 1, the motivation and justification for this study into business failure prediction were discussed and investigated, and the research objectives were defined. In Chapters 2 to 4, the results of the literature review regarding the users and the usefulness of financial statements, the limitations of financial statements and financial ratios, the key attributes of successful companies and the previously identified warning signals for corporate distress, as well as the history and dilemma of the going concern principle, were presented. Chapter 5 explained the research methodology that was applied to ensure that sufficient and appropriate evidence would be obtained to properly investigate and answer the research objectives, and the results of the financial ratio calculations and analysis were detailed in Chapter 6.

The purpose of this chapter is to summarise the findings of this study, to present conclusions – if not answers – to the research questions, and to acknowledge the limitations that constrained the research that was performed. The chapter and the dissertation conclude with suggestions for viable future areas of research.

This chapter consists of six sections. Figure 7.1 below presents a summary of the chapter:

**Figure 7-1: Overview of Chapter 7**



(Source: Author compilation)

Chapter 7 provides a logical conclusion from the data interpreted in the previous chapter. In Section 7.1, the chapter outlay is reviewed. The research objectives that were set for the study are revisited and answered in Section 7.2, whereafter this study's contribution is explained in Section 7.3. In Section 7.4, the limitations that constrained this study are addressed and in Section 7.5, suggestions for further areas of research are offered and explained. Section 7.6 concludes the chapter and the dissertation. The discussion now turns to the study's research objectives and an evaluation of whether they have been met.

## **7.2 Conclusion to the research objectives**

### **7.2.1 The primary objective**

The primary objective of this study was to assess the usefulness of financial statements in assisting the users thereof to successfully distinguish between healthy (or successful) and unhealthy (or failed) companies and to determine whether there were any variables, for example a key financial ratio, that could warn companies and their stakeholders that the entities might be heading towards financial distress. The purpose is to allow stakeholders the opportunity to prevent

future financial losses, e.g. by protecting investors from risking their personal resources through a continued investment in a failing company, protecting financiers from extending lines of credit to companies that are unlikely to be able to meet their debt commitments, and protecting customers from purchasing products where after-sales services or the honouring of warranty commitments are uncertain. In addition it is also to warn the management of companies timeously about potential going concern issues, so that preventative action and turn-around strategies may be implemented before disaster strikes, and thus to ensure the survival and continuance of the companies.

Consequently, this study analysed the financial statements of two groups of successful companies, two groups of companies that had failed, and two groups of companies that appeared to be on the verge of failure. There were two groups of each type of company (successful/struggling/failed), so that results over two different time periods could be analysed and compared: the first time period was set for 1998 to 2003, which pre-dates the 2005 implementation of the International Financial Reporting Standards (IFRS) and the 2008 global recession; the second time period was set for 2013 to 2018, to be as recent as possible to the date of this study, whilst still avoiding the upheavals and abnormal conditions brought about by the 2020 COVID-19 pandemic. The results of the analysis, which were presented in Chapter 6 of the study, are summarised below:

**Table 7-1: Table of financial ratios and usability for failure prediction**

| <b>Financial ratios considered useful for failure prediction</b>                                                                | <b>Financial ratios with limited usability</b>                                                                                 | <b>Financial ratios that did not assist with failure prediction</b>                               |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Interest cover ( <i>from three years prior to failure; declining cover or a cover of less than 3 denote potential failure</i> ) | Percentage change in shareholders' interest ( <i>close to failure date; downward trend for failed companies</i> )              | Percentage change in long-term liabilities                                                        |
| Cash interest cover ( <i>especially if viewed over the long-term; higher for successful companies</i> )                         | Total long- and short-term liabilities per annum ( <i>successful companies are more indebted</i> )                             | Percentage change in total liabilities                                                            |
| Percentage change in revenue ( <i>successful companies grow continuously, at rates higher than inflation rates</i> )            | Outside shareholders' interest as a percentage of total assets ( <i>increasing levels are a possible sign of overtrading</i> ) | Cash generated, and cash used (total Rand amounts), across operations, investments, and financing |

