UNIVERSITY OF SOUTHAMPTON

Information content of audit reports with respect to delisting in Thailand

Wachira M Boonyanet

Submitted for the degree of
Doctor of Philosophy

School of Management
Faculty of Social Sciences
November 2002

UNIVERSITY OF SOUTHAMPTON

ABSTRACT

Faculty of Social Sciences

School of Management

<u>Doctor of Philosophy</u>

Information content of audit reports with respect to delisting in Thailand

by Wachira M Boonyanet

This research analyses empirical evidence of the relationship between audit reports (i.e. going concern audit reports and all types of audit qualifications) and delisting factors in stock markets. The data set comprises quoted companies between 1994 and 2000 in the emerging Thai Stock Market. The research methodology is developed based on the work of Lennox (1999a). Conditional probability, mainly logit regression is employed. Potential factors, both adopted from previous studies and introduced by the present study, cover three main areas: macroeconomic factors, company internal factors, and audit reports. The findings indicate that the potential factors are not important determinants of voluntary delisting. On the other hand, the empirical results show that going concern reporting issued under modified opinions are a predictor of mandatory delisting. However, going concern reporting issued under both unqualified opinions with explanatory paragraphs and also under modified opinions do not signal useful incremental information about the probability of mandatory delisting. This study also finds that when the lagged effect is taken into account, all types of audit qualifications issued under modified opinions are important determinants of mandatory delisting. Apart from audit reports, a decrease in Gross Domestic Product (GDP) significantly influences mandatory delisting probability. In addition, the study finds that bad trading record announcements by the Thai Stock Exchange provide useful incremental information about the probability of mandatory delisting. In addition, a decrease in short-term liquidity and gross cashflow indicate that low profits increase liquidity problems and the likelihood of mandatory delisting. Finally, the analysis also indicates that the size of auditing firms (Big 5 and Non-Big 5), debt-turnover, gearing ratios and returns on capital are unlikely to be factors influencing mandatory delisting probability. There are several contributions of the present study. The study suggests that mandatory delisting should be considered as a pre-warning signal of business failure. The statistical significance of going concern audit reports and all types of audit qualifications leads to the implications that it would be reckless to consider audit reports just as steward reports. In fact, audit reports may have other implications, especially in the area of prediction. The present study also proposes changes in current auditing standards. For the auditing standards on audit's report on financial statements, auditing standard setters should reconsider whether unqualified opinions with explanatory paragraphs should be allowed under going concern uncertainty. This is because the empirical results do not appear to show that these audit reports significantly increase the probability of delisting announcements. The findings lead to the idea of "self-defensive" reports rather than "self-fulfilling" reports of going concern reporting. In addition, because of the statistical significances of all types of audit qualifications in delisting models, the proposed change in auditing standards is to require to explicitly state when audit qualifications, rather than going concern reporting, will not result in the entity's ability to continue as a going concern. For going concern auditing standards, the descriptive statistics find that adverse opinions are unlikely to be issued when going concern is material. This finding leads to the question as to whether to retain adverse opinions in going concern auditing standards. This is because it is unrealistic for a company to accept adverse reports on its financial statements. It is more realistic for auditors to issue disclaimers of opinions to maintain a good relationship with their clients. Finally, there should be a great opportunity for future research to adopt this research methodology into different settings, especially in other emerging markets. Future studies should also look for other potential factors for better results of business failure prediction.

Dedication

To My family and "Kru"

Table of Contents

List of tables

List of figures

List of Appendices

Acknowledgements

Chapter 1

Introduction

1.1 Background to the research

This study investigates the predictive ability of audit reports. Many previous studies relating to the predictive ability of audit reports have been conducted, only but in Anglo-Saxon countries where stock markets have developed. However, for developing countries, only a few studies have been carried out in this area. As a result, the setting of the present study is the emerging market in Thailand. Like stock markets in other countries, the Stock Exchange of Thailand (SET) has the objective of improving the Thai economy. Information about listed companies, which can be disclosed to the public, needs to be reliable. An auditor's report is one of the main sources of information that investors seem likely to pay attention to. Therefore, it is useful to extend the previous literature by investigating the association between audit reports and business failure in emerging markets.

The motivation for this thesis has its roots in the Thai financial crisis in the middle of 1997. A speech given by the Thai Minister of Commerce at the 1997 Annual Meeting of Thai Accountants and auditors stated that accountants and auditors should take responsibility for the Thai financial crisis, since companies' financial statements depend on this profession. The Auditing Practices Board (APB) in England and Wales also made similar statements. The APB stated that "The reality of public concern in this issue is that when company failure exists there is an immediate outcry of where were the auditors? And questions as to whether they are truly objective" (APB, 1994).

Even if it is accepted that auditing reports do not aim to predict events or conditions that may cause an entity to cease to continue as a going concern, it is unavoidable that scholars and analysts consider audit reports as an important source when considering the future of companies. In fact, audit reports play a great role in predicting events or conditions in the future. The present study, therefore, seeks to investigate the incremental information content of audit reports in the area of prediction, especially going concern reporting. It also describes previous investigations in the literature. Instead of using traditional criteria, such as the bankruptcy criterion, to identify failed companies, the analysis introduces a delisting announcement as a

criterion to investigate the incremental information content of audit reports in delisting models. The main reason is that delisting is an important failure-type event from the investors' standpoint, especially minor investors. It provides some opportunity for minor investors to recover, once a delisting has been announced. The important output of this investigation is also to propose changes to existing auditing standards.

It should be noted that as the study focuses on Thai audit reports, the references to Thai accounting and auditing standards are the first level of sources applied during the period covered by the study. In addition, since 1998 the Institute of Certified Accountants and Auditors of Thailand (ICAAT), which has the authority to establish Thai accounting and auditing standards, has adopted the international accounting and auditing standards issued by the International Federation of Accountants (IFAC) (ICAAT, 1998). Furthermore, for normative purposes and as evidence of best practice, the present study also refers to international accounting and audit standards as the second level of sources. Because the previous research related to the present study was carried out mostly in the UK and US, the literature review mainly refers to these two countries.

The following two sections contain definitions of some potentially confusing terms. Firstly, the terms "predict" and "forecast" are explained. These two terms have been unclear in the areas of business failure prediction. Secondly, some concerns relating to the definitions of going concern uncertainty in accounting and auditing have also been unclear. Therefore, the notion of going concern in the accounting and auditing context is also discussed.

1.2 Definitions of "predict" vs. "forecast"

There has previously been confusion relating to the terms "predict" and forecast", as the literature has tended to use them interchangeably. The general definitions of the terms "predict" and "forecast" are similar, the Chambers Dictionary (1999) defining "predict" as to foretell, especially on the basis of present knowledge (p. 1293), and "forecast" as to assess or calculate beforehand: to foresee; to predict (p. 626). In everyday life, the term "forecast" is common in a context such as a weather report, whilst the term "predict" may refer to a number of other contexts. Thus, the term "predict" is a more general and informal descriptor of future outcomes.

In a theoretical domain, Bell (1974) states that prediction is likely to deal with events and focus on decisions, for example who will win a war or an election. Bell also explains that prediction is

a function of inside knowledge or judgement arising from long involvement in a situation. On the other hand, forecasting is likely to deal with regularities and recurrences of phenomena, which might be plotted according to statistical time-series or formulated as historical tendencies. In other words, forecasting is possible only where there is a high degree of reality, such as in the recognition of costs and constraints, the common definition or acceptance of the rules of the games (Bell, 1974, p.3-4).

In the area of accounting, the two words have been adopted in various ways, according to the kind of research work undertaken. The first researchers to perceive accounting data as useful information for decision making were Beaver et al. (1968) in their work entitled "Predictive ability as a criterion for the evaluation of accounting data". Demski and Feltham (1972) wrote an article entitled "Forecast evaluation" to explain how accounting information should be evaluated. Although Demski and Feltham (1972) based their study on the work of Beaver et al. (1968), the study did not employ the term "predict" as used in Beaver et al. (1968). Demski and Feltham believed in a positive accounting approach rather than a normative accounting approach. A positive approach considers accounting information as using hypotheses to generate useful information for decision making. The word "forecast" is appropriate when accounting information is treated in this way. More specifically, the word "forecast" is used when authors intend to forecast accounting numbers. The study by Meek (1998) is a good example of using the term "forecast" with accounting numbers. Meek's (1998) research found that financial reports have been a powerful theme in the economic information approach. The major role of financial reports was to help investors "forecast" a company's income. The study of *Guidelines for a Review of a Financial Forecast* by Jensen (1983) stated that accounting data was useful when forecasting an estimate of financial positions, results of operations, and changes in financial position for one or more future periods (p. 87). From the preceding examples could be drawn the conclusion that the term "forecast" is adopted when studies are more likely to focus on specific information such as accounting numbers.

On the other hand, the word "predict" concerns future events or situations. For example, the work introduced by Beaver (1966) entitled "Financial ratios as predictors of failure" was a classic work attempting to predict firms' financial stability. Lennox's (1999a) article entitled "The accuracy and incremental information content of audit reports in predicting bankruptcy" also adopted the word "predict". The study introduced a set of independent variables in order to determine whether auditors issued any qualified audit reports prior to a firm's bankruptcy. From

these examples could be drawn the conclusion that the word "predict" is adopted when studies are more likely to focus on events or situations.

The intention of this study is to investigate which information would best predict delisting. The term "predict" is adopted throughout the study for two main reasons. The study is most likely to "predict" situations or events (i.e. delisting). In addition, the study agrees with Bell (1974) that prediction is a function, mainly dependent on inside knowledge and judgement and long involvement with a situation. In the end, prediction needs more than a single piece of information in order to obtain solutions.

1.3 The concept of the going concern in accounting and auditing standards

It is no surprise that a going concern concept is similarly perceived in both auditing and accounting contexts, although there are also dissimilarities.

Paton and Littleton's (1940) *Accounting Theory,* was the first work to refer to the going concern concept as an accounting concept. In Thailand, ICCAT adopted the same concept in a work entitled *Accounting Assumptions* (ICAAT, TAS No. 1, 1979). This was revised in 1999 under the title of *Accounting Framework,* but the going concern concept remains the same. Accounting standards for going concerns read:

> *"Generally, financial statements are prepared on an assumption that the entity will continue in existence for the foreseeable future. Therefore, it is assumed that the entity has no intention to liquidate or significantly reduce its operations; otherwise other principles are needed to be disclosed" (ICAAT, 1999, para. 23).*

The main concept of going concern is to assume that the entity will continue to exist in the foreseeable future without threat of liquidation within a reasonable period of time. Therefore, the profit and loss account and balance sheet presume no intention or necessity to liquidate or crucially reduce the business operation scale in a reasonable period of time. Woolf (1983) asserts that the going concern concept is the most important concept in accounting because it is fundamental to other accounting concepts. Without it, the three concepts of accrual, consistency and prudence would not come into play.

4

In the auditing context, the going concern concept plays a similar role as in accounting. Mautz and Sharaf (1961) stated in *The Philosophy of Auditing* that the going concern concept was an auditing postulate. The basic foundation of the going concern in the auditing context is stated as follows:

> *"In the absence of clear evidence to the contrary, what has held true in the past*
> *for the enterprise under examination will hold true in the future (p. 42)".*

This means that the concept provides a guide to auditors in performing all their audit work and is a protection against unforeseeable changes in the economy and business at the time of the verification. Mautz and Sharaf (1961) assert that the lack of such a concept would make auditing improbable or even impossible (p. 49).

However, rather than being a basis for other accounting concepts, auditing standards encompassing the going concern concept were established to ward off lawsuits against auditors during the 1970s (Killough and Koh, 1986). On the other hand, the audit standard requires auditors to perform their duty to verify whether financial statements given are true and fair. This includes expressing their opinions as to whether the entity will continue as a going concern and whether the financial statements are fully disclosed relating to going concern uncertainty (ICAAT, 2001 TSA 570, para. 2). In other words, unlike going concern in the accounting context, auditors cannot assume that the entity will be ongoing in the future and fail to gather audit evidence to support their opinions on financial statements.

In summary, even though the going concern concept is a fundamental of both accounting and auditing, the going concern concepts in auditing and accounting are divergent. On the one hand, auditing standards require auditors to perform certain auditing procedures to ensure that the entity will continue in operation for a reasonable period of time; on the other hand, accounting standards do not require accountants to perform any procedure other than to assume that the entity will continue in operation for a reasonable period of time. In this study, the analysis focuses on the going concern concept from the auditing point of view.

1.4 Literature review

The main focus of the prior literature has been to identify, demonstrate and evaluate financial information, which is mainly used in the analysis, to determine whether it could be considered as one of the main sources of predictive information. Normally, governmental bodies are likely to require financial information from an organisation. In the United Kingdom (UK), incorporated organisations have a legal obligation to publish annual accounts and file them at Companies House. Similarly, Thai companies have a legal obligation to submit annual financial reports to the Registrar's Department, Ministry of Commerce. The financial information consists of audit reports, financial statements (i.e. a profit and loss account, balance sheet, cash flow statement and notes to financial statements). The next chapter specifically investigates the predictive value of financial statements. Chapters 3 and 4 investigate audit reports, all types of audit qualifications and going concern reporting. The following description explains in more detail the content of each of the literature review chapters, as schematised in Figure 1.1 below.

Chapter 2 intends to answer the question as to whether financial statements (i.e. accounting numbers) have predictive value. The discussion begins with the roles of accounting information from early years. Predicting the value of accounting information comes from the informational function of accounting information. The discussion fully analyses the predictive value of accounting information in both the development of the accounting concept of predictive value and the previous literature carried out to investigate the predictive value of accounting. The implementation and usefulness in the areas of prediction of accounting information are also described.

Chapter 3 starts by explaining the general background of audit reports. An explanation of types of audit reports is also provided. Like Chapter 2, the main objective of this chapter is to review the significance of audit reports in the area of prediction. Initially, the discussion investigates users' perceptions on audit reports. Then, the discussion moves on to investigate the incremental information content of audit reports in two broad areas: market model research and experimental research in the areas of prediction. It is found that audit reports can be used as a predictive tool.

Chapter 4 narrows the literature down to going concern audit reports, which are predominately considered as a source of pre-warning information of business failure. The discussion reviews recent audit standards for going concern uncertainty as the first concern. Then, the review

divides the previous research related to going concern audit reports into three main topics: the relationship between going concern reporting and failure prediction, the impact on going concern audit reports and the competence of auditors in giving going concern opinions. The review finds that a going concern reporting has useful incremental information content in predictive areas.

Figure 1.1 Literature review route

```
                              ┌─────────────────────┐
                              │    Annual reports    │
                              └─────────────────────┘
        ┌──────────────────────┬──────────────────────┬──────────────────────┐
  ┌──────────────────────┐ ┌──────────────────┐  ┌──────────────────────┐
  │ Financial statements │ │ Directors' reports│  │    Audit reports     │
  └──────────────────────┘ └──────────────────┘  └──────────────────────┘
  ┌──────────────────┬──────────────────┐     ┌──────────────────┬──────────────────┐
┌────────────────┐ ┌──────────────┐        ┌──────────┐      ┌──────────┐
│Accounting numbers│ │    Ratios    │        │  Clean   │      │ Modified │
└────────────────┘ └──────────────┘        └──────────┘      └──────────┘
                   ┌──────────────┐                    ┌──────────────────────┬──────────────────┐
                   │EPS prediction│            ┌──────────────────────────┐ ┌──────────────┐
                   └──────────────┘            │Other audit qualifications│ │Going concern │
                   ┌──────────────────────┐    └──────────────────────────┘ └──────────────┘
                   │Security price prediction│                            ┌──────────────┐
                   └──────────────────────┘                             │   Accuracy   │
                   ┌──────────────────────┐                             └──────────────┘
                   │        Events        │                          ┌──────────────────────┐
                   │      Bankruptcy      │                          │ Information content  │
                   │    Takeovers, etc    │                          └──────────────────────┘
                   └──────────────────────┘                          ┌──────────────────────┐
                                                                     │ Auditor's competence and│
                                                                     │      independence    │
                                                                     └──────────────────────┘
```
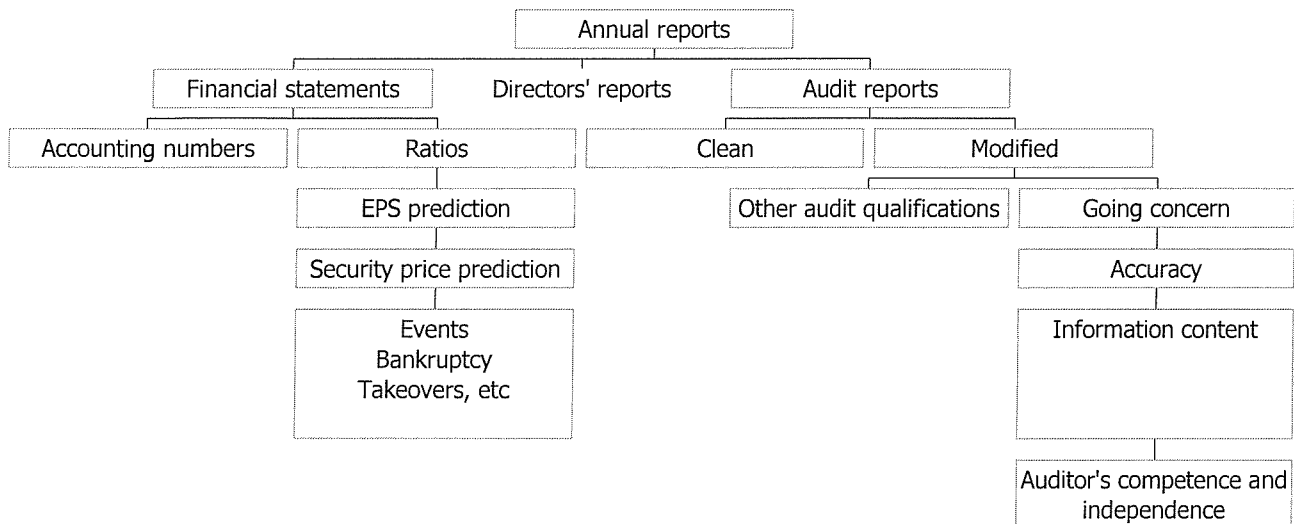
1.5 Overview of the remainder of the study

The remainder of the thesis is concerned with its empirical content. The following chapters are the main text of the present work. The research methodology is given in Chapter 5. Chapter 6 contains descriptive statistics of the data set of the study. Chapter 7 shows the empirical results of the statistical techniques adopted in the analysis. Conclusions and contributions derived from the empirical results are offered in Chapter 8.

In more detail, Chapter 5 presents the case for the functionalist paradigm, as the study will attempt to validate the existing theory. The present study will therefore initially replicate research methodologies of previous studies on different data sets. However, several analyses have been made to both variables and research methods. Instead of using traditional bankruptcy criteria, the study introduces a delisting announcement as a criterion to identify business failure. The independent variables are adopted from the previous research and newly introduced. These include macroeconomic factors, company internal factors and audit reports. In order to give a general idea of the statistical techniques used in the study, a brief review of previous statistical techniques used in business failure is given. Then, the conditional probability of statistical

techniques (i.e. logit and probit) is explained, as is the interpretation of regression coefficients. Finally, the chapter explains the development of hypotheses. There are two main groups of hypotheses. The first group of hypotheses helps in investigating the incremental information content of audit reports (i.e. going concern qualifications and all types of audit qualifications) in delisting announcements. The second group of hypotheses helps in investigating information used in qualifying audit reports (i.e. going concern qualifications and all types of audit qualifications). The empirical results of the statistical analysis will be described in Chapter 7.

Chapter 6 explains the data set and descriptive statistics of the present study. The descriptive statistics attempt to provide general background to the descriptive data relating to the later analysis. The chapter begins with an explanation of data collection procedures from all listed companies on the Stock Exchange of Thailand (SET). As in other research, missing and illogical data were encountered. An account is given of the kinds of missing and illogical data and how they are managed. Data diagnostics are also analysed. The descriptive analysis starts with an explanation of the characteristics of audit reports issued on the SET, followed by some ideas on the association between going concern audit reports and delisting. The analysis also attempts to study the association between all types of audit qualifications and delisting. In addition, the descriptive statistics indicate the relationship between going concern reporting and audit firm size (i.e. Big 5 and Non-Big 5 firms) as to whether audit firm size affects the probability of going concern reports given to listed companies in the SET.

Chapter 7 presents the empirical results of the study. The empirical findings of this chapter make several contributions. Generally, it is found that voluntary delisting is less likely to be predicted using the potential factors adopted from previous studies and introduced by the study. On the other hand, the same set of independent variables could be used to predict delisting announcements as a whole and mandatory delisting. Information including Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA), and gross cashflow ratios (GC), including some types of audit reports, are statistically significant to delisting as a whole and mandatory delisting. The interpretation of these findings could be as follows. Delisting occurred more (less) frequently when the economy was expected to move from boom (recession) to recession (boom). Listed companies with bad trading record announcements are more likely to be delisted than listed companies without bad trading record announcements. Listed companies whose total assets were relatively large were less likely to be delisted than were listed companies whose total assets were relatively small. Delisted companies

8

were more likely to experience difficulty in low profits which finally increased cashflow problems.

Considering the information content of delisting announcements, it is found that listed companies with audit qualifications are more likely to be delisted. However, the level of each audit report may indicate different effects. It is found that the going concern reporting issued under modified opinions is most likely to be considered as the pre-warning of the probability of delisting. In addition, all types of audit qualifications issued under modified opinions could be important determinants of delisting. However, all types of audit qualifications and going concern audit reports issued under both unqualified opinions and also under modified opinions with explanatory paragraphs do not appear to increase the probability of delisting.

Considering information used in qualifying audit reports, it appears more likely that auditors use different information from delisting announcements to issue qualified audit reports. Only bad trading record announcements and gross cashflow ratios were used in both delisting announcements and qualified audit reports.

Chapter 8 summarises the thesis and discusses the conclusions and contributions of the study based on the empirical findings. It is found that the independent variables employed by this study do not appear to increase the probability of voluntary delisting. However, when applying the same independent variables into the analysis using delisting announcements as a whole and mandatory delisting as the dependent variables, it is found that independent variables, including audit reports (i.e. all types of audit reports and going concern qualifications) are statistically significant in delisting announcements as a whole and mandatory delisting. Therefore, it would be too ignorant to conclude that there is no useful incremental information content of audit qualifications. In fact, future research should take audit qualifications into consideration as a source of information that may be useful for empirical analysis.

In addition, the empirical results show that liquidity ratios are important determinants of delisting announcements. Based on the work of Boritz (1991) who explained that liquidity problems are the first stage of liquidation, the empirical evidence leads to an implication that mandatory delisting could be considered as the pre-warning signal of business failure.

Furthermore, going concern reporting issued under modified opinions are most likely to be considered as the pre-warning of the probability of delisting announcements. However, going concern reporting issued under both unqualified audit opinions with explanatory paragraphs and also under modified opinions do not appear to be statistically significant. This leads to the suggestion that international standard setters should re-consider whether it is appropriate to allow going concern reporting to be issued under unqualified audit opinions with explanatory paragraphs. This is because, when going concern becomes an issue, unqualified audit opinions with explanatory paragraphs will be used as "self-defensive audit reports" rather than "self-fulfilling prophecy". In addition, it seems unrealistic to allow adverse opinions when going concern uncertainty is so material. Disclaimers of opinions would be more appropriate.

For international audit standards for auditor's report on financial statements, auditing standards should not allow repeated audit opinions. This is to force a company to solve the previous year problems. Also, repeated audit reports may cause no information content in empirical tests. Furthermore, when qualified opinions are issued, auditors should be required to clearly state that the qualifications do not cause the entity's ability to continue in existence. This would be more beneficial to users to ensure that business failure may not occur because of audit qualifications.

Finally, it would be a great opportunity for future research to adopt this research methodology in different settings, especially in other emerging markets. This is to verify the existing theories of audit reports as well as to re-confirm the implications suggested by the study. Future studies should also look for other potential factors, such as the rehabilitation status of listed companies in stock markets. This is to have better results of business failure prediction.

Chapter 2

The predictive value of financial reports

2.1 Introduction

Financial reports have been utilised in various ways. The Accounting Standard Board in the UK points out that financial reports are prepared on the basis of three main functions: (i) their stewardship role, (ii) the provision of specific information to generate cash for an entity, and (iii) the provision of general information needed for decision making in the future (ASB, 1999, paragraph 1.11, 1.14(a), and 1.18). In other words, financial reports show how well an entity is operating its business activities, which could perhaps involve dividend payments (profit and loss account). Financial reports also ensure the accountability of management in its utilisation of the entity's resources (balance sheet). Finally, in the long-term, financial reports should provide information for decision making in order to allow users to analyse the entity in the future. Tamari (1978) concludes that the financial position and operational results of an entity reflect not only its success or failure but also reflect the whole picture of a nation's economy. As a result, these reports were considered as one of measures or indicators of economic performance (p. 1).

As stated in above, financial reports are prepared for multipurpose objectives. However, one question remains to be answered which is whether financial reports (i.e. accounting information) are useful information in the area of predictions of events or situations. The main objective of the present chapter is to investigate predictability in financial reports. Initially, in order to understand how accounting information could be considered as a predictive tool, it is necessary to be familiar with the roles of accounting information. Therefore, the analysis starts by examining accounting functions since the early years of accounting history. The predictive value of accounting information, which is created under one of the accounting functions, is fully analysed. The analysis then goes on to discuss the implementation of accounting information and its usefulness. In this section, as the main objective of this study is to discuss whether financial ratios represented in financial reports could be useful information to predict business failure prediction, the discussion mainly focuses on the issues related to failure prediction. The analysis also attempts to find out which theory should be used to select financial ratios in the area of failure prediction. An argument as to whether it is appropriate to employ accounting information as a predictive tool is also made.

As one of the objectives of this chapter is to include classical theories from the well-known literature in the area of prediction since the early years of accounting history, the references in this chapter date back to the beginning of the nineteenth century.

2.2 The roles of accounting information

In order to understand how accounting information provides predictive value, the overall functions of accounting should first be explained. The initial usefulness of accounting information was in the context of the charge and discharge function at the beginning of accounting history back in the eleventh century. Accounting data evolved to become the income measurement function, once corporations were established at the beginning of the seventeenth century. By the twentieth century, a crucial period in the development of accounting functions, the informational function of accounting information was recognised when scholars realised that accounting should be standardised. As a result, the formation of an accounting framework was widely purposed. Later, some adjustments to accounting measurements were introduced to modify the accounting framework. In the middle of the twentieth century accounting information became more scientific. The predictive value of accounting information was initially formalised within the informational function. Under the informational function, accounting information has been shaped in various ways depending on circumstances in particular periods. Each accounting function is discussed in greater detail below.

2.2.1 Charge and discharge function

The charge and discharge function was dominant in the early understanding of the purpose of financial reports. In this early view, a steward was liable for financial transactions to a higher authority. His duty was to maintain records of how receipts had been utilised in paying expenses and to return what remained to his superior (Jones, 1994, p. 378). Napier (1995) states that accounting records of the charge and discharge function could be traced back to the eleventh century in the United Kingdom. The function benefited two main users. On the one hand, the government needed to make sure that revenues and expenses were properly accounted. In practice, revenue was collected by the sheriff and handed over to the king, the authorised expenses having first been deducted. On the other hand, a lord needed to control his estate with accounts for the bailiff or reeve income, so the lord's representatives would audit the records.

The system of the charge and discharge accounting function survived until the late nineteenth century in the United Kingdom (Napier, 1995).

It is clear that the accounting function in earlier years was to record receipts and expenses of daily transactions. Jones (1994) concludes that the most generally accepted meaning of the charge and discharge function in the present day was accounting statements on the basis of single entry (p. 379).

2.2.2 Income measurement function

After the charge and discharge accounting function was created, the role of accounting information then moved on to the income measurement function. Littleton (1981) states that no list of the factors that contributed to the expansion of bookkeeping into accounting, would be complete without including the influence of the corporation (p. 205). He indicates that the central accounting issue of a corporation concerns the amount of profit available for dividend (formally 'division') (p.206). The idea of dividend from commercial corporations was initially introduced in the seventeenth century, the most notable being the East India Company. The company issued not only joint stock but also terminating stock to trade goods at a large profit back in England. Initially, all the proceeds were divided at the end of each voyage and each following trip was supplied with newly subscribed capital. Later, however, one quarter of the profits were set aside, and the idea of continuous capital in the company was adopted (Littleton, 1981, p. 210).

One of the most valuable contributions of the East India Company to accounting was the clarification of the term 'capital'. On the grounds that an investor's money was the supreme concern of the 'joint stock' dilemma, it was necessary to decide on what dividend payment to make in relation to (i) the money advanced by an individual, (ii) the commodities acquired with it, or (iii) the total of the monies advanced to the enterprise). Later, the word 'capital' began to mean the total money advanced to the company. Consequently, dividend calculations, based on all properties advanced, would be transferred to the account called 'the remains'. The 'remains' would be the net assets, or net worth as we would say today (Bryer, 2000).

The existence of the business corporation had another positive effect on the income measurement function of accounting information. Littleton (1981) attests that the calculation of profit or

13

income was an accounting problem because of different legal judgements. Large numbers of court cases were adjudicated with questions of profit or dividend that related to accounting principles. For instance, it would be fraud if dividends were declared out of capital because it would decrease the security of creditors. The distinction between assets and expenses was also ruled on. Courts judged that interest paid during construction was an asset, however a dividend on new securities (i.e. investment) was not chargeable to capital (i.e. it was a revenue charge). Also, allowance for depreciation and depletion could be recognised as expenses before determining a dividend (p. 215-219).

2.2.3 Informational function

Scholars structured the informational function of accounting data in the twentieth century through work on the concept of an accounting framework. Many papers attempted to develop the foundation of accounting in order to make it more generalised and understandable. A controversial issue at the later stage was accounting measurement. After the establishment of the accounting framework and the adjustment of accounting measurements, accounting was recognised as an informational function and referred to as scientific information. As a result of its behaviour as scientific information, accounting information has been recognised as a predictive tool. Researchers have recently paid attention to the roles of accounting information, and the concept of information economics is among the popular approaches applied to accounting information.

2.2.3.1 The formation of an accounting framework

From the beginning of the twentieth century, when the accounting literature began to flourish, accounting became better understood, and critical work rapidly increased. Many accounting scholars shifted their interest from income measurement to the formation of an accounting framework. Beaver (1981) indicates that, during the early accounting period, it was presumed for a long time that merely reporting on cashflow was adequate, so accounting failed to establish the crucial form of accrual accounting. Subsequently, many remarkable works on the

fundamentals of accounting led to a turning point for accounting information[1]. Beaver (1981) states that the basic faith in the superiority of accrual accounting (what was called the 'cost accrual and income') was epitomised in Paton and Littleton's (1940) work. Beaver states that the work was one of the most important contributions to financial accounting in the twentieth century. Apart from the cost accrual and income concept, Paton and Littleton (1940) also proposed other accounting concepts, such as the business entity, continuity of activity and measured consideration (p. 2).

One of the most critical issues when forming an accounting framework is whether accounting knowledge should be based on practice or theory. Paton and Littleton (1940) recommended that the accounting profession should have initiative and needed to formalise the fundamental ideas of accounting in order to build a framework for subsequent statements of corporate accounting standards. The subsequent theories would be conceived to be a coherent, co-ordinated, consistent body of standards. Subsequently, accountants would be able to make a realistic appraisal of their practice if new issues affected accounting principles (Paton and Littleton, 1940, p. xi).

Similarly, Chambers (1955) proposed that accounting research and theories should be much less concerned with contemporary practices. Instead, accounting development should be more concerned with achieving a better accounting system. Chambers asserted that theory was supposed to be a guide to develop and improve accounting practice. Without the development of theory, the accounting profession lacked the sharpness, the progressiveness and the vitality of other technologies (Chambers, 1955). In 1961 Chambers also composed a guideline for an accounting framework. In order to achieve better accounting concepts, the work initially identified all the environments of accounting. Then, the accounting framework was approached according to the accounting environment (Chambers, 1961).

---

[1] It is believed that Paton was a pioneer, introducing new ideas of the accounting framework in 1922, *Accounting Theory*. But his work was not generally recognised until the American Accounting Association (AAA) officially published *An Introduction to Corporate Accounting Standards* by Paton and Littleton (1940). There might have been other accounting frameworks which were previously introduced. However, the frameworks were not recognised for several reasons. For example, those papers were not official pronouncements. In addition, those authors did not carry their analysis to the point of developing a complete set of concepts and their analyses were based on current practice rather than theoretical views (Anthony, 1983, p. 17-18).

2.2.3.2 Adjustment of accounting measurement

After the formulation of the accounting framework, many studies gave rise to some concern about accounting measurement. As a matter of fact, historical cost measurement had been adopted in financial reports for a long period of time. The measurement was initially recommended in official work by Paton and Littleton (1940). The explanations in favour of historical cost measurement recommended by Paton and Littleton (1940) were that historical cost came within the verifiable, objective evidence concept, which was based on transactions that had actually occurred. Also, such a principle was much more verifiable and objective than any other principles such as replacement costs or disposal values, which were based on hypothetical transactions that enterprises might have or could have engaged in on specific financial report dates (Ijiri, 1980).

However, historical cost measurement was not accepted in certain periods, especially in an inflationary environment. The tendency in accounting measurement had changed from historical cost measurement to near or current value accounting measurement in the middle of the century. One of the well-known accounting scholars was Staubus, who did not agree with the historical cost of accounting measurement. Staubus proposed that corporate financial reports should emphasise information in the short and long-term before users made any decisions. Only considering historical cost as an accounting theory of accounting measurement left a wide gap in the literature of accounting, particularly the absence of a descriptive theory of accounting measurement. Staubus recommended that accounting information should represent the "wealth" of companies. To represent wealth, the accounting measurement should take all related aspects into consideration in the accounting information. Economic effects were among the accounting environment, and were undeniably to be included in the accounting events, as users looked for productive investments. Following this idea, Staubus recommended that market price should substitute for historical costs. In addition, market prices should be considered the raw material of accounting transactions. For example, trade accounts should be based on future cash flows or the present value of future cash flows. Finally, he also suggested that those different accounting measurements should also depend on the judgement of the user. Users should employ their interpretative assessment of the degrees to which specific measurements processed specific quality in specific cases. This would allow accounting to provide information useful for the decision making processes of those who read and are affected by financial reports and enable effective decision making to be achieved (Staubus, 1977, p. xxi-xxvii and 1985).

Other accounting scholars recommended other accounting measurements. Most studies tended to approach the adjustment of accounting information in the direction of more recent value than historical cost measurement. The main reason is that once accounting information is more closely to current value, it is more useful to users for decision making.

2.2.3.3 Scientific accounting information

After accounting scholars had introduced the formulation of an accounting framework and later adjustments to accounting measurement, during the 1960s, accounting scholars shifted their focus from prescriptive topics to those involving empirical analysis and hypothesis testing. The empirical analysis and hypothesis testing of accounting research mainly came from the idea of the predictive value of accounting information introduced by Beaver et al. (1968) (Griffin 1982, p. 135). Some accounting scholars also argued for the predictive value of accounting. A full discussion of the predictive value of accounting information is presented in Section 2.3.

2.2.3.4 Information economics: the current trend

After accounting information had been used in this way and developed to a certain level, a point was reached when the question was raised as to what criteria should be used to evaluate accounting information. Demski and Feltham (1976) introduced the term "information economics" into the accounting context. They attempted to determine how accounting information should be handled relative to this term. One of the well-know works to explain the term is the book titled *Cost Determination* by Demski and Feltham (1976). The book explained that accounting information was initially formed from the so-called "historical communication approach". At that stage accounting data provided just the absolute information based on historical costs, meaning that accounting emphasised measurement and classification of the costs providing, a tractable basis for resolving a specific question. Users were enabled to use accounting information to predict the expected future costs of supplies. Then, accounting information was developed into a user decision making model called "the condition truth". This model focused on decision methods under given assumptions for various classes of decision. However, accounting information provided only information after decisions had been made. To develop accounting in a proper direction, Demski and Feltham recommended that accounting data should be formed under their idea of an explicit resource allocation perspective called "the information economic approach". They stated that desirability was determined under economic

conditions. As a result, accounting information should be treated as economic information focusing on an analysis of how resources should be allocated and not a prescription. In addition, accounting information should provide cost measurement information in a particular setting rather than categorically stating preferred types of measurements. Only economic function carried choices before decisions and also the information would motivate in action selection (p. 4-9). In addition, in his own work, Demski (1974) went on to emphasise the term "information economics" by stating that consumers were likely to focus on any information which provided information relating to cost and benefit perspectives. As a result, financial reports should provide enough information to allow consumers to trade off among choices before making any decision.