| Financial ratios considered useful for failure prediction                                                                                                        | Financial ratios with limited usability                                                                                              | Financial ratios that did not assist with failure prediction                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Percentage change in earnings before interest and tax<br><i>(successful companies grow continuously)</i>                                                         | Total debt-to-total assets <i>(only if the inverse ratio can be used – to be investigated)</i>                                       | Financial gearing                                                                                                                                  |
| Asset turnover <i>(to distinguish between successful and failed companies; higher for successful companies)</i>                                                  | Debt-to-equity (market values) <i>(only for signs of distress; an increasing ratio associated with distress)</i>                     | Debt-to-equity (book values)                                                                                                                       |
| Return on total assets <i>(from three years prior to collapse; higher for successful companies)</i>                                                              | Percentage change in finance charges in the Statement of Profit or Loss <i>(only as a warning; look for sudden, sharp increases)</i> | Market capitalisation-to-total liabilities                                                                                                         |
| Altman's original Z-score <i>(provided that it is used to distinguish between successful and failed companies; Altman's traditional thresholds do not apply)</i> | Interest and finance charges as a percentage of total interest-bearing debt <i>(only as a trend viewed over the long-term)</i>       | Retained earnings as a percentage of total assets <i>(if declining, the ratio could potentially warn of distress – to be investigated further)</i> |
| Springate-model Z-score <i>(best indicator overall)</i>                                                                                                          | Total cash balances per annum <i>(as a long-term trend; successful companies grow balances steadily, others are volatile)</i>        | Percentage change in cash and near-cash balances over time                                                                                         |
|                                                                                                                                                                  | Operating cash flow-to-current liabilities <i>(low levels and/or decreases may denote continuity problems)</i>                       | Total repayment period                                                                                                                             |
|                                                                                                                                                                  | Current asset balances per annum <i>(successful companies' balances are higher and increase over time)</i>                           | Free cash flow to debt                                                                                                                             |
|                                                                                                                                                                  | Current ratio and acid test <i>(only if inverse ratio can be used – to be investigated)</i>                                          | Net profit margin <i>(only a clear decline in the final year prior to failure: not timely)</i>                                                     |

|  | Financial ratios with limited usability                                                                                                                                                              | Financial ratios that did not assist with failure prediction |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
|  | Headline earnings per share<br><i>(declines and/or ratios below market averages indicate distress; significant from two to three years prior to failure)</i>                                         | Efficiency of cash flow                                      |
|  | Return on equity (book values)<br><i>(useful for failure prediction only; decline visible two to three years prior to failure)</i>                                                                   | Price-to-Cash flow ratio                                     |
|  | Return on equity (market values)<br><i>(useful for failure prediction only; decline visible two to three years prior to failure)</i>                                                                 | Net working capital as a percentage of total assets          |
|  | Market-to-book ratio<br><i>(decreasing ratios and/or ratios less than 1 are signs of distress)</i>                                                                                                   | Price/Earnings ratio                                         |
|  | Percentage change in the market price per share<br><i>(limited value; decreasing trend denotes distress)</i>                                                                                         | Percentage dividend yield                                    |
|  | Number of persons employed<br><i>(as a size indicator: most successful companies were large players; may also indicate overtrading [sharp increases] or distress [declines, i.e. retrenchments])</i> | Dividend cover                                               |
|  | Average salary<br><i>(successful companies pay more – to be investigated)</i>                                                                                                                        | Altman's Z"-score for emerging economies                     |

(Source: Author compilation)

It is therefore possible to summarise that, although there are various financial ratios that could be useful for failure prediction across industries in a South African context – where most listed companies trade in more than one industry – there are a very limited few that give accurate and unqualified results in terms of timeous failure prediction and that also have the ability to distinguish between successful and failed companies appropriately and reliably. As Veganzones and Severin (2020:216) and Charitou *et al.* (2004:483) noted, financial ratios should be used to design the failure prediction model that stakeholders apply when analysing companies' performance and financial condition, but complementary variables – such as qualitative disclosures – should also preferably be integrated into the analysis to provide a broader view on failure and more accurate results.

The most successful ratio was the Springate-model Z-score, which delivered undeniably accurate results for distinguishing between successful and failed companies across all years of both time periods. The Springate-model Z-score could significantly improve the economic decision-making abilities of the users of financial statements and, therefore, should be receiving far more attention from stakeholders of companies, researchers, and the financial media, than it currently garners. This study would like to suggest that it ought to be included in the key financial ratios disclosed and published by companies as part of their annual financial statements.

The conclusion is therefore that financial statements remain useful to decision-makers when assessing the risk of potential financial distress, but financial ratios should be applied judiciously and in conjunction with other metrics.

### **7.2.2 The secondary objective**

The **second objective** of the study was to contemplate, based on the conclusions reached with regard to the primary objective, whether the going concern principle is still deserving of its status as an underlying principle of financial accounting, given that the assumption of unlimited life for corporate entities may be in question. To be meaningful, the going concern principle should add value to the users of financial accounting and annual financial statements: it should enhance their decision-making. If it does not, it does not have to be accepted and stated as an accounting principle.

The results of this study have shown that there aren't many financial ratios that will assist the users of financial statements in assessing whether or not a company is a going concern. The majority of the financial ratio figures were inconclusive at best, and the financial statements that



provide the information for the application of the financial ratios are vulnerable to manipulation. Previous research, as noted in Chapter 1, has shown that the majority of companies and their auditors did not alert the users of financial statements to potential going concern problems or risks, until the companies were virtually beyond help and certain to fail.

Consequently, there are potentially two arguments against the going concern principle being inherently assumed that may be considered. These two arguments contrast with one another, although both ultimately lead to the same conclusion:

- In the current business environment, where the rate of technological change and investment in artificial intelligence is not just high, it is extreme, where competition is global, and where times are unpredictable and turbulent due to wars, pandemic lockdowns and political upheaval (amongst others!), it is difficult to justify the belief that any company has perpetual life, irrespective of its status as a separate legal entity. Is the ability to meet debt obligations in the short-term, sufficient proof of a long-term life expectancy? Given that the Altman Z-score comprehensively indicated that all South African companies are at risk of failure – even the so-called successful groups of companies – one could argue that the going concern principle no longer applies to any of the companies trading on the JSE.
- In a simple analogy, the life of a company may be compared to the life of a human being. Until the moment when someone dies, their exact moment of death is not certain. And yet, until that moment has passed, a person cannot be said *not* to be alive. Certainly, if a person has a terrible and life-threatening illness, they may succumb earlier than a healthy individual – however, this is not true in all cases: even a healthy individual may pass away as a result of an accident or due to crime, and ill people could be cured. For the most part, doctors and family members will try their best to treat a patient until there are no more medical or other treatment options available.

The same may be said of a company. Until the moment that it is liquidated in a court of law, a company cannot be said to have come to an end. Companies will likely continue trading, albeit at a reduced scale, until the last asset or piece of inventory has been sold and the doors to the business locked (Musvoto & Gouws, 2011:35; Sterling, 1968:482). There is also always the hope of recovery, even for companies suffering from terrible financial distress. Recovery may be the result of changing economic conditions, interventions by stakeholders and financiers, bailouts by the South African government, the closure of a competitor, or due to management buy-outs, amalgamations, mergers or takeovers. Thus,

although the company may not be able to continue in its present condition, and although there may be very strong indications of potential future failure, the company may yet continue under a different name, with a different partner, or with new management, and cannot be denoted as 'failed' until it has been liquidated, de-listed and de-registered.

The International Financial Reporting Standards advise accountants that, if it is certain that a company will not be able to survive, its financial accounts ought to be prepared on a liquidation basis rather than a going concern basis. For the most part, such a revised policy would affect the values of the assets of the company. The determination of revenue and costs, and the values of liabilities, are not likely to be significantly affected. The question arises whether, with the advent of fair value accounting and the possibility of making use of impairments to re-value assets to acknowledge changes in their expected useful lives, it is necessary to adopt a completely different accounting basis for the preparation of the financial statements simply because a company is deemed to be in distress. In fact, if fair value accounting and IFRS are applied consistently, an assessment is already made at the end of each financial year, for each major component of an asset, of its remaining economic life and value-in-use, and impairments would already be provided for when the asset or component is deemed to have decreased in value. Moreover, the final sales value of an asset, and thus the intrinsic value of the company, will not be known until the final liquidation has taken place, which supports the argument put forward by Fremgen (1968:649) and Sterling (1968:481) that going concern is more of an assumption than a principle as it is provisional until the occurrence of subsequent events (and that it is consequently unnecessary to accounting). A declaration by management that a company is in financial distress could serve as a more powerful communication tool, and be more effective at reaching stakeholders, than a note in the financial statement about the basis that was applied.

Having noted all of the above, it should also be acknowledged that the primary purpose of most companies is to maximise wealth for their shareholders. A company's potential to create wealth is determined by its attitude and response to risk and its ability to generate future cash flows. To create sustainable cash flows, the business has to be financially viable (Karas & Režňaková, 2020:25) – this certainly implies that a company must be able to continue as a going concern. However, it does not necessarily mean that it has to be accounted for as such. Businesses existed for millennia before accounting was even introduced; consequently, it is not the paper recording of the transactions that count (although SARS might argue with that); instead, it is the products produced, the services delivered, the people employed and the processes followed, that create

value. When one further considers that different companies, even in the same country, apply different accounting standards, the basis of accounting nearly becomes a moot point.