From the belief in "information economics", Demski and Feltham conducted further research to investigate whether accounting information is useful in information economics. Their work in 1994 attempted to observe the associations between accounting earnings, price changes, and trade volume at the time accounting earnings were publicly reported and in time periods preceding the financial report date. The study found that share prices were statistically changed around the time of earnings announcements. This means that accounting information provides information for decision making (Demski and Feltham, 1994).

In the late twentieth century, the development tendencies have been mostly in the direction of information economics, with information not only for decision making but also for practical strategies for future organisation management.

Figure 2.1 below summarises all the accounting information functions discussed in the previous sections. The chart highlights the transitional periods in accounting functions since the early years of accounting history. It shows that the early years of accounting information were only concerned with day by day operations, namely the charge and discharge function. The accounting records were just for receipts and payments of accounts or more likely as a cash basis. Due to the need for capital in joint stock companies to operate more sizeable businesses, accounting data gradually made the transition to the income measurement function. This was to ensure that dividend payments to stockholders were fair. The income measurement function enabled accounting data to evolve from a cash basis into an accrual basis. The later development of accounting was formalised by accounting framework concepts in response to the need for more standardised accounting information. In this stage, accounting data provides the

informational function. After the formulation of an accounting framework, accounting information became more scientific. Scholars employed accounting information in their work in areas of empirical analysis and hypothesis testing. The predictive value of accounting data was found at this stage. Within the informational function, some other perspectives have moved accounting data into certain directions. These perspectives are in response to user needs, particularly in the area of accounting measurement and information economics for decision making.

Figure 2.1 Functions of accounting data

The charge and discharge
function

The income measurement
function

The informational
function

Fair ness of divi - dend pay ment

Cash basis accounting information

Accrual basis accounting information

Ac coun ting Fra me work

Scientific accounting information

────▶ Accounting information flow
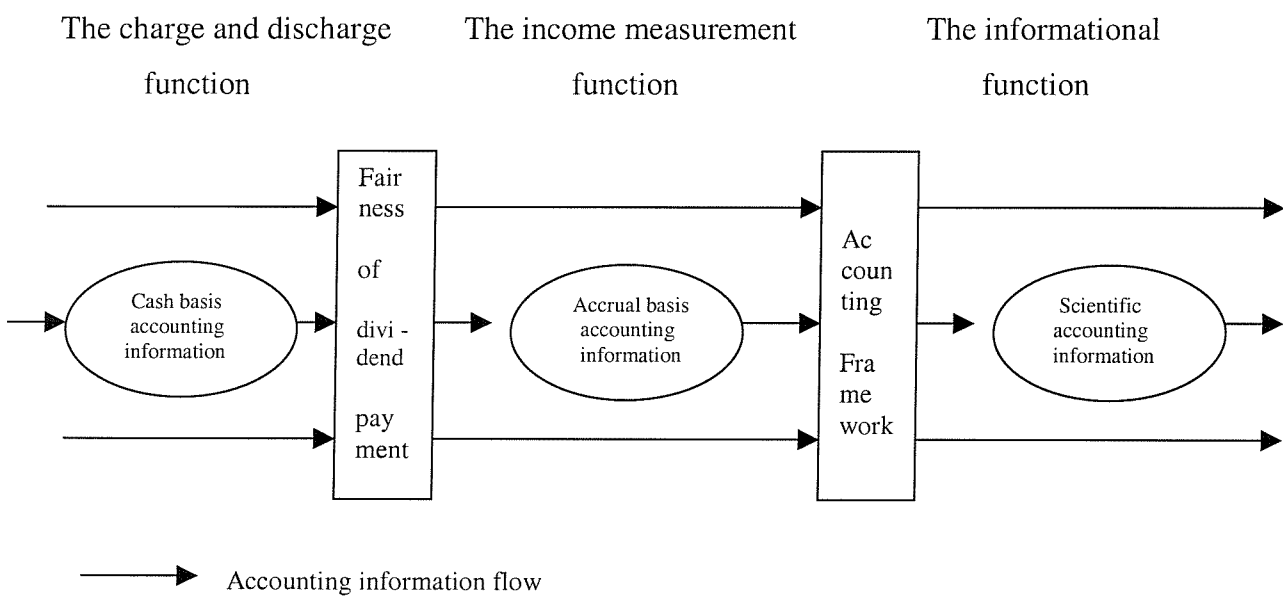
In this section, the study has discussed the roles of accounting information since the early years of accounting history. The predictive value of accounting information originated under the concept of scientific accounting information in the informational accounting function. The next section discusses what kind of basic thought led accounting information to be considered as a predictive tool.

2.3 The predictive value of accounting information

There is no doubt that financial reports provide information about an entity's financial position, as well as the results of operating business activities in a single and aggregate period. However, it is doubtful whether financial reports could be useful information in the area of prediction. Therefore, the following discussion attempts to analyse whether predictive value is a useful aspect of financial reports.

Scholars have attempted to determine whether accounting information provides any predictive value for a long period of time. A reasonable argument for the predictive value of accounting information comes from the idea of a positive accounting approach described by Keynes (1904), namely that:

> "A positive science may be defined as a body of systematised knowledge concerning what is; a normative or regulative science as a body of systematised knowledge relating to criteria of what ought to be, and concerned, therefore, with the idea as distinguished from the actual (p.34-35).

The above quote could be applied to the accounting context so that accounting information regarded as is a positive science. This is because the primary goal of an accounting theory is to explain which accounting alternative should be used. Also, accounting theories have relied on standardised concepts, for instance, relevance, usefulness, objectivity, fairness, reliability, and verifiability (e.g. see ASSC, 1975) to outline accounting alternatives. No suggestion derived from accounting standards ranks alternatives in accordance with preference and beliefs. On the other hand, accounting standards provide choices and allow users to view them according to their expectations. Therefore, users should look for "what is" in accounting information rather than "what ought to be".

Friedman (1953) further explained positive science as follows:

> "The ultimate goal of a positive science is the development of a "theory" or "hypothesis" that yields valid and meaningful (i.e., not truistic) predictions about phenomena not yet observed. Such a theory is, in general, a complex intermixture of two elements. In part, it is a "language" designed to promote "systematic and organised method of reasoning". In part, it is a body of substantive hypotheses designed to abstract essential features of complex reality"(p. 7).

When linking a positive science of accounting information as explained by Keynes and the goal of a positive science which yields predictive value as explained by Friedman, it is reasonable to draw the conclusion that accounting information provides predictive value.

The work of Beaver et al. in 1968 was the classic study that described why accounting information could be considered as a predictive tool. Beaver et al. stated that the predictive value of accounting information was well established in the social and natural sciences as a method for choosing among competing hypotheses. It was to be believed that alternative accounting measures have the properties of competing hypotheses and could be evaluated in a similar manner. Beaver et al. explained that value was achieved as a result of four observations. First, both competing hypotheses and alternative accounting measurements were abstractive, which meant that there were an unlimited number of alternatives. An alternative could be chosen and justified. Secondly, accounting measurements were supported by theories, which provided the logical propriety evaluation. Thirdly, the predictive power was defined as the ability to generate operational implications. One could identify the predictive value out of accounting measurements in a particular way through empirical research. Finally, together with supporting theories and empirical research, the results could be generalised from the findings of the sample data to a new set of observations. Beaver et al. supported the above arguments by giving accounting for leases as an example. Accounting for leases would reflect each of the above points. Lease accounting was an abstraction because of its accounting treatments (i.e. with and without asset capitalisation). Saying that one measurement system was more abstract, however, was debatable. Both accounting treatments were supported by theories and were able to generate operational implications, for instance, determining a method that could predict loan defaults. Finally, the results of hypothesis testing should enable the identification of accounting treatments for leases that were more suitable to predict loan defaults. In sum, Beaver et al. (1968) stated that the predictive value of accounting information was created under the concept of the social and natural sciences in which researchers are able to build up hypotheses to test whether accounting information provides predictive value.

However, without empirical research to investigate the predictive value of accounting information, the theory may not be persuasive. Libby (1975) continued the work of Beaver et al. (1968) by conducting empirical research to observe whether accounting information provided predictive value about loan defaults. Both a discriminant analysis and a subject interview

approach were conducted. The result confirmed Beaver et al.'s (1968) theory. The study found that accounting information could be used to predict loan defaults.

By using the inductive research method, Carsberg et al. (1977) also strengthened the work of Beaver et al. (1968). The paper started by explaining that financial accounting was founded on logical assumptions: going concern assumptions, accrual principles, consistency, and prudence and perhaps historical cost and the recognition of profit on realisation. These assumptions were considered to be scientific in nature. As a result, accounting information should contain scientific information and could be considered as a predictive tool. Carsberg et al. referred also to the previous literature, which supported the predictive value of accounting information. The paper finally concluded that both the fundamentals of accounting and the primary means of choosing the most useful alternative method of preparing financial accounting reports led to the conclusion that accounting data could be recognised as a predictive tool for decision making (Carsberg et al., 1977).

Davis et al. (1982) also supported the predictive value of accounting information. The study showed that accounting theory and research had been generated by a numerical view of reality, which resulted in specific kinds of imagery. Consequently, accounting information was perceived in four principal images: a historical record, a description of current economic reality, an information system, and a community. Davis et al. stated that it was ignorant to consider accounting information just for specific purposes. The study encouraged the view that the subjective nature of image-led users meant that no one image could capture fully the essence of accounting. New images would, and should be, generated to add new dimensions to meet changes in context. Accounting in essence attempted to meet the requirements of the context in which it was set (Davis et al., 1982). In other words, accounting information could be further used as a predictive tool, but there might be as yet undiscovered characteristics.

Finally, Staubus (1977) simply stated that if predictions for the future mirrored events in the past, it would be impossible to ignore accounting data. Therefore, accounting information, based on events in the past, was valuable in this way. The results from prediction models should be useful information for the future.

In this section, the study has achieved the main objective of this chapter by explaining why accounting information could be considered as predictive information. The analysis results in

the finding that both narrative descriptions and empirical research reveal the predictive ability of accounting information.

2.4 Implementation of accounting information and its usefulness

As stated in Section 2.3, one of the main objectives of financial reports is to furnish information in making financial reports that could be considered as a predictive tool. This gives rise to the question of how financial reports might be utilised in practical ways. Also, as the amount of information in financial reports is somewhat extensive, which theory should be used when selecting information from them. The following section attempts to answer these questions. The usefulness of financial reports in the area of failure prediction is also discussed. Because the main objective of the present study is to observe whether financial reports could be useful information for predicting business failure, an example of how to select information when predicting business failure is given. Finally, some concerns when implementing financial reports are raised.

2.4.1 Financial ratios as representative of financial reports

The implementation of financial reports can be an easy matter of taking some accounting figures from reports to analyse them for specific purposes. For example, to analyse how a company has done well in its operations in recent years, the current year and previous years net profits could be a good source of information. However, using accounting figures (sometimes called absolute value) extracted from financial reports might not make full use of the accounting information. For example, firm size is a variable that might affect comparisons of accounting figures in various industries. Financial ratio analysis is created to overcome this constraint. For this reason, ratios are more likely to be representative of financial reports. This is because ratio analysis provides an idea on estimation of empirical relationships between at least two financial variables. Dev (1974) also stated that financial ratios gave representative financial reports in both balance sheets and income statements. Ratios can also be thought of as indicators of the status of fundamental relationships within the business. They are barometers of relationships and business conditions within the organisation. In fact, all financial and operating statistics should be read with a view to determining fundamental relationships (Dev, 1974).

2.4.2 Usefulness of accounting information in predictive areas

It is believed that the banking industry initially adopted financial ratios when approving loans to customers. Due to the tremendous increase in financial information, the analysis of financial reports was changed from an item-by-item basis to the segregation of current from non-current items and finally the relationships between current and non-current asset items began to come under scrutiny (Horrigan, 1978). Foulke (1968) states that the first financial ratio was current ratio, which had a significant and long-lasting impact upon financial statement analysis, more than any other ratio (p. 180-181). In addition, Dev (1974) believed that the main purpose of using current ratio by commercial banks was to predict clients' short-term financial insolvency.

In his review papers, Barnes (1987) found that there were two principal uses of financial ratios: to control the size effect on the financial variables being examined, and to control industry-wide factors to compare between a subject and its industry. Size is only properly controlled when two financial variables are in proportion. Also, in practical financial statement analysis, a firm's ratios would be compared with industry norms. This is to know how the firm performed compared with the industry.

Financial ratios have been employed in various areas. In the area of prediction, financial ratios have been widely adopted. Belkaoui (2000) found that ratios have been employed in predictive areas in three main areas. First, financial ratios are useful when researchers would like to predict certain situations or events. Specific prediction areas include bond premiums and bond rating predictions, the predictions of corporate restructuring behaviour, such as corporate take-overs and merger and acquisitions and credit and bank-lending decisions.

Secondly, financial ratios could be suitable for time-series analysis. Time-series analysis assumes that accounting variables could be best described as random variables, thus past values of a single data set enables clues regarding future realisation of the same data set. The most predictive area in time series-analysis related to the prediction of future earnings. Future earnings prediction was based on the theory that accounting figures have aggregated numbers in two dimensions: temporal (i.e. quarterly earnings) and compositional (i.e. annual earnings). Examples of time-series analysis included using past annual earnings to predict future earnings, using past quarterly earnings to predict future earnings and using earnings components to predict future earnings.

Finally, financial ratios are widely used to predict financial distress. This is because firm failure costs are considerable to investors, especially minor ones. The main objective of these types of research is to provide a pre-warning signal prior to firm failure (Belkaoui, 2000, p.333-342).

In the present study, financial ratios are one of the independent variables in the data set. The main objective of the study is to investigate which financial ratios are statistically significant to the probability of delisting. As a result, when referring to Belkaoui (2000), the present study will use financial ratios to predict firm failure.

2.4.3 Supporting theory for selecting ratios: an example of failure prediction

Beaver (1966) initially studied failure prediction, and subsequent research relating to business failure has been carried out extensively. However, supporting theories for selecting a set of financial ratios are few. The review papers by Zavgren (1983), Jones (1987) and Keasey and Wotson (1991) found that the cash-flow concept was the only theory used in predicting business failure. It is not too surprising that financial ratios derived from the "cashflow" concept would be appropriated when analysing company insolvency. This concept was introduced by Beaver (1966). Beaver explained that the firm was viewed as consisting of a pool of liquid assets which was supplied and drained by the firm's operations. As a result, firm insolvency could be defined in terms of the probability that the reservoir would be drained. From this concept of ratio analysis, four propositions were stated:

1. The larger the reservoir, the smaller the probability of failure.
2. The larger the net liquid assets flow from operations (i.e. cashflow), the smaller the probability of failure.
3. The larger the amount of debt held, the greater the probability of failure.
4. The larger the firm's expenditures for operations, the greater the probability of failure.

As a result, the four propositions could be used in business failure prediction with regard to the main value of six financial ratios, as in Table 2.1 below.

Table 2.1 Prediction of the mean value of failed firms and non-failed firms

Ratios	Prediction[A]
Cash flow to total debt[B]	Non-failed > failed
Net income to total assets	Non-failed > failed
Total debt to total assets	Failed > non-failed
Working capital to total assets	Non-failed > failed
Current ratio	Non-failed > failed
No-credit interval	Non-failed > failed

[A] Non-failed > failed is a prediction that the mean value of the non-failed firms will be greater than that of the failed firms

[B] Debt is defined as current plus long term liabilities plus preferred stock.

Source: Beaver, W H (1966) Financial Ratios as Predictors of Failure. *Supplement to Journal of Accounting Research*, pp. 81.

However, Jones (1987) and Keasey and Watson (1991) tended to disagree with the cash-flow concept in failure prediction. The overall reason was that cash flow financial figures might not represent firms' financial liquidity. Keasey and Watson (1991) explained that it was arguable that firms failed because of insufficient cash for operations. Distressed firms should also depend upon other factors, particularly upon economic cycles, the capability of the management team, the shareholders' financial status, and creditors' point of view. In addition, there had not been formal theoretical models of the relationship between failure process and financial variables, economic process, management team and actions of creditors. Jones (1987) found some other arguments against cash flow theory for failure prediction. For example, one of the business failure studies found that the ratio of dividends over total cash flow was statistically significant in predicting failed companies. Jones argued that the result did not provide any incremental information value because a sudden drop or absence of dividend should be considered as a financial distress signal. Finally, Jones concluded that most failure prediction research had not applied any theory when selecting financial ratios to empirical research (Jones, 1987).

However, Jones (1987) mentioned that the lack of theory to support ratio selection was not necessarily a serious problem to research interested solely in bankruptcy. Jones noted that theory sometimes played a limited role in leading empirical research projects, for example, in research related to corporate disclosure, accounting method choices, time series analysis and financial distress. The study encouraged researchers to accept a relatively high degree of uncertainty, particularly in the variables to be examined. This was perhaps because economic and

institutional factors might lack homogeneity in motivation for bankruptcy filing (Jones, 1987). This led to the finding by Barns (1987) that failure prediction studies were likely to adopt well-known and successful sets of financial ratios in prediction models. Table 2.2 summarises the sets of financial ratios which have been using by previous researchers in the area of business failure predictions.

In the present study, financial ratios will be selected according to replication of previous studies. There are two reasons for this. They are to observe whether financial ratios give useful incremental information to predict business failure, and to compare the results of a previous study through replication.

Table 2.2 Summary of ratios used in failure prediction studies

Ratios	Altman and McGough (1974)	Taffler and Tisshaw (1977)	Deakin (1977)	Levitan and Knoblett (1985)	Menon and Schwartz (1987)	Peel (1989)	Hopwood et al. (1989)	Koh and Killough (1990)	Koh (1991)	Lennox (1999a)
Liquidity										
Cash/Total assets			X	X			X			
Cash/Current liabilities				X				X	X	X
Cash/Sales				X						
Working capital/Total assets	X					X				
Working capital/Sales				X						
Current assets/Current liabilities			X		X	X	X			
% Change in current ratio				X	X					
Times in current ratio less then one (last three years)				X						
Current assets/Total assets			X	X			X			
Current assets/Total liabilities		X				X				
Current assets/Sales				X			X			
Current liabilities/Total assets		X				X				
(Cash - Current liabilities)/Operating costs, excluding depreciation		X								
Cash flow from operations/Total liabilities				X	X					
% Change in cash flow from operations				X						
Times of negative cash flow from operations (last three years)				X						
Cash flow /Total liabilities				X						
% Change in cash flow				X						
Times of negative cash flow (last 3 years)				X						

Ratios	Altman and McGough (1974)	Taffler and Tisshaw (1977)	Deakin (1977)	Levitan and Knoblett (1985)	Menon and Schwartz (1987)	Peel (1989)	Hopwood et al. (1989)	Koh and Killough (1990)	Koh (1991)	Lennox (1999a)
Gearing										
Long-term liabilities/Total assets							X			
Total loans/(Total assets - Current liabilities + Short-term loans - Intangible assets)										X
Total liabilities/Total assets				X	X	X			X	
Retained earnings/Total assets	X			X	X			X	X	
Common equity/Total liabilities				X						
Net worth/Total liabilities				X						
Market value of equity/Total liabilities	X									
Market value of equity/Total assets									X	
Profitability										
Natural log of sales							X			
Interest payments/(Interest payments + Net income (NI) before tax)									X	
EBIT and depreciation/(Total assets - Intangible assets)						X				
EBIT and depreciation/Total liabilities						X				
EBIT/Total assets	X			X						
EBIT/(Total assets - Current liability + Short-term loans - Intangible assets)										X
EBIT/Shareholders' equity				X						
% Change in EBIT				X						
Times in negative EBIT (last 3 years)				X						
NI before depreciation/(Total assets - Intangible assets)										X
NI before tax/(Total assets - Intangible assets)						X				
NI before tax/Current liabilities		X								
NI before tax/Nominal value of issued capital						X				

Ratios	Altman and McGough (1974)	Taffler and Tisshaw (1977)	Deakin (1977)	Levitan and Knoblett (1985)	Menon and Schwartz (1987)	Peel (1989)	Hopwood et al. (1989)	Koh and Killough (1990)	Koh (1991)	Lennox (1999a)
NI before tax/sales						X				
NI/Total assets			X		X			X	X	
NI/Shareholders' equity				X						
% Change in NI				X						
Times in negative NI (last 3 years)				X						
Recurring operating losses					X					
EPS								X		
EPS this year x Retail price index this year						X				
EPS last year x Retail price index last year						X				
Change in adjusted EPS						X				
Efficiency										
Sales/Receivables										X
Sales/Current assets			X							
Sales/Total liabilities						X				
Sales/Fixed assets						X				
Sales/Total assets	X			X		X				

Ratios	Altman and McGough (1974)	Taffler and Tisshaw (1977)	Deakin (1977)	Levitan and Knoblett (1985)	Menon and Schwartz (1987)	Peel (1989)	Hopwood et al. (1989)	Koh and Killough (1990)	Koh (1991)	Lennox (1999a)
Others										
Going concern auditor reports							X			X
Good and bad news							X			
Dividends per share								X		
Lowest and highest share price						X				
Highest and lowest stock index						X				
Natural log (Total assets/GDP)						X				
Natural log (Sales x Retail Price Index)						X				
Proportion of outstanding shares						X				
Type of industry						X				X
Numbers of firms that filed bankruptcy										X
Economic cycles										X
Number of employees										X

2.4.4 A concern when implementing financial reports in business failure

Some of the arguments against the predictive value of accounting information are somewhat extensive. The most controversial issue is the valuation of accounting figures in financial reports. Chambers claims that the word "account" refers to a statement of what has happened, as no one can give an account of something that has not yet happened. Consequently, to speak of accounting for the future was a misuse of language. Accounting roles should take part mostly as a retrospective act, not as anticipatory calculations (Chambers, 1966, p. 98). There are other arguments against the predictive criterion cited in the work of Chambers (1995) *"An Accounting Thesaurus 500 years of Accounting"*. In sum, the arguments tend to claim that no part of accounting work involves future estimations.

To answer the above concern, the study by the Accountants International Study Group (1975) should provide good answers. The study surveyed accounting practice in Canada, the United Kingdom and the United States, relating to going concern financial reports, and found that the tendency in accounting figures has moved to market or nearly market price. Even if the study is quite old, Table 2.3 shows the differences between financial reports prepared using the going concern basis and those prepared according to liquidation value.

Table 2.3 Comparison of accounting methods of going concern basis and liquidation basis

Items	Going Concern Basis	Liquidation Basis
Fixed assets such as land, buildings, plant & machinery, motor vehicles etc	At cost (valuation, in the UK) less accumulated depreciation to write down to estimate residual value over estimated useful life. The net book amounts do not purport to represent realisable values	At estimated realisable values on a "break-up" basis
Inventories	At the lower cost and "market" (as the term is used in the three counties) in the ordinary course of trade	At estimated realisable value on a "break-up" basis, which will almost always be much less than in the ordinary course of trade
Accounts receivable	At the amount of the debts less provision for doubtful accounts	At the amount of the debts less any contingent or other claims which can be set-off and less provision for doubtful accounts
Deferred costs and prepaid expenses	Carried forward as assets to match against future revenues	Normally excluded as of no value

Investment
  Long-term
 	
  Short-term
	At equity or cost, unless value permanently impaired
	At lower of cost or market value (sometimes just at market value)
		At market value
		
		At market value

Liabilities	No provision for additional liability which would emerge if the enterprise were to cease operations	Full provision for additional legal liabilities on cessation

Source: Accountants International Study Group (1975) *Going concern problems.* paragraph 48.

Some of the accounts in Table 2.3 may give rise to some concerns. Arguments might arise relating to the values of accounting receivable, inventories, fixed assets, deferred costs and prepaid expenses, which are based on the going concern basis rather than the liquidation basis. An explanation could be that even though these accounts are presented at historical cost under the going concern basis, recent accounting standards require these accounts to be regularly re-evaluated to ensure that they are still presented at net realisable values. In some asset items, recent accounting standards require liquid assets such as investments to be presented at market price. In addition, the latest revision of Statements of Principles in the UK in 1999 tended to accept the current cost value of accounting. Zeff (1999) stated that in the world of changing relative prices, the use of current value accounting could remedy some of the inherent deficiencies of historical cost accounting. In addition, historical cost accounting has diluted to become advantageous accounting information which would have been unnecessary if current value accounting had been adopted.

Finally, it is somewhat difficult to search for financial reports prepared under liquidity value. Sterling (1970) explained that liquidation value could only be proved when firms were

liquidated. As a result, income was never determined according to the going concern concept. In other words, with the going concern concept, it is impossible to prove what financial reports should look like and what the significant differences between financial reports on the going concern basis and the liquidation basis were (Sterling, 1970, p. 301). Woolf (1983) claims that, to his knowledge, in general, no financial reports were drafted on any basis other than that of the going concern. As a result, accounting figures in financial reports were not disturbed by the concept.

In the present study, the concern regarding the historical costs in accounting figures might not be persuasive enough when compared with the characteristics of accounting information mentioned in Section 2.3. Therefore, financial ratios will be employed in the data set as independent variables. This is to test whether financial ratios are indicators to predict business failure.

In this section, the study has mainly discussed the implementation of accounting information and its usefulness. Financial ratios are recommended as being representative of financial reports. Concrete supporting theories when selecting ratios in failure prediction is less likely to occur. The previous literature tends to use well-known and successful sets of financial ratios. Finally, the study has found that although the going concern concept is important when preparing financial reports, the concept is unlikely to play a great role in predicting failed companies. Financial reports are still useful when analysing business failure.

2.5 Concluding remarks

Financial reports have been perceived as valuable knowledge of the company's financial position, its past success or failure as well as perhaps its future aspects. However, there might be some other values that users are able to use within financial reports. In this chapter, the analysis finds that the predictive value of accounting information is one source of valuable information in financial reports. The reason why accounting information provides predictive value is because accounting information is formed under positive science. The positive science of accounting information leads to the development of theory or hypotheses within accounting information. The results from the analysis yield valid and meaningful predictions about phenomena not yet observed (Keynes, 1904 and Friedman, 1953). The accounting information is scientific in nature (Beaver et al., 1968). These two characteristics of accounting information lead to the conclusion that accounting information could be considered as a predictive tool. In addition, many previous

empirical studies have been successfully carried out to test the predictive ability of accounting information. In a practical way, financial ratios are representative of financial reports. The ratios play a great role as independent variables in failure prediction models. However, no theory supporting the selection of financial ratios is to be found in previous research. Even if there were arguments against the predictive ability of accounting information relating to the historical costs of accounting figures, the tendency in accounting standards has moved towards value accounting figures in the way that they are presented with market or nearly market value.

Chapter 3
The significance of audit reports

3.1 Introduction

Figure 1.1 in Chapter 1 showed that annual reports consist of two main financial information parts: financial statements and audit reports. In Chapter 2, the study argued for the predictive value of financial statements. This chapter goes on with the question of whether audit reports are useful incremental information to predict business failure. Generally, financial statements are prepared by management for use by investors, creditors, regulators, and other third parties. To maximise benefits in issuing the reports, management tends to prepare financial information according to its own judgement, which might cause the financial statements to lack credibility. Normally, auditing is the tool by which legal bodies require organisations to ensure that financial statements present a true and fair view[2]. Auditors are a party authorised to take the role of examining financial statements. Audit reports are auditors' products which are intended to describe the result of the examination. Enthoven (1981) recommends that the audited financial statements could be used for stewardship determination. Also, an audit tends to have a beneficial influence on the generation, allocation, and flow of capital from internal and external sources, and enhance efficient administration in the future.

The main purpose of this chapter is to discuss how audit reports affect users in real events, especially as a predictive tool. In other words, the chapter attempts to explain whether audit reports provide incremental information content leading to the consideration of the predictive value of audit reports. In order to achieve this objective, it is very important to have general background of the general form and types of audit reports. Generally, the general format of audit

---

[2] "True and fair view" is sometimes termed "fairly presented". Normally, this term is used to show whether financial statements are reasonably correct in accounting sense. This term is defined, for example, in Section 226 in the Companies Acts 1989, UK as follows: "the balance sheet shall give a true and fair view of the state of affairs of the company as at the end of the financial year; and the profit and loss account shall give a true and fair view of the profit or loss of the company for the financial year" (Furey and Parkers, 1990, pp. 136). Cooper & Lybrand (1981, p. 11) explains that true and fair view may be distorted in the following ways:
  1) financial statements are over- or under-stated by a material;
  2) disclosures are required in areas that might be misleading or ambiguous;
  3) the accounts have not been prepared on a basis consistent with previous periods or in conformity with acceptable accounting policies;
  4) some significant information may not be given;
  5) financial statements have been prepared in a difficult manner which may lead to misinterpretation.
In other words, if financial statements fail to provide useful information, which results in wrong decision making, true and fair view is breached.

reports is recommended by professional auditing bodies. Each type of audit report contains, if appropriate, a description of all substantive factors giving rise to the disagreement between auditors and company management, as well as their implications on the financial statements. Therefore, the first part of this discussion explains the general form and types of audit reports. In the second part of the chapter, the explanation then moves on to the main objective of the chapter to explain how specific audit reports may affect users in real events. The second part of the explanation is sub-divided into two parts. First, the explanation attempts to show whether users understand various types of audit reports. In order to determine the effects of audit reports, the latter part endeavours to discuss audit reports' effects in reality in two perspectives: through a market model study and an experimental study. Finally, concluding remarks summarise the main points that are relevant to this present study.

3.2 The general format of audit reports

It seems that rather than forming their own wordings on audit reports, most auditors in every country adopt the standard wordings of audit reports recommended by authorised auditing organisations. Therefore, to obtain a general background on standard wordings for audit reports, the following discussion describes the general format of audit reports.

In the absence of statutory requirements for an audit, early practitioners of public accounting had to justify engagement on the basis of economic benefits to the clients. The scope of the examination was flexible, but the auditor would, accordingly, restrict the report wording to the conclusion justified by the scope of the work performed. It has been found that British accountants recommended standard wordings of official audit reports to the US accounting community in the early twentieth century. Standard wording audit reports have been continuously revised since the first official audit reports (Carmichael and Winters, 1982).

Table 3.1 shows the 2- and 3- paragraph standard wordings used in Thailand. Table 3.1 also shows examples of the clean audit reports in the UK, which are quite different from the general forms of international audit reports. However, the content of the UK audit reports is quite similar compared with that of international audit reports. The basic format of the 3-paragraph standard wordings consists of three main parts: an introductory, a scope, and an opinion paragraph. An introductory paragraph is mainly to stress that the principal responsibility for financial statements rests with management, regardless of whether or not an auditor's report is

issued. A scope paragraph is to explain what auditors base their work on. If there is disagreement between auditors and clients, additional paragraphs could be added, following the scope paragraph. Finally, an opinion paragraph is to express a professional opinion rather than a statement of fact. On the other hand, the 2-paragraph standard wordings do not mention about the responsibility of the company's management and how auditors perform their audit procedures.

Table 3.1 Examples of clean audit reports

Paragraphs	Thailand (past – 1998)[a] (2-paragraph audit reports)	Thailand (1999 – present)[b] (International Standards on Auditing)[c] (3-paragraph audit reports)	UK[d]
Address	Auditor's report to the shareholders of X Co.	Auditor's report to the shareholders of X Co.	Auditors' report to the shareholders of X Co.
Introductory	We have examined the balance sheet of ABC Company as of December 31,19X1, and the related statements of income, retained earnings, and changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.	We have audited the accompanying balance sheet of the ABC Company as of December 31, 19x1, and the related statements of income, and cash flows for the year then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.	We have audited the accounts on page.... to page .... which have been prepared under the historical cost convention and on the basis of the accounting policies set out on page.... **Respective responsibilities of Directors and Auditors** As described above, the Company's Directors are responsible for the preparation of the accounts. It is our responsibility to form an independent opinion, based on our audit, on those accounts and to report our opinion to you.
Scope paragraph		We conducted our audit in accordance with International Standards on Auditing (or refer to relevant national standards or practices). Those Standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.	**Basis of opinion** We conducted our audit in accordance with Auditing Standards issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts and disclosure in the accounts. We also concluded an assessment of the significant estimates and judgements made by the Directors in the preparation of the accounts and of whether the accounting policies are appropriate to the Group's circumstances, consistently applied and adequately disclosed. We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the accounts are free from material misstatement, whether caused by fraud or other irregularity or error. In forming our opinion we also evaluated the overall adequacy of the presentation of information in the accounts.

Opinion	In our opinion, the financial statements referred to above present fairly the financial position of ABC Company as of December 31, 19X1, and the results of its operations and the changes in its financial position for the years then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.	In our opinion, the financial statements give a true and fair view (or present fairly, in all material respects) the financial position of the Company as of December 31, 19x1, and of the results of its operations and its cash flows for the year then ended in accordance with...(and comply with...)	In our opinion the accounts give a true and fair view of the state of affairs of the Company and of the Group as at 31 December 2000 and of the profit of the Group for the year then ended and have been properly prepared in accordance with the Companies Act 1985.
Signature	Auditor's signature	Auditor's signature	The manuscript or printed signature of the auditors
Date	End of fieldwork date and address	End of fieldwork date and address	End of field work and address

[a] TSA (1975) *Statement on Auditing Standards No. 1: Auditing standards*, ICAAT, Bangkok.

[b] TAS (1999) *Statements on Auditing Standards No. 700: The Auditor's report on financial statements*, ICAAT, Bangkok.

[c] IAPC (1994) *Standards on Auditing No. 700: The auditor's report on financial statements*. IFAC, New York.

[d] APB (1993) *Statement of Auditing Standards No. 600: Auditors' reports on financial statements (SAS 600)*. APB, London.

The difference between 2- and 3- paragraph standard wordings is mainly about identifying auditors' and management responsibility. Manson and Zaman (2001) found that 3-paragraph standard wordings were successful in aligning the view of auditors and users. Also, Innes et al. (1997) discovered that the 3-paragraph wording reduced gab between auditors and users and the reports changed users' perceptions in the sense of not expecting that auditors are responsible to companies.

In addition, this study believes that the reason for the change was to step up the quality of audit reports. Before the 3-paragraph audit reports were introduced, the opinion paragraph tended to use certain language such as "subject to", "except for" or "with the exception of" in the paragraph so as to introduce extra messages. The separate explanatory paragraph tends to state the subject matters of qualifications and should be cited in the opinion paragraph. The following definitions explain what these words mean.

"Subject to" is used when a qualification by auditors states that there was a material but not fundamental uncertainty in the account being audited. The term is adopted when any adjustment that may have been necessary had a scope limitation or had the outcome of an inherent uncertainty. "Subject to" is used in disclaimers of opinions depending on how significant the circumstances are.

"Except for" is used when qualifications by auditors state that the financial statements give a true and fair view except for the effects of any adjustment that might have been found necessary. Also, scope limitation in the area of evident availability is also under "except for". Auditors may also use the term if there is a disagreement with the treatment or disclosure of matter in financial statements. Any case mentioned previously would be expressed using both qualified and adverse opinions depending on the materiality of the matters. Auditors should express a qualification by stating that the financial statements give a true and fair view except for the effects of the matter giving rise to disagreement.

However, after research on "subject to" had been conducted in order to test its information content, scholars recommended that "subject to" was a compromise opinion and reduced the information value of audit reports. Moreover, "subject to" permitted auditors to make a very sketchy examination. Consequently, professional bodies in the UK and US eliminated the compromise opinion from generally accepted auditing standards and acceptable practices

(Walance, 1991, p. 86-87). "Subject to" was deleted and the new 3-paragrph standard audit reports, which do not allow the "subject to" qualification, were used with a new type of audit reports.

For further development, Hatherley (1997) saw a future for free-form audit reports. Hatherly gave the reason that users of financial reports paid little attention to the technicalities of the audit and simply wanted to know that financial statements were "OK". As a result, audit reports were more like a seal of approval rather than useful information. Changing from standard wording to free-form reports, users would be more likely to pay attention to what auditors were trying to say. This would increase user understanding of what is happening in financial statements. Consequently, it may improve communication between auditors and users in respect of their responsibilities. Finally, with free-form audit reports, greater disclosure should provide for market competition and cause greater appreciation of auditors' judgements (Hatherly, 1997).

Table 3.1 also demonstrates an interesting point in an opinion paragraph. The 2-paragraph standard wordings refer to "present fairly", whilst the 3-paragraph standard wordings mention "a true and fair view". Both terms have a long history in financial reports. "Present fairly" first appeared in US financial reporting regulation in 1939, while "true and fair" first appeared in the UK Companies Act 1947 (McEnroe and Martens, 1998). Wallace (1991) explained that the term "present fairly" meant that the statements provide an objective, candid, and equitable representations of the entity's financial position. The term does not intend to hedge, but to tolerate the presentation within the framework of generally accepted accounting principles. Users are assured that the presentation of financial statements is impartial within such a framework (p.71). On the other hand, Coopers & Lybrand (1981) stated that a true and fair view may be distorted if financial statements are over- or under-stated by a material amount, inadequate disclosure, inconsistence with previous periods, lack of relevance information and so obscure or complicated that they are difficult to interpret (p.11). Gwilliam (1989) concluded that the term "present fairly" tended to be more rule based, while the term "true and fair" was closely identified with judgement (107-108). However, International Standards on Auditing describes that these two terms are equivalent (IAPC, 1998 ISA 700, para. 18).

In the present study, the data set for Thailand covers audit report evolutions of only the last few changes. Therefore, the discussion will focus on the latest evolutions. The first official audit reports recommended by the ICAAT to bare authority as regards Thai auditing standards were

issued in 1975. The first official wordings were most likely the 2-paragraph wording standards of the US audit reports. Later, in 1999, the ICAAT introduced new auditing standards in the so-called 3-paragraph audit reports for the auditor's report on financial statements. The new 3-paragraph-audit report is most likely to be used as the audit report issued by the International Auditing Practices Committee (IAPC). The change from 2- to 3-paragraph audit reports in Thailand was different. ICAAT gave the reason that Thailand is a member of the International Federation of Accountants (IFAC), so Thai auditing standards should mainly parallel the IAPC, which is responsible for issuing international auditing standards. In addition, the new 3-paragraph audit reports are internationally recognised (ICAAT, 1998). In addition, it does not appear of any research conducted to prove how users differently perceive on the terms "true and fair" and " present fairly" in Thailand. However, it appears that these two terms are used interchangeably in Thailand.

In this section, the general form of audit reports is explained. The reasons for changing audit reports in recent years are to reduce expectations gab between auditors and users and to step up audit report quality. The general form of audit reports, which are now standardised, is likely to change to free-from audit reports.

3.3 Types of audit reports

The concept of auditors' responsibility could be referred back to the study by Mautz and Sharaf (1961) in *The Philosophy of Auditing*. Auditor responsibility comes from the idea of "fair presentation". Mautz and Sharaf explained that "fair presentation" comprised three subconcepts: the concept of accounting propriety, the concept of adequate disclosure, and the concept of audit obligation (p. 158). In brief, auditors were responsible for evaluating whether accounting policies, even if adopted from generally accepted accounting principles (GAAP), were suitable to a particular company (accounting propriety) (p. 169). In addition, auditors needed to ensure that all important information had been disclosed and users would not be misguided if the information were not provided (adequate disclosure) (p. 200). Finally, auditors had responsibility for fair presentation in connection with their own opinions. Audit reports should contain a clear-cut indication of the character of the auditors' examinations, as well as the degree of responsibility they were taking. As a result, the degree of responsibility depended on what types of audit reports were issued and auditors may assume the reliability of financial information issued in conjunction with audited financial statements (p. 200-201) (Mautz and Sharaf, 1961).

As stated earlier in this section, the development of audit reports has taken quite some time. The following discussion describes only the recent types of audit reports, which are widely adopted in many countries, including Thailand. The two broad audit reports comprise clean audit reports and modified audit reports. Within clean audit reports, unqualified opinions and unqualified opinions with explanatory notes are given. Within modified audit reports, qualified opinions, disclaimers of opinions and adverse opinions are subcategories. The following sections explain these types of audit reports.

3.3.1 Clean audit reports

Previously, clean audit reports contained only unqualified opinions. However, once the 3-paragraph audit reports were introduced, unqualified opinions with explanatory paragraphs were also allowed. The unqualified opinions with explanatory paragraphs are still clean audit reports.

3.3.1.1 Unqualified opinions

Unqualified audit reports are issued when auditors consider that the financial statements give a true and fair view and have been prepared in accordance with relevant accounting practices or other requirements. TSA 700 explains that unqualified reports should cover the following requirements:

- appropriate accounting policies have been adopted and consistently applied;
- other related rules and regulations or applicable accounting standards have been considered when preparing financial statements, if not explanation required;
- adequate disclosures of all information have been treated properly and comprehensively (ICAAT, 1999 TSA 700, para. 27).

3.3.1.2 Unqualified opinions with explanatory paragraphs

It is more often the case that the financial statements present a true and fair view up to the financial statements' date. However, auditors may prefer to add matter paragraphs to highlight a matter affecting the financial statements, which are included in the note to financial statements, and which more extensively discuss the matter. The arising matters, which are likely to be

presented after the opinion paragraph, do not affect the auditor's opinion. An example of a matter arising is given in the following case.

It is possible that the financial statements could be affected by inherent uncertainties after the financial statement date. For example, clients may have encountered financial difficulty, which may cause insolvency in the near future, shortly after clean audit reports have been issued. Even though auditors have no responsibility to consider the following year's financial statements because of the year-by-year engagement rule, it is useful to users to know the auditors' point of views as to whether, in a few months time after the financial statements have been issued, these clients could go bankrupt. The stated example should show that there is nothing wrong with the current year's financial statements, but there is some doubt relating to the following year as to whether the entity could continue to exist. In this case, TSA 700 states that if there are any inherent uncertainties (going concern assumption), disclosures in audit reports should include an explanatory paragraph referring to the fundamental uncertainty after the opinion paragraph. However, an explanatory paragraph is not considered to be qualified.

In addition, in some other circumstances, it might be considered necessary to issue unqualified opinions with an explanatory paragraph. For example, if clients adopt a new accounting policy, which differs from the previous year accounting policies, the consistency concept is broken. Due to the fact that the change does not break any accounting-related rule, but does breach a fundamental accounting assumption, an unqualified opinion with an explanatory paragraph are needed (ICAAT, 1999 TSA 700, para 30-32).

3.3.2 Modified audit reports

Modified audit opinions contain three types of opinions. They include qualified opinions, disclaimers of opinions and adverse opinions.

3.3.2.1 Qualified opinions

Qualified audit opinions are issued when any of the following circumstances occur:
  (a) a limitation of the scope during examination;
  (b) disagreement with the treatment or disclosure of an event in the financial statements

(c) any case where financial statements do not present a true and fair view (ICAAT, 1999 TSA 700, para. 37).

Generally, qualified opinions consist of two sub-opinions: adverse opinions and disclaimers of opinions. The overall principle when issuing either qualified opinions or adverse/disclaimers of opinions is the concept of "materiality"[3]. If the effect of any disagreement with the entity's management, or limitation on scope is not so material and pervasive as to require an adverse opinion or a disclaimer of opinion, a qualified opinion should be issued.

3.3.2.2 Disclaimers of opinions

Disclaimers of opinions are issued when auditors find that there are some possible effects of a scope limitation, which mean that auditors are unable to express any opinion on financial statements. If a scope limitation is material and seriously affects a true and fair view, disclaimers of opinions should be taken into consideration. If not material, qualified opinions are possible (ICAAT, 1999 TSA 700, paragraph 38). In other words, disclaimers of opinions are issued when auditors are unable to audit whether disagreement is correct or not. For example, auditors are engaged after commencing an audit period which results in no other alternative audit procedures to audit the quantity of beginning inventory. This scope limitation gives rise to the issue of disclaimers of opinions because it is not possible to prove whether the quantity of beginning inventory is correct or wrong.

3.3.2.3 Adverse opinions

Adverse opinions are issued when auditors find that financial statements do not comply with relevant accounting principles or other requirements such as regulations and legislation and the disagreement is material as to the presentation of a true and fair view of the financial statements. In addition, if the financial statements disclose important information, adverse opinions should also be issued. However, if disagreement is not sufficiently significant to require adverse opinion, auditors can express qualified opinion by stating that the financial statements give a true and fair view, except with regard to of the matter mentioned (ICAAT, 1999 TSA 700, para. 39).

---

[3] Generally the concept of "materiality" is an issue of professional judgement on which is somewhat difficult to draw any criteria. ISA 320 *"Material and the audit"* explains that "information is material of its omission or misstatement could influence the economic decisions of users taken on the basis of the financial statements. Materiality depends on the size of the item or error judged in the particular circumstances of its omission or misstatement. Thus, materiality provides a threshold or cut-off rather than being a primary qualitative characteristic which information must have if it is to be useful" (IAPC, 2001 ISA 320, para. 3).

In other words, if auditors are able to prove whether the disagreement is correct or not, adverse opinions should be issued, if material. For instance, if clients have not complied with any accounting standard in material respects and auditors find these errors during audit work, in this case, adverse opinions should be issued because it is possible to prove whether the errors are right or wrong.

In some cases, audit reports have been issued with mixed opinions. For example, a company has the problem of under provision of doubtful accounts. This causes the profit and loss account not to present a true and fair view. However, the effect causes the balance sheet to present a material overstated. Therefore, a qualified opinion is issued to the balance sheet and an adverse opinion is issued to the profit and loss account.

In order to get overviews of the qualifications on 3-paragraph and 2-paragraph audit reports, Table 3.3 compares types of audit reports in various auditing disagreements.

Table 3.2 Summary of types of audit reports when disagreement is incurred

Disagreement	3-paragraph standard wordings				2-paragraph standard wordings		
	Qualified opinions	Adverse opinions	Disclaimers of opinions	Unqualified with explanatory paragraphs	Qualified opinions	Adverse opinions	Disclaimers of opinions
Departure from GAAP and other related laws and regulations	X	X			X	X	
Disclosure	X	X			X	X	
Scope limitation			X	X	X		X
Uncertainty (e.g. litigation, going concern)		X	X	X	X	X	X
GAAP inconsistency		X		X	X	X	
Emphasis matters				X			

As shown in Table 3.2, the 3- paragraph standard wordings do not appear to substitute the 2-paragraphs reporting. The most significant difference in types of audit reports between the 2- and the 3-paragraph standard wordings is mainly from the elimination of "subject to". The similarity of these two types of audit qualifications are when departure from GAAP and other related law and regulations. This is because, in these two cases, there is no inherent uncertainty. Therefore, the "subject to" qualification is not needed. On the other hand, the dissimilarity of these two types of audit qualifications incur when inherent uncertainty exists. In the case of

scope limitation and uncertainty, auditors are unable to identify what may happen in the future. Therefore, the "subject to" qualification is needed. However, once the 3-paragraph standard wordings were introduced, "subject to" is no longer effective. Instead, unqualified opinions with explanatory paragraphs are required when scope limitation and uncertainty is not material. In addition, rather than issuing qualified opinions to financial statements which inconsistently apply with generally accepted accounting principles, unqualified opinions with explanatory paragraphs are recommended. This means in these two cases the new auditing standards decrease the seriousness of audit reports from qualified audit opinions to unqualified audit opinions when scope limitation, uncertainty and GAPP inconsistency are not material. Finally, the new 3-paragraph audit report also allows auditors to give matters arising when they think the information would be useful for users to know. Appendix A gives examples of modified audit reports.

It should be noted that because the data set of the study covers both the 2- and 3- paragraphs standard wordings, the classifications of types of audit opinions depend on audit opinions in the following analysis. For example, the 2-paragraph standard wordings requires qualified opinions when going concern become an issue, but later when the 3-paragraph standard wordings are effective, unqualified opinions with explanatory paragraphs are required. The analysis considers the former case as a qualified opinion, but unqualified opinions in the latter case.

In this section, the discussion has achieved general understandings of the general form and all the types of audit reports, including unqualified opinions, unqualified opinions with explanatory paragraphs, qualified opinions, adverse opinions, and disclaimers of opinions. This general understanding brings the discussions on to how audit reports affect users' perception in real events.

3.4 Relationship between audit reports and real events

The previous two sections, Sections 3.2 and 3.3 have explained the background information about the general form and types of audit reports. The main objective of this section is to analyse whether audit reports provide information content to users to facilitate decision making. In other words, this section has the same intention as in Chapter 2. It is to discuss whether audit reports could be considered as a predictive tool or whether audit reports contain useful incremental information content.

The question of how valuable audit reports are to shareholders and third parties has arisen quite often. Roberston (1988) and Strawser (1991) stated that considering whether audit reports are effective or not, requires analysis through two steps. First, the audit reports need to be understandable for users and users should understand what messages are conveyed in audit reports. Secondly, users should utilise the information from audit reports in proper ways. Roberston (1988) and Strawser (1991) described the ways in which users perceived audit reports in two stages, as shown in Figure 3.1.

Figure 3.1 Users' perceptions of audit reports
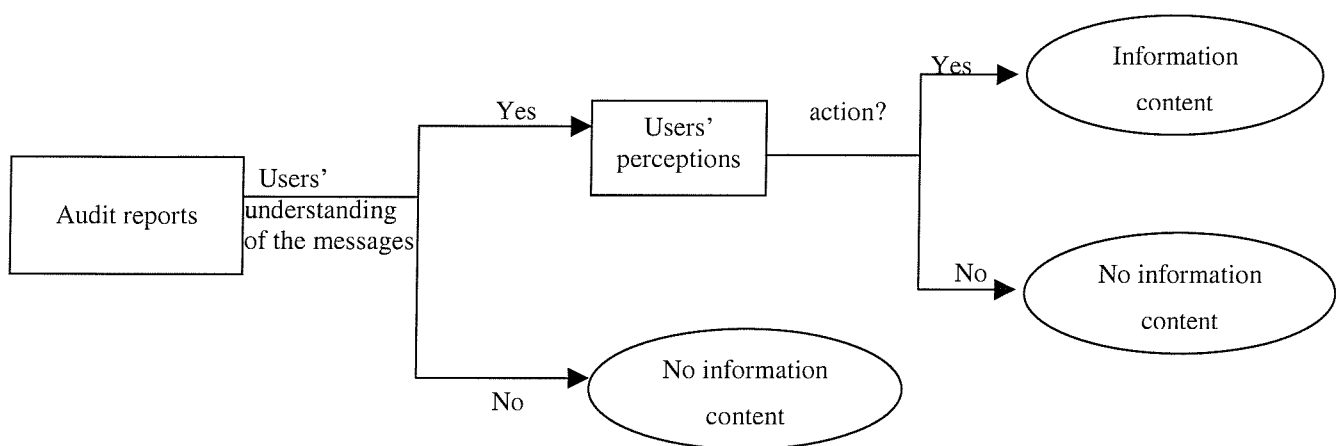
The information content of audit reports needs to pass through two stages in order to make the audit report effective. First, when audit reports are published, the question arises whether users clearly understand the messages from the reports. Secondly, when users perceive the message, how significantly does the message affect users' decision making. An example explaining these two stages of users' perceptions would be as follows. After the auditors have issued going concern qualified audit reports, users might perceive the reports in negative ways and could draw the conclusion that the entity's operations in the future may be in doubt. Then, the users will make a decision to reduce the number of holding shares of the entity in their portfolio. If users make a decision in these two steps, the market price of the stock will be affected. On the other hand, if users fail to understand the message sent by the auditors or if they understand the message, but take no action, auditors reports have not been useful or have no good information content

Several studies have found that users' perceptions of audit reports are sometimes favourable and sometimes unfavourable. Previous research has been conducted in two ways, according to the

two stages of users' perceptions: first, to test whether users do understand audit reports, and once users understand them, second, what are the effects of users' reactions.

The objective of the following section is to review the significance of audit reports starting with how users understand audit reports. In order to understand whether audit reports provide information content to users, the explanation moves to the specific implications of audit reports in two broad areas: market model research and experimental research. The two research areas examine on the effects of audit reports on users' decision making.

3.4.1 Users' perceptions of audit reports

Until this century, auditors have provided many kinds of services, including auditing services and non-auditing services. Non-auditing services usually include financial consulting and due diligent reviews. Auditing services include year-end full audits, quarterly reviews and forecast reviews. Non-auditing services are beyond the scope of the present study, so this aspect is not discussed in this review. However, the following analysis explains the general background to well-known audit reports. In order to provide background to the following literature review, Table 3.3 provides comparisons of standard wordings of auditing services provided by auditing practitioners, including a full audit reports, a quarterly review and a review of forecast.

Table 3.3 Comparisons of the contents of auditor association reports [a]

Paragraphs	Full audit	Quarterly review	Review of forecast (pro forma)
Introductory	1. We have audited 2. Financial statements are being audited 3. Management responsibility 4. Auditor responsibility 5. Emphasis on the historical cost (UK)	1. We have been instructed by the company to review 2. Financial statements are being audited 3. Management responsibility (mainly) 4. Auditor responsibility	1. We report on the 2. Emphasis of a specific purpose of using this information 3. Solely of management responsibility 4. Limited auditor responsibility
Scope paragraph	1. Generally accepted auditing standards 2. Examining evidence, on a test basis, of support amounts and disclosures 3. Assessing accounting principles used and significant estimates used 4. Assessing consistently accounting policies among Group's circumstances, and adequate disclosure 5. Evaluating for reasonable assurance and free of material misstatement (UK, US) whether caused by fraud or other irregularity (UK) 6. Evaluating overall presentation	1. limited scope, only complied with a specific accounting announcement and provides a lower level of assurance than an audit 2. Assessing accounting policies and presentation through management interviews 3. Assessing overall financial statements using analytical analysis 4. No opinion expressed for reviews	1. Limited scope, only complied with a specific accounting announcement and provides a lower level of assurance 2. Evaluating underlying financial information 3. Comparing accounting figures with source documents 4. Assessing any material adjustment through discussion
Opinion paragraph	1. In our opinion 2. A true and fair view (UK) or presentation fairly stated, in all material respects (US) 3. In accordance with the Companies Acts (UK) or in conformity with generally accepted accounting principles	1. Not aware of any material misstatement to financial information	1. In our opinion 2. Properly complied on the basis stated 3. Complied with Group's accounting policies 4. Appropriate as required by a certain body

[a] AICPA (1988) *Statement on Auditing Standards No. 58: Reports on Audited Financial Statements*. AICPA, New York.

APB (1993) *Statement of Auditing Standards No. 600: Auditors' reports on financial statements*. APB, London.

ICAAT (1999) *Statement of Auditing Standards No. 700: The auditor's Reports on Financial Statements*. ICAAT, Bangkok.

IAPC (2001) *Statement on Auditing Standards No. 810: The examination of prospective financial information*. IFAC, New York.

IAPC (2001) *Statement on Auditing Standards No. 910:Engagement to review financial statements*. IFAC, New York.

Research on users' perception of audit reports has been carried out since the 1970's. Coreless and Norgaard (1974) were pioneers who attempted to determine users' understanding of auditing services. They conducted research to compare different users' perceptions of reliability in forecasted financial statements and audited financial statements. A survey was conducted using a questionnaire. Subjects were asked to compare audited financial statements and reviewed financial forecasts. The results showed that, overall, subjects were able to distinguish between audited reports and forecast reports.

Instead of comparing audited financial statements with forecast reports, Reckers and Pany (1979) compared audited financial statements with quarterly review financial statements. Participants were asked to indicate the reliability of quarterly statements generated under sets of conditions presented to them and manipulated by the authors. The study found that users relied on the statements that had been subject to a full audit rather than a limited review. Also, confidence in the reality of a limited review and a full audit were significantly higher than for quarterly statements with no auditor association. Pany and Smith (1982) supported the finding of Reckers and Pany (1979). They employed more audit association reports and found that a greater significant difference was observed in reliability with auditor association than with no auditor involvement. However, when comparing among auditor associations, users could not distinguish between the reliability of types of audit reports.

Johnson et al. (1983) changed the research direction to other dimensions of financial statement reliability. Loan officers were participants in the study. First, they were asked to decide whether to grant a loan and determine an appropriate interest rate. Then, they evaluated the financial statement information using dependent variables, including conformity with generally accepted accounting principles (GAAP), freedom from clerical errors, and freedom from management fraud. The results showed that audited financial statements were perceived to be of higher quality than were compilations, reviews and statements with no auditor involvement.

Johnson and Pany (1984) also conducted a questionnaire survey with loan officers and extended the dependent variables to areas other than audit report reliability. The study attempted to identify how users perceived forecasted financial statements reviewed by auditors in the area of forecasting accuracy. Financial statements with either no auditor involvement or a review report were provided for subjects. The study concluded that auditor association significantly affected

forecasted financial statements, as they were not only free from material errors but also were also more accurate than those with no auditor association.

The results of studies examining the effects of auditor reports on users' perception are summarised in Table 3.4. The findings of these studies indicate that users' perceptions of entities' financial statements were more positive where auditors were associated than to those where no auditor was involved. However, evidence concerning the effects of auditor association in the various reports on users' perceptions was inconsistent. Strawser (1991) explained that there were two possible reasons for this inconsistency found by the previous studies. First, the dependent variables and the types of audit reports were different for each study. As a result, the inconsistency of users' perceptions of various audit reports was unlikely to bring the conclusion that there was no user perception among different types of audit association. Secondly, different groups of participants were selected, which might not give a generalised indicator of what perceptions others users would have. Gwilliam (1987) explained the differences by describing the symbolic nature of auditor reports and pointed out that users assumed audit reports would be both present and unqualified, and as a result, no attention was paid to audit reports. It might not be that audit reports themselves were able to convey information content to users (Gwilliam, 1987, p. 112).

Table 3.4 Summary of research on users' perceptions on auditor association reports

Author(s)	Participants	Total sample (% response rate)	Auditor association	Dependent variable	Results[a]
Corless and Norgaard (1974)	Financial analysts	855 (43%)	1. Full audit 2. Forecast review	Reliability	1 > 2
Reckers and Pany (1979)	Financial analysts	200 (31%)	1. Full audit 2. Quarter review 3. No auditor involvement	Reliability	1 > 3 2 > 3
Pany and Smith (1982)	Financial analysts	65 (88%)	1. Full audit 2. Quarter review with a disclaimer opinion 3. Quarter review with a positive opinion 4. No auditor involvement	Reliability	1 > 4
Johnson et al. (1983)	Loan officers	600 (16%)	1. Full audit 2. Review report 3. Compilation 4. No involvement	Conformity with GAAP Freedom from errors Freedom from fraud	1 > 2 1 > 3 1 > 4 2 > 4 3 > 4 1 > 2 1 > 3 1 > 4 1 > 2 1 > 3 1 > 4
Johnson and Pany (1984)	Loan offices and CPAs	400 (30%) 400 (26%)	1. Review of forecast 2. No auditor involvement	Freedom from clerical error Forecast accuracy	1 > 2 1 > 2

[a] Significant at 0.05

Source: Adapted from Strawser, Jerry R (1991) The role of accountant reports in cases' decision-making processes: a review of empirical research. *Journal of Accounting Literature*. Vol. 10, pp. 181-208.

3.4.2 Incremental information content of audit reports

After analysing users' understanding of audit report information, this next section analyses further how audit reports affect certain events in reality. Scholars have examined whether audit reports provide useful information for several years in two broad areas: market model research and experimental research. The following sections describe these two areas.

3.4.2.1 Market model research

It was believed that in efficient capital markets, market prices tended to be influenced by all publicly available information. Consequently, once any new information is released, market prices should react immediately and unbiasedly to it (Fama, 1970). Gonedes (1972) applied market efficiency concepts in the accounting context and concluded that accounting figures, which were produced under alternative sets of accounting procedures, should affect market prices. Baskin (1972) also explained that the theory and research underlying market models came within the concept of efficiency security markets. Security prices responded when economic conditions changed. As a result, if the period when data input occurred could be sufficiently isolated, then changes in prices which resulted from investors' decisions could be assumed from the data input. The concept was then applied to audit qualifications, which were considered the input data and should have the same effects. Since audit qualifications provided bad news to an entity whose financial statements were qualified, market prices would be affected by that information (Baskin, 1972). This concept was extended in subsequent research when attempting to show the information content of audit reports.

Baskin (1972) introduced initial market model research in the area to prove the information content of audit reports. The objective of the study was to compare stock prices and qualified audit reports when they were issued. The study presumed that qualified audit reports conveyed bad news to users' perceptions, which reflected on stock prices. The research divided companies into three groups. First, a control group was set up with unqualified opinions. Secondly, an experimental group was provided with consistency qualifications that had not previously disclosed changes to accounting policies prior to annual reports. Finally, another experimental group was provided with consistency qualifications that had previously disclosed changes to accounting policies prior to annual reports. The analysis suggested that share prices were not

significantly influenced for both experimental groups. This meant that consistency qualifications had no impact on share prices.

The work of Alderman in 1977 and 1979 was conducted with the belief that risks and returns were relevant information in determining the value of any asset. Accounting information, including audit reports should provide information value to identify risks and returns. The two studies presumed that, if uncertainty qualifications had an impact on market assessed risk, then this evidence supported the proposition that qualified opinions provided information value. Both studies attempted to evaluate the information content of "subject to" qualifications (uncertainty qualifications) by considering the risk characteristics of share prices receiving qualifications. Two experimental groups were created according to the types of audit reports they received. One group received first time "subject to" qualifications, whereas the other one received unqualified opinions. The results showed that there was no significant difference in change of risk over the two time periods (before and after the qualified opinions were announced) between the two sample groups. Therefore, Alderman (1977, 1979) concluded that uncertainty qualification had little impact on market assessed risk, which indicated no information value regarding risk to investors.

However, Firth (1978) contradicted the results of Alderman (1977, 1979). This study was conducted by collecting share price data 20 days before and after qualifications. The research found that for all types of qualifications there were no significant effects on share prices in the 20 days before the annual reports were published. However, immediately after qualifications were published, certain types of qualifications (going concern and assets value qualifications) reflected negative abnormal returns.

Ball et al. (1979) replicated Firth's (1978) study using Australia data. They found that no overall evidence proved that qualifications had a significant negative effect on share prices. However, if considering what types of qualifications affected share prices the most, the study suggested that non-depreciation of building qualifications had an upward effect on share prices. Valuation of assets which was the most significant effect in Firth's (1978) study, had very little effect on share prices, however.

Chow and Rice (1982) investigated whether stock prices were affected when qualified audit reports were received over a period of two months including the month of financial statement

releases. The study used a sample of 90 qualifications and 90 unqualified opinions matched on the basis of sales, industry types and auditors. Three types of audit opinions were selected: assets realisation, uncertainty qualifications, and other qualifications. The results of the analysis showed that downward changes in stock prices were associated with qualifications. The most significant difference in negative stock prices was associated with asset realisation qualifications.

Davis (1982) extended Chow and Rice's (1982) study in order to observe whether market reaction was instantaneous. Daily returns of stock price data were collected. The study showed that within a short period (21 days) after qualifications were issued, there was no significant change in stock prices, which suggested a lack of information content of audit reports. However, significant differences were found for a longer time frame (from 224 days prior to the release of the audit qualifications). The study concluded that information contained in qualifications was impounded by other sources prior to release of audit reports.

Banks and Kinney (1982) also attempted to discover the effects of qualifications on audit reports. Share prices were also the target for comparison in two main areas. First, the study compared the earnings of loss contingency qualifications and loss contingency without qualifications. Secondly, the study compared earnings of companies whose accounts were qualified and were disclosed prior to the issuance of the opinions and companies whose accounts were qualified and were not disclosed prior to the issuance of the opinions. The first experimental group had no significant difference in earnings. On the other hand, the second experimental group revealed a marginally significant difference.

Elliott (1982) also conducted empirical research on market models by observing the market effect on "subject to" qualifications. The study divided qualification into five categories: going concern, assets realisation, litigation, utility rate case, and qualifications that were favourable to investors. A market model was constructed using share price data from the sixty weeks immediately before the year of qualifications. A control group with unqualified opinions was also set up. The market effects were then tested for the forty-five week period prior to the announcement of the earnings release and for the fourteen-week period following the earnings release (the remaining one week was the week of the earnings announcement). The results showed that a significant difference in returns was incurred in the period associated with asset realisations and going concern qualifications, but in the period following the earnings announcement only asset realisation qualifications showed further decline. All other

qualifications did not appear to have any statistical significance. The study concluded that "subject to" opinions were issued in association with several differing types of information which all affected share prices. This suggested that audit qualifications might provide the same information as other information.

Later research focusing on market models took great care to research methodologies, the date of data collection and the influence of the earnings announcement. Dodd et al. (1984) raised the issue that the actual date of announcement might be one of the several problems that caused audit reports to have no incremental information value. Samples were carefully extracted on the basis that the annual earnings announcement was made at least 5 days prior to filing with a stock market or the release of annual reports. The results showed that "subject to" opinion had little impact on stock prices.

Dopuch et al. (1986) contradicted the conclusion of Dodd et al. (1984) after paying more attention to the date of disclosure of audit qualifications to the media disclosure. The study extended the period under investigation to 300 days prior to the disclosure to 60 days after the disclosure. The study found that significant negative returns were incurred around the announcement date. The results showed that qualifications possessed information content. In addition, the study concluded that media disclosure of qualified opinions resulted in significant abnormal negative returns.

Instead of keeping the same direction as previous studies by selecting audit report data and then finding the effects of audit reports, Choi and Jeter (1992) observed the slope coefficientcy of earnings after qualifications were issued. The study found that earnings coefficients were altered subsequent to the issuance of qualifications for both consistency qualifications and "subject to" qualifications.

Frost (1997) conducted research to test whether firms voluntarily disclosing the expected receipt of modified audit reports, prior to the annual report release, would affect stock prices. The study selected 81 UK firms whose accounts were modified for the first time during the sample period 1982 – 1990. For each modified report, the closest size-matched UK firm in the same industry and fiscal year was selected to be the comparison firm. Financial ratios (net income over accounts receivable, total liabilities over total assets and current assets over total liabilities) were also selected in these firms. The study found that UK firms that received first-time modified

audit reports were financially weaker than comparison firms that did not receive modified audit reports.

Apart from research carried out in developed stock markets like the UK and the US, Chen et al. (2000) conducted research using an emerging market in the Shanghai Stock Exchange. Chen et al. believed that modified audit opinions representing bad news about the company were likely to induce negative impact to stock prices. The study hypothesised that the announcement of modified audit reports was negatively associated with market returns. Audit opinions and announcement dates were collected, as well as returns and financial data. After controlling for effects of accounting earnings and other concurrent announcements, the study found that modified audit reports were associated with negative abnormal market returns.

Finally, Chen et al. (2001) conducted different research using the same database as in 2000, the Shanghai Stock Exchange. The study compared modified audit reports with the return on equity (ROE). The hypothesis of this part of the empirical research stated that, other things being equal, the company that frequently received modified audit reports was positively associated with reporting marginal ROE. A logit model was derived in support of the hypothesis. The frequency of modified audit reports had a significantly negative relationship with ROE.

The findings of market model research investigating the information content of qualified audit opinions are summarised in Table 3.5. Although Firth's (1978) study, based on UK data, was the only study in which empirical evidence agreed with the theory underlying the market model (i.e. bad news creates negative returns) and which made general conclusions about the information content of audit qualifications, most of the findings tended not to agree with it. There are, however, some arguments in favour of Firth (1978). First, most previous studies adopted "subject to" qualifications and were conducted using US data. The main objective of these studies was to establish whether "subject to" opinions should be eliminated from auditing practice (e.g. Chow and Rice, 1982) rather than to say whether audit reports provided information content. In addition, "subject to" qualifications were eliminated from auditing practice for a number of years, so the unfavourable results of no information content are not relevant to the present days.

Gwilliam (1987) explained that it was not logical to conclude that audit qualifications did not provide information value. When referring to the successful results of Firth's (1978) work in the

UK, it was because there were occasionally very severe qualifications, but the US Stock Exchange Commission (SEC) did not allow registered companies to file financial statements containing qualifications. (Gwilliam, 1987, p.130). Lately, the research conducted by Chen et al. both in 2000 and 2001, using an emerging market (the Shanghai Stock Exchange) has proved that modified audit reports resulted in negative stock prices and return on equity. As a result, the findings of previous research against the ability of audit reports in respect of information content should not give rise too much concern for users.

Finally, due to the fact that mixed information occurred in audit report information could be a case for the decline in information content (Davis, 1982). Craswell (1985) found that it was unlikely that general conclusions would be unfavourable concerning the information content of audit qualification. Such reports may contain information content, but research designs and methodologies might not interpret it correctly. One example in the work by Choi and Jeter (1992) would be evidence that research design affects the results of audit report assessment.

Table 3.5 Summary of the results of market studies on audit reports

Author(s)	Sample years	Samples	Qualifications	Dependent variables	Results after disclosure[a]
Baskin (1972)	1965 - 1967	137	Consistency (changes in accounting principles)	Stock prices	Not significant
Alderman (1977) Alderman (1979)	1968 - 1971 1968 - 1971	40 600	Uncertainty ("subject to")	Risk investment	Not significant Not significant
Firth (1978)	1974 - 1975	1,500	1. General qualified opinions *Qualified opinions* 2. Going concern 3. Assets valuation 4. Subsidiary's audit 5. Non compliance with GAAP 6. Non compliance with GAAP, but CPAs concurred 7. Continued qualification	Stock prices	Negative Negative Negative Not significant Not significant Not significant Not significant
Ball et al. (1979)	1965 - 1972	117	The "subject to" opinions 1. Depreciation on building 2. Others	Stock prices	 Positive Not significant
Chow and Rice (1982)	1973 - 1974	180	Uncertainty Assets realisation	Stock prices	N/A[b] N/A[b]
Davis (1982)	1968 - 1975	600	The "subject to" qualification 1. Litigation 2. Valuation of assets	Stock prices	 N/A[b]
Banks and Kinney (1982)	1969 - 1975	92	1. Uncertainty ("Subject to" qualifications)	Stock prices	N/A[b]
Elloitt (1982)	1972 - 1978	328	The "subject to qualification" 1. Going concern 2. Assets realisation 3. Litigation 4. Others	Stock prices	 Not significant Not significant Not significant Not significant

Table 3.5 (continued) Summary of the results of market studies on audit reports

Author(s)	Sample years	Samples	Qualifications	Dependent variables	Results
Dodd et al. (1984)	1969 – 1980	606	Uncertainty qualification 1. Litigation 2. Assets realisation 3. Future financing 4. Multiple uncertainty 5. Disclaimers	Stock prices	 Not significant Not significant Not significant Not significant Not significant
Doupch et al. (1986)	1970 – 1982	114	"Subject to" qualification	Stock prices	Not significant
Choi and Jeter (1992)	1983 – 1986	130	1. Inconsistency qualifications 2. The "subject to" qualifications	Slope coefficeincy of earnings	Negative Negative
Frost (1997)	1982 – 1990	162	Modified qualifications	Financial ratios	Negative
Chen et al. (2000)	1995 – 1997	844	Modified qualifications	Stock price	Negative
Chen et al. (2001)	1992- 1997	2,163	Modified qualifications	Return on equity	Negative

[a] Significant at 0.05
[b] No result examined after disclosure

Source: Updated and adapted from Strawser, Jerry R (1991) The role of accountant reports in cases' decision-making processes: a review of empirical research. *Journal of Accounting Literature.* Vol. 10, pp. 181-208.