What is infinitely more valuable, in this researcher's opinion, is that the users of financial statements – instead of having to assume that a company is a going concern because there is an accounting principle that tells them so – are informed pertinently and unambiguously by the management and the auditors of a company whether a company is able to continue, if not indefinitely, then at least for the foreseeable future. Instead of an emphasis of matter paragraph, or a well-hidden paragraph in an executive officer's report, the suggestion this study would like to put forward is that there ought to be a much clearer, more prominent and more comprehensive declaration at the start of all published financial statements, of whether a company is a going concern or not. This would also entail the publication of far more detailed reports than are currently available to the general public, which would relate to the company's strategies, its current problems, its definable plans for improvement, its supporting cash flow predictions and its established performance indicators.

Although it may be argued that such detailed reports will destroy a company's ability to compete effectively, this potential disadvantage should be weighed against the increased accountability of the management and auditors of a company, the assurance such a declaration could afford the users of financial statements, and the advantages of protecting investors, employees, creditors and society, from sudden and unexpected financial collapses. A company that delivers an excellent service or produces a sought-after product is not likely to lose its competitive edge completely by publishing more (hitherto internal) documents. The publication thereof will allow investors to scrutinise the company's plans, to judge the reasonableness of the financial information, to question management at shareholders' meetings, and to make more informed financial decisions. Such declarations will render the application of a going concern principle unnecessary and will be far more useful to those investors who are not experienced analysts or financially literate accountants, than an underlying accounting principle.

### **7.2.3 A brief reflection on IFRS**

Although not a specific objective of the study, it was also stated in Chapter 1 that some consideration would be given to the question of whether the change in the accounting standards for South African listed companies from generally accepted accounting principles to International Financial Reporting Standards (IFRS), contributed to the meaningfulness of the annual financial statements, especially when assessing financial distress and the likelihood of failure.

The intent of accounting standard-setters is to set standards that ensure that financial statements become more useful and relevant to investors and other users of annual financial statements. If the standard-setters manage to do so successfully, the quality of the financial statement data ought to be enhanced, and consequently, the predictive ability of the annual financial statements and the financial ratios applied to those statements should improve (Zeller *et al.*, 2019:20; Beaver *et al.*, 2005:94).

Numerous researchers consequently tested the assertion that the adoption of IFRS would lead to a reduction in the variability of financial ratios in comparison to the ratios that were produced before IFRS was implemented, and the majority found that there had been a significant improvement. This means that the ratios that are based upon audited financial statements may be relied upon, are consistent, and that they produce results that are comparable to the financial ratios of other companies in the same country and industry. Only one South African author in 2013 determined that there had been a minimal change to the information value of the annual financial statements published by South African companies (Zeller *et al.*, 2019:20–22).

This study revealed that there has been some improvement – a reduced variability – with respect to the debt ratio, the percentage change in total liabilities ratio, the interest cover and the price-to-cash flow ratio. However, this improvement may also be due to changed business conditions, lower overall debt levels and other external factors, and credit for the improvement can therefore not be afforded to the implementation of IFRS alone. This study will therefore have to conclude that there was very little discernible improvement in the predictive ability of the financial ratios employed in this study, based on the data provided by IRESS, the financial software programme used by the majority of South African universities to aid accounting and financial research, before and after the implementation of the International Financial Reporting Standards.

### **7.3 Contribution of this study**

Corporate failure prediction has become a cornerstone of accounting research (Veganzones & Severin, 2020:215). This is not surprising, as corporate failures can have devastating effects on businesses and a country's economy. Corporate failures can also wipe out the pension funds of vulnerable investors, traumatise employees, and lead to reduced trust in managements, accountants, auditors, and even accounting systems (Jung & Nanda, 2021; Krawcheck & Lowry, 2021; Veganzones & Severin, 2020:219; Ashraf *et al.*, 2019:1; Correia, 2019:1-3; Alaka *et al.*, 2018:164; Jiang & Jones, 2018:1064; Marriage *et al.*, 2018; Liang *et al.*, 2016:561; Situm,

2014:23; Alareeni & Branson, 2013:113; Kurunmäki & Miller, 2013:1100; Roos, 2005:12–13; Charitou *et al.*, 2004:465–466; Payne, 2000:5; Kincaid, 1998:27; Deakin, 1972:167).