3.4.2.2 Experimental research

Researchers have also criticised prior studies which adopted market models to analyse the incremental information content of audit reports. The main argument is that it is unlikely that the effects of audit reports have been set aside from the effects of other sources such as earnings announcements. To solve this problem, research has been designed to isolate the effects of audit reports from other information using experimental research. The procedures included 1) comparing reactions to unaudited and audited financial statements and 2) obtaining reactions to information sets consisting of identical financial statements accompanied by different audit reports (e.g. Bailey, 1981 and 1982 and Estes, 1982).

Several studies have examined users' perceptions of audit reports through asking those who are directly involved with the reports. Financial analysts and loan officers were among those who participated in the studies. Estes and Reimer explained that these two groups had an impact on market prices. They were sophisticated in financial reporting matters, as well as being able to command the attention of corporate officers. As a result, these two groups were the target representing users when testing perceptions of audit reports. Estes and Reimer (1977, 1979) conducted research to identify whether audit reports themselves conveyed incremental information content apart from financial statements. In order to prove the value of the information content, two groups of participants (bank officers and financial analysts) were selected to answer a questionnaire. A set of financial statements was sent to subjects, including three-year audit reports. A test group received qualified audit reports for non-compliance with generally accepted accounting principles, and a control group received unqualified audit reports. Bank officers were asked to assess the maximum loans that they would give to an experimental company at a given interest rate. Financial analysts were asked for the maximum share prices at which they would decide to purchase a share in an experimental company. The results showed that whereas bank officers were not significantly affected by the qualification, financial analysts were.

Estes (1982) conducted a further study which included more types of audit reports and more participants. The types of audit reports covered all possible opinions and subjects were asked to assess companies in various ways, mainly by income projection and management evaluation. The experimental package comprised financial statements with no extreme information and one of the audit opinions was also sent. The overall analysis showed that none of the audit reports

had any impact on investor behaviour. However, the results suggested that adverse opinions had the most influence on investors.

Similar research was conducted in the UK by Firth (1980). Firth (1980) attempted to observe the impact of certain types of qualified audit reports on bank lending decision and credit line analysis. A questionnaire survey was designed to state how much bankers and credit analysts would lend or give to experimental companies for each of four audit report situations. The means of loan amounts and credit lines in each report type were examined to see whether there were any statistical differences. The study found that two types of audit qualifications, going concern and assets valuation problems, significantly affected decisions. These two qualifications resulted in lower loan amounts and credit lines than unqualified opinion and inventory valuation which departed from generally accepted accounting principles.

The two studies by Libby (1979) in the US and Houghton (1983) in Australia attempted to compare types of audit reports using an interview survey. Both studies provided subjects with financial statements that disclosed an uncertainty and that disclosed unqualified opinions. The same information was given to subjects with different types of audit reports. The subjects were then asked what loan amounts should be given to the experimental companies. The studies concluded that types of audit reports did not affect lending decisions. However, Houghton found that once qualified audit reports were issued, lending processes appeared to take a longer time, but the reports did not significantly affect the lending decision. Similar research was conducted in Singapore by Gul (1987). The result confirmed Libby's (1979) and Houghton's (1983) findings that additional information was required as a result of "subject to" audit qualifications (Gul, 1987).

In 1997 the study of LaSalle and Anandarajan confirmed Libby (1979), Houghton (1983) and Gul (1987). LaSalle and Anandarajan (1997) conducted research focusing on unqualified opinions with explanatory paragraphs and disclaimer opinions of litigation and going concern issues. The actual financial statements, including audit reports and companies' backgrounds were included in the case materials. The result of a questionnaire survey showed that disclaimer opinions caused loan officers to 1) reduce the line of credit 2) refuse to lend 3) change their assessment of the entity's ability to improve its profitability and 4) ask for a higher interest charge if the entity was granted a loan.

Bailey (1981) changed one dependent variable to prove the credibility of management and auditors using audit report messages. A case study, questionnaire type, based on the financial statements of an actual company was adopted. Various types of audit reports were also included in the case study. Subjects were asked to forecast future data-net earnings and net sales using the given financial statement and/or audit reports. The study intended to establish which sources of data were employed (whether from the management, auditors, both or none of the reports). Subjects were also asked to rate the credibility of these sources. The results showed that there was little evidence of the use of management information and audit reports. Moreover, even adverse audit reports, which were considered serious audit reports, did not appear to convey incremental information to chartered financial analysts. However, there was a clear relationship between the types of audit reports and the credibility of auditors, especially when reports presented adverse opinions.

In 1988, audit reports were confirmed in the area of credibility when added to financial statements. The results showed that financial analysts could not distinguish between qualified audit reports. However, if audit reports expressed serious problems, such as adverse opinions, financial analysts could rank audit reports according to credibility referred to in the reports and reliance and satisfaction related to the analysts (Robertson, 1988).

Table 3.6 summarises studies related to experimental research on users' perceptions. The experimental research was conducted in two main areas: lending decisions in banking systems, and the credibility of management or auditors. In general, these studies tended to conclude that if audit reports were not a serious type (i.e. adverse opinions), there was no significant difference between the types of qualifications. Moreover, research employing various types of users (i.e. investors) found that audit reports had no significant influence on users, which means that audit reports conveyed no additional information to users (e.g. Estes, 1982). The study by Holt and Moizer (1990) could provide an answer as to why users, especially the persons who were directly involved with audit reports, were unable to comprehend the messages from qualified audit opinions. The results of their study showed that only accountants could distinguish between the various audit report types, whereas other users could not. However, even though it is just one example of the recent research by LaSalle and Anandarajan (1997), they found in favour of audit reports, which could be perhaps a good signal that users have begun to understand audit reports in recent years.

Table 3.6 Summary of experimental studies of audit reports on users' decisions

Author(s)	Participants	Total samples (% of response)	Survey types	Types of audit reports	Dependent variables	Results
Estes and Reimer (1977) Estes and Reimer (1979)	Bank officers Financial analysts	500 (44%) 1,000 (20%)	Questionnaire Questionnaire	1. Unqualified opinions 2. "Except for" qualifications (GAAP departure) 1. Unqualified opinions 2. "Except for" qualifications (GAAP departure)	Maximum loan amount Stock prices	Not significant 1 > 2
Estes (1982)	Investors	7,051 (19%)	Questionnaire	1. Unqualified opinions 2. Unqualified opinions with explanatory paragraphs 3. Qualified opinions ("Except for") 4. Qualified opinions) ("Subject to") 5. Adverse opinions 6. Disclaimer opinions	Stock prices Management evaluation Investment decision	Not significant (when compared 1 and other qualifications
Firth (1980)	Bankers Credit analysts	220 (50%) 120 (57%)	Questionnaire	1. Unqualified opinions *Qualified opinions* 2. Going concern 3. Assets valuation 4. Non GAAP inventory valuation	Maximum loan amount	1 > 2 1 > 3 4 > 2 4 > 3
Libby (1979)	CPAs Loan officers	30 28	Interviews	1. Unqualified opinions 2. Qualified and disclaimers opinions (uncertainty, litigation, assets realisation)	Lending decision Interest rate	Not significant Not significant

Table 3.6 (continued) Summary of experimental studies of audit reports on users' decisions

Author(s)	Participants	Total samples (% of response)	Survey types	Types of audit reports	Dependent variables	Results
Houghton (1983)	Loan officers	250 (70%)	Questionnaire	1. Unqualified opinions 2. Qualified opinion 3. No auditor involvement	Loan decision Loan process	Not significant 2 > 3 2 > 1
Gul (1987)	Loan officers	93	Interviews	1. Unqualified opinions 2. "Subject to" opinions 3. Uncertainty disclosure	Loan approval process	Not significant
LaSalle and Anandarajan (1997)	Loan officers	2,000 (25%)	Questionnaire	Unqualified opinions with explanatory paragraph 1. Litigation 2. Going concern Disclaimer opinion 1. Litigation 2. Going concern	Loan decision	 Not significant Not significant Significant Significant
Bailey (1981)	CPAs	1,778 (20%)	Questionnaire	1. Unqualified opinions *Qualified opinions* 2. Consistency exception 3. GAAP departure 4. Adverse opinions 5. No auditor involvement	Credibility of management and auditors	Not significant
Robertson (1988)	Financial analysts	1,000 (18%)	Questionnaire	1. Unqualified opinions 2. "subject to" opinion 3. "Except for" opinion 4. Disclaimer opinion (uncertainty) 5. Disclaimer opinion	Credibility added Reliance Satisfaction	Worst = 5 Worst = 4, 5 Worst = 5

[a] Significant at 0.05

In this section, the study has answered the main concern of this chapter as to why audit reports could be employed as a predictive indication. There are two stages which finally reflect that audit reports provide incremental information content to users. First, users are able to distinguish between the reports with or without auditor involvement. Then, market model research in an efficient capital market and experimental studies give rise to the conclusion that users' decision making has been influenced by audit reports.

3.5 Concluding remarks

The main question for this chapter is to answer how significant audit reports are, especially in decision making. It reviewed previous studies about whether audit reports provide incremental information content to users and whether they are worth using as a predictive indicator. The review divided previous literature into two parts: users' perceptions of audit association and the effects of audit reports in reality. The study finds that users are likely to distinguish between reports with and without auditor involvement. With auditor involvement, various users acknowledged types of audit reports in different ways, but with the tendency that a full audit is the most reliable procedure (see Table 3.4). The second stage of the review examined whether stock prices had been concrete evidence to prove the presence of additional information in audit reports under the efficient capital market hypothesis. Although some market models showed an insignificant influence for example on stock prices, arguments against these findings claim insignificant information content in audit reports. The reasons for these findings could be explained by, for example, research designs, out of date data, certain requirements which do not allow other modified opinions to be issued rather than clean opinions (see Table 3.5). Finally, the studies revealed that the incremental information content of audit reports can be found via experimental research. The level of users' perceptions depends on the level of users' knowledge and how serious the audit reports are (see Table 3.6). The overall finding in this chapter is that audit reports are providers of crucial information in any decision making and have predictive value.

Chapter 4

Information content of going concern audit reports

4.1 Introduction

The previous two chapters have confirmed that financial statements and audit reports provide incremental informational content and users could utilise these two kinds of reports as a predictive tool. This chapter views information content in going concern audit reports to be in the predictive value area. A going concern qualification is given to financial statements that do not present a true and fair view. Unlike other qualifications, going concern reporting also gives rise to some awareness that the reports could be considered as a predictive tool. This awareness comes from the fact that auditors are required to give a pre-warning signal prior to failure. In fact, the two greatest concerns as regards audit standards for going concern uncertainty are 1) to affirm that financial statements, as a whole, are prepared according to the going concern basis and 2) to ensure that financial statements provide adequate disclosures. In addition, the standards explicitly state that auditors cannot predict any future event that may cause an entity to cease to continue as a going concern. As a result, the absence of any reference to going concern uncertainty in audit reports cannot be viewed as a guarantee as to the entity's ability to thrive as a going concern (ICAAT 2001, TAS No.570, para. 10). However, both the objectives of the auditing standards for going concern uncertainty and the explicit statements cannot prevent researchers who are interested in firm failure predictions. This is perhaps because researchers are certain of the information content of going concern audit reports.

The purpose of this chapter is to identify the useful information content of going concern audit reports. Before discussing the main objective of the chapter, general backgrounds of going concern audit reports are discussed. In addition, in order to understand each type of going concern audit report, the discussion gives general guidelines about how going concern reports are issued. Then, the chapter moves on to its main objective, to prove that going concern audit reports provide useful incremental information content. The analysis classifies the previous literature on going concern reporting into two main areas: mathematical research and experimental research. Failure prediction models have been very popular since the middle of the 1960's. In the areas related to going concern audit reports, mathematical models have been developed to compare the accuracy of going concern audit reports. Recent research has carried out studies with going concern audit reports as independent variables. This is to test whether

going concern opinions provide incremental information content to failure prediction models. Experimental research on going concern reporting is also an interesting area to which researchers pay attention. The aim of experimental research is to observe whether auditors are able to distinguish between failed and non-failed firms. Concluding remarks are offered at the end of the chapter.

4.2 Recent auditing standards for going concern uncertainty

Going concern auditing standards are issued under the general objective of auditing principles, stating that auditors are required to express an opinion as to whether the financial statements are presented in true and fair manner (ICAAT, 2000 TSA 200, para. 2). More specifically, the auditing standards for going concern uncertainty also state that if auditors find that the going concern basis is inappropriate at the balance sheet date or the entity has significant uncertainty in the foreseeable future, auditors are required to express opinions to show whether financial statements give a true and fair view (ICAAT, 2001 TSA 570 para. 9). The auditing standards for going concern uncertainty are quite recent. There have been only a few developments of auditing standards for going concern uncertainty. Going concern auditing standards were not established until 1962, when the US Securities and Exchange Commission established a requirement for the "subject to" qualification. Prior to this, going concern audit reports were issued under individual professional judgement (Asare, 1990).

Because the present study focuses on Thai data, the description mainly refers to Thai auditing standards. The first auditing standards for going concern uncertainty were issued in October 1988, and were based on US going concern auditing standards. In 2001, the standards were revised, based on the International Auditing standards issued by IFAC. However, the content of these two auditing standards is very similar, apart from the change of types of audit reports from qualified opinions to unqualified opinions with explanatory paragraphs.

Rather than discussing the nature of auditing standards for going concern uncertainty, the intention of the following description is to give overviews of various types of audit reports for going concern uncertainty. This is to provide the general background to what types of going concern audit reports are useful for the subsequent statistical analysis. The major developments and concerns of auditing standards for going concern uncertainty have been explained.

The types of audit reports for going concern uncertainty cover all audit opinions. The followings descriptions briefly sketch the circumstances for each opinion.

When auditors consider whether there could be substantial doubt about the entity's ability to continue as a going concern, it is necessary to obtain additional information, for example management plans, about such conditions and events that fuel auditors' doubt. Once auditors are satisfied with the information and consider that financial statements give a true and fair view, they can issue an **unqualified audit report** and no disclosure in notes to financial statements is needed (ICAAT, 2001, TSA 570, para. 13).

When considering all support information, auditors may conclude that reasonable doubt to the entity's ability to continue as a going concern for a foreseeable period still exists. Auditors should consider the need for disclosure of the principal conditions that cause them the reasonable doubt. In this case, financial statements should disclose such conditions, any possible mitigating factors and other management plans to solve the problems. **An unqualified audit report with an explanatory paragraph** about the entity's ability to continue in existence should be issued (ICAAT, 2001, TSA 570, para. 33).

However, if auditors conclude that disclosures regarding the entity's ability to continue as a going concern for the foreseeable period of time are inadequate and a departure from generally accepted accounting principles exists, this may result in **a qualified or an adverse report** depending on how serious the non-disclosure is (ICAAT, 2001, TSA 570, para. 34).

After auditors consider all information supporting the ongoing ability of the entity and find that the entity will not be able to continue as a going concern, regardless of whether disclosure has been made, the auditor should express **an adverse opinion** if the financial statements have been prepared on a going concern basis. This is because the financial statements do not give a true and fair view. In addition, whether disclosures of the going concern event are prepared or not has no bearing on the modified audit report, because the going concern basis used in the preparation of financial statements as a whole was inappropriate (ICAAT, 2001, TSA 570, para. 35).

In some cases, auditors may believe that it is necessary to obtain further information. However, management is unwilling to make or extend its assessment. The auditor should consider issuing modified audit reports related to scope limitation of the auditor's work. When the auditors

consider that the estimate of the outcome is not so material, **a qualified audit report** should be issued. If the scope limitation is material, **a disclaimer opinion** should be taken into consideration (ICAAT, 2001, TSA 700, para. 36).

Figure 4.1 summarises possible types of audit opinions when going concern uncertainty becomes an issue. Appendix B illustrates some examples of going concern audit reports issued to listed companies in the Stock Exchange of Thailand.

Figure 4.1 Types of audit reports on going concern uncertainty
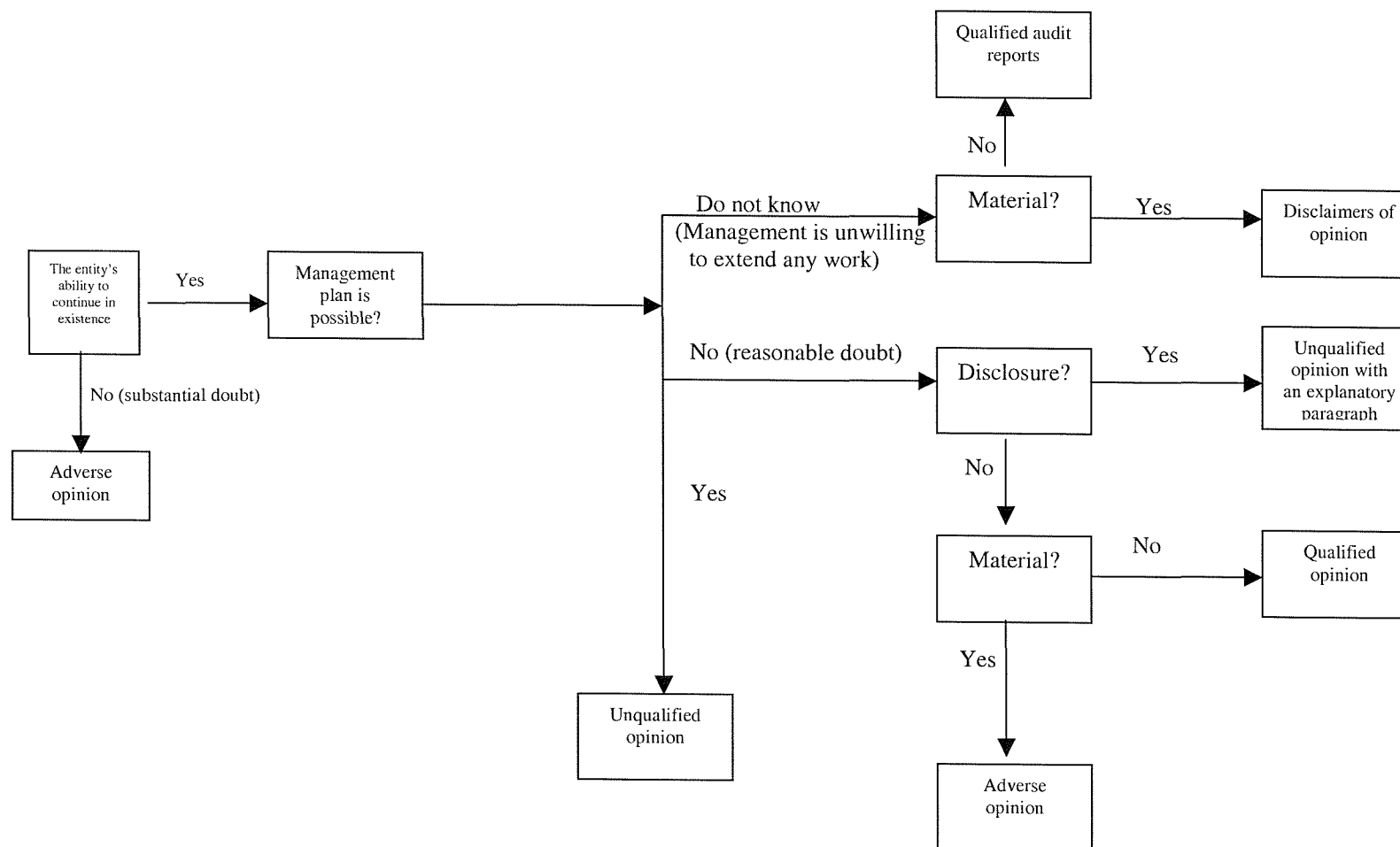
There are two major developments in auditing standards for going concern uncertainty. They include:

First, the question is whether auditors should passively or actively act on the going concern uncertainty. In the early years, auditing standards did not require auditors to search for evidence relating to the entity's ability to continue in existence because, in the absence of information to the contrary, an entity's ability to continue was likely to be assumed. Auditors were required to consider the going concern issue only when the results of other audit procedures brought forth contradictory information (AICPA, 1988 SAS No. 34). However, the recent auditing standards tend to require auditors to perform auditing work in planning the audit, no matter whether the going concern is an issue or not. (ICAAT, 1994, TSA 570 para. 11, APB, 1994, SAS 130, para. 22 and AICPA, 1988, SAS 59, para. 3). In other words, the recent auditing standards for going concern uncertainty require auditors to actively conduct their work by also focusing on the entity's ability to continue at the planning stage.

There has also been a major change in audit reports. In the past, professional bodies had allowed auditors to express the "subject to" opinion. However, as stated earlier, scholars considered the "subject to" opinion as a compromise opinion and the audit reports issued with the "subject to" qualification reduced the information value of audit reports. Eventually, "subject to" was eliminated from acceptable practice. This elimination caused auditing standards for going concern uncertainty to be changed, with an unqualified opinion with explanatory paragraphs coming into force. This kind of opinion is to emphasise a matter paragraph that highlights the going concern problem by drawing attention to the notes to financial statements on how serious the entity's going concern situation is and how management plan to solve the problem. Unqualified audit opinions with explanatory paragraphs are considered as unqualified opinions.

A piece of auditing research in the US was carried out to prove the effectiveness of the above changes. The research questioned whether the proportion of client bankruptcies with prior going concern modified reports did not increase after SAS No. 59 (US auditing standards for going concern uncertainty) became effective. With controls of financial factors and size of population, audit reports for 362 non-bankrupt (but financially stressed) companies and 175 bankruptcy companies were examined. The results showed that after SAS No. 59 became effective, auditors were more likely to issue going concern modified reports for financially stressed non-bankrupt companies and for bankrupt companies prior to failure (Raghunandan and Rama, 1995).

Holder-Webb and Wilkins (2000) confirmed the findings of Raghunandan and Rama (1995). The study raised the question that, if SAS No. 59 increased auditor responsibilities and improved the communication gap between auditors and users, stock prices should be less negative than before SAS No. 59 was introduced in 1988. The sample consisted of 217 firms having filed for bankruptcy between 1975 to 1996. The research found that price responses to bankruptcy announcements were less negative for firms receiving SAS No. 59 going concern opinions than for firms receiving SAS No. 59 clean opinions, and less negative for firms receiving SAS No. 59 going concern opinions than for firms receiving SAS No. 34 going concern opinions.

There are some concerns in the auditing standards about going concern uncertainty. They include the following:

The term "foreseeable future" (UK) or "a reasonable period of time" (US) is uncertain. The question is how much time should be allowed by these two terms. There is no specific time recommended by auditing professional bodies, but normally, it is a year after financial reports are issued (ICAAT, 2001, ISA 570 para. 5, APB, 1994, SAS 130, para. 15 and AICPA, 1988, SAS 59, para. 2).

The auditing standard for going concern uncertainty and other auditing standards (i.e. the auditing standards for analytical procedures) provide no specific audit evidence and procedures. The standards tend to suggest only an overview of how auditors should perform audit procedures. The suggestions include three main areas: financial indications, operational indications and other indications. Financial indications included adverse key financial ratios, substantial operating loss, and difficulty in complying with loan agreements. Auditors should also pay attention to operating indications which are signalled by loss of key management, loss of major market, or loss of sales agreements, and labour union difficulties. Finally, other indications such as lawsuits against the entity and changes in legislation or government policy should be observed.

In addition, different audit reports are issued when going concern uncertainty causes material doubt as to the entity's ability to continue as a going concern. Both the auditing standards in Thailand (i.e. the International Auditing Standards) and the UK state that adverse opinions should be given. This is because auditors could simply identify whether the audit evidence obtained include the effect of management's plan and auditors' judgement are enough to prove

that the entity will not be able to continue as a going concern (ICAAT, 1994, TSA 570 para. 35, APB (1994), SAS 130, para. 49-50). On the other hand, disclaimer opinions are recommended in the US. There is no reason expressed in the US auditing standards for going concern uncertainty.

An unqualified opinion with explanatory paragraphs becomes a compromise opinion when going concern uncertainty becomes an issue. As a matter of fact, the 2-paragraph audit reports allowed the "subject to" qualification when auditors cast significant doubt on the entity's ability to continue as a going concern. In such a case, a qualified opinion is issued. However, when the 3-paragraph audit reports became effective, the "subject to" qualification was no longer accepted and a unqualified opinion with explanatory paragraphs was recommended when adequate disclosure relating to going concern uncertainty was properly informed. Therefore, an unqualified opinion with explanatory paragraphs becomes a compromise opinion when the going concern uncertainty is an issue.

Finally, as recommended by the Thai auditing standards (i.e. International auditing standards) if, in the auditor's judgement, the entity will not be able to continue as a going concern, an adverse opinion should be expressed to show that financial statements have not been prepared on a going concern basis. However, in practical terms, it seems unlikely that an adverse opinion will be issued when going concern uncertainty becomes very significant. Instead, auditors are more likely to issue a disclaimer of opinion, stating that management was not willing to make or extend its assessment when requested to do so by the auditors. This is because a strong opinion (i.e. an adverse opinion) may be too risky to both auditors and the client. The auditors may face a lawsuit when such an opinion is disproved. On the other hand, a strong opinion may have economic consequences for the client. For example, the client will eventually have going concern problems through impairment of ability to obtain adequate financing, straining relations with customers and/or suppliers.

In this section, the general backgrounds of types of audit opinions when going concern uncertainty becomes an issue are explained. The developments and some concerns of the audit standards for going concern uncertainty are also included in this analysis.

4.3 Research on going concern audit reports

After the background of going concern audit opinions has been described, the analysis comes to the main point of this chapter, which is to argue whether going concern reports convey useful information content. In order to observe the capability of going concern audit reports, previous research on going concern audit reports is reviewed using both mathematical models and experimental research. Mathematical models have been created to observe overall statistical views on predicting firm failure. Researchers have, then, compared predictive models with going concern audit reports which have been issued prior to failure. However, it seems unlikely that the accuracy of mathematical models in predicting firm failure is superior to that of going concern audit reports. At a later stage, going concern audit reports were adopted as part of the independent variables in the prediction of firm failure. Some studies have also paid attention to information content when going concern audit reports were adopted as variables in the probability prediction models. Finally, research on the competence of auditors has also been carried out, to observe whether auditors consistently issue going concern opinions. Moreover, when using other information such as financial ratios, it is possible to predict audit opinions. In the following discussions, both mathematical research and experimental research are described in the area of going concern audit reports.

4.3.1 Mathematical model research

Mathematical model research has been conducted in failure prediction for many years. In the areas of failure prediction, financial ratios have been employed in various perspectives in various mathematical models. Later, researchers introduced publicly available information with the intention of observing the incremental information content of each variable in the probability prediction models. Audit reports are also one of the factors that many studies have used to observe their information content. In the present study, mathematical model research in the area relating to going concern audit reports is classified into three topics: the relationship between going concern reporting and failure prediction models, the information content of going concern audit reports, and the competence of auditors in giving going concern opinions.

4.3.1.1 Relationship between going concern reporting and failure prediction models

As stated earlier, the professional auditing standards relating to going concern uncertainty give rise to some awareness about whether going concern audit reports could be recognised as a predictive tool. This led to some research to prove the predictive value of going concern audit reports in the areas of failure prediction. Therefore, at the beginning of research, studies initially developed mathematical models to predict firm failure. Then, the studies compared the results with going concern audit reports to see whether mathematical models or going concern audit reports are more accurate in predicting firm failure.

Research on bankruptcy prediction was conducted in the 1960s by the first two pioneers: Beaver (1966) and Altman (1968). Research focusing on going concern audit reports and their ability to predict bankruptcy was carried out later as a by-product of failure prediction models. Altman and McGough (1974) conducted research by extending the bankruptcy prediction model by Altman (1968). They compared the types of audit reports issued for a sample of 34 bankrupt companies to the prediction of a discriminant model, which mainly contained financial ratios. The study showed that the model had 82 percent accuracy in identifying companies going bankrupt. On the other hand, auditors issued going concern audit reports to only 44 percent of the companies that went bankrupt.

Altman (1982) extended his previous research by collecting more data over a longer period of time. The study showed that the discriminant models indicated 86 percent and 73 percent accuracy for the first and second year, respectively. However, auditors issued going concern reports with 48 percent and 19 percent accuracy for the first and second year, respectively. Similarly, Deakin (1977) used 47 failed companies in his bankruptcy model and compared going concern opinions with the predictive accuracy of the model. The study showed that the accuracy rate of his model was superior to the audit reports.

Taffler and Tisshaw (1977) replicated Altman (1968) on UK data. The study began by selecting a sample using a matched pair sample technique. Forty-six failing firms were matched with 46 financially sound firms based on same size and industry. The discriminant analysis showed that the model indicated 98 percent accuracy, but auditors issued going concern qualifications to only 22 percent of failing companies.

Koh and Killough (1990) conducted research using a stepwise technique on well-known financial ratios before applying discriminant analysis. Initially, twenty-one ratios were selected from financial reports one year prior to failure and applied stepwise multiple discriminant analysis. The sample consisted of seventy firms, half of which were failed firms. Failed firms were then matched with healthy firms with the same industry and size criteria. The results confirmed previous studies, that the accuracy rate of the model was superior to that of going concern audit reports. Remarkably, the accuracy rate of going concern audit reports issued to bankrupt companies increased from previous studies.

Koh (1991) also carried out empirical research using another mathematical model, Probit analysis, to assess going concern audit reports. A matched pair sample resulted in 330 companies, half of which were bankrupt firms. The study had 99 percent accuracy using the model, whilst going concern reports were issued to 54 percent of companies going bankrupt.

Finally, Hopwood et al. (1994) contradicted previous studies by stating that neither auditor opinions nor bankruptcy prediction models could correctly predict bankrupt firms. In order to prove their statement, Hopwood et al. (1994) selected 134 bankrupt companies and 160 non-bankrupt companies and classified them into stressed and non-stressed firms. Firms were classified as stressed if they exhibited at least one of the following financial distress signals: 1) negative working capital in the current year, 2) a loss from operations in any of the three years prior to bankruptcy, 3) a retained earning deficit in year 3 before bankruptcy, and 4) loss in any of the last three years before bankruptcy. The final sample consisted of 118 stressed and 16 non-stressed bankrupt companies and 80 stressed and 80 non-stressed non-bankrupt companies. Logistic regression was employed in this study. The results indicated that neither going concern audit reports nor bankruptcy prediction models were very accurate predictors of bankruptcy when the proportion of bankrupt and non-bankrupt companies was carefully classified and different stress levels were considered.

In sum, researchers have begun their studies related to going concern audit reports by developing mathematical models and then comparing the results with audit reports issued to failed firms prior to failure. It is found that mathematical models were superior to auditors who had given going concern opinions prior to failure. Previous studies related to the accuracy rate of going concern audit reports are summarised in Table 4.1.

Table 4.1 Empirical studies of the accuracy of going concern audit reports

No.	Studies	Years	Samples	Statistical methods	Modal accuracy	Auditor accuracy	Year(s) prior to failure
1.	Altman & McGough (1974)	1970-73	Bankrupt firms	Discriminant	82%	44%	1 year
2.	Deakin (1977)	1972-74	Bankrupt firms	Discriminant	83%	15%	2 years
3.	Altman (1982)	1970-82	Bankrupt firms	Discriminant	73%	19%	2 years
4.	Taffler and Tisshaw (1977)	1969-77	A matched pair sample	Discriminant	98%	22%	1 year
5.	Koh and Killough (1990)	1980-85	A matched pair sample	Discriminant	88%	86%	N/A
6.	Koh (1991)	1979-85	A matched pair sample	Probit	99%	54%	N/A

Many scholars attempted to explain this incapability of going concern audit reports. For example, Deakin (1977) claimed that auditors failed to signal distress because they might have considered the costs of losing clients, as well as the small chance that companies might fail. Altman (1982) stated that auditors might appear to have important evidence, but fail to recommend effective changes in policies and procedure. This was because auditor and client relationships lacked a degree of objectivity, and there was the idea of "too close" to influence any effective positive changes, even if the problems were deemed to be more important (Altman, 1982). The overall conclusion of research related to going concern audit reports strongly recommended auditors to adopt mathematical models when issuing going concern opinion, for greater accuracy and also because they are inexpensive and easy to use.

4.3.1.2 Information content of going concern audit reports

However, it seems that going concern audit reports were unlikely to be a good predictor for firm failure. Researchers have shifted their attention to the question as to whether the reports themselves furnish incremental information content to users. Hopwood et al. (1989) carried out research on this question. The objective of the study was to assess whether uncertainty and consistency audit opinions separately or jointly are useful as bankruptcy predictors. Audit opinions were selected the year immediately preceding bankruptcy. Both univariate and multivariate models were adopted in this study. Testing of the univariate models showed that bankrupt companies significantly received qualified opinions on the year immediately proceeding bankruptcy. Testing of the multivariate model resulted in a significant association between bankrupt companies and the models that used consistency and going concern qualifications. The study concluded that going concern audit reports had incremental information content.

One way to determine whether going concern audit reports convey information content is to examine stock returns when going concern audit reports are released. Fleak and Wilson (1994) introduced their study with the belief that unexpected going concern opinions were about inconsistent information about firms' financial viability. The study selected firms whose accounts had been qualified going concern opinions. The total sample was 478 firms, of which 99 firms were issued going concern qualifications. Multiple regression models were introduced in this study. With the hypothesis that unexpected auditors' going concern qualifications were associated with abnormal security returns, the study confirmed the hypothesis of a significant negative association between going concern qualifications and abnormal returns.

Jones (1996) also assessed the information content of going concern audit reports by examining the abnormal stock return surrounding the release of the reports. In this study, both firms with going concern audit reports and financially distressed firms with unqualified audit reports were included in the population. Financially distressed firms were included because Jones (1996) believed that investors should react favourably when distressed companies received unqualified audit reports and the degree of the reaction would be the same as companies that received going concern audit reports. The regression analysis result was that abnormal returns surrounding the release of going concern qualifications were negative, whilst abnormal returns surrounding the release of unqualified opinions to financially distressed firms were positive. The study concluded that going concern audit reports provided information content to investors, and provided additional support for the continuation of the requirement to disclose going concern uncertainties in audit reports.

Behn et al. (2001) carried out research as to whether going concern reports influenced management plans. The control variables included going concern audit reports, financial ratios, firm size, and management plans. For the management plans, the study interpreted the company's publicly disclosed management plan to demonstrate its ability. For example, if the company issued more common shares within 12 months after the financial statement date, the going concern audit reports had no influence to the plan. The study found that going concern reporting was strongly linked to publicly available mitigating information relating to certain management plans. In particular, plans to issue equity and to borrow additional funds exerted the strongest association with the issuance of an unqualified opinion.

However, the study by Lennox (1999) contradicted previous studies, especially the studies by Koh (1990) and Hopwood et al. (1989). Lennox (1999) claimed that Koh's (1991) model had a lower Type I error[4] rate than audit reports. Also, the limitation of Koh's (1991) study was that the model's accuracy was not compared to audit reports in a holdout sample. Consequently, it would appear that going concern audit reports were not very accurate indicators of financial failure. Furthermore, Lennox (1999) argues against Hopwood et al. (1989), saying that audit reports do not signal useful incremental information content. The study selected all quoted UK companies in the model. Rather than just employing financial ratios and going concern audit reports as variables, Lennox (1999) introduced other variables including numbers of employees, industry sectors and economic cycles to his bankruptcy prediction model. Probit analysis was employed in this study. Lennox (1999) found the bankruptcy models more accurate than going concern audit reports. Also, by applying various sets of variables to his models, the results showed that when other variables (i.e. economic cycles, company size, and industry sector) were included in the model, audit reports, especially going concern audit reports did not have incremental information content about the probability of bankruptcy.

---

[4] Type I error occurs when a bankruptcy occurs, but auditors did not qualify the opinion. Conversely, Type II error occurs when auditors gave a going concern exception, but the firms survived. The table below shows the relationship of these two types.

Actual results	Audit opinion classification	
	The going concern audit reports	Unqualified audit reports
Failed	Correct	Type I error
Non-failed	Type II error	Correct

Type I error occurred more frequently because auditors did not intend to predict distress. The cost concerned with Type 1 error included auditor failure to perform proper auditing work and lawsuits against auditors' wrong-doing. This failure raised the idea of the "self fulfilling prophecy" of auditors. On the other hand, Type II error could lead to consequences not only for the auditors themselves regarding the loss of clients, but also for firms regarding economic consequences (Altman, 1982).

4.3.1.3 Competence of auditors in giving going concern opinions

Another route of the research in going concern audit reports is possible. Having noticed that auditors might not be able to distinguish failed from non-failed firms, the issue of the consistency of auditors when issuing going concern audit reports gives rise to the concern as to whether auditors issued the reports in an arbitrary manner. Researchers attempted to determine whether going concern audit reports could be predicted using publicly available information.

Mutchler (1985) examined the relationship between going concern audit reports and information publicly available. Samples of 238 firms, of which 119 had received going concern opinions, were selected randomly. The results showed that the model with previous year going concern opinions achieved an 89 percent accuracy rate to predict the following year's audit opinion, while the model without the previous year's going concern audit opinions achieved an 83 percent predictive accuracy rate.

Levitan and Knoblett (1985) examined whether auditors employed the same variables and weighted those variables as their bankruptcy prediction models. The study conducted research by having two hypotheses: firms that were proceeding toward bankruptcy could be separated from those which were not, and auditors did not use any financial ratio variables in rendering opinions. Two multidiscriminant analyses was adopted. The first discriminate model was constructed with a sample of 35 bankrupt companies and a matched sample of non-bankrupt companies. The second discriminate model was constructed and 32 companies that had received going concern reports were set against 32 healthy companies. The study showed that there was an overlap between the financial variables adopted by auditors and the models. For example, both models were likely to employ current years' operation net worth/total debt and recurring negative cash flow. Levitan and Knoblett (1985) concluded that going concern audit reports were issued in proper ways and auditors were consistent in issuing the reports.

Menon and Schwartz (1987) attempted to prove auditors' ability to issue going concern audit reports. Financial ratios and audit reports prior to bankruptcy of 89 bankrupt companies, of which 37 companies had their accounts qualified as going concern opinions, were selected. The results of the logistic regression model enabled significant identification of the companies whose accounts had been qualified going concern opinions.

Finally, Peel (1989) also attempted to find the association between going concern audit reports and publicly available information. The primary data sample comprised 40 individual UK quoted companies, which failed (i.e. entered receivership and/or court or creditors' winding up). A sample of 40 non-failed quoted industrial firms was also included in the study. Financial data was collected from the last published accounts prior to first public announcement of failure and the previous year's accounts, as well as other non-financial data. Logistic regression analysis showed that auditors appeared to qualify the last accounts of failing companies.

4.3.2 Experimental research

As stated in Section 3.4.2.2 in Chapter 3, experimental research is one of the useful methods to attempt to solve the problem of the isolation of information value in audit reports (Bailey, 1982). The experimental research was introduced by Kida (1980), who criticised Altman and McGough (1974) concerning the accuracy of their mathematical model, which might not be higher than that of the auditors. Kida (1980) explained that the issuing of audit reports might be confounded by extraneous factors. For example, auditors might recognise that there would be consequences, such as in the decision processes to issue the going concern opinion, as well as losing clients. Therefore, comparing the accuracy of auditors' ability to issue accurate reports to bankruptcy models might understate the auditors' ability to recognise problems. Kida (1980) attempted to determine the difference between the accuracy rate of mathematical models and the accuracy rate of failed firms whose accounts were qualified with going concern uncertainty by conducting experimental research. The study selected 40 firms, half of which were problems firms. Problem and non-problem firms were matched using industry and asset size. Initially, 20 financial ratios were tested; then by adopting stepwise discriminant, the analysis resulted in the final five financial ratios, including net income/total assets, net worth/total debt, quick assets/current liability, sales/total assets, and cash/total assets. A profile of the five financial ratios for each of the 40 companies was presented to 27 audit-partners of national CPA firms for classification into problem and non-problem firms. The study showed that the auditors were able to discriminate problem from non-problem firms, given just ratio data, with an average accuracy rate of 83 percent, compared with the 90 percent accuracy rate of the discriminant model.

Due to the fact that auditors' judgement could affect the processes in issuing going concern audit reports, Kida (1984) extended his previous research by examining the impact of auditors' pre-hypothesis strategies. Kida explained that judgement played a great role in auditing work, for

example, the evaluation of internal control and risk assessment, as well as appraisal and reports on uncertainty. As a result, auditors tended to have hypothesis-testing strategies before performing their work. Audit partners and managers were randomly selected and were given 20 cues, half of which pointed to failure, and the other half to viability. Subjects were asked to read the descriptions containing both good and bad news, but there was no single piece of conclusive information. The results indicated that subjects in failure conditions selected fewer items that pointed to a failure group than did subjects in continuing existence. This meant that confirmatory strategies would be more evident in auditing contexts in which judgement was made sequentially as information was received. In other words, auditors based judgement on their experience, which resulted in no bias in issuing going concern audit opinions.

Campisi and Trotman (1985) extended Kida's (1980) study by providing more financial ratios and other information, a brief history of the company, the summary of five consecutive years of consolidated profit and balance sheet figures, the summary of share price fluctuation, and the details of financial statements. Auditors with an average of 10.3 years of experience were interviewed independently under the supervision of one of the researchers. The initial task was to ask auditors to rate on a ten-point scale whether each company was experienced and/or would experience a going concern problem within the next 12 months. The study also asked the interviewees what types of audit reports should be issued based on all information. Moreover, the interviewees were required to select factors from the provided descriptions that might have influenced the auditors' judgement concerning the ongoing ability of the entity, as well as to express their comparative preferences for their factors. The analysis revealed that auditors were capable of identifying at 76 percent accuracy rate. However, when asked what types of qualifying (i.e. qualified or disclaimer of opinions) should be issued to those problem firms, disagreement among the subjects occurred.

Mutchler (1984) also expanded the Kida (1980) study in a different way. The study interviewed 16 partners of the Big Eight firms to identify companies that potentially had going concern problems. The samples of problem firms included those entering receivership, entering reorganisation, having inability to meet interest due, third year substantial losses, and third year deficit. The study asked subjects to identify which companies would receive going concern reports. Once problem companies had been identified, subjects were also asked for potential variables that caused the companies to fail. The results showed that subjects were able to identify problem firms and the main indicators that auditors considered appropriate were cash

flow projections and management plans. The study also found that the main financial ratios emphasised debt-related ratios such as cash flow/total debt, current ratio, net worth/total debt, total debt/total assets, and total liability/total assets.

Asare (1992) also observed auditors' going concern judgements when mitigating factors came along. Asare (1992) hypothesised that the order of information might affect auditors' judgements when forming going concern judgements. Seventy audit partners and managers were randomly selected in this experiment. Subjects were asked to express their belief that the firm would fail or continue during the next financial statement period. A subject was asked to identify problem firms with two mitigating factors being followed by two piece of contrary information. A different order was then used for other subjects. The results indicated that auditors paid attention to the information content of evidence rather than to the direction of evidence.

In this section, the finding has been that although going concern audit reports are less inferior to mathematical models in failure prediction, the reports are useful incremental information when they are adopted as factors in the probability models of failure prediction. The going concern audit reports have proved, by using mathematical models, to have been properly issued. It is found that auditors consistently issued going concern opinions to failed firms prior to failure. Moreover, the going concern opinions could be predicted by using publicly available information. Experimental research found in favour of auditors, who are able to distinguish failing from non-failing firms.

4.4 Concluding remarks

The main objective of this chapter was to observe whether going concern audit reports are useful incremental information in predictive areas. The discussion started with the explanation of recent audit standards for going concern uncertainty. The study found that there are some concerns about auditing standards for going concern uncertainty, especially types of audit reports given when going concern uncertainty is very significant.

The research in the areas of going concern audit reports was carried out as a by-product of failure prediction models. Initially, researchers developed mathematical models to predict failed firms. Then, the studies compared the mathematical results with firms' audit reports issued prior to

failure. It was found that going concern audit reports were less likely to be given to failed firms prior to failure. Researchers have shifted the research direction to use audit reports, including going concern opinions, as variables in failure prediction models. The studies attempted to observe whether audit reports had incremental information value. Both experimental and mathematical research were carried out. Experimental research found that auditors were able to distinguish failed firms from non-failed firms. Similarly, going concern audit reports, for example, resulted in abnormal return to share prices. However, some contradictory results remain when going concern information is employed as an independent variable to failure prediction models. For example, Hopwood et al. (1989) showed that there was incremental information content in going concern audit reports when combining the reports with other independent variables. However, Lennox (1999) argued against Hopwood et al. (1989) by explaining that audit reports, including going concern audit reports, had no significant influence on the firms which finally failed. On the other hand, other independent variables tended to influence bankruptcy prediction models rather than going concern audit reports.

Chapter 5

Research design and methodology

5.1 Introduction

In the previous three chapters, Chapters 2-4, the reviews have found that accounting data and audit reports, which will be the main factors of the analysis in the following chapters, have useful incremental information content to predict business failure. In the following chapters, the analysis applies all the known information as data for statistical analysis. This is mainly to investigate the incremental information content of accounting data and audit reports in delisting environments. In this chapter, the research paradigm and methodology are initially explained. The following chapter, Chapter 6 discusses the data and descriptive statistics of the data set. Then, the empirical analysis using statistical techniques is performed in Chapter 7. Conclusions and contributions based on the empirical findings in the present study finding are discussed in Chapter 8.

In the following analysis, research paradigms are surveyed. This is to identify which research paradigm is suitable for the present study. Then, all variables adopted in the analysis are summarised. Previous research has not tended to carry out studies to investigate the incremental information content of audit reports in delisting environments. Therefore, the present study extends previous work by adopting delisting as the dependent variable. In order to investigate the important determinants of delisting announcements, the present study introduces factors potentially influencing the probability of delisting. Also, the factors considered as important determinants of business failure in previous studies are taken into account. Therefore, macroeconomic data and company internal data as well as audit reports are used as the independent variables in the analysis. The discussion also reviews what statistical techniques should be appropriate to the study. In order to move on to the empirical analysis, hypothesis development is also undertaken. At the end of the chapter, concluding remarks are offered.

5.2 Research paradigm

Research scholars have undertaken to develop the framework of social science studies for many years. At the beginning of social science research, some arguments had arisen against the processes of the social sciences. This is because when the word "science" is mentioned, it should, in general, mean that the knowledge is ascertained by observation and experiment, critically tested, systematised and brought under general principles (Chambers Dictionary, 1999, p. 1478). However, research in social science differs from that in science because the studies are less likely to be proven by scientific experiments as in scientific studies. As a result, the word "science" should not be used in social science studies. However, Kuhn (1970) tended to define the word "science" in a less narrow way. He stated that "normal science" meant that "research was firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice" (Kuhn, 1970, p. 10). In such a way, it is appropriate to adopt the word "science" in the social context. Taking the word back to its Latin roots, it simply means knowledge.

The above arguments lead to the idea that social studies should be anchored under a general perspective or way of thinking that reflects fundamental beliefs and assumptions. Burrell and Morgan (1979) were among the pioneers to put in place a framework for social studies. They used the word "paradigm" in classifying social science studies. Burrell and Morgan (1979) explained that paradigms involved assumptions about the nature of the social world, including an ontological nature, an epistemological nature, a human nature, and a methodological nature. Ontology explained the nature of reality and whether it was dependent on an individual's consciousness and cognition or just considered as an objective entity. Ontology attempted to explain whether reality existed in the world or just in the individual's mind. Once the nature of reality was identified, the nature of knowledge was created under an epistemological nature. Epistemology explains how true knowledge of reality is identified, obtained, and communicated. It also debates whether knowledge can be transmitted in tangible form or whether it is more subjectively based on individual experience. The study of human nature explores the relationship between human beings and their environment and their environment influence on each other. Finally, methodology is influenced by the three preceding assumptions. It attempts to determine the way that knowledge of the social world is obtained. Knowledge covers from the natural world, which is considered as hard, objective reality and external to the individual,

which has a softer, personal and more subjective quality (Burrell and Morgan, 1979, p. 1-3). In sum, Burrell and Morgan (1979) stated that 'paradigms' in social sciences focused on a community of perspectives among theorists, whose studies formed the bounds of a common plane (p. 23).

Debates over fundamental beliefs and assumptions arise from different philosophical views and conceptual paradigms. Therefore, Burrell and Morgan (1979) combined the four assumptions (ontology (the nature of reality), epistemology (the nature of knowledge), human nature (the relationship of human beings with their environment), and methodology (the way knowledge in social studies is obtained) into the objective-subjective and radical change-regulation dimensions producing a 2 by 2 matrix as shown in Figure 5.1.

Figure 5.1 Paradigms in social studies

Radical Change

	Radical Humanist	Radical Structuralist
Subjective		Objective
	Interpretive	Functionalist

Regulation
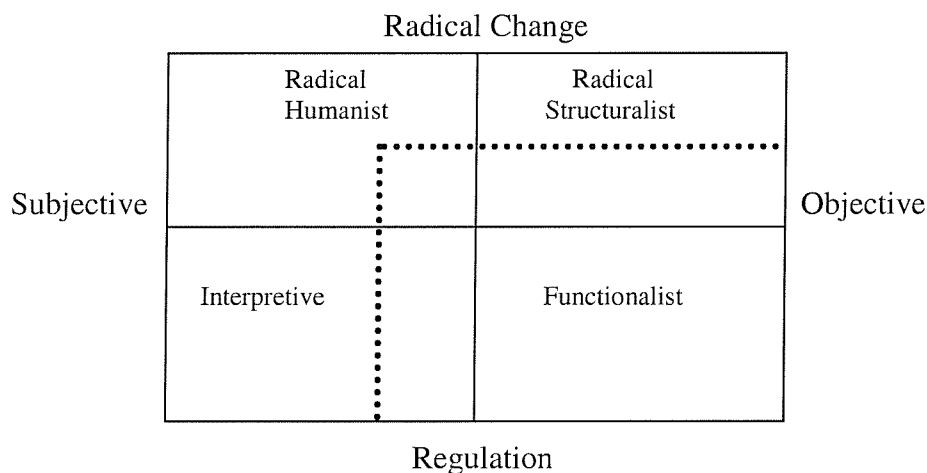
Source: Burrell and Morgan (1979), *Sociological Paradigms and Organisational Analysis*, London: Heinemann.

The above 2 by 2 matrix comprises four different research paradigms: functionalist, interpretive, radical humanist, and radical structuralist. On the subjective-objective axis, the functionalist and radical structuralist paradigms are both objective. However, whereas the functionalist paradigm tends to assume that the social world represents a unity of science, which is stable and characteristic, the radical structuralist paradigm assumes social class as objective and demands examination and radical change. The interpretive and radical humanist are both subjective. However, while the interpretive tends to assume that that social world is a socially constructed and ongoing process of accomplishment, the radical humanist paradigm tends to criticise social members as sources of domination, alienation, exploitation, and repression with the intention of

90

changing social members (Burrell and Morgan,1979, p. 22-35). Gioia and Pitre (1990) represented the theory of differences as in Table 5.1.

Table 5.1 Theory building under research paradigm

Functionalist paradigm	Interpretive paradigm	Radical humanist paradigm	Radical structuralist Paradigm
Goals To search for regularities and test in order to predict and control	**Goals** To describe and explain in order to diagnose and understand	**Goals** To describe and critique in order to change (achieve freedom through revision of consciousness)	**Goals** To identify sources of domination and persuade in order to guide revolutionary practices (achieve freedom through revision of structures)
Theoretical concerns Relationships Causation Generalisation	**Theoretical concerns** Social construction of reality Reification Process Interpretation	**Theoretical concerns** Social construction of reality Distortion Interests served	**Theoretical concerns** Domination Alienation Macro forces Emancipation
Theory-Building Approaches Refinement through Causal Analysis	**Theory-Building Approaches** Discovery through Code Analysis	**Theory-Building Approaches** Disclosure through Critical Analysis	**Theory-Building Approaches** Liberation through Structural Analysis
Research method Deductive (more suitable)	**Research method** Inductive (more suitable)	**Research method** Deductive/inductive	**Research method** Deductive/inductive

Sources: Adjusted from Gioia and Pitre (1990) Multiparadigm perspectives on theory building. *Academy of Management Review.* Vol. 15, No. 4, pp. 584-602.

Gioia and Pitre (1990) emphasised the fact that organisations are driven mainly by social science variations of natural science models, which basically believe that "the world is out there" awaiting impartial exploration and discovery. This assumption was clearly identified by the functionalist paradigm. As a result, research has tended to operate by using a deductive approach to theory building, specifying hypotheses deemed appropriate for the organisational world and testing them against hypothesis-driven data via statistical analysis. As a result, the area in the 2 by 2 matrix of the functionalist paradigm recommended by Burrell and Morgan (1979) should be larger, as shown in Figure 5.1 in the broken-line areas.

As stated in Table 5.1, a deductive method is the most suitable for the functionalist paradigm. This is because a deductive method is one which develops from a conceptual and theory structure, which already exists, using empirical observations to test whether concepts and theories are sensible. The main objective of the method is to falsify or unfalsify existing concepts and theories. In order to further understand this deductive research method, Figure 5.2 presents a basic schema. The process begins with basic knowledge or concepts which have been acknowledged for some time. This basic knowledge is then developed into new theories or hypotheses. To take an example from the commercial world, an entity may go bankrupt as a result of its financial failure. Of course, there may be other causes that lead the entity to go bankrupt, such as management fraud or economic crisis. Researchers should look for definitions

as background to theory/hypothesis (this stage is called "operationalisation"). Several variables could be studied in order to determine what caused the entity to go bankrupt. For example, a hypothesis could be that going concern reporting has an effect on firm's failure (this stage is called "testing"). If results confirm the hypothesis, the theory becomes generalised and may be applied to other cases (this stage is called "verify the theory"). If not, the theory must be discarded and the deduction process will return to basic knowledge formulation and new theory and hypothesis stage, repeating the process until the theory/hypothesis is again accepted or rejected (i.e. falsification and discarding the theory) (Gill and Johnson, 1997, p. 28-33).

Figure 5.2 The deduction process
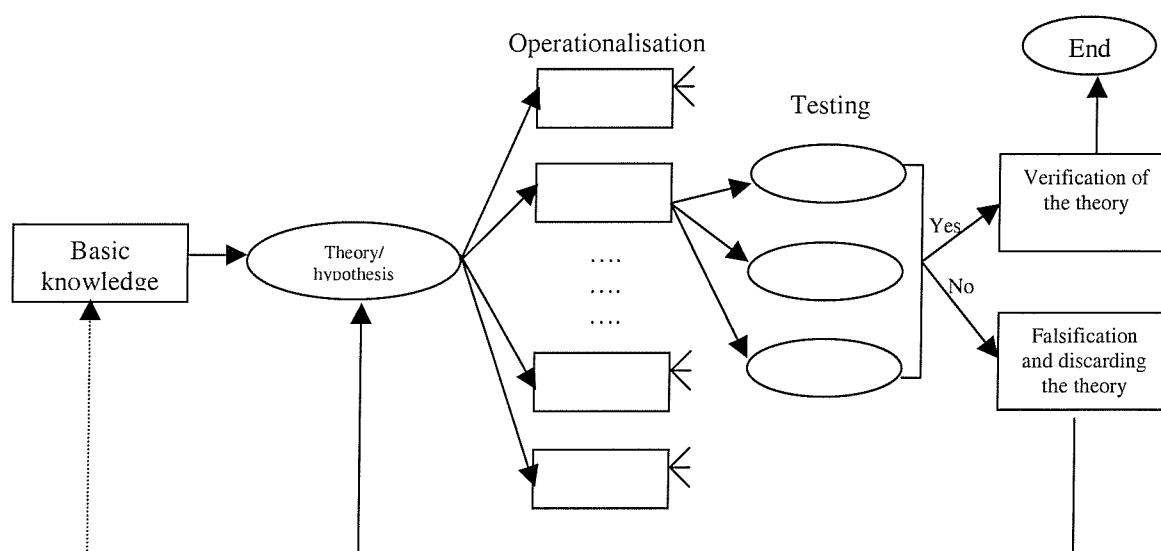
Gioia and Pitre (1990) summarised the whole process of the functionalist paradigm as an attempt to generalise or standardise principles through examining regularities and relationships between events. Theory building in this paradigm was likely to be deductive, beginning with reviews of existing research work and operating out of previous theories to understand organisational structure. Researchers were required to build up hypotheses derived by choosing specific variables that may cause some designated effects. Data were collected according to the hypothesis formulations. Analysis tends to be by quantitative methods. The results of the process are expected either to verify or falsify the hypotheses and finally a new theory, revision or confirmation of the original theory is offered.

In the world of auditing, previous research on incremental information content of audit reports, especially going concern qualifications, has been carried out with inconsistent results (Asare, 1991). The main objective of the present study is to falsify or unfalsify existing theory as to

whether audit reports have useful incremental information content regarding the probability of business failure. The present study, therefore, adopts the functionalist paradigm as the method to re-investigate the incremental information content of audit reports, especially going concern qualifications.

5.3 Variables

Business failure studies have been carried out with two expectations. First, the studies expected to develop mathematical models for overall accuracy of business failure predictions. In addition, the studies expected to investigate which independent variables give useful incremental information regarding the probability of business failure. The first expectation is commonly known. However, empirical studies on the incremental information content of certain independent variables have been limited. The objective of the present study is to investigate whether audit reports provide useful incremental information about delisting probability, when there are known factors in delisting models.

The empirical studies that have been done thus far examined several factors as potential reasons for business failure. The most controversial issue of the previous research is how business failure can be identified. In addition, researchers are most likely to introduce potential independent variables with the expectation that those new independent variables would increase the probability of determining business failure. Like previous studies, this present study intends to introduce the dependent variables as well as independent variables to predict business failure. This is to investigate which independent variables have useful incremental information to delisting probability. The following sections describe both the dependent and independent variables in the present study.

5.3.1 Dependent variable

Previous studies on business failure have introduced various points of business failure. The following descriptions explain failure points, which had been adopted by business failure studies.

5.3.1.1 Previous studies

Previous research on business failure predictions is divided into two main categories: research to develop the overall accuracy of mathematical models, and research to investigate the incremental information content of potential factors in failure prediction models. Many scholars have attempted to identify at which stage business failure can be identified.

Koh and Killough (1990) recommended that business failure should be viewed as a) the point at which management intended to limit activities for the future of business entities. This happened when management (1) planned to terminate an entity when certain objectives have been achieved, (2) proposed or planned to sell a substantial portion of the business. b) material uncertainty, which is more common and difficult to deal with, including contingent liabilities, recoverability of specific assets, involuntary conversions, and continued operating losses (Koh and Killough, 1990).

In addition, Boritz (1991) explains that three typical stages of business failure can be identified: incubation, rescue attempts, failure and liquidation. Normally, business failure occurs when an entity has financial difficulties and problems have accumulated (so called incubation). It is more likely that adverse economic conditions such as changes in technologies, changes in marketing, and management weaknesses are the main causes of financial distress. These adverse conditions lead to costly mistakes and eventually result in a severe cash shortage. The cash shortage initially leads to attempts at new borrowing, sale of assets and possible cost-cutting. However, the attempts to look for cash fail and eventually result in the reduction or suspension of dividends and default on interest and/or principal payments, signalling a state of insolvency (p.17). Figure 5.3 shows the development of the three stages in business failure.

Figure 5.3 Typical stages of business failure
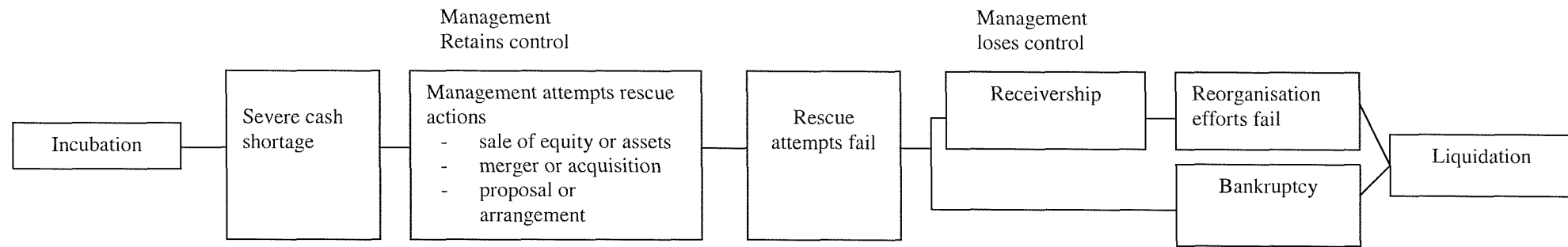
Source: Boritz, J E (1991) The "going concern" assumption: Accounting and Auditing implication. The Canadian Institute of Chartered Accountants: Toronto.

Researchers have attempted various ways to define a business failure position for their failure prediction models. The bankruptcy criterion has been the most used criterion in failure predictions. Altman and McGough (1974) were the pioneers in identifying business failure using the bankruptcy criterion. Altman and McGough interpreted failed companies by using Chapter X and XI of the US bankruptcy code, since both indicated significant going concern problems. Altman and McGough stated that a Chapter XI arrangement is a voluntary proceeding which applies only to the unsecured creditors of corporations and removes the necessity to get all creditors to agree on a plan of action. The more severe Chapter X proceedings involve secured creditors and are usually required by the court, where a substantial public interest is deemed to be present. Chapter X automatically provides for the appointment of an independent, disinterested trustee to assume control of the company for the duration of the bankruptcy proceedings. Neither Chapter X nor Chapter XI proceedings, by themselves, can be considered conclusive evidence that the company will be forced to liquidate. Both, however, give rise to significant uncertainty as to the future operations of the company" (Altman and McGough, 1974). In the UK, bankruptcy (called liquidation in the UK) can be classified into 5 types: administrative receivership, administration, winding up (liquidation), statutory compromises and reorganisation (Goode, 1997).

Subsequent research selected failed companies by scanning firms using popular words such as "bankruptcies", "unable to continue", "ability to obtain future financing" in databases such as the Wall Street Journal Index (e.g. Deakin, 1977, Hopwood et al., 1989). Nevertheless, the business failure criterion was restricted to companies that officially filed for receivership (i.e. creditors voluntarily liquidated or which were wound up (Peel, 1989)), as well as the companies that were officially filed for bankruptcy (e.g. Koh, 1991, Hopwood at el., 1989).

The above classification of the event of bankruptcy could give rise to some arguments. For example, firms that filed themselves as bankrupt firms might not finally fail. Court decisions may not allow every firm that is considering itself as failure to go bankrupt. Also, there are many stages of bankruptcy events. As a result, using the bankruptcy criteria to identify business failure may not be appropriate. In addition, based on the liquidation process outlined by Boritz (1991), it might not be of any advantage to investors, especially minor investors, if a pre-warning signal comes at the very last stage. This is because bankruptcy or liquidation may be costly to investors. Therefore, it would be more useful if users are notified before suspect companies enter a liquidation stage.

5.3.1.2 Present study failure point: delisting announcements

As shown in Figure 5.3 that there many stages of liquidation. The present study introduces a new criterion for business failure, which is delisting announcements. Unlike other stages of liquidation, delisting is very simple to identify. Furthermore, as will explain in Table 5.2, mandatorily delisted companies are most likely to be liquidated. In addition, there are several advantages of using delisting as a failure point. Firstly, delisting is most likely to occur before bankruptcy, which is considered nearly the final stage of liquidation. The significant information derived from the analysis using delisting announcements should be an important failure-type event from the investors' standpoint, especially minor investors. Investors are able use the significant information not only to protect and/or recover their investments but also to help them to make informed decisions about returns. Furthermore, delisting typically occurs prior to and more frequently than bankruptcy, especially in the data set of the study (see Table 6.2, Chapter 6); it provides greater power to examine the relation between delisting announcements and audit reports, especially with going concern qualifications.

The present study also investigates the current status of both voluntarily and mandatorily delisted companies using the BOL Business online website which demonstrate the current status of all Thai companies. This is to investigate the current status of voluntary and mandatory delisted companies. Based on the BOL database, it is found that 21 out of 23 voluntarily delisted companies still continue to operate. On the other hand, the tendency of mandatorily listed companies is liquidate. Table 5.2 shows the current status of mandatorily delisted companies.

Table 5.2 Current statuses of mandatorily delisted companies (1994-2000)

	Reasons	Number of listed companies	Current status[a]
1.	Listed closed by Bank of Thailand	25	All Liquidated
2.	Violations of SET's regulations (mostly due to failure to submit annual financial statements)	19	Rehabilitation = 4 companies Liquidation = 5 companies No information = 10 companies
3.	Grounds of delisting	8	Rehabilitation = 2 companies Liquidation = 1 company No information = 5 companies
4.	Requested to transfer companies' assets and liabilities to finance companies owned by Thai government (mostly due to failure to increase their capitals as requested by Bank of Thailand)	7	All Liquidated
	Total	59	

[a]The information was retrieved from BOL Business Online website on 19-20 June 2002.

Table 5.2 shows that 38 out of 59 mandatorily delisted companies are liquidated. The rest are potentially liquidated due to unavailability of information. The unavailability of information leads to the idea that delisting announcements imply company liquidation. In other words, delisting announcements are a pre-warning signal of business failure.

In addition, delisting announcements models become more popular in business failure studies. The recent study by Chen and Schoderbek (1999) carried out research to investigate as to whether accounting information is useful in security exchange delisting. The paper looked at the considerations made by the American Stock Exchange in decisions to remove listed companies from its lists (i.e. mandatory delisting). One hundred and fifty mandatorily delisted companies were selected during 1981-1992. Independent variables included the Chapter 11 filing of the US Bankruptcy Code (i.e. mandatory liquidation), going concern audit reports, lawsuits by a stockholder or under investigation of the US Stock Exchange Commission (SEC), returns on stocks, and trading volume for the twelve months prior to delisting. The logistic regression results indicated that Chapter 11 filing, companies' trading volume, and one-year stock return prior to delisting are important factors in mandatory delisting. The work by Chen and Schoderbek (1999) employed going concern audit reports in their study, but it was found that there was no incremental information content in the audit reports. However, even if previous

research has investigated the information content of going concern audit reports, it is still interesting to re-test in the present study. This is mainly because the work does not appear to pay attention to the different types of audit reports. In addition, the research was carried out using the population in the US stock market, which is considered as a developed stock market. However, the present study is based on the Thai stock market, which is considered as an emerging market. The empirical results should provide some contributions in different areas.

Since the present study is based on listed companies in Thailand, it is useful to provide delisting rules set by the Stock Exchange of Thailand (SET). Like other stock markets, SET publicly states delisting rules and regulations to investors. The SET classifies the delisting of securities into two main parts: voluntary and mandatory delisting. The distinguishing feature between these two delisting announcements is that voluntary delisting occurs to listed companies upon request. Voluntarily delisted companies may have their own reasons, such as merging with listed companies in the same group of companies. Or, some listed companies may no longer need financial support from the public and prefer to stay out of the stock markets. On the other hand, mandatory delisting occurs to listed companies where there are grounds for delisting.

SET announces listed companies as mandatorily delisted in the following situations:

1. The listed company violates or fails to comply with laws governing securities and the exchange regulations of the SET.

2. The listed company fails to disclose (or discloses false) information which may seriously and adversely affect rights, changes in price of securities, interests or decisions of investors as well as shareholders.

3. The listed company enters into liquidation to dissolve its business or is even under receivership by a court order or under any similar circumstance.

4. The listed company fails to maintain paid-up capital of its ordinary share beyond Baht 60 million (around £1 million) and has less than 150 small ordinary shareholders holding in aggregate less than 10% of the paid-up capital, while the trading volume of the listed company per year is less than 10 % of the paid-up capital for 2 consecutive financial years.

5. The listed company's financial conditions fall within any of the following cases:

(a) The assets used in the operation of the listed company have significantly lessened or are going to significantly lessen as a result of sale or any other case resulting in the same effect.

(b) The operation is halted entirely or almost entirely for any reason whatsoever, regardless of whether such halting of operation is due to the act of the listed company or any other person.

(c) The auditors issue a disclaimer or an adverse opinion on the financial statements of the listed company for 3 consecutive years

(d) The financial condition disclosed in the latest audited financial statements or consolidated financial statements shows that the shareholders' equity is lower than zero (SET, 2001).

The following analysis classifies delisting announcements into 3 groups: voluntary delisting, mandatory delisting and delisting as a whole.

5.3.2 Independent variables

Research on business failure has adopted many potential factors to investigate the incremental information content of individual independent variables. However, few previous studies have used audit reports as one of the independent variables to predict delisting announcements. Therefore, the present study introduces factors which may potentially influence the probability of delisting announcements. In addition, some dependent variables of previous studies, which have been considered as statistically significantly to business failure, are also adopted. The potential independent variables are explained as follows.

5.3.2.1 Macroeconomic factors

Several studies have found that key economic factors have significant impact on the frequency of business failure in the economy, although such impacts are frequently subject to a time lag between the point when the factor is observed and the point when business failure begins to increase. Altman (1968) stated that companies were likely to fail with the cumulative effects of reductions in factors such as economic growth and stock market performance. As a result, adverse economic conditions may affect specific organisations and finally increase the probability of business failure. In the present study, two macroeconomic indicators, the Thai financial crisis in the middle of 1997 and Gross Domestic Product (GDP) are taken into account.

Thai economic crisis year (YEAR1997)

The present study introduces a new independent variable, the Thai economic crisis year, into the analysis. Thailand has encountered financial crisis since the middle of 1997. In fact, the economy began to slow down in 1996, signalling decline in export growth. The trend continued into the first half of 1997 and Thailand's bubble economy eventually burst in the middle of 1997. The Thai financial crisis deteriorated into recession, due to very tight liquidity, causing serious difficulties in all sectors of the economy. The SET price index, which closed at 665.62 points at the end of July 1997, fell to 372.69 points at the end of December 1997 (Bangkok Bank, 1998). Since the crisis, the number of listed companies has declined, because of the increase in the number of delisted companies, while not many companies have been newly listed.

As a result, it is interesting to employ the Thai financial crisis year as a dummy variable into delisting probability models. This is to observe whether the effects of the Thai financial crisis would increase the probability of delisting. This dummy variable is used in the analysis, whose the data set covers the period 1994-2000.

Gross Domestic Product (GDP)

The Thai financial crisis might affect only the year that it occurred. Rather than using a particular point as economic indicator, it may be more appropriate to have an indicator representing the overall aggregate economy. Therefore, it is also interesting to adopt an aggregate economy indicator. The present study then introduces Gross Domestic Product (GDP) as a dummy variable to represent an aggregate economy status.

GDP is defined as the output of goods and services produced by labour and property located in the country. GDP includes production within national borders regardless of whether the labour and property inputs are domestically or foreign owned. Data reflect income as well as expenditure flows. GDP also measures aggregate economic activity in the national income and product accounts. It closely tracks other measures of domestic economic activity such as industrial production or employment (Fischer and Dornbusch, 1983, p. 553). Previous research also adopted GDP as an independent variable to investigate whether the effects of GDP influence the probability of corporate failure (e.g. Peel, et al., 1986).

5.3.2.2 Company internal factors[5]

In contrast to macroeconomic factors, company internal factors may contribute to identification of specific organisations in failure prediction. This is because the information is mainly from a company itself. The most commonly used indicators of business failure are financial data extracted from financial statements. There are some other factors that could be considered as failure indicators. The SET has the policy that full disclosure of all information should be publicly available to the public. This is to allow investors to carefully analyse all relevant information before making any decision. According to the main objective of the present study, which is to focus on delisting on the Thai stock market, the dependent variables related to information in stock markets are also introduced into delisting probability models. The following statements describe company internal factors that are potentially considered to increase the probability of delisting.