The purpose of the research into corporate failure prediction is therefore to identify financial ratios and business failure prediction models that may better assist the users of the annual financial statements of companies in identifying potential financial distress or failure in a timely manner, so that the necessary corrective action may be taken (Cassim, 2021:17–18; Karas & Režňaková, 2020:36). According to the Institute of Directors in Southern Africa (IoDSA, 2009) sustainability is the primary moral and economic imperative of the 21<sup>st</sup> Century. The key variables which determine whether a company is likely to fail or succeed therefore remain undeniably important.

This study was designed to determine whether there is a single key ratio or variable, or a group of such variables, which may assist the users of financial statements with the early identification of potential distress. The ratio which meets this objective is the Springate-model Z-score. This particular Z-score does not appear to currently be widely used in practice, and there is not a plethora of research available on its application – *in fact, its use could form the base for future research*. This study will therefore have made a contribution in bringing to light a potentially useful failure prediction model that may be applied by all users of financial statements and which could prove to be a game changer in a South African context. Moreover, as the model is made up of four individual financial ratios, the underlying parts of the model may point management in the right direction in terms of where remedial actions are required (e.g. by indicating that a company is overindebted, or over-invested in working capital, or not generating sufficient cash flow). The following stakeholders of companies, amongst others, may benefit from this determination:

- The management: A financial ratio that has the ability to correctly identify when a company may be in, or heading towards, financial distress, and which can do so a significant number of years before failure becomes inevitable, will allow the management to identify the risk, to determine the origin or reason for the distress, and to implement such changes as are necessary to return the company to profitability and positive cash flows.
- The employees: Employees will be forewarned that a company may be heading towards financial distress, and can react to the news in a number of different ways: (i) the employees can work harder or more productively to assist the company in reducing costs and eliminating

wasteful activities, (ii) they may use the time available before the closure of the business to upskill themselves (i.e. to acquire further training or qualifications) that will allow them to transfer to other companies or different positions more easily, (iii) it will help to ensure that employees' pension funds are protected, especially where these may be tied to share initiatives and personnel schemes, and (iv) it may afford the employees time to search for and find other lucrative positions before they are faced with traumatic retrenchments and out-of-work situations.

- **The shareholders:** Existing shareholders will have the opportunity, if potential failure may be detected soon enough, to ensure that the management of the company takes responsibility for returning the company to profitability and success or, failing that, to replace the management team with a more dynamic and successful group of individuals. Shareholders may also be able to disinvest from, or at least make the decision not to invest any further of their funds, into a company that has little chance of recovery. Potential investors will also be able to assess the risk of investing in a particular company, against the expected pay-off (in terms of shareholders wealth), to determine whether an investment is worth their while – some investors may not mind investing in a risky company, if the return for such additional risk is satisfactory.
- **Debt providers:** Debt providers can avoid extending or increasing lines of credit to companies that are heading towards financial distress, thereby also protecting their own shareholders or owners from financial losses as a result of irrecoverable debts.
- **Others:** Numerous other stakeholders, including suppliers, customers, the local authorities, government institutions, regulators and especially the society surrounding the company, may also be protected from unnecessary losses if the Springate-model Z-score proves, through further research and practical implication, to be as useful as this study seems to suggest.

The study furthermore attempted to address the question of whether or not the going concern assumption is required as an underlying principle of accounting, which must be applied when financial statements are prepared. According to this researcher, the principle does not add significant value to the decision-making abilities of the users of the financial statements and should rather be replaced with a requirement for management and/or the auditors of the company to present far more comprehensive justification for their assessments of companies as going concerns or businesses in distress. The suggestion may assist the following users:

- **Accountants:** Accountants and financial managers will have one less 'underlying principle' to consider when preparing annual financial statements. This may enhance their decision-making as well, for instance with respect to calculating the optimal depreciation periods of the major components of assets owned and used by the respective companies.
- **Standard-setters:** Standard-setters will be able to remove the going concern principle from the accounting standards and will no longer have to deliberate on the exact meaning of the term 'going concern', or have to frequently update the principle to constantly adjust to changing economic, technological and market conditions.
- **Others:** Other users will not be misled by making use of financial statements that they assume were compiled on a going concern basis, when in fact a warning about potential going concern issues was 'hidden in plain sight' in the myriad of financial statement notes, or where the auditors failed to qualify their audit reports as they did not judge the companies to be beyond redemption yet. Management and auditors are subjective in their assessments of a company's ability to continue as a going concern – by forcing them to provide justification for their statements, they are far more likely to put in the additional effort to ensure that their assessments are accurate or at least reasonable.