Financial ratios

As outlined in Section 2.3 in Chapter 2, financial information could be used as a predictive tool. Therefore, the most commonly used indicators of business failure are financial data extracted from financial statements. Financial ratios have been instrumental in the evaluation of financial conditions. However, the previous literature does not appear to recommend financial ratios that might be the most suitable in predicting business failure, as mentioned in Section 2.4.3 in Chapter 2. As a result, this study uses financial ratios recommended by the study of Lennox

---

[5] Initially, the study had found that it should be interesting to introduce the rehabilitation status into delisting probability models. However, the later analysis found that the rehabilitation status did not appear to be statistically significant to delisting models. It is perhaps because the rehabilitation rules were enacted in 1998. The lack of the information may cause non-statistical significance of the rehabilitation status. As a result, the later analysis will drop the rehabilitation status out of delisting models. However, the following explanations should be useful for further research in testing the information content of the rehabilitation status announced by stock markets.

In general terms, it is the SET's policy not to make any public judge or comment on the management of listed companies. However, in line with policy, the SET provides relevant and useful information, which may affect investors' interests. Before delisting, The SET has a policy to let management set up companies' rescue plans. It is the SET's responsibility to prescribe the disclosure allowing shareholders to assess the material information presented by a company's executive management. In this stage, the SET will announce that the company is in the "rehabilitation status". This is to allow some time for the company to work on the rehabilitation plan for a listed company that is facing delisting.

The SET requires a listed company's management and its independent advisors to jointly prepare a rehabilitation plan. This plan, which first receives shareholder approval, should seek to resolve all the reasons for the proposed desisting. It would also be the responsibility of the company' management, and its advisors, to present regular reports on how the rehabilitation plan is progressing. This process must continue until all the problems that caused the possible delisting have been resolved.

The intended dummy variable for the rehabilitation status is 1, if the company is in the rehabilitation status at the end of the year: 0, otherwise.

(1999a), which is very similar to the present study. The study found that stated financial ratios were statistically significant in failure probability models. The financial ratios included:

1. Debt-turnover ratios (DT) determine whether a company was experiencing difficulty in receiving payment for past sales.

2. Cash or quick ratios (QR) represent a company's short-term liquidity.

3. Gross cashflow ratios (GC) capture the fact that as profitability increases, a company is less likely to experience cash flow problems.

4. Gearing ratios (GR) represent the proportion of capital employed which is accounted for by long-term fixed debt. A company experiencing an increase in gearing ratios is prone to long-term financial difficulty.

5. Returns on capital ratios (RC) represent how well a company operates its business. Decrease in returns on capital is more likely to indicate any irregularities or changes in expenses from year to year.

It should be noted that some formulations for financial ratios shown in Table 5.2 differ from the ones stated in Lennox (1999a). This is mainly because financial statements in Thailand are classified differently, compared with the ones adopted by Lennox (1999a). However, despite the difference in classifications, the formulations should not cause any problem, because the Datastream database (UK financial statements), which was used by Lennox (1999a), provides a reconciliation between the financial ratios used in Lennox (1999a) and the classifications of the Thai financial statements. Table 5.3 shows the formulation of financial ratios used in the present study.

Table 5.3 Definitions of financial ratios used in the study

Ratios	Formula
Debtor-turnover (DT)	Total sales x 100 / Total debtors
Quick ratio (QR)	(Cash + Short-term investments + debtors) x 100 / Current liabilities
Gross cashflow ratios (GC)	(Net profit before extraordinary items + Depreciation) x 100 / Total assets – Intangibles
Gearing ratio (GR)	(Bank overdraft + Current portion of lia. + Long-term liabilities) x 100 / Total assets – Current lia. + Bank overdraft + Current portion of lia.-Intangible
Return on capital (RC)	Net income before interest and tax x 100 / Total assets – Current lia. + Bank overdraft + Current portion of lia. - Intangible

Bad trading records (BTR)

The SET has a policy to disclose relevant and useful information to investors. However, disclosure should not cause any preference to any specific listed companies. As a result, both negative and positive signs, but only relevant and useful information, are permitted during trading hours. For instance, XD (Excluding Dividends) means buyers are not entitled to dividend payment. XI (Excluding Interests) means buyers are not entitled to interest payment. However, the above stated signs may not convey business failure information compared with the following signs: Notice Pending (NP), Notice Received (NR), Suspension of trading (SP), and Trading halt (H). The following descriptions explain the meaning of the selected signs in the study.

The SET posts the NP sign on stocks to inform investors that at this particular time: 1) the SET is awaiting clarification or additional information from the company which issued the stock and 2) the SET is awaiting disclosure of the company's financial statements or other reports which must be filed at specified intervals.

The SET posts the NR sign on stocks to replace the NP sign when the listed company as requested and required by the SET has made sufficient clarification of certain information or disclosure of additional information.

The SET posts the SP sign on a security to suspend trading of that security for more than 1 trading session, due to: 1) Replacement of the SP sign by the NP sign following the failure of the issuer to adhere to SET disclosure regulations, 2) Failure of the issuer to provide adequate explanation in the event of its share price change without legitimate reason, and 3) the issuer's request for trading suspension because of material news or activity in the process of implementation which may affect its share prices.

The SET posts the trading halt sign, ("H") sign on the security during the trading session to notify investors that trading in the security is not allowed, when 1) There is a material development relating to the company during the session. The company must clarify the situation with the SET immediately, and 2) the trading pattern indicates that some investors may have received important news or information about the company before it is formally disclosed to the public.

The present study introduces the above bad announcement signs by SET into the probability of delisting models in the following analysis (the Stock Exchange of Thailand, 2001).

Company size (LNTA)

Previous studies about patterns of business failure have found that small companies are more likely to fail than big companies (e.g. Horrigan, 1966, Ohlson, 1980, and Peel et al., 1986). Company size is defined in various ways. For instance, Lennox (1999a) considers the number of employees in calculating company size. However, one of the arguments against using number of employees to represent company size is investment in high technology (capital incentive) and spending is on fixed assets may reduce the need for employees, as compared to labour incentive companies. On the other hand, companies that are labour incentive give an inaccurate representation of company size. In the present study, as Thailand is a labour incentive country, it is more appropriate to use "total assets" in calculating company size. The study also uses natural log transformations to reduce outlier effects of total assets.

Audit firm size (BS)

Few studies have included audit firm size in failure prediction models. The research finding of Lennox (1999b) was that big auditing firms were likely to provide higher quality audits and offered greater credibility to clients' financial statements than smaller firms. The results can be proved by increases in stock prices when a company switched to a larger auditor. Also, large audit firms gave more accurate signals of financial distress in their audit opinions. However, Reynolds and Francis (2001) found no evidence for Big 5 firms to report more favourably in their audit reports than Non-Big 5 firms. These inconsistent findings lead to the idea in the present study that the present study should, therefore, introduce audit firm size into delisting probability models. This is to investigate whether audit opinions for Big 5 and Non-Big 5 firms would result in different delisting probabilities. In other words, audit firm size would affect SET's decision to announce listed companies as delisted companies.

Also, in this present study, it occurs that one of the Big 5 firms, Ernst & Young, has mostly audited listed companies during this study period (as will be shown in Section 6.4.4, Chapter 6).

Therefore, delisting probability models also investigate whether Ernst & Young, as a separate dummy variable, influences the probability of delisting.

5.3.2.3 Audit reports

As continuously stated, the present study attempts to investigate which publicly available information provides useful incremental information about delisting probability, and audit reports are the main concern of the analysis. Previous studies have found that audit reports could be used as a predictive tool as outlined in Chapter 3 and 4. Unlike previous research (e.g. Lennox, 1999a), the strong point of the present study is the attempt to observe various types of audit opinions, which may or may not directly relate to delisting probability. The following descriptions explain the types of audit reports adopted in this study.

There are two main types of audit reports in the following analysis: going concern qualifications and all types of audit qualifications. As mentioned in Chapter 4, going concern qualifications should be more predominantly influential than any other types of audit reports in business failure predictions. This is because the content of the going concern qualification gives rise to the concern that auditors are likely to issue the qualifications prior to business failure. In addition, when auditors issue a certain type of audit opinion, it is less likely that only an audit qualification is given to an audit opinion. In fact, auditors refer to more than one audit qualification for an audit opinion. This leads to the idea that the present study should introduce all types of audit qualifications into the probability of delisting models.

In addition, as stated in Chapters 3 and 4, after the new auditing standards for the auditors' reports on financial statements became effective, unqualified opinions with explanatory paragraphs were allowed. This leads to the idea that, even though the new standards consider unqualified opinions with explanatory paragraphs as unqualified opinions, there is no empirical evidence to prove that unqualified audit opinions with explanatory paragraphs may be considered as qualified opinions and are useful incremental information as regards delisting probability. To ensure which types of audit reports increase the probability of delisting, statistical analysis employs various types of audit reports in the delisting models.

The following analysis classified audit reports in 3 ways: lagged effects (i.e. previous year), the change from unqualified or less qualified opinions to more qualified opinions, and current year

audit reports. It is reasonable to introduce lagged effects of audit reports into analysis. This is because the reports are the latest auditor's opinions before delisting is announced and delisting decisions may be based on previous year audit reports. In addition, the change in audit reports could be informative. This is because a first-time opinion could be a signal of worse news than a repeated opinion, and a clean audit report following a qualified report could be a signal of better news than a repeated clean audit report. Finally, current year audit reports may increase the probability of delisting. Even if the current year audit reports may occur after delisting is announced, the reports should be considered as a proxy of interim audit reports (i.e. quarterly audit reports), which consistently indicate how well listed companies during the year. Figure 5.4 show timing of audit reports used in the study. Note that, as delisting companies are unlikely to enter bankruptcy immediately, current year audit reports after the delisting announcement are generally available.

Figure 5.4 Timing of audit reports
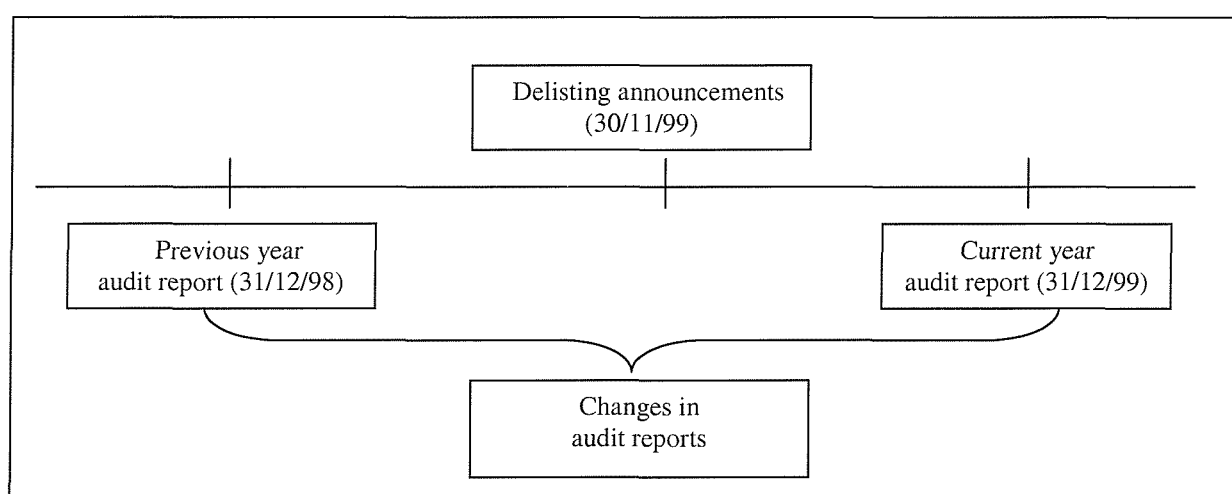
The symbols representing the above three types of audit reports are as follows: 1) if there is no CH at the beginning and P at the end of the symbols, the variables represent current year audit opinions, meaning incurred year audit reports; 2) if there is CH at the beginning, the variables represent the change from unqualified or less qualified opinions to more qualified opinions; and 3) if there is P at the end of the symbols, the variables represent lagged effects of audit opinions. The following example is reasonably representative. The accounts of ABC Public Limited Company were issued with unqualified audit reports and qualified audit reports for fiscal year 1998 and 1999, respectively. In such a case, the current year dummy variable are equal to 0 in 1998 and 1 in 1999 (i.e. 0 = unqualified audit reports and 1 = modified audit reports), while the lagged effects of audit reports (previous year audit reports) for 1998 was left it blank and 0 in 1999. The change of audit reports was left it blank in 1998 and 1 in 1999 since more serious reports than that of in 1998 were issued in 1999.

The following variables represent all the types of audit reports used in the present study as shown in Figure 5.5.

Figure 5.5 Types of audit qualification used to estimate delisting models

	All types of audit qualifications (except going concern)	Going concern
Unqualified opinions with explanatory notes	1	2
Modified opinions	3	4

108

Figure 5.5 demonstrates the types audit reports used in this study as follows.

1. AG, CHAG and AGP (Going concern reporting issued both under unqualified opinions with explanatory paragraphs and also under modified opinions)

The objective of these audit qualifications is to investigate whether the going concern reporting issued under both unqualified audit opinions with explanatory paragraphs and also under modified opinions have incremental information content regarding mandatory delisting. Areas 2 and 4 in Figure 5.4 show the mentioned audit qualifications.

2. AGS, CHAGS, and AGSP (Going concern reporting issued under modified opinions)

Unlike 1, the objective of these audit qualifications is to investigate whether going concern modified audit qualifications have incremental information content to mandatory delisting. Area 4 in Figure 5.4 shows the mentioned audit qualifications

3. AQR, CHAQR, and AQRP (audit qualifications issued under modified opinions)

The objective of these audit qualifications is to investigate whether all types of audit qualifications issued under modified audit opinions have incremental information content to mandatory delisting. Areas 3 and 4 in Figure 5.4 shows the mentioned audit qualifications.

4. AQT, CHAQT, and AQTP (All types of audit qualifications issued both under unqualified opinions with explanatory paragraphs and also under modified opinions)

Unlike 3, the objective of these audit qualifications is to investigate whether all types of audit qualifications issued under both unqualified audit opinions with explanatory paragraphs and modified opinions have incremental information content about mandatory delisting. Areas 1, 2, 3 and 4 in Figure 5.4 show the mentioned audit qualifications.

5. AQRGC, CHAQR and AQRGCP (all types of audit qualifications issued under modified opinions, but without going concern reporting)

The objective of these audit reports is to investigate whether, if going concern reporting are discharged from all types audit qualifications, these audit qualifications still have incremental information content about mandatory delisting. Area 3 in Figure 5.4 shows the mentioned audit qualifications.

6. AQTGC, CHAQTGC and AQTGCP (All types of audit qualifications issued both in unqualified opinions with explanatory paragraphs and also under modified opinions, but without going concern reporting)

Unlike 5, The objective of these audit reports is to investigate whether, if going concern reporting are discharged from all types audit qualifications issued both under unqualified audit opinions with explanatory paragraphs and also under modified opinions, these audit qualifications still have incremental information content regarding mandatory delisting. Areas of 1 and 3 in Figure 5.4 show the mentioned audit qualifications.

In this section, delisting announcements were identified as the dependent variable, and the independent variables were described. They included macroeconomic factors, company internal factors and audit reports. Table 5.4 summarises all the variables in the present study.

Table 5.4 Variables used to estimate delisting models

	Abbreviations	Definitions	Type	Expected sign
Dependent/ Independent	DELISTED	1 if company is delisted in particular year; 0, otherwise	(0,1)	NA/+
Dependent/ Independent	MAN	1 if company is a mandatorily delisted company and delisted in particular year; 0, otherwise	(0,1)	NA
Dependent/ Independent	VOL	1 if company is a voluntarily delisted company and delisted in particular year; 0, otherwise	(0,1)	NA/+
Independent	YEAR1997	1 if it is the year before 1997; 0, otherwise	(0,1)	+
Independent	GDP	1 if Gross Domestic Product increases from last year; 0, otherwise	(0,1)	-
Independent	BRT	1 if company is announced with SP, NP, NR, or H during the year; 0, otherwise	(0,1)	+
Independent	BS	1 if company is audited by one of Big 5 firms; 0, otherwise	(0,1)	+
Independent	NONEY	1 if company is audited by one of Big 5 firms, but not Ernst & Young; 0, otherwise	(0,1)	+
Independent	EY	1 if company is audited by Ernst &	(0,1)	+

		Young; 0, otherwise		
Independent/ dependent	AG	1 if company's accounts were issued unqualified opinions with explanatory notes and modified opinions with going concern uncertainty; 0, otherwise	(0,1)	+/NA
Independent	CHAG (change of AG)	1 if change from non-going concern to going concern audit reports; 0, otherwise	(0,1)	+
Independent	AGP	Lagged effects of AG	(0,1)	+
Independent/ dependent	AGS	1 if company's accounts were issued with modified opinions with going concern uncertainty; 0, otherwise	(0,1)	+/NA
Independent	CHAGS (change of AGS)	1 if change from non-going concern to going concern audit reports; 0, otherwise	(0,1)	+
Independent	AGSP	Lagged effects of AGS	(0,1)	+
Independent/ dependent	AQR	1 if company's accounts are issued with modified opinions; 0, otherwise	(0,1)	+/NA
Independent	CHAQR (change of AQR)	1 if change from clean or less serious to more serious audit reports; 0, otherwise	(0,1)	+
Independent	AQRP	Lagged effects of AQR	(0,1)	+
Independent/ dependent	AQT	1 if company's accounts are issued with unqualified opinions with explanatory notes and modified opinions; 0, otherwise	(0,1)	+/NA
Independent	CHAQT (change of AQR)	1 if change from clean or less serious to more serious audit reports; 0, otherwise	(0,1)	+
Independent	AQTP	Lagged effects of AQT	(0,1)	+
Independent	AQRGC	1 if company's accounts are issued with modified opinions, but not with going concern reporting; 0, otherwise	(0,1)	+
Independent	CHAQRGC (change of AQRGC)	1 if change from clean or less serious to more serious audit reports; 0, otherwise	(0,1)	+
Independent	AQRGCP	Lagged effects of AQRGC	(0,1)	+
Independent	AQTGC	1 if company's accounts are issued with unqualified opinions with explanatory notes and modified opinions, but not with going concern reporting; 0, otherwise	(0,1)	+
Independent	CHAQTGC (change of AQTGC)	1 if change from clean or less serious to more serious audit reports; 0, otherwise	(0,1)	+
Independent	AQTGCP	Lagged effects of AQTGC	(0,1)	+
Independent	LNTA	Natural Log of Total assets	Continuous	-
Independent	DT	Debtor turnover	Continuous	-
Independent	QR	Quick ratios	Continuous	-
Independent	GC	Gross cash flow	Continuous	-
Independent	GR	Gearing ratios	Continuous	-
Independent	RC	Return on capital	Continuous	-

111

5.4 Statistical techniques

There have been many statistical techniques used in failure prediction studies. Generally, statistical techniques are employed for two main purposes: to give overall accuracy to failure prediction models, and to give information as to which independent variables have useful incremental information in failure prediction models. As continuously mentioned, the main objective of the present study is to investigate the incremental content of financial information, especially audit reports. However, the following literature review of statistical techniques mainly focuses on statistical techniques that provide significant statistical information for individual independent variables rather than statistical techniques that provide overall accuracy to failure prediction models.

Statistical techniques for business failure have followed a trend starting with univariate analysis, discriminant analysis, conditional probability models (logit or probit analysis), neural networks, and multidimensional scaling. The following description briefly summarises the previous statistical techniques for business failure.

5.4.1 Previous studies

The development of statistical techniques in failure prediction started with the work of Beaver (1966). Beaver (1966) was a pioneer who employed univariate data analysis to examine the usefulness of financial ratios in bankruptcy predictions. Univariate analysis gives a constant value which is a cut-off score between distressed and non-distressed firms. The predictive ability of each variable is measured by applying the cut-off score to a holdout sample. However, although Beaver achieved remarkable success in financial distress prediction in the early years, there are some concerns about univariate analysis. This is because the technique applies ratios to the analysis individually. This results in no single ratios being able to describe a multidimensional view. Therefore, univariate analysis cannot provide a whole view of a firm. Researchers tend to start with the univariate approach to gain perceptions of individual variables.

Altman (1968) was the first to use linear discriminant analysis in predicting bankruptcy. He was successful in predicting failure in the first and second years before distress, but achieved a lower rate of accuracy for three to five years before bankruptcy. The concept of the analysis is to assign a z score to each company in the population, using a linear combination of independent

variables. A cut-off score, which is established by the analysis, plays a major role in classifying new companies in term of potential bankruptcy. If the score is above the cut-off point, the companies can be expected to remain healthy; otherwise they are likely to fail. The main usefulness of discriminant analysis is to reduce the financial dimensions to a single score. However, the technique has a weakness, which is that independent variables need a multivariate normal distribution, and the covariance matrices of the two groups need to be equivalent (e.g. Koh, 1991). Many researchers have shown that discriminant analysis is a robust statistical technique, which can tolerate some deviation form the multivariate normal distribution assumption. Moreover, the assumption was very important for tests for significance of individual variables (Klecka, 1980, pp. 60-61).

Neural network analysis was also introduced into failure prediction studies, because of the restrictive assumptions of discriminant analysis. The concept of neural network analysis involves using a mathematical algorithm to create a perfect mapping between the input and output values for a set of training data such as financial ratios. The training process additionally captures knowledge about the relationship between the output and the patterns in the input. This is to correctly categorise the training situations. Once training is complete, the patterns found by the neural network can be used to forecast a situation whose outcome is unknown (Coats and Fant, 1993). However, a review paper by Trigueiros and Taffler in 1996 found that neural networks may not be appropriate in empirical accounting research. The main reason is that the method does not provide adequate significance and hypothesis tests and is difficult to interpret or explain conceptually (Trigueiros and Taffler, 1996). Because the objective of the present study is to investigate the statistically significant coefficients of individual independent variables based on the t or F distributions, neural network analysis is not adopted.

The multidimensional scaling method (MDS) was also introduced into failure prediction studies. Simply, the method is a set of mathematical techniques that represent the similarities of objects within a group of objects. MDS procedures represent objects judged experimentally to be similar to one another as points close to each other in a resultant spatial map. Objects judged to be dissimilar are represented as points distant from one another (Schiffman et al, 1981, p. 3). The main reason to bring MDS into failure prediction studies is that the product of MDS is the graphical representation of the main characteristics of the data. Therefore, failed companies are distinguished from continuing companies in a graphical manner. In addition, the previous literature in failure predictions encountered difficulty with the statistical properties of the data,

such as the multivariate normal distribution assumption as required by discriminant analysis, and multicolinerity of independent variables as required by linear regression. However, even though the advantages of MDS are realised, the method is not suitable for the present study. This is because MDS does not provide information on the statistical coefficients of individual variables.

5.4.2 Present study statistical techniques

It is most likely that a statistical method using conditional probability is appropriate to the present study. The following descriptions briefly explain the statistical techniques, conditional probability technique, adopted in the study.

5.4.2.1 Conditional probability

Conditional probability statistical techniques seem very popular in failure prediction studies. The technique mainly includes two well-known methods: logistic regression (logit) and probit analysis. The main objective of conditional probability is to investigate the statistical significance of individual independent variables in failure prediction models. Unlike MDA, these statistical techniques require neither that independent variables be multivariate normal nor that groups have equal covariance matrices. The following explanations briefly summarise both logit and probit analysis.

Logistic regression is a form of regression that is based on social phenomena which are discrete or qualitative rather than continuous or quantitative in nature. In other words, the logic of logistic regression comes from the idea that a social event is likely to occur or it does not occur. Logistic regression is normally a dichotomy or binary, and the independent variables can be either continuous or categorical, or both. Therefore, the probability of regression results should be between 1 and 0.

However, applying the idea of linear regression to binary dependent variables causes two statistical problems: the problems of functional form and statistical inference. The liner regression line can extend upwards towards positive infinity, as the value of the independent variables increase indefinitely, and extend downwards towards negative infinity as the values of the independent variables decrease indefinitely. Therefore, the results of regression, when the dependent variable is binary, may be over 1 and below zero. In addition, when the dependent variable is binary, the distribution of residual errors, is heteroscedatic, which violates the assumptions of regression analysis. This makes significant tests of individual independent variables misleading.

To solve the problem in dealing with a dependent variable with a ceiling and a floor and the problem of the heteroscedaticity of the binary dependent variable, logit transformation of the dependent variable may be needed. This is to allow for the decreasing effects of independent variables on the dependent variable. Logit transformation involves two steps: first, taking the ratios of the odds of experiencing the event and secondly, taking the natural logarithm of the odds. These two steps are called logged odds. Taking the natural log of the odds eliminates the floor of 0, just as transforming probabilities into odds eliminates the ceiling of 1.

The linear relationships between the independent variables and the logit dependent variables imply non-linear relationships with probabilities. The linear relationship of independent variables to the predicted logit appears in

$$\ln [P_I / (1-P_i)] = b_0 + b_1 X_i$$

With some mathematical calculations, the final equation should be

$$P_i = \frac{1}{(1 + e^{-(b_0 + b_1 X_i)})}$$

Probit regression is an alternative way to handle the ceiling and floor of probabilities. Probit analysis transforms the probabilities of an event into a score from the cumulative standard normal distribution rather than the logged odds from logistic distribution. Like any z score, probit analysis defines a probability in the cumulative standard normal distribution. Any probability in the cumulative standard normal distribution translates into a z score. The greater the cumulative probability, the higher the associated z score. Further, because probabilities vary between 0 and 1, and the corresponding z scores vary between positive and negative infinity, it suggests using the areas defined by the standard normal curve to translate bounded probabilities into unbounded z scores (Pampel, 2000, p. 1-18 and 54-55).

Although a number of studies have found that the results of logit and probit are very similar, the empirical analysis in the following chapter mainly adopts logit models. The analysis also uses probit models so as to compare the empirical results of the present study with the results obtained by Lennox (1999a), which used probit analysis. The SPSS software package, Version 10.0 was employed in the current study.

They are two main reasons for not to using the probit model as the main technique. First, some independent variables in the data set are financial ratios, which may pose problems of normal

116

distribution and homoscedasticity. Unlike the probit model, the logit model does not assume the linearity of the relationship between independent and dependent variables. In addition, the logit model does not require normally distributed variables and does not assume homoscedasticity. Another advantage of the logit model is that probit coefficients are more difficult to interpret. This is because probit analysis does not allow calculation of the equivalent of odds ratios, and makes calculation of changes in probabilities more difficult than in the logit model. Furthermore, despite the familiar nature of the normal curve, the changes in units of the inverse of the cumulative standard normal distribution described by probit coefficients lack intuitive meaning (Pampel (2000), p. 68). Overall, in most circumstances, researchers in social science would prefer the logit model (e.g. Pampel (2000) p. 68 and Gujarati (1995) p. 567).

5.4.2.2 Interpretations of regression coefficient signs and expected signs in the present study

As the present study adopts conditional probability techniques to investigate the incremental information content of independent variables, it is important to understand the interpretations of meaning and direction for each variable in the conditional probability coefficient results. The logistic regression programs in SPSS provide coefficients for each variable in terms of logged odds. The coefficients tell in which ways individual independent variables associate with the dependent variable. A one-unit change in the independent variables has the same effect on the dependent variables. According to the logistic regression model, a negative coefficient for each independent variable would decrease the probability of each variable in the predictive model. On the other hand, a positive coefficient would increase the probability of each variable in predictive models. Logistic regression is able to handle all types of data, including discrete, dummy and continuous variables. The interpretations of meaning and direction are explained as follows.

For dummy variables, when a positive coefficient occurs and the variable is identified by 1, this means that the variable is likely to increase the delisting probability. On the other hand, when a negative coefficient occurs and the variable is identified by 1, this means that the variable will decrease the delisting probability. For example, if 1 represents the issuance of a going concern audit report and the logistic regression coefficient is positive, this means that the going concern audit reporting is likely to be the variable that increases delisting probability.

117

For discrete and continuous variables, when a positive coefficient occurs, the increase in the continuous variable is likely to increase delisting probability, but the decrease in the continuous variable is likely to decrease delisting probability. When a negative coefficient occurs, the increase in the continuous variable is likely to decrease delisting probability, but the decrease in the continuous variable is likely to increase delisting probability.

In the present study, the data set contains dummy, discrete and continuous variables. In order to be useful for the following analysis, the expected results of regression coefficient signs for all variables are shown in Table 5.4. However, instead of interpreting all possible outcomes of all independent variables, the explanation focuses on the expected regression coefficient sign of each variable adopted in the present study. The following summarises the expected results of individual variables.

For dummy variables, the interpretation of the coefficient signs can be explained as follows. A positive sign would be expected from the 1997 Thai financial crisis variable (YEAR1997). This is because, after the crisis, delisting would be more likely to occur. A negative coefficient on Gross Domestic Product (GDP) should be expected from the probability of delisting models because delisting occurs more (less) frequently when the economy moves from boom (recession) to recession (boom). The coefficient sign of the bad trading records (BTR) should be positive because the records should signal a company's difficulty. Larger audit firms (BS) should increase delisting probability. This is because it is found by previous research that larger audit firms provide more auditing quality (Lennox, 1999b). Consequently, they should provide more accurate audit reports than smaller firms. Therefore, the regression coefficient should result in a positive coefficient sign. Because one of the larger audit firms, Ernst & Young has been a major audit firm (as will be found in statistics descriptive of the data set in Table 6.12), it is interesting to investigate whether the firm significantly influences the probability of delisting and also how the firm associates with the types of audit reports.

A positive coefficient for all types of audit reports should be expected. This is because audit qualifications should be one of the pre-warning signals when listed companies have encountered delisting announcements. A first time qualification could be a signal of worse news than a repeated qualification and an audit qualification followed by a qualified report could be a signal of better news than a repeated clean audit report. Also, the change from unqualified or less

serious reports to more serious reports should provide additional information for delisting probability.

For discrete and continuous variables, the interpretation of the coefficient signs can be explained as follows. Based on previous research showing that larger companies (high total assets) are more likely to survive than smaller companies (Lennox, 1999a), a negative coefficient on total assets (LNTA) is also anticipated. In other words, smaller companies whose total assets are small are more likely to be delisted.

The coefficients of selected financial ratios are supposed to be negative when delisting occurs. Negative coefficients on financial ratios normally increase the delisting probability. Therefore, delisted companies are likely to experience the following symptoms: the negative coefficient on debtor turnover (DT) shows that delisted companies are likely to encounter difficulties in receiving money from past sales; the negative coefficient on quick ratios (QR) shows that short-term liquidity is also likely to be observed prior to delisting; the negative coefficient on gross cashflow ratios (GC) shows that low profits cause cashflow problems and, consequently, affect the increase of delisting probability; the negative coefficient on gearing ratios (GR) or leverage shows that companies experiencing high gearing ratios are likely to be delisted; finally, the negative coefficient on returns on capital (RC) shows that the low profitability of companies is likely to increase the delisting probability.

Table 5.4 also includes the abbreviations for all variables used to estimate both delisting models and audit report models as well as the expected regression coefficient signs.

In this section, the analysis of statistical techniques in business failure was initially described. It was found that conditional probability, logit and probit analysis were appropriate for the present study. Logit analysis is mainly employed in the analysis. However, probit analysis is also used. This is to compare the empirical results of the present study and the previous studies, which adopted probit analysis.

5.5 Hypothesis development

Having explained all the variables in the previous sections, the following description explains the development of hypothesis in the study. The dependent variables are delisting as a whole, voluntary delisting, and mandatory delisting. Voluntary and mandatory delisting may be considered as different cases. Mandatorily delisted companies are delisted with grounds of delisting. However, voluntarily delisted companies have own reasons to withdraw their shares. If the reason to request a voluntary delisting is not due to their business failure, such as merger and acquisition, the analysis may not find incremental information content of voluntary delisting. However, the company management may have perceived some information indicating a chance to be voluntarily delisted due to, for example, consecutive losses for many years. Such cases lead to the idea that it should be useful to analysis the information content of voluntary delisting. Therefore, the following hypotheses are developed with the belief that the analysis should provide statistical significance of some independent variables in both voluntary and mandatory delisting.

5.5.1 Going concern audit reports in delisting announcements

As going concern audit reports are predominantly considered as one of the failure indicators, the following analysis mainly focuses on the incremental information content of going concern audit reports in delisting environments.

5.5.1.1 Delisting announcements as a whole in relation to going concern audit reports

The intention of this section is to investigate the incremental information content of independent variables, especially going concern audit reports in delisting announcements as a whole. The present study advances the following hypothesis as:

H1.1: After controlling for other known effects, listed companies with going concern reporting are more likely to be delisted than are listed companies without going concern reporting.

5.5.1.2 Voluntary delisting in relation to going concern audit reports

The intention of this section is to investigate the incremental information content of independent variables, especially going concern audit reports in voluntary delisting. The present study advances the following hypothesis as:

H1.2: After controlling for other known effects, listed companies with going concern reporting are more likely to be voluntarily delisted than are listed companies without going concern reporting.

5.5.1.3 Mandatory delisting in relation to going concern audit reports

The intention of this section is to investigate the incremental information content of independent variables, especially going concern audit reports in mandatory delisting. The present study advances the following hypothesis as:

H1.3: After controlling for other known effects, listed companies with going concern reporting are more likely to be mandatorily delisted than are listed companies without going concern reporting.

5.5.2 All types of audit reports in delisting announcements

Previous research does not appear to pay attention to all types of audit qualifications in the context of failure prediction. In fact, qualified audit reports are issued when financial statements are not presented a true and fair view. In addition, when audit reports are issued, rather than a single qualification being given, auditors are more likely to issue more than one audit qualification for an audit opinion. Furthermore, based on the earlier literature review, it is found that qualified audit reports caused, for example, negative stock prices (see Section 3.4.2.1, Chapter 3). This leads to the idea that audit qualifications might also influence business failure. In addition, previous research found that there are many reasons why going concern reporting may not be issued. The reasons include the fact that qualifications would result in, for example, a relationship deterioration between auditors and clients, some problems of impairment of ability to obtain adequate financing, straining relations with customers and suppliers, and no time for clients to work out problems. Indeed, the presence of audit qualifications may reflect business failure. In the present study setting, therefore, all types of audit qualifications are employed.

This is to investigate whether all types of audit reports qualifications have incremental information content about delisting announcements.

5.5.2.1 Delisting announcements as a whole in relation to all types of audit reports

The intention of this section is to investigate the incremental information content of independent variables, especially all types of audit qualifications in delisting announcements as a whole. The present study advances the following hypothesis as:

H2.1: After controlling for other known effects, listed companies with qualified opinions are more likely to be delisted than are listed companies without audit qualifications.

5.5.2.2 Voluntary delisting in relation to all types of audit reports

The intention of this section is to investigate the incremental information content of independent variables, especially all types of audit qualifications in voluntary delisting. The present study advances the following hypothesis as:

H2.2: After controlling for other known effects, listed companies with qualified opinions are more likely to be voluntarily delisted than are listed companies without audit qualifications.

5.5.2.3 Mandatory delisting in relation to all types of audit reports

The intention of this section is to investigate the incremental information content of independent variables, especially all types of audit qualifications in mandatory delisting. The present study advances the following hypothesis as:

H2.3: After controlling for other known effects, listed companies with qualified opinions are more likely to be mandatorily delisted than are listed companies without audit qualifications.

✓ 5.5.3 Information used in audit reports

In the last two sections, the analysis has focused on the incremental information content of audit reports in delisting environments. In the following two sections, it will also be interesting to explore which independent variables have statistical significances of audit reports. Going

concern reporting and all types of audit qualifications issued both under unqualified opinions with explanatory paragraphs and also under modified opinions are selected as the dependent variables in the following analysis. It should be noted that the analysis intends to explore which independent variables are significant determinants of audit reports, therefore no hypotheses are mentioned.

In this section, the hypothesis development has been described. The next chapter will apply the mentioned variables in statistical analysis to test the above hypotheses.

5.6 Concluding remarks

The main objective of this chapter was to describe all the information used in the empirical analysis for the later chapters. Because previous studies have been carried out with inconsistent outcomes relating to the incremental information content of audit reports in business failure prediction, initially, a research paradigm was selected namely the functional paradigm. The main reason for this is to re-verify existing theory stating that audit reports have incremental information content in business failure prediction. By using different types of data sets from previous studies, the outcomes of the present study should falsify or unfalsify the existing theory.