#### **7.4 Limitations of the study**

Despite several advances with regard to corporate failure prediction, forecasting limitations still remain (Veganzones & Severin, 2020:216). The items below have been identified as the most important limitations that applied to this particular study.

- The financial ratios tested for this study – in an attempt to find the one key financial ratio or group of ratios that could assist the stakeholders of companies with the early identification of signs of financial distress – are all based on the data that are available in the annual financial statements of the selected companies. Therefore, reliance has to be placed on the reasonableness of the content of the annual financial statements. In Chapter 2, the limitations which could hamper or affect the usefulness of the financial statements were explored. Two problems may, in particular, affect future studies:
  - The emphasis in current business and trading conditions is increasingly on artificial intelligence, big data analytics, and other technological improvements. Research into these, and the value of patents, licences and other intangible assets resulting from their development, are difficult to quantify. New-age companies could have statements of financial position that consist almost exclusively of intangible assets. The traditional accounting methods and financial ratios may not be applicable to these companies (Veganzones & Severin, 2020:217; Beaver *et al.*, 2005:94).
  - As a result of the implementation of IFRS, management and accountants are increasingly being called upon to use their discretion in, for instance, determining values, write-off periods, and appropriate discount rates. It is harder and more time-consuming to judge each of these discretionary items individually for reasonableness, and could therefore be used by management as a channel for adjusting financial statements to suit their needs, which may impair the usefulness and reliability of financial statement data (Beaver *et al.*, 2010:143; Beaver *et al.*, 2005:94).
- This study predominantly made use of financial ratios to inform the discussions about success versus failure, the results of which are contained in Chapter 6. However, as noted in Chapter 5, financial ratios also have some inherent flaws, the most significant of which is the assumption that predictions may be made about the future, based on trends observed in the financial ratios of the company over a period of time, because the future will reflect the past. In a fast-paced and ever-changing world, this is unlikely to hold true – the future is uncertain – and consequently, financial ratios and failure prediction models may not always deliver reliable results (Beaver *et al.*, 2010:156; Balcaen & Ooghe, 2006:65; Hajdu & Virág, 2001:28–29; Foster, 1986:538–539). The interpretation of the financial ratios may also be influenced by the personal biases and worldviews of the analyst of the information, and consequently, an analysis is subjective and may not necessarily be replicable.



To address these shortcomings, future studies should incorporate qualitative information into the analysis as failure prediction may best be served through a multi-faceted process, rather than the calculation of a 'single best predictor'. The ratio analysis can direct the user to potential areas of concern (BankruptcyCanada, 2022; Beckham, 2021; Barnard *et al.*, 2020:354 & 368; Veganzones & Severin, 2020:217; Marx *et al.*, 2017:67).

- The results of the analysis performed in this study may be sample-specific. This study purposefully aimed to eliminate differences in size and industry by making use of a non-matched design and average financial results for the companies selected for inclusion into each sub-set (successful/struggling/failed) which was analysed, so that the results could be extrapolated to smaller businesses, non-listed companies and companies in other countries. Nonetheless, the inclusion and exclusion criteria as defined in Chapter 1, as well as other variables such as staff morale, productivity, legislative requirements and political unrest, which were not accounted for in the sample selection and which might have influenced the outcome of the empirical study, could inadvertently have led to sampling bias (Veganzones & Severin, 2020:217; Kurunmäki & Miller, 2013:1111; Becchetti & Sierra, 2003:2117; Platt & Platt, 2002:186; Scott, 1981:325; Joy & Tollefson, 1975:725–726; Edmister, 1972:1478). Other companies and businesses may therefore not experience the same trends and phenomena as those noted in this study.

Furthermore, due to the requirement for the companies selected for this study to have financial data available for a minimum of six years so that long-term trends could be identified, all new or newly listed companies were effectively excluded from the sample. New businesses are more likely to fail than older, established entities, and therefore it would be useful in future research to apply the results from this study to companies with a limited financial history (Balcaen & Ooghe, 2006:75; Foster, 1986:561; Scott, 1981:325; Altman, 1968:609). As the study also purposefully opted to exclude years where there were substantial economic upheaval and uncertainty (i.e. 2008 and 2020), the results of this study mostly apply to normal operating conditions. The results would have to be re-tested for years excluded from this study to determine whether the conclusions hold across all possible economic conditions.

- This study demanded that the reason for delisting was determined to ensure that a company that had delisted for strategic or operational reasons was not selected for inclusion into the 'failed' groups of companies – the reason for a company's demise had to be actual financial failure. However, the JSE has a limited number of listed entities and the number of listed

companies is continuously decreasing (MyBroadband, 2022). Consequently, the meaning of financial failure was not limited to liquidation (either voluntary or mandatory) only, but also included a workout with creditors or a takeover by another company where the takeover was effected based on the poor results delivered by the target company in the lead-up to the merger or amalgamation.

- IRESS is considered to be a reputable data source based on respected financial software. It is widely used by analysts and university students as a base for financial research. It is one of a very limited number of databases that provide information from as early as the 1990s, and that has information available on both listed and delisted public companies, and that also focuses on South African companies. For the empirical analysis conducted in this study, reliance was placed on the data provided by IRESS and adjustments were made where these were considered imperative and justified.

## 7.5 Further research opportunities

*Good research advances understanding but never provides the ultimate answer; we always have more to learn. And life offers no guarantees.*  
(Collins & Hansen, 2011:182)

This study attempted to address whether the annual financial statements of a company are still useful to the various stakeholders who have an interest in a company, especially in relation to the time identification of a company that may be heading for financial distress. The study also briefly deliberated whether the going concern assumption is still worthy of its status as an underlying principle of accounting.

Some interesting answers were uncovered, some exciting discoveries were made, and some potentially controversial suggestions were put forward. However, it is also clear from the results achieved that further research is needed and warranted, and that more knowledge may be acquired. There is always room for growth. Consequently, this study would like to recommend the following future and further research opportunities to its readers:

- The most important suggestion would likely be to investigate the Springate-model Z-score in far more detail, on a larger sample size and on an individual-company basis. It should also be tested during years when trading conditions are not normal, and for companies that

did not fall within this study's parameters, e.g. unlisted public and private companies and newly set-up or recently listed companies.

Furthermore, a study could be performed to determine how many companies already include the Springate-model Z-score in their key performance management indicators and how aware the users of financial statements are of the existence and application of this failure prediction model. If the Springate-model Z-score proves useful in other studies as well, and it can be determined that this ratio is not yet well-known, it may be very valuable to make more individuals and companies aware of its existence and success rate in correctly classifying companies as successful or failed, and including the model in the syllabi of universities that offer accountancy programmes and degrees.

- Based on the results of the financial ratio analysis, it may be interesting to investigate those ratios, results and underlying data, where the results were spectacularly contrary to expectations, in more detail:
  - The high and increasing debt levels of successful companies deserve further investigation. Most failure theory holds that high levels of indebtedness are nearly always at the root of financial distress – however, in this study, the failed companies had very low levels of debt, and the successful companies comparatively had very high levels. All debt-related ratios, e.g. the gearing and the debt-to-equity ratios, were affected by this phenomenon, which held true across both time periods and for all of the years under investigation. It would seem as though the judicious use of debt is not just sensible for a company to achieve success, it's a near-necessity.
  - In line with the above, the free cash flow to debt ratio produced surprising results over the full 2013 to 2018 term, when the free cash flow available with which to meet debt obligations was far higher than the cash flows available to successful companies, even though successful companies had higher debt levels overall. This ratio in a South African context requires further analysis.
  - The acid test ratio delivered results that were the exact inverse of what had been expected. The results also hold across the majority of the years and both time periods that were considered for this study. It could be interesting to see whether this very strange occurrence also holds true for unlisted companies, companies in other countries, and for years where there may have been economic upheavals. Such

research may even lead to the norm for the acid test being discarded or redesigned for South African companies.

- A number of other interesting results from the empirical analysis could also be interesting to consider with more depth or breadth:
  - The volatility of the results of the companies that were deemed as struggling was noticeable throughout the empirical analysis of the financial statements. A future study may attempt to identify companies that are not yet suffering accounting losses, but that do deliver similar results with significant variability, to track the companies' success or failures over time, so that a decision-making model may be developed that focuses attention on the standard deviation of a company's results from the average for its industry or market.
  - The one-year time lag between the results of the successful companies and the struggling and failed companies could be explored in more detail, and even in a qualitative study, to attempt to determine how often less successful companies copy the behaviour of successful companies, or simply behave in a reactionary manner. The strategies adopted by these companies, their decision-making processes and their willingness to accept risk, could cast more light on the key attributes of successful companies.
  - The study seemed to indicate that struggling companies made use of more outside shareholders' financing than successful companies. This may lead to speculation that the struggling companies have cash flow problems as a result of growing and expanding too quickly, i.e. that the companies are guilty of overtrading. It would be interesting to see whether this result can be replicated in future studies, and to delve into the ratio in more depth: for instance, the recent acquisitions of struggling companies could be assessed and tracked against their financial performance.
  - The operating cash flow to current liabilities ratio seemed to be able to distinguish fairly accurately between successful, struggling and failed companies, and could be a significant predictor of financial distress in future – it would be worthwhile to test this ratio on a larger sample size as well.