The description then moved on to provide information about the variables used in the analysis. As clearly stated, the present study focuses on delisting announcements rather than bankruptcy or other business failure as the dependent variable. The main reason for adopting delisting as the dependent variable is that the delisting event is an important failure-type event from investors' point of view, especially minor investors. Minor investors should have an opportunity to recover, once a delisting has been announced. As a result, the independent variables are selected according to delisting environments, including macroeconomic factors, company internal factors and audit reports. Macroeconomic factors, the Thai financial crisis and Gross Domestic Product are included in the set of independent variables. For company internal factors, the present study also introduces potential independent variables based on delisting environments such as bad trading records of stock markets. Independent variables also include appropriate financial ratios, such as liquidity, long-term financial difficulty, and profitability. In addition, audit reports are used in various aspects of the statistical analysis. Logistic regression (logit) is mainly adopted because the technique is the most suitable to the data set; also no theoretical weakness has been

mentioned in previous studies. Finally, in order to arrive to conclusions, the development of the hypotheses has also been explained.

Chapter 6

Data set and descriptive statistics

6.1 Introduction

This chapter provides a general background to audit reports of listed companies on the Securities Exchange of Thailand (SET) during 1994-2000. The chapter also gives a general idea of how to proceed with further analysis in the following chapter. Initially, the population and data collection is described. Preliminary data analysis is also provided. This is to explain some concerns relating to missing and illogical data. In addition, the diagnostics of the data set is also analysed. The main intention of the analysis is to investigate whether the problem of multicollinearity exists in the data set. The analysis begins by describing types of audit reports and the characteristic tendency of audit reports in SET during 1994-2000. The main objective of the study is to investigate whether audit reports, especially going concern reporting, have useful incremental information content as regards the probability of delisting, and it is useful to investigate how audit reports associate with delisting through descriptive statistics. There is also the fact that when auditors express their opinions, it is somewhat difficult to isolate which audit qualifications derive to certain types of audit reports. Therefore, rather than investigating the association between going concern audit reports and delisting, the investigation also observes the association between all audit qualifications and delisting. Finally, previous studies have found that large audit firms provide more audit quality than smaller firms, so the analysis also investigates the association between audit firm size and going concern audit reports. Concluding remarks summarise all the findings of the chapter. It should be noted that this chapter emphasises only descriptive statistics, therefore, no statistical techniques are used in the analysis.

6.2 Data set

Sample selections on previous research related to audit reports, including going concern reporting, in business failure predictions are shown in Table 6.1.

125

Table 6.1 Sample selections on business failure studies

No.	Studies	Years	Sample selections	Statistical methods
1.	Altman & McGough (1974)	1970-73	Bankrupt firms	Discriminant
2.	Deakin (1977)	1972-74	Bankrupt firms	Discriminant
3.	Altman (1982)	1970-82	Bankrupt firms	Discriminant
4.	Taffler and Tisshaw (1977)	1969-77	A matched pair sample	Discriminant
5.	Levitan and Knoblett (1985)	1980-81	A matched pair sample	Discriminant
6.	Peel (1989)	1972-79	A matched pair sample	Logit
7.	Hopwood et al. (1989)	1974-85	A matched pair sample	Univariate and Multivariate
8.	Koh and Killough (1990)	1980-85	A matched pair sample	Discriminant
9.	Koh (1991)	1979-85	A matched pair sample	Probit
10.	Hopwood et al. (1994)	1974-84	A matched pair sample	Logit
11.	Lennox (1999a)	1987-94	All quoted firms in UK	Probit

Previous samples techniques can be divided into three categories: bankrupt firms, matched pair samples (failed and non-failed firms), and the total available population (i.e. all quoted firms on a stock market). The early analysis attempted to find out whether mathematical models could predict a firm's financial distress or not. Samples chose bankruptcy firms and selected certain financial ratios some years before failure. Then, statistical models were adopted to evaluate the ability of prediction models and compare with auditors' accuracy when they issued going concern audit reports to failed firms. However, Kida (1980) argued against the conclusion that the accuracy of mathematical models was inferior to that of auditors because issuing going concern audit reports might be based on extraneous factors. As a result, selecting just failed firms in the models might not include all other factors.

A matched pair sample technique had been perceived as a good technique for many years. The idea was to include both failed and non-failed firms in the population. The method required initially the selection of failed firms using a pre-determined criterion and then matching these failed firms with non-failed firms based on criteria such as the same size of total assets, industry sectors and fiscal years. Then, the total population could be searched for financial ratios. Within a matched pair sampling technique, researchers normally mixed the two groups of firms and applied them to a model together.

Although Levitan and Schwartz (1985) found that a matched pair sample resulted in more accuracy than adopting just failed firms in the model, a matched pair sample technique was strongly criticised by Hopwood et al. (1994). Hopwood et al. (1994) explained that standard statistical models did not apply simultaneously to both failed and non-failed firms. Generally, a

matched pair sample was constructed using 50 percent bankrupt companies, which was higher than the actual bankrupt rate that auditors faced. The problem was that the accuracy of mathematical models increased when the proportion of bankrupt firms increased, while the accuracy of non-bankrupt firms decreased. For example, if samples consisted of 80 percent bankrupt firms, the model would predict bankruptcy virtually all the time, and the vast majority of these predictions would be correct. If increasing to 100 percent of bankrupt firms, the accuracy rate for bankrupt firms would be 100 percent. However, auditors typically issued going concern audit reports less than 1 percent of the time. Therefore, it was no surprise that mathematical models evaluated on 50 percent of bankruptcy samples more correctly than auditors did (Hopwood et al., 1994).

In addition, Lennox (1999b) stated that the only advantage of a matched pair sample was to reduce data collection costs in a smaller sample size. However, one of the disadvantages of this technique was the difficulty in investigating the effects of the matching criteria: industry sectors, company size, and year of failure on the probability of bankruptcy. Moreover, the use of the relative small sample could lead to overfilling (Lennox, 1999b). In addition, some databases, such as the Wall Street Journal Index, might not include small firms, which also filed bankruptcy, in the population. Therefore, the selected samples might not be representative of all samples (Jones, 1987). In order to overcome these problems, Lennox (1999a) collected a large number of companies (all quoted companies in the UK) over an eight-year period (1987-1994).

The data set in this study contains the whole population of the Thai stock market, whole sets being recommended by Lennox (1999a). Financial data for the data set was mainly collected from the I-SIMS CD-ROMs prepared by the Security Exchange of Thailand (SET). I-SIMS is an abbreviation for Integrated-SET Information Management Systems. It provides relevant financial data on all companies on the Stock Exchange of Thailand. This data includes company-specific information such as financial statements, notes to financial statements, and audit reports. One of the main efforts in this present study is to attempt to carefully collect data to avoid error in the data set. Without manual data collection, accounting numbers from consolidated financial statements in the data set were carefully extracted from the ISIM CD-ROMs financial information. Since the ISIM CD-ROMs provide Microsoft Excel conversion options, not for SPSS, the data collection simply transferred all accounting numbers from the ISIM CD-ROMs to Microsoft Excel spreadsheets. Then, the data set was transferred from Microsoft Excel spreadsheets into SPSS Data spreadsheets. After the data collection was

completed, random verification of the information from the database against the hard copy of annual reports indicated the high accuracy of database information. In addition, instead of using the accounting numbers from the comparative financial statements in the ISIM CD-ROMs, accounting numbers were collected only the year incurred. This was to avoid accounting retroactive adjustments. Audit reports were also collected from the ISIM CD-ROMs. Similarly, rather than using the comparative audit reports, the audit reports were collected only the year incurred. This is to avoid the development of comparative audit opinions. To fulfil some missing data, data was also collected from the Registrar Department (RD), Ministry of Commerce. The department also provides relevant data on all Thai national companies. This data includes company-specific information such as financial statements, notes to financial statements, and audit reports among all company registrations.

Table 6.2 reports the number of the population in the present study. The total observations were 2,862 (2,882 in total minus 20 missing data) including both continuing and delisted companies. It is found that during 1994-1996 the number of listed companies in SET had increased due to newly listed firms and fewer numbers of delisted companies. However, since 1997, the number of listed companies has declined because of the increase in the number of delisted companies, while not many companies have been newly listed. One of the main causes for the falling number of listed companies was the Thai Financial Crisis in the middle of 1997. Within delisted firms, the mandatorily delisted companies form the majority of total delisted companies during 1994-2000. Voluntarily delisted companies, on the other hand, are not in major proportion. As stated in Section 5.3.1, Chapter 5, voluntary delisting might not have any financial distress signals shown in their financial statements and their audit reports. However, voluntary delisting from SET is mainly due to the merger among companies in the same group. In addition, Schnusenberg and Skantz (1998) found that there was no negative consequence to share prices before and after voluntarily delisting. Therefore, in this study, the discussion mainly focuses on mandatory delisting. However, to confirm the above finding (that there is no information derived from financial information prior to delisting), Chapter 7 will also analyse information on voluntary delisting.

Table 6.2 The Population in the present study

	1994	1995	1996	1997	1998	1999	2000	Total
No. of companies (b/f)	346	389	416	454	431	418	392	2,846
Newly listed	43	28	39	5	1		3	119
Delisted								
- Mandatory				25	12	16	6	59
- Voluntary		1	1	3	2	10	7	24
Population of Thai listed companies on SET at the end of year	389	416	454	431	418	392	382	2,882
Availability								
- Continuing	389	415	453	403	404	366	364	2,794
- Mandatory				20	4	15	6	45
- Voluntary		1	1	3	2	9	7	23
Population in data set	**389**	**416**	**454**	**426**	**410**	**390**	**377**	**2,862**
Missing								
- Continuing							5	5
- Mandatory				5	8	1		14
- Voluntary						1		1
Total missing				5	8	2	5	20

6.2.1 Missing data

As shown in Table 6.2, some companies were still missing from the data set even if two main sources of data collection were used, it is inevitable to have missing data. Missing data involves three main parts: 1) financial statements, 2) the lack of audit reports in 1993, and 3) financial ratios. The data missing were mainly from mandatorily delisted companies. It often occurs, that before being delisted, companies have some difficulties in completing financial statements and apply for extension of their deadline. However, such companies tend not to submit financial information to governmental organisations.

If missing data occurs due to unavailability of information, no listed companies were deleted out of the data set. The dependent variable was coded as 1 (dummy variable) at the year before the unavailability of financial statements rather than the year of delisting. The following example is reasonably representative. ABC Public Limited Company is mandatorily delisted on 30 November 1999; the latest financial statements submitted to the Stock Exchange of Thailand is for the fiscal year 1997. In such a case, delisting dummy variables is coded 1 in the year 1997. Ohlson (1980) also adopted the above practice when unavailability existed.

The unavailability of data affects the number of delisting cases in each year as shown in Table 6.2. Table 6.3 below demonstrates the number of delisting cases in the regression analysis of the study after the adjustment of the unavailable data.

Table 6.3 Summary of delisting cases in the regression analysis

	1994	1995	1996	1997	1998	1999	2000	Total
Mandatory delisted			30	15	9	5		59
Voluntary delisting	1	1	3	2	11	6		24
Total	1	1	33	17	20	11		83
		35			48			

While the number of observations of all variables should be 2,862 as shown in Table 6.2 and 6.4. It appears in Table 6.4 that there are fewer observations in some cases. Firstly, due to the data set covering the period 1994 – 2000, audit report information in 1994, which uses 1993 audit report information is unavailable. Moreover, the lack of 1993 information causes no comparison information between 1993 and 1994 audit reports resulting in no information for 1994.

Finally, there were also fewer observations of financial ratios. This is because the classifications of balance sheet and profit and loss accounts in bank and finance related industries are different from other industries. The main differences are that no current assets and current liabilities in bank and finance related industries. These different classifications cause the number of observations for debt turnover ratios (DT) and quick ratios (QR) to be fewer than 2,862. Furthermore, in some cases, profit and loss accounts were not prepared because certain companies had not started their operations, resulting in no income and expense accounts. Finally, certain accounts such as accounts receivable had no outstanding balance at the end of the year, resulting in infinity numbers in debt turnover ratios.

It is useful to note that, in the data set, rather than replacing the above missing data with zero, all missing data is left blank. This is because SPSS software considers a zero number as a number and includes the zero number in calculations.

Table 6.4 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
DELISTED	2,862	0	1		
MAN	2,862	0	1		
VOL	2,862	0	1		
YEAR1997	2,862	0	1		
GDP	2,862	0	1		
REH	1,177	0	1		
BTR	2,862	0	1		
BS	2,862	0	1		
NONEY	2,862	0	1		
EY	2,862	0	1		
AG	2,862	0	1		
CHAG	2,470	0	1		
AGP	2,470	0	1		
AGS	2,862	0	1		
CHAGS	2,399	0	1		
AGSP	2,397	0	1		
AQR	2,862	0	1		
CHAQR	2,473	0	1		
AQRP	2,471	0	1		
AQT	2,862	0	1		
CHAQT	2,400	0	1		
AQTP	2,397	0	1		
AQRGC	2,862	0	1		
CHAQRGC	2,398	0	1		
AQRGCP	2,396	0	1		
AQTGC	2,862	0	1		
CHAQTGC	2,401	0	1		
AQTGCP	2,398	0	1		
LNTA	2,862	3.47	14.16	8.15	1.55
DT	2,310	-428.42	862,325.00	2,233.26	25,868.44
QR	2,338	.042	2,321.84	87.33	154.15
GC	2,859	-1,086.09	1,199.39	2.02	40.98
GR	2,637	-45,364.54	12,017.28	35.62	1,031.66
RC	2,857	-6,919.51	4,244.44	.89	195.14

6.2.2 Illogical data

As also shown in Table 6.4, there are some illogical signs for some financial ratios. They include debt turnover ratios (DT), and gearing ratios (GR). The minimum values of DT and GR should be positive because in DT, both debtors and sales are positive. When dividing debtors by sales, the result should, therefore, be positive. However, a negative result should also be possible. In the case of debt turnover ratios during 1994-1995, the property development

industry had recognised too much construction income in previous years. This is because the unexpected cancellation of sale contracts by customers and the revenues had been recognised for a number of years. Instead of amending previous year revenues with the beginning retained earnings, the industry offset previous year income, as allowed by SET, with current year income. This resulted in negative sales and consequently reflected in a minus in the debt turnover ratios. In addition, gearing ratios should not be minus. However, the formula to calculate GR contains current liabilities and intangible assets subtracting from other accounting numbers. In some cases, if the current liabilities and the intangible assets were more than other accounts, minus signs for GR would be incurred.

From descriptive statistics, few negative DT and GR ratios appeared in the data set. However, there are many samples in the data set; therefore, no data transformation or elimination of such illogical data has been carried out. The statistical calculations in Chapter 7 include all the original data.

6.3 Diagnostic of the data set

The objective of this section is to diagnose whether there is any multicollinearity of variables within the data set. As mentioned in Section 5.4, Chapter 5, logistic regression is mainly adopted to investigate the incremental information content of independent variables in probability models. Therefore, the following analysis intends to investigate the problem of multicollinearity, which is the main problem of logistic regression.

Logistic regression, as logistic regression in the analysis, is a form of regression which is used when the dependent variable is a dichotomy and the independent are continuous, discrete and dummy variables. Researchers have to be of the problems of this statistical technique. Dielman (1992) states that multicollinearity is a typical problem of regression. Multicollinearity occurs when there are strong relationships among the independent variables. According to the regression equation:

$$Y = ax_1 + ax_2 + \ldots\ldots + ax_n + b.$$

A regression technique attempts to find the correlation between a dependent variable and independent (explanatory) variables. The results of regression analysis show how well independent variables correlate to the dependent variable. Nevertheless, regression is not desirable if strong relationships exist among the independent variables. This is because, when

independent variables are correlated with one another, the problem of multicollinearity is most likely to exist. High correlations may result in highly unstable regression coefficients. In addition, high correlations may cause the opposite effect to that which is supposed to occur. Finally, discharging one variable from the regression or adding a variable will cause large changes in the estimates of the coefficients of other variables (Dielman, 1992, p. 281).

There have been many ways to help detect multicollinearity. Dielman (1992) suggests that a pairwise correlation between independent variables and Variance Inflation Factors (VIFs) are among the detective techniques for observing the problem of multicollinearity. A pairwise correlation simply explains a correlation between a pair of variables. A serious problem of multicollinearity occurs when the correlation of a pair of variables is higher than 0.5.

VIFs are recommended to investigate problems of multicollinearity involving more than two variables. VIFs can identify the relationship between each independent variable in regression models. The overall correlations could be observed by this equation:

$$VIF_i = 1/(1 - R_i^2)$$

This means if there is no relationship between VIF_i and R^2, then $R_i^2 = 0.0$ and $VIF_i = 1/(1-0) = 1$. A large value for VIF_i suggests that X_i may be more highly related to other variables and this results in the problem of multicollinearity. It is recommended that if any individual VIF_i is larger than 10, the problem of multicollinearity may influence the regression coefficients. A serious problem with multicollinearity occurs when the VIFs of each variable are larger than 10 (Belsley et al. (1980) and Dielman (1992), p. 282-3).

In the present study, both a pairwise correlation and VIFs are adopted to investigate whether independent variables appear to have the problem of multicollinearity.

The analysis considers the Thai financial crisis in the middle of 1997 as a cut-off period. This is because the crisis may cause different determinants of the dependent variables. The data set in the present study covers the population during 1994-2000. The statistical analysis is, therefore, divided into three main parts: before the crisis (1994-1996), after the crisis (1997-2000) and the whole population (1994-2000). This is to investigate the effect of the crisis on delisting announcements in the period before, after the crisis and a whole population.

The logistic regression analysis is, therefore, taken over three main periods: 1994-1996, 1997-2000, and 1994-2000, Appendices C.1, C.2 and C.3 show the results of correlations of a pair of individual independent variables. It is found that a high correlation (more than 0.5) occurs within the same group of independent variables. For example, for company size (i.e. BS, NONEY, EY), the pairwise correlation is more than 0.5. But when independent variables are individually applied to the logistic regression models, there is no problem of multicollinearity. There is also correlation between types of audit reports. Once again, because each type of audit report is individually applied to the logistic regression model, the problem of multicollinearity is less likely to occur.

For the investigation using the VIF technique, Appendices C.4 – C.9 demonstrate the results for multicollinearity of each model, as shown in Sections 7.2 and 7.3. Appendix C.4 shows the VIF results of Tables 7.1 – 7.3 whilst Appendix D.5 shows the VIF results of Tables 7.5 – 7.7. Appendix C.6 shows the VIF results of Table 7.9 whilst Appendix C.7 shows the VIF results of Table 7.10. Appendix C.8 shows the VIF results of Table 7.12 whilst Appendix C.9 shows the VIF results of Table 7.13. In sum, the values for VIFs in Appendices C.4 - C.9 are less than 10.0. Therefore, it is unlikely that the problem of multicollinerity exists in the data set.

An analysis using the two statistical techniques leads to the conclusion that the problem of multicollinearity of independent variables in the data set is unlikely to exist. Therefore, the significant and regression coefficient of each independent variable should reflect the ability of all independent variables to predict delisting announcements and audit reports.

6.4 Descriptive statistics

In order to have some background to the audit reports of listed companies in SET, this section explains all useful information about audit reports, starting with what types of auditors' opinions were issued during 1994-2000. The discussion also offers reasons for when modified audit reports are issued. The topic focuses on going concern reporting: the discussion analyses the association between the number of delisted companies and going concern reporting. The discussion also analyses what kinds of audit reports had been issued prior to both mandatory and voluntary delisting. Finally, because audit firm size might influence delisting, the association between audit firm size and delisting is also analysed in the following section. In every section

of the following analysis, a conclusion is also given. This is useful to the analysis of the subsequent chapters.

6.4.1 Characteristics of audit reports issued in SET

As stated in Chapter 3, since 1998 the Thai auditing standards for audit reports on financial statements have been changed by adopting the International Auditing Standards issued by the International Federation of Accountants. The major change from the previous to the current auditing standards is the allowance of unqualified opinions with explanatory paragraphs, which are still considered as unqualified opinions.

Table 6.5 presents descriptive statistics on types of audit opinions in the population. It is found that there has been a rapid growth of modified opinions in SET during 1994-2000. At the same time, it is noticeable that the proportion of unqualified (clean) audit reports has decreased from 67% of total audit reports in 1994 to 36% of total audit reports in 2000. Also, the number of serious reports, such as disclaimers and mixed opinions has increased since the 1997 fiscal year. Nevertheless, adverse opinions have not been given to many Thai listed companies.

Interestingly, from the fiscal year after December 1998[6], the Institute of Certified Auditors and Accountants (ICAAT) introduced the new auditing standard for audit reports. The standards eliminated the "subject to" opinion and allowed auditors to issue unqualified opinions with explanatory notes. Consequently, there has been a significant increase in unqualified opinions with explanatory paragraphs. This could be observed by the decrease in the number of qualified opinions during the fiscal year 1997 – 1998 from 45% of the number of audit reports in 1997 to 36% of the number of audit reports in 2000. Moreover, the increase in the number of unqualified opinions with explanatory notes from 22% of the number of audit reports in 1997 to 38% of the number of audit reports in 2000 is also shown. This leads to the assumption that rather than issuing qualified opinions, Thai auditors have changed their opinion styles by issuing unqualified opinions with explanatory notes when doubting whether financial statements presented a true and fair view. This also suggests that, even though the "subject to" opinion, which is considered a compromise opinion for auditors, has been eliminated from auditing practices, unqualified opinions with explanatory notes have been used as a new compromise

---

[6] Even if the new auditing standards for audit reports on financial statements were effective for the financial statements after the fiscal year 1998, some audit firms, especially Big 5 firms had adopted them before the effective date.

opinion. This is to avoid expressing serious qualifications (i.e. qualified, disclaimer and adverse opinions).

Table 6.5 Types of audit reports in SET (1994-2000)

	1994	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*Total*
Unqualified	262	278	287	115	128	79	135	1,284
Unqualified with explanatory notes[a]	2	6	14	95	116	170	144	547
Qualified	124	131	142	193	115	97	62	864
Disclaimer	1	1	8	21	40	38	33	142
Adverse				1		1		2
Mixed[b]			2	2	10	6	3	23
Total	**389**	**416**	**454**	**426**	**410**	**390**	**377**	**2,862**

[a] Even if the auditing standards for the 3-paragraph style have been effective for the financial statements for year end after 1998, some auditing firms had adopted the standards before the effective date.

[b] Mixed opinions represent the reports when auditors express their opinion differently to the balance sheet and profit and loss statements. For example, the under-provision of doubtful accounts causes profit and loss account not to present a true and fair view, but the effects might not cause the balance sheet to present a material overstatement.

Following the discussion of the types of audit reports, it is useful to observe what kinds of qualifications have been given when modified audit reports were issued. Table 6.5 shows the types of qualifications during 1994–2000 in SET. It should be noted that the number of all qualifications includes both the qualifications in explanatory notes within unqualified opinions and modified opinions. Overall, the number of audit qualifications has increased from 149 qualifications in 1994 or 1.17 qualifications to 484 qualifications in 2000 or 2.0 qualifications on average for each company whose accounts are qualified.

In Table 6.6 the audit qualifications cover all types of qualifications mentioned in the auditing standards of audit reports on financial statements. The following discussion sequentially explains crucial audit qualifications, beginning with the most frequent qualifications.

The largest number of audit qualifications in SET during 1994-2000 is "non-audit of subsidiaries". The main reason underneath this qualification is that under group-of-companies management styles, financial statements of subsidiaries are required to be consolidated into listed-parent companies' financial statements. However, in order to meet time constraints, the management of listed companies has to either engage different auditors for subsidiaries from principal auditors of the parent companies or to allow the principal auditors to use financial

statements prepared by the management. These two options cause principal auditors to issue qualified audit reports due to "non-audit subsidiaries" (ICAAT, TAS 39, 1995). In recent years, the number of these qualifications has decreased. This is mainly because the managements of groups of companies have changed their management styles by reducing investments in subsidiaries to less than 20% of shareholders' equity to avoid equity accounting. In case of continuously significant losses from subsidiaries, the group companies' consolidation accounts might result in negative investment in the balance sheet. By reducing their interests under 20%, the parent companies are not required to take operation profit or loss from their subsidiaries. This would stop the parent's negative operations losses and/or negative investments in the parent's financial statements if their subsidiaries had experienced significant losses for many years.

Due to the economic crisis in the middle of 1997, there have been frequent qualifications. The qualifications explain that the Thai economic uncertainty may cause firm failures in the near future. The qualification was mentioned both in unqualified opinions with explanatory notes and in modified opinions, depending on how significant the economic crisis was to the companies. Generally, the companies whose accounting transactions involved foreign currencies were given this qualification, starting from 1997 financial statements. However, after the Thai economy became more stable, only some business types, such as finance and property development industries, had "economic crisis" statements mentioned in their audit reports.

"Going concern" qualifications are other crucial qualifications in SET. Such a high number of qualifications leads to the expectation that there might be a large number of delisted firms in the following years. However, the number of business failures (i.e. delisting) has not corresponded to the number of "going concern" qualifications, as observed in Table 6.5. The analysis of going concern reporting related to delisting announcements will be mainly discussed in Section 6.4.2.

The qualifications of "under allowance for bad debt" have been mainly and typically issued to banking and financial industries. However, the number of qualifications has decreased since the decline of the number of finance and security companies. For the latest years, the qualifications have also been given to companies who provide loans to their subsidiaries, but subsequently their subsidiaries have had no ability to pay back the loans.

The Thai financial crisis also caused auditors to give "impairment of assets" qualifications. Before the financial crisis, the price of property, especially land, was unreasonably high. Later

in 1997, after the bubble economy broke down, it happened that land price dropped significantly. The Thai accounting profession introduced accounting standards for impairment of assets, effective for the financial statements after the fiscal year 1996. This was to require companies to re-evaluate property value. Given such unexpected and controversial accounting standards, listed companies failed to apply the standard in a timely and proper way. As a result, "impairment of assets" qualifications have been issued to companies whose assets are represented unreasonable historical costs. The qualifications were still given to listed companies, especially in the property development industry, which had some difficulties in valuing their inventories (i.e. land and construction in progress)

"Changes in accounting policies" qualifications are among audit qualifications frequently referred to. The main reason for this qualification is the new accounting standards and income smoothing. From the year starting from 1998, ICAAT has introduced new accounting standards, adapted from the International accounting standards. The new standards introduce more accounting principle choices and also eliminate some non-updated accounting principles. The changes include, for example, the market price of investments, introduced to substitute the lower cost or market value of investment. This caused listed companies to change their accounting policies to the new accounting policies. Furthermore, since 1997, large listed companies have preferred to maintain their profits on the lines of previous years, which resulted in changed accounting policies to respond to their needs. Deferred income taxes and changes of depreciation methods are among the most common accounting policy changes. These two reasons caused auditors to issue "changes in accounting policies" qualifications. As a result, the number of such qualifications has increased during this period.

"Scope limitation" qualifications represent difficult situations, when auditors are unable to satisfy themselves by any means of alternative auditing procedures. In the cases of Thai listed companies, the lack of physical stock count observations was among frequent qualifications of scope limitations. The qualifications are given when auditors are engaged to audit financial statements after financial statement date and physical stock observations, which normally take place on the date or near the date of financial statements, but have already taken place. The results are that auditors cannot satisfy themselves by performing alternative audit procedures on the quantity of the ending inventories. In such cases, "scope limitation" qualifications are most likely to be issued. Also, many cases occurred of third party confirmations, especially from bank and finance companies, not being replied to. The main reason for non-reply was unsettled

resolutions between banks and finance related companies and clients regarding principles and interest payable. This also results in "scope limitation" qualifications.

The final interesting qualifications are "uncertainty" qualifications. The qualifications include, for example, companies' future obligations (such as the guarantee of subsidiaries' borrowings) and contingent liabilities (such as lawsuits against the company). In such cases, auditors have some doubts that some expenses and liabilities may incur if the results of the uncertainty are known. However, financial statements have no provision for the obligations and the contingent liabilities. This results in "uncertainty" qualifications. It should be noted that "going concern" qualifications are not included in "uncertainty" qualifications

Table 6.6 Types of audit qualifications in SET (1994-2000)

Qualifications	1994	1995	1996	1997	1998	1999	2000	Total
Non-audit of subsidiaries	76	89	110	125	88	85	66	639
Economic crisis		2	4	154	119	108	54	441
Going concern	8	10	19	71	76	94	99	377
Under allowance for bad debt	14	23	31	51	53	56	29	257
Impairment assets	7	9	12	42	39	47	39	195
Changes in accounting policies	2	5	6	5	14	90	67	189
Scope limitation	12	15	27	29	30	27	28	168
Uncertainty	1	5	13	19	12	10	42	102
GAAP violations	18	7	11	11	7	8	10	72
Year 2000				1	8	50		59
Related party transactions	6	8	9	9	5	4	11	52
Subsidiary going concern and Liquidation		2		5	3	4	15	29
Loan default				3	9	13	2	27
Others	5	6	5	14	9	18	22	79
Total	149	181	247	539	472	614	484	2,686
No. of companies whose accounts were issued with qualified opinions and unqualified opinions with explanatory paragraphs	127	138	167	311	282	311	242	1,573
Average per company	1.17	1.32	1.48	1.73	1.67	1.97	2.00	1.70

In this section, by referring to descriptive statistics of types of audit reports issued to Thai listed companies during 1994-2000, the discussion finds that, since 1997, audit reports have been issued that are more serious and with more serious audit qualifications. This is perhaps because after the Thai financial crisis in the middle of 1997, auditors were more aware of the risk of failure when issuing audit reports. Among the most frequent audit qualifications, the "going concern" qualifications are also referred to. Because the intention of this present study is to

investigate the association between delisting and audit reports, especially "going concern" qualifications, the following analysis will examine "going concerns" in detail and all other audit qualifications.

6.4.2 Association between going concern audit reports and delisting

As mentioned in Chapter 5, delisting from a stock market could imply that a company might have some difficulties, and investors, especially minority ones, should pay special attention to it. Generally, delisting from SET can be either mandatory or voluntary. Briefly, mandatory delisting occurs when companies have experienced some difficulties, which are not allowed by SET to stay as continuing listed companies. On the contrary, voluntary delisting occurs when companies prefer to exit out of the stock market for their own reasons, which may not for the reason of being unhealthy companies. In voluntary delisting, there may not be any pre-warning signal from any source of information prior to delisting. The following analysis, therefore, mainly focuses on mandatory delisting.

As mentioned in Chapter 4, going concern reporting may lead to some awareness of the entity's ability to continue in existence in the near future. However, the argument over the term "in the near future" or "a reasonable period of time" still remains. In general, the audit standards for going concern uncertainty imply that it should not exceed one year beyond the date of the financial statements, because generally, the accounting details should be prepared one year after the balance sheet date (APB, 1994 para. 15). Also, Thai listed companies are required by government bodies, including SET to have a full audit of their financial statements every 12 months. In the present study, therefore, the analysis uses the 12-month period as a basis to investigate the association of going concern audit reports and mandatory delisting.

Table 6.7 shows the number of delisted firms on SET during 1994-2000 and the number of going concern audit reports issued to the listed companies in the same period. The large number of mandatorily delisted companies began to occur in 1997, which is the Thai financial crisis year. Overall, the number of going concern reporting is not relatively equal to the number of delisted companies during 1994-2000. For example, going concern reporting were issued to 8 companies in 1994, but just one company was voluntarily delisted in 1995. Also, there were 6 mandatorily delisted companies in 2000, while 94 going concern opinions were issued in 1999. Going concern audit reports have been issued 377 times to various listed companies. The total number

of 377 going concern audit reports includes both the unqualified opinions with explanatory paragraphs and modified qualification audit reports. Within the total of 377 qualifications, 161 companies were given going concern reporting, whilst only 83 are delisted from SET. Within 83 delisted companies, there are 59 cases of mandatory delisting and 24 cases of voluntary delisting. This means going concern audit reports have repeatedly been given to listed companies, but some companies are still listed in SET.

In addition, as mentioned in Chapter 4, the change from the previous to the current standard audit reports caused changes in the presentation of going concern uncertainty. Previously, when auditors cast reasonable doubt about going concern, the previous auditing standards allowed going concern reporting to be issued under qualified opinions. However, after the new standard reports become effective, going concern reporting could not be issued within qualified opinions, and going concern reporting were issued under all types of audit reports. Table 6.6 shows the transitions. Before 1998, going concern reporting could be issued under modified audit reports. Since 1998, going concern reporting under unqualified opinions with explanatory paragraphs has been issued. In addition, since 1997, the financial statements of listed companies have been seriously qualified with going concern reporting. Once again, it is perhaps because of the Thai financial crisis in the middle of 1997.

Table 6.7 Number of delisted firms and going concern reporting (1994-2000)

	1994	1995	1996	1997	1998	1999	2000	Total
Delisted		1	1	28	14	26	13	83
- Mandatory				25	12	16	6	59
- Voluntary		1	1	3	2	10	7	24
Going concern audit reports	8	10	19	71	76	94	99	377
Types of opinions								
- Unqualified opinions with explanatory notes					21	36	45	102
- Modified opinion	8	10	19	71	55	58	54	275
- Qualified	8	9	14	54	18	25	21	149
- Disclaimers		1	3	15	36	33	33	121
- Adverse			1		1			2
- Mixed			1	2				3

Table 6.8 Panel A further revels that, within 161 companies of all types, going concern opinions were repeated. When comparing between voluntary and mandatory delisting, companies whose accounts were given repeated going concern opinions figured much more in mandatorily delisted companies than voluntarily delisting companies. In Table 6.8 Panel B, more serious types of audit opinions were issued to mandatorily delisted companies than to voluntarily delisting

companies. In Table 6.8 Panels A and B, it appears that auditors did not only issue going concern opinions to delisting companies. Instead, some continuing and rehabilitation companies were also given going concern pre-warning too.

Table 6.8

Panel A: Number of going concern reporting (GCQ) given to listed companies (1994-2000)

No. of repeated GCQs	Types of listed companies				
	Continuing	Rehabilitation	Voluntary delisting	Mandatory delisting	Total
1	37	2	3	4	46
2	30	11	2	6	49
3	21	8		10	39
4	9	13		1	23
5		2			2
6					
7		2			2
Total	97	38	5	21	161

Note: The number in the table is the quantity of each type of listed companies given going concern audit reports.

Panel B: Types of audit reports given to going concern uncertainty (1994-2000)

Types of opinions	Types of listed companies				
	Continuing	Rehabilitation	Voluntary delisting	Mandatory delisting	Total
Unqualified with explanatory notes	85	19	2		106
Qualified	81	42	5	17	145
Disclaimers	30	62	3	26	121
Adverse				2	2
Mixed[a]		1		2	3
Total	196	124	10	47	377

It is useful to summarise the overall association between going concern reporting and mandatorily delisted companies in SET during 1995-2000. It is useful to note that when considering whether auditors have signalled firms' failure by issuing going concern audit reports, the analysis should use prior year going concern audit reports to compare with the number of current year delisted firms. Table 6.9 summarises the association between going concern audit reports and mandatory delisting. It could be summarised that both Type I and Type II errors are somewhat high. This means that going concern opinions were also issued to companies that have a chance to continue as listed companies. On the other hand, listed companies were mandatorily delisted without going concern opinions prior to delisting.