- It could be interesting to test whether the number of personnel employed by a company, or the average salaries paid, have any value either for failure prediction, or to distinguish between healthy and unhealthy businesses.
- It should be interesting to track the financial performance of the companies that were included in this study, to see whether the successful companies remain so well into the future and to determine what happened to the struggling companies: did they eventually recover and succeed, or were they finally liquidated? This may further enhance available failure prediction models and the identification of key attributes of successful companies.
- The ratio analysis performed in this study could also be extended to public and private companies that are not listed but that may be willing to share their financial information, to companies operating in countries outside of South Africa, and to companies that report in a different currency to the South African rand (Yendrawati & Adiwafi, 2020:79). The financial ratios that were identified as potentially significant, for instance the Springate-model Z-score, could also be applied to newly listed companies for a limited time span (Morris, 1998:24).

The study could also, conversely, be repeated on a smaller sample of South African companies, where specific industries are isolated and where a matched pair-design is followed, to determine whether different results would be obtained than those noted in the conclusion above (Rowlings, 2016:149).

- A suggestion, that has been put forward a number of times, is to attempt to include more non-financial information in the analysis and investigation as well, for instance metrics relating to the chief executive officer or chairman's report, BB-BEE scores, employee productivity data, business efficiency indicators, export status, corporate governance statistics, customer concentration, the presence of large competitors in the same region, and going concern qualifications expressed by auditors (Laurila, 2020:10; Liang *et al.*, 2016:562; Rowlings, 2016:148; Beaver *et al.*, 2010:164; Becchetti & Sierra, 2003:2117). A number of these will require co-operation by the companies involved in the study.
- A qualitative study could be performed to ascertain various stakeholders' understanding of the going concern principle and their assessment of its usefulness as an underlying accounting principle.

- Given the limited population of listed companies in a South African context, it may be useful to attempt to determine the optimal sample size to be used in future research, that will simultaneously be cost-efficient, effective, consistent and accurate (Veganzones & Severin, 2020:216).
- The analysis could be repeated on companies that provide interim results to determine whether it may be beneficial to the management of companies to formally assess a company's liquidity and solvency on a more regular basis – this could assist with the early identification of financial distress warning signals (Cassim, 2021:6). It is interesting to note that Veganzones and Severin (2020:217) found that struggling companies, even when alerted to warning signs of potential financial distress, failed to take the drastic action one would have expected to address the situation. They refer to the phenomena as 'inertia theory'. Surely one of the tests of effective leadership would be the ability of a manager or management team to identify and recognise a problem before it becomes an emergency or catastrophe. It would be interesting to determine why this does not currently seem to be the case.
- The success rate of auditors of South African listed companies in correctly predicting the failure rate of large, listed companies – as noted in Chapter 1 – could be assessed. It may also be interesting to determine which financial ratios, if any, the auditors of South African companies use when exercising their responsibility of assessing a company's going concern and the management of the companies' going concern declarations. It may also be interesting to determine whether the auditors have other failure prediction models that they employ in their going concern analysis and, if so, what those failure prediction models consist of, and to what extent their individual elements are weighted (Geiger *et al.*, 2019:79).

Finally, it should be noted that it would also be in the interest of the various researchers and academics who focus on business failure prediction to apply new technologies, such as artificial intelligence and advanced data mining techniques, to future studies (Geiger *et al.*, 2019:79). More insight may be gained from larger populations (data for companies could potentially be accessed globally, for instance) and from alternative data sources (e.g. social media accounts), and this will assist in keeping the results of academic research and analysis relevant and useful.

## 7.6 Conclusion

*It is better to look ahead and prepare than to look back and regret.*

*Jackie Joyner-Kersey*

This chapter has summarised the results and conclusions of this study, has attempted to answer the research questions that were posed at the start of the dissertation, and has considered the limitations to which the study was exposed. Future areas of research have been highlighted, and the use of the Springate-model Z-score has been advocated as a reliable indicator of financial distress. All research into business failures attempts to either improve the corporate failure prediction models or to understand the reasons for distress (Veganzones & Severin, 2020:216). It is this researcher's hope that her study will contribute to the protection of the stakeholders of companies through the efficient use of failure prediction models to timeously identify warning signs of potential financial distress, as well.

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