Table 6.9 The relationship between going concern audit reports and mandatory delisting (1994-1999) (One year prior to failure)

	No going concern reporting issued in previous year	Going concern reporting issued in previous year
Not failed (continuing)	2,259	258
Failed (mandatory delisting)	39	20
Type I Error	66%	
Type II Error	10%	

According to this analysis, it seems that it is less likely that going concern reporting associates with delisting. The question now is what is the information that auditors use to issue going concern audit reports. Table 6.10 shows the reasons cited for issuing going concern opinions in SET during 1994-2000. There are two main categories of reasons given when issuing going concern reporting: financial ratios (including accounting numbers) and evidence from audit findings. Based on the large number of reasons for going concern reporting, auditors are likely to refer to the deterioration of financial ratios. The most frequent reason cited is that current liabilities exceed current assets. There are also frequent references to financial ratios such as operating loss, equity deficiency, deficit, total liabilities exceeding total assets. Such reasons are most likely, as they are obvious and easy to refer back to in financial statements. Moreover, it is more convincing than other evidence, when figures have dropped from the previous year features.

Auditors also refer to other reasons where going concern uncertainty is concerned. These reasons include, for example, "default", "inability to pay back the loans" and "operations suspended". However, these reasons are much fewer than references to the deterioration of financial ratios. It is possible that they are not convincing compared to financial ratios. For example, for the "inability to pay back loans" reason, shortly after going concern reporting are issued, some later events may improve the entity's going concern uncertainty, such as getting additional funding from new partners. Therefore, going concern reporting becomes unnecessary.

Table 6.10 Reasons cited for auditors going concern opinions (1994-2000)

Qualifications	1994	1995	1996	1997	1998	1999	2000	Total
1. Current liabilities exceeds current assets	1	5	8	38	47	39	48	186
2. Economic crisis				44	42	52	44	182
3. Operating losses	3	6	10	37	26	36	37	155
4. Default			3	26	42	47	25	143
5. Debt restructuring				5	13	29	37	84
6. Equity deficiency			2	12	15	26	19	74
7. Inability to pay back loans	1	1		13	14	15	23	67
8. Deficit	1	2	3	2	6	12	20	46
9. Negative working capital	1	2		9	7	12	9	40
10. Total liabilities exceeds total assets	1	3	3	4	10	8	10	39
11. Continuous losses				8	14	5	7	34
12. Operations suspended		1	1	3	7	9	11	32
13. Subsidiaries going concern			3	4	4	8	13	32
14. Lawsuits			1	2	6	7	9	25
15. Bankruptcy filing					1	2	15	18
16. Possible to be delisted			2	1	2	5	6	16
17. Significant liabilities					1	8	7	16
18. Others		1	1	18	17	14	13	64
Total	8	21	37	226	274	334	353	1,253
No. of going concern audit reports (issued under both unqualified opinions with explanatory paragraphs and also under modified opinions)	8	10	19	71	76	94	99	377
Average per company	1	2.1	1.95	3.18	3.61	3.55	3.57	3.32

In conclusion, the descriptive data analysis shows that going concern reporting do not appear to associate with delisting. Going concern reporting has also been given to continuing listed companies. The reasons given for going concern reporting are not a delisting announcement. Instead, auditors are more likely to refer to deteriorating accounting figures, especially those that show liquidity problems.

6.4.3 Association between audit qualifications and delisting

In most cases, going concern reporting was issued among other qualifications. Therefore, it is useful to analyse further what kinds of qualifications were issued for listed companies prior to delisting. Table 6.11 summarises the audit reports of delisted companies one year prior to delisting for both mandatory and voluntary delisting. It is found that delisting does not depend on the type of industry. The main industry to be mandatorily delisted is finance and security

companies. However, the audit reports of finance and security companies are unlikely to give rise to of any concern of business failure.

In Table 6.11, "going concern" qualifications were issued to 20 out of 59 mandatorily delisted companies and 6 out of 24 voluntary delisted companies. "Scope limitation" qualifications are the second most frequent reference for mandatorily delisted companies. Some other qualifications which give the same idea as "scope limitations" are also given, such as "economic crisis", "non-audit subsidiaries", and "impairment of assets". Such qualifications could be considered as defensive qualifications. This is because when uncertainty incurs, even if auditors have performed alternative procedures, they still doubt the outcomes of the uncertainty. It is quite often that such audit qualifications are issued. This also leads to an idea that audit qualifications might have incremental information content to the probability of delisting.

Table 6.11 Audit qualifications of delisted companies one year prior to delisting (1994-1999)

No.	Industry	Delisted firms		Qualifications								Total
		Mandatory	Voluntary	Going concern	Economic crisis	Scope limitation	Non-audit subsidiary	Impairment of assets	Under allowance for bad debt	Other qualifications	Unqualified	
1	Agribusiness	1	5	1	(3)	(1)	(1)	1(1)	1	(4)		13
2	Bank	2			2			1	1			4
3	Building and furnishing materials	3	2	3	1	1			1	2(1)		9
4	Chemicals and plastic		1	(1)		(1)	(1)	(1)				4
5	Commerce	1	1	1		1				(1)		3
6	Communication	1		1		1	1					3
7	Electronic products and computer	1		1	1					1		3
8	Electronic components	1	2	1(1)		1				(1)		4
9	Energy											
10	Entertainment and recreation											
11	Finance and securities	30	1		(1)		1		9	8	18	37
12	Foods and beverage	4	2	2	1	3	1(1)		1	2	(1)	12
13	Health care services											
14	Hotel and travel services	1		1								1
15	Household goods	2	1	2		2		1		2	(1)	8
16	Insurance		1		(1)							1
17	Jewellery and ornaments	2		2		1			1			4
18	Machinery and Equipment		2	(1)						(1)		2
19	Mining											
20	Packing	1			1		1					2

Table 6.11 (continued) Audit qualifications of delisted companies one year prior to delisting (1994-1999)

No.	Industry	Delisted firms		Qualifications								Total
		Mandatory	Voluntary	Going concern	Economic crisis	Scope limitation	Non-audit subsidiary	Impairment of assets	Under allowance for bad debt	Other qualifications	Unqualified	
21	Pharmaceutical products and cosmetics											
22	Printing and publishing	1					1			1		2
23	Professional services											
24	Property development	6	1	3	1(1)	2	4	3	1		1	16
25	Pulp and paper										(1)	1
26	Textile, clothing and footwear	1	4	1(3)		1(1)		(1)	1	1	(1)	10
27	Transportation											
28	Vehicles and parts		1								(1)	1
29	Warehouse and silo											
30	Others	1		1						1		2
	Total	59	24	20(6)	7(6)	13(3)	9(3)	6(3)	16	18(8)	19(5)	142

Note: Numbers of qualifications for mandatory delisted without parenthesis and voluntary delisted in parenthesis

Table 6.12 shows audit reports in 1994-1999 issued to both mandatorily and voluntarily delisted companies. It should be noted that, due to the concept of the pre-warning signal, going concern reporting should be issued prior to business failure. The present study covers the data during 1994-2000; therefore, the analysis does not consider 2000 audit reports. It is found in Table 6.10 Panel A that financial statements for voluntarily delisted companies had not been issued with serious qualifications. In addition, financial statements prior to delisting had been issued with unqualified opinions or unqualified opinions with explanatory notes.

On the other hand, Table 6.12 Panel B highlights that mandatorily delisted companies had been given more serious audit reports than voluntarily delisted firms had. Furthermore, their financial statements one year prior to delisting had been consistently and seriously qualified. Moreover, it is found that once the financial statements of the companies had been issued with certain qualifications such as going concern uncertainty, it is likely for the same qualifications to be repeated until delisting. It is also found that auditors failed to issue going concern reporting prior to delisting to any finance and security companies during 1994-2000. The qualifications such as "under allowance for bad debt" and "economic crisis" were issued in respect of financial statements in the industry. However, based on the belief that auditors should have mentioned some qualifications prior to failure, some mistakes might have been incurred. At least two conclusions could be logically drawn. Firstly, current going concern auditing standards are unlikely to be appropriate to the finance and security industry. Or it is possible that auditors have not done their jobs effectively in finance and security cases.

Table 6.12 Panel A: Audit reports prior to voluntary delisting (1994 - 1999)

No.	Name	Industry	Year of delisting	1999	1998	1997	1996	1995	1994
1	TUPCO	Pulp and paper	1995						1
2	AFL	Textile, clothing and footwear	1996					3 **1. Going concern**	3 **1. Going concern**
3	KT	Agribusiness	1998			3 1. GAAP violation	3 1. Scope limitation 2. GAAP violation	3 1. Scope limitation 2. GAAP violation 3. Subsidiary liquidation	3 2. GAAP violation
4	PATRA	Household goods	1997				1	3 1. Non-audit of subsidiaries 2. Impairment of assets 3. Scope limitation	3 1. Related party transactions 2. Non-audit subsidiaries 3. Scope limitation
5	TICO	Textile, clothing and footwear	1997				3 **1. Going concern**	3 **1. Going concern**	3 **1. Going concern**
6	ESSEX	Textile, clothing and footwear	1997				1	1	1
7	PTSL	Insurance	1998			2 1. Economic crisis	1	1	1
8	BAP	Agribusiness	1999		2 1. Economic crisis 2. Changes in accounting policies	1	1	1	1
9	BKP	Agribusiness	1999		2 1. Economic crisis 2. Changes in accounting policies	1	1	1	1
10	CPNE	Agribusiness	1999		2 1. Economic crisis 2. Changes in accounting policies	2 1. Economic crisis	1	1	1
11	TFC	Agribusiness	1999		3 1. Scope limitation 2. Non-audit of subsidiaries 3. Impairment of assets	3 1. Economic crisis 2. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries 2. Scope limitation	3 1. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries
12	PHATRA	Finance and securities	1999		2 1. Economic crisis	2 1. Economic crisis	1	1	1

Table 6.12 Panel A (continued): Audit reports prior to voluntary delisting (1994 - 1999)

No.	Name	Industry	Year of delisting	1999	1998	1997	1996	1995	1994
13	FFT	Foods and beverage	1999		3 1. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries	1	1	1
14	SC	Foods and beverage	1999		1	1	1	1	1
15	MEC	Machinery and equipment	1999		2 **1. Going concern**	2 1. Changes in accounting policies	1	1	1
16	ONONO	Textile, clothing and footwear	1999		4 **1. Going concern** 2. Impairment of assets 3. Scope limitation	4 **1. Going concern** 2. Impairment of assets 3. Scope limitation	3 1. Impairment of assets 2. Scope limitation	3 1. Non-audit of subsidiaries 2. Impairment of assets 3. Scope limitation	3 1. Impairment of assets 2. Scope limitation
23	STC	Vehicles and parts	1999		1	2 1. Economic crisis	1	1	1
17	CIT	Building and furnishing materials	2000	2 1. Subsidiary gong concern	1	1	1	1	1
18	EAC	Commerce	2000	3 1. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries 2. Year 2000	2 1. Non-audit of subsidiaries	1	1	2 1. Changes in accounting policies
19	GSS	Electronic components	2000	2 **1. Going concern**	2 1. Economic crisis	1	1	1	1
20	HIPRO	Electronic components	2000	2 1. Year 2000	1	1	1	1	
21	KG	Property development	2000	2 1. Economic crisis	2 1. Economic crisis	2 1. Non-audit of subsidiaries 2. Economic crisis	1	1	1
22	S-CHEM	Chemicals and plastic	2000		4 **1. Going concern** 2 Non-audit of subsidiaries 3. Scope limitation 4. Impairment of assets	3 1. Non-audit of subsidiaries 2. Impairment of assets	3 1. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries
24	UMW	Machinery and equipment	2000	2 1. Year 2000	2 1. Year 2000	1	1	1	1

Table 6.12 Panel B: Audit reports prior to mandatory delisting (1994 - 1999)

No.	Name	Industry	Year of delisting	1999	1998	1997	1996	1995	1994
1	CATHEY	Finance and securities	1997				1	1	1
2	CMIC	Finance and securities	1997				1	1	1
3	DEFT	Finance and securities	1997				3 1. Under allowance for bad debt 2. Uncertainty	3 1. Under allowance for bad debt 2. Uncertainty	3 1. Under allowance for bad debt 2. Uncertainty
4	EKP	Finance and securities	1997				1	1	1
5	FIN 1	Finance and securities	1997				1	1	1
6	GCN	Finance and securities	1997				1	1	1
7	GF	Finance and securities	1997				1	1	1
8	ITF	Finance and securities	1997				3 1. Related party transactions	3 1. Related party transactions 2. Under allowance for bad debt	3 1. Related party transactions 2. Under allowance for bad debt 3. GAAP violation
9	NPAT	Finance and securities	1997				1	1	1
10	PACFIN	Finance and securities	1997				1	1	1
11	PFS	Finance and securities	1997				1	1	1
12	PRIME	Finance and securities	1997				1	1	1
13	SCCF	Finance and securities	1997				3 1. Under allowance for bad debt	3 1. Under allowance for bad debt	3 1. Under allowance for bad debt
14	SCF	Finance and securities	1997				3 1. Under allowance for bad debt	3 1. Under allowance for bad debt	3 1. Under allowance for bad debt
15	SDF	Finance and securities	1997				1	1	1
16	SITCA	Finance and securities	1997				1	1	3 1. Non-audit subsidiaries
17	TFS	Finance and securities	1997				1	1	1
18	TMF	Finance and securities	1997				1	3 1. Under allowance for bed debt	1

Table 6.12 Panel B (continued): Audit reports prior to mandatory delisting (1994 - 1999)

No.	Name	Industry	Year of delisting	1999	1998	1997	1996	1995	1994
14	SCF	Finance and securities	1997				3 1. Under allowance for bad debt	3 1. Under allowance for bad debt	3 1. Under allowance for bad debt
15	SDF	Finance and securities	1997				1	1	1
16	SITCA	Finance and securities	1997				1	1	3 1. Non-audit subsidiaries
17	TFS	Finance and securities	1997				1	1	1
18	TMF	Finance and securities	1997				1	3 1. Under allowance for bed debt	1
19	TFT	Finance and securities	1997				1	1	1
20	WALL	Finance and securities	1997				1	1	1
21	UNITED	Finance and securities	1997				3 1. Under allowance for bed debt	1	1
22	KTF	Finance and securities	1997				1	1	1
23	MCC	Finance and securities	1997				2 1. Changes in accounting policy	1	1
24	TTF	Finance and securities	1997				1	1	1
25	FAS	Finance and securities	1997				3 1. Non-audit of subsidiary	1	1
26	BBC	Bank	1998			2 1. Economic crisis	3 1. GAAP violation	3 1. Under allowance for bad debt	3 1. Under allowance for bad debt
27	FBCB	Bank	1998			3 1. Economic crisis 2. Under allowance for bad debt 3. Impairment of assets	1	1	1
28	BPT	Building and Furnishing material	1998			3 **1. Going concern** 2. Economic crisis 3. Under allowance for bad debt	3 **1. Going concern** 2. Under allowance for bad debt	3 **1. Going concern** 2. Under allowance for bad debt	3 1. Under allowance for bad debt

Table 6.12 Panel B (continued): Audit reports prior to mandatory delisting (1994 - 1999)

No.	Name	Industry	Year of delisting	1999	1998	1997	1996	1995	1994
29	VK	Commerce	1998			3 **1. Going concern** 2. Scope limitation	3 **1. Going concern** 2. Scope limitation	3 **1. Going concern**	3 **1. Going concern**
30	TATL	Communication	1998			3 **1. Going concern** 2. Non-audit of subsidiaries 3. Scope limitation	3 **1. Going concern** 2. Economic crisis 3. Non-audit of subsidiaries 4. Scope limitation	3 1. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries 2. Impairment of assets
31	UCT	Foods and beverage	1998			4 **1. Going concern** **2.** Non-audit of subsidiaries 3. Scope limitation	5 **1. Going concern** 2. Scope limitation	4 **1. Going concern** 2. Non-audit of subsidiaries 6. Under allowance for bad debt	4 1. Non-audit of subsidiaries 2. Under allowance for bad debt
32	SURAT	Foods and beverage	1998				3 **1. Going concern** 2. Under allowance for bad debt	3 1. Under allowance for bad debt	3 1. Under allowance for bad debt
33	PIC	Hotel and travel services	1998			3 **1. Going concern**	3 **1. Going concern** 2. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries
34	EI	Household goods	1998			4 **1. Going concern** 2. Scope limitation 3. Impairment of assets 4. Possibility to be delisted	4 **1. Going concern** 2. Impairment of assets 3. Scope limitation	3 1. Impairment of assets 2. Scope limitation	3 1. Impairment of assets 2. Scope limitation
35	TGI	Packing	1998			3 1. Economic crisis 2. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries	1	1
36	MA	Property development	1998				6 **1. Going concern** 2. Impairment of assets	3 **1. Going concern** 2. Related party transactions 3. Impairment of assets	3 **1. Going concern** 2. Related party transactions 3. Impairment of assets
37	SOMPR	Property development	1998				4 1. Scope limitation	3 1. Non-audit of subsidiaries 2. GAAP violation 3. Uncertainty	3 1. Non-audit of subsidiaries 2. GAAP violation

Table 6.12 Panel B (continued): Audit reports prior to mandatory delisting (1994 - 1999)

No.	Name	Industry	Year of delisting	1999	1998	1997	1996	1995	1994
38	GRANIT	Building and Furnishing material	1999			4 **1. Going concern** 2. Related party transactions 3. Scope limitation 4. Uncertainty	3 **1. Going concern** 2. Related party transaction 3. Scope limitation	1	1
39	ATEC	Electronic components	1999			6 **1. Going concern** 2. Scope limitation	3 1. Non-audit of subsidiaries 2. Uncertainty	1	1
40	SS	Electronic products and computer	1999		4 **1. Going concern** 2. Economic crisis 3. Uncertainty	4 1. Going concern 1. Economic crisis 2. Related party transactions 3. Under allowance for bad debt 4. Uncertainty	3 **1. Going concern**	1	1
41	DS	Finance and securities	1999		3 1. Year 2000 2. Under allowance for bad debt	3 1. Under allowance for bad debt	1	1	3 1. Non-audit of subsidiaries
42	FCI	Finance and securities	1999		3 1. Under allowance for bad debt 2. Year 2000	3 1. Economic crisis 2. Under allowance for bad debt 3. Impairment of assets	1	3 1. Share-price manipulation	3 1. Share-price manipulation
43	IFCTF	Finance and securities	1999		6 1. Year 2000 2. Under allowance for bad debt	3 1. Economic crisis 2. Under allowance for bad debt 3. Impairment of assets	1	1	1
44	NAVA	Finance and securities	1999		6 1. Under allowance for bad debt 2. Year 2000	3 1. Under allowance for bad debt	1	1	1
45	UAF	Finance and securities	1999		6 1. Under allowance for bad debt 2. Year 2000	3 1. Under allowance for bad debt	1	1	1

Table 6.12 Panel B (continued): Audit reports prior to mandatory delisting (1994 - 1999)

No.	Name	Industry	Year of delisting	1999	1998	1997	1996	1995	1994
46	MORAKOT	Foods and beverage	1999		3 1. Economic crisis 2. Related party transactions 3. Scope limitation 4. Operations suspended	1	1	1	1
47	NSTAR	Foods and beverage	1999			4 1. Scope limitation	4 1. Scope limitation	3 1. Scope limitation	3 1. Scope limitation
48	STACO	Household goods	1999		5 **1. Going concern** 2. Scope limitation 3. Uncertainty	4 **1. Going concern** 2. Economic crisis 3. Impairment of assets 4. Scope limitation	4 **1. Going concern** 2 Economic crisis 3. Non-audit of subsidiaries 4. Under allowance for bad debt	3 1. Non-audit of subsidiaries	1
49	WAT	Printing and publishing	1999				3 1. Non-audit of subsidiaries 2. GAAP violation	3 1. Non-audit of subsidiaries 2. GAAP violation	3 1. Non-audit of subsidiaries 2. Scope limitation 3. GAAP violation
50	STAR	Property development	1999				4 **1. Going concern** 2. Non-audit of subsidiaries	3 1. Scope limitation	1
51	BCHANG	Property development	1999			4 1. Non-audit of subsidiaries 2. Under allowance for bad debt	4 1. Non-audit of subsidiaries 2. Under allowance for bad debt	3 1. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries
52	JULDIS	Property development	1999			4 1. Economic crisis 2. Non-audit of subsidiaries 3. Impairment of assets	3 1. Economic crisis 2. Non-audit of subsidiaries 3. Impairment of assets 4. Scope limitation	3 1. Non-audit of subsidiaries 2. Impairment of assets	3 1. Non-audit of subsidiaries 2. Impairment of assets
53	UNIVEST	Property development	1999			4 **1. Going concern** 2. Under allowance for bad debt 3. Impairment of assets 4. Non-audit of subsidiaries 5. Scope limitation	4 1. Non-audit of subsidiaries 2. Under allowance for bad debt 3. Impairment of assets 4. Scope limitation 5. Uncertainty	3 1. Under allowance for bad debt 2. Impairment of assets	3 1. Non-audit of subsidiaries

Table 6.12 Panel B (continued): Audit reports prior to mandatory delisting (1994 - 1999)

No.	Name	Industry	Year of delisting	1999	1998	1997	1996	1995	1994
54	BIJOUX	Jewellery and ornaments	2000		4 **1. Going concern** 2. Under allowance for bad debt 3. Scope limitation	4 **1. Going concern** 2. Under allowance for bad debt **3. Non-audit of subsidiaries**	3 1. Under allowance for bad debt **2. Non-audit of subsidiaries** 3. Scope limitation	**3** 1. Under allowance for bad debt	**3** 1. Exchange rate
55	CMG	Building and furnishing materials	2000	4 **1. Going concern**	4 **1. Going concern**	3 1. Under allowance for bad debt	3 1. Under allowance for bad debt	3 1. Under allowance for bad debt	**3** 1. Under allowance for bad debt
56	O-LAB	Jewellery and ornaments	2000	4 **1. Going concern**	4 **1. Going concern** 2. Under allowance for bad debt 3. Impairment of assets 4. Scope limitation 5. Uncertainty	3 **1. Going concern** 2. Exchange rate 3. Under allowance for bad debt 4. Impairment of assets 5. Loan default	3 1. Under allowance for bad debt 2. Scope limitation	3 1. Scope limitation	3 1. Under allowance for bad debt
57	ONE	Holding company	2000	4 **1. Going concern** 2. Changes in accounting policies	4 **1. Going concern** 2. Changes in accounting policies	4 **1. Going concern** 2. Economic crisis 3. Impairment of assets 4. Loan default	3 1. Non-audit of subsidiaries 2. Scope limitation	3 1. Non-audit of subsidiaries	3 1. Non-audit of subsidiaries
58	T-FISH	Agribusiness	2000	4 **1. Going concern** 2. Under allowance for bad debt 3. Impairment of assets	4 **1. Going concern** 2. Under allowance for bad debt 3. Impairment of assets	4 **1. Going concern** 2. Under allowance for bad debt 3. Uncertainty	3 1. Under allowance for bad debt 2. Non-audit of subsidiaries	3 1. Under allowance for bad debt 2. Non-audit of subsidiaries	3 1. Under allowance for bad debt
59	TMP	Textiles, clothing and footwear	2000	4 **1. Going concern** 2. Under allowance for bad debt 3. Scope limitation 4. Uncertainty	4 **1. Going concern**	4 **1. Going concern**	1	1	1

Note   1 = Unqualified (clean) opinions
           2 = Unqualified opinions with explanatory notes
           3 = Qualified opinions
           4 = Disclaimers of opinions
           5 = Adverse opinions
           6 = Mixed opinions

In conclusion, like the findings in Section 6.4.3, audit qualifications are less likely to be considered as a pre-warning signal prior to delisting. However, it is found that auditors have issued audit qualification to listed companies prior to delisting. This leads to the idea that it might be useful to apply all types of audit qualifications to the probability delisting models. This is to investigate whether audit qualifications could increase the probability of delisting.

6.4.4 Going concern audit reports and audit firm size

As described in Chapter 5, previous research has found that large audit firms provided higher quality audit and offered greater creditability to financial statements than smaller firms. In this section, therefore, it is interesting to investigate whether audit firm size influences delisting.

Previous research has divided audit firm size into two main groups: large firms and small firms. The large firms or Big 5 firms are Arthur Andersen (AA), Deloitte & Touche, Ernst & Young (EY), KPMG and PriceWatherhouseCooper (PwC). Smaller firms or Non-Big 5 firms include all other domestic and smaller international audit firms. Table 6.13 shows the market share of the Big 5 and Non-Big 5 firms on SET during 1994-2000. It is found that the market share of the Big 5 is relatively constant across the analysis period, around 65-70% of the total market. In other words, there has been no switching between Big 5 and Non Big 5 firms. However, within Big 5 firms, it is noticeable that, since 1997, all other Big 5 firms have lost their clients to Ernst & Young. The number of clients of Ernst & Young has increased from 54 (13.85%) in 1994 to 100 (26.53%) in 2000.

Table 6.13 Audit firms in SET (1994-2000)

	1994	1995	1996	1997	1998	1999	2000	Total
Arthur Andersen	60	63	77	75	72	63	43	453
Deloitte & Touche	51	54	58	48	37	29	22	299
Ernst & Young	54	59	59	65	71	74	100	482
KPMG	62	66	70	61	54	43	33	389
PwC (including Price Waterhouse and Coopers & Lybrand)	35	39	48	48	47	52	47	316
Other smaller firms	127	135	142	129	129	129	132	923
Total	389	416	454	426	410	390	377	2,862
% of big firms (Big 5)	67	68	69	70	69	67	65	68
% of small firms (Non-Big 5)	33	32	31	30	31	33	35	32

In addition, Table 6.14 shows the number of going concern audit reports issued by Big 5 and Non-Big 5 firms to Thai listed companies during 1994-2000. It is found that before 1997 the proportion of the number of going concern audit reports issued by Big 5 and Non-Big 5 firms is nearly the same. However, starting from 1997, the proportion of Big 5 firms has increased compared with Non-Big 5 firms. Since 1997, it has appeared that shareholders and/or regulators (i.e.Thai Security Exchange Commissions) sued the partners of Big 5 firms because of improper audit reports. Based on these events, it is logical to draw the conclusion that since lawsuits occurred, Big 5 firms have appeared to be wary of risk of failure when issuing audit opinions.

Table 6.14 Number of going concern audit reports issued by Big 5 and Non-Big 5 firms

	1994	1995	1996	1997	1998	1999	2000	Total
Big 5	4	5	10	55	57	65	68	264
Non-Big 5	4	5	9	16	19	29	31	113
Total	8	10	19	71	76	94	99	377
% of Big 5	**50**	**50**	**53**	**77**	**75**	**69**	**69**	**70**
% of Non-Big 5	**50**	**50**	**47**	**33**	**25**	**31**	**31**	**30**

Table 6.15 examines whether Big 5 or Non-Big 5 firms are more accurate when issuing going concern reporting. Apart from 1997, when auditors were unlikely to issue going concern audit reports to finance and security companies, both Big 5 and Non-Big 5 firms reasonably identified mandatorily delisted companies with relatively equal ability, especially in 2000. In other words, there is no difference between Big 5 and Non- Big 5 in ability to identify mandatorily delisted companies.

The descriptive statistics also find that the noticeable increase in the number of clients at Ernst & Young might be the results of so called "low balling". "Low balling" occurs when an audit firm offers low audit fees, which are below total current costs on initial audit engagement. This is to gain competitive advantage from the expectation that clients would switch to its audit services. The main concern of "low balling" is that it may lead to overproduction of dishonest audit reports (DeAngelo, 1981). However, DeAngelo (1981) found that a concern for dishonest audit reports was unlikely. This is because it may appear that audit fees earned during the initial engagement were higher than total current costs. However, once significant start-up costs in audit technology and transaction costs have been recovered, auditors would possess these advantages, and they could raise future audit fees above the avoidable costs of producing audits.

Table 6.15 The relationship between the number of mandatorily delisted companies and audit firm size

	1997	1998	1999	2000	Total
No. of mandatorily delisted companies	25	12	16	6	59
No. of going concern reporting issued by Big 5	-	5	5	3	13
No. of going concern qualifications issued by Non-Big 5	-	3	1	3	7
Not issued going concern reporting	25	4	10	-	39

It should be noted that up to the present, it is somewhat difficult to draw any conclusion as to whether Ernst and Young in Thailand adopted a "low balling" policy resulting in dishonest audit reporting. However, the analysis in Chapter 7 will take the Ernst & Young case into consideration by applying an Ernst & Young dummy variable into the probability delisting models.

Also, it is somewhat difficult to suggest that large audit firms are superior to smaller firms when issuing going concern opinions. Therefore, the next chapter will take the influence of audit firm size into the probability of delisting models.

6.5 Concluding remarks

This chapter has given a broad picture of the characteristics of audit reports for listed companies on the Securities Exchange of Thailand during 1994-2000. The Thai financial crisis in the middle of 1997 should be the cut-off point for changing types of audit reports. Before this crisis, Thai auditors had been more relaxed with their clients. There were fewer modified audit reports issued to the listed companies before 1997. After the crisis, Thai auditors appeared to be more cautious when issuing their opinions. More serious audit reports have been issued with more serious audit qualifications.

Without using any statistical technique, the analysis of descriptive statistics finds that going concern reporting is less likely to associate with both voluntary and mandatory delisting. Going concern reporting has also been given to continuing listed companies. The reasons given for going concern reporting are not a delisting announcement. Instead, auditors are more likely to refer to deteriorating accounting figures, especially those that show liquidity problems. In addition, all types of audit qualifications are less likely to be considered as useful additional information prior to delisting. Audit qualifications have been given to indicate accounting

problems, not delisting. Finally, it seems less likely that large audit firms provide higher audit quality work. In fact, audit firm size does not appear to have direct associations with going concern audit reports and delisting probability. However, the descriptive statistics may not be appropriate to draw any conclusion as to whether the above findings are statistically significant. Therefore, the following chapter, Chapter 7, will apply all information in the data set to the statistical analysis.

Chapter 7

Empirical results

7.1 Introduction

In Chapter 5, the variables and statistical techniques for the present study were described and the hypothesis development for the analysis was explained. In Chapter 6, the data set and the background for the data set were also described. This chapter combines the research methodology discussed in Chapter 5 and the descriptive statistics of Chapter 6 derive to statistical analysis for the study. The empirical analysis in this chapter is designed to answer the hypotheses posited in Chapter 5. The main hypothesis about whether audit reports have useful incremental information to determine the probability of delisting. Audit reports and the independent variables used in the study contain potential factors which have been used in previous studies and introduced in the present study. The statistical analysis focuses on various types of audit reports, mainly going concern reporting and all types of audit qualifications. In addition, the empirical analysis also investigates the incremental information content of audit reports. This is to compare whether information used in delisting announcements and audit reports is different. Independent variables used in delisting announcements are also adopted in investigating the information used in audit reports.

7.2 Important determinants of delisting announcements

The intention of this section is to investigate the incremental information content of going concern audit reports and all types of audit qualifications in delisting announcements. The dependent variables are divided into three variables: delisting as a whole, voluntary delisting, and mandatory delisting.

Initially, the estimations of delisting models were intended to use a year-by-year basis. After the regression analysis had been performed, it was noticed that no statistical significance was found. Furthermore, quite a few regression models provided no outcome. This is mainly because there were insufficient delisting cases in each year. Therefore, the analysis pooled data into three main sets. Within each type of delisting announcement, the analysis classifies the data set into three periods using the Thai financial crisis in the middle of 1997 as a cut-off period. This is

161

because the crisis may cause different determinants of delisting announcements. The data set in the present study covers the population during 1994-2000. The statistical analysis is, therefore, divided into three main parts: before the crisis (1994-1996), after the crisis (1997-2000) and the whole population (1994-2000). This is to investigate the effect of the crisis on delisting announcements in the period before, after the crisis and a whole population.

In the following analysis of delisting models, the independent variables outlined in Section 5.3.2 are all applied to delisting models. The independent variables include Gross Domestic Product (GDP), bad trading records announced by the Thai stock market (BTR), audit firm size (BS), company size (LNTA), debt-turnover ratios (DT), quick ratios (QR), gross cashflow ratios (GC), gearing ratios (GR) and returns on capital (RC). The Thai financial crisis (YEAR1997) is also included, if the analysis covers the whole population (i.e. 1994-2000).

Finally, as the objective of the present study is to investigate the incremental content of audit reports in delisting announcements, various types of audit reports as outlined in Section 5.3.2.3 are individually adopted into the probability of delisting model.

7.2.1 Going concern audit reports

Going concern reporting is the main focus of in this section. They include going concern reporting issued under both unqualified opinions with explanatory paragraphs and modified opinions (AG) and going concern opinions issued under modified opinions (AGS). The changes of non-going concern to going concern reporting (CHAG, CHAGS) are also independent variables in the analysis. Lagged effects of going concern reporting (AGP and AGSP) are also applied. Each type of going concern reporting is individually applied into logit models.

7.2.1.1 Delisting as a whole in relation to going concern audit reports

This section presents multivariate tests of the first hypothesis,

H1.1: After controlling for other known effects, listed companies with going concern reporting are more likely to be delisted than are listed companies without going concern reporting.

Delisting announcements are the dependent variable. The analysis includes 18 models (M 1 – M 18). M 1 – M 6 give the empirical results of multivariate tests during 1994 – 1996, M 7 – M 12 give the empirical results of multivariate tests during 1997 – 2000, and M 13 – M 18 give the empirical results of multivariate tests during 1994 – 2000.

Table 7.1 shows the empirical results for the above hypothesis. The logit results of delisting announcements during 1994 – 1996 (Models 1 – 6) show that quick ratios (QR), going concern reporting issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AG), and going concern opinions issued under modified opinions (AGS) are statistically significant in providing incremental information content to delisting announcements. Their coefficient signs are the same as expected.

With the Thai financial crisis in 1997, the results of multivariate tests changed. During 1997 – 2000 (Models 7–12), more independent variables could be used to identify delisting announcements. Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA), gross cashflow ratios (GC), going concern reporting issued under modified opinions (AGS), and lagged effects of AGS (AGSP) are statistically significant in providing useful incremental information content to delisting announcements. Their coefficient signs are the same as expected.

When applying all data (1994-2000) into multivariate analysis, Models 13-24 show that the Thai financial crisis (YEAR1997), Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA), gross cashflow ratios (GC), going concern reporting (AG, AGP, AGS and AGSP), but not CHAG and CHAGS are statistically significant in providing useful incremental information content to delisting announcements. Their coefficient signs are the same as expected.

The statistically significant coefficient of these independent variables during these three periods could be interpreted as follows. During 1994-1996, the negative and significance of QR shows that short-term liquidity is an important determinant of delisting announcements. Listed companies with going concern reporting (AG and AGS) are more likely to be delisted than listed companies without going concern reporting.

163

After the Thai financial crisis in the middle of 1997, the information used in delisting announcements was different from that before the crisis. There were more statistically significant variables used in delisting announcements during 1997-2000. The interpretation of statistical significance during 1997-2000 could be as follows. The negative and significant coefficient of GDP shows that delisting announcements occur more (less) frequently when the economy moves from boom (recession) to recession (boom). The positive and significant coefficient of BTR shows that listed companies experiencing bad trading announcement signs were more likely to be delisted companies than if the companies had had no or less experience of bad trading records. The negative and significant coefficient of LNTA means that companies whose total assets were relatively small were more likely to be delisted than companies whose assets were higher. The negative and significant coefficient of GC means that delisting companies were more likely to experience difficulty with low profit, causing liquidity problems. In addition, delisting announcements were more likely to occur when listed company accounts were issued with either going concern reporting issued under modified opinions (AGS) or lagged effects of going concern reporting issued under modified opinions (AGSP).

Observing the development of the results for all three periods of the analysis, it is found that the multivariate results of 1997-2000 are similar to those from 1994-2000. On the other hand, the results during 1994-1996 are unlike the other two periods. Only going concern reporting issued under modified opinions (AGS) have useful incremental content to delisting announcements for all three periods.

Before the financial crisis in the middle of 1997, there are only a few independent variables could provide incremental information content to delisting announcements. However, after the Thai bubble economy burst in the middle of 1997, other signals could be used as a predictive tool of delisting announcements. The empirical analysis finds that the decrease of Thai Gross Domestic Product (GDP) results in more delisted companies. Bad trading announcements signs become more statistically significant to delisting announcements. Quick ratios representing short-term liquidity were no longer important determinants to delisting announcements after the crisis. On the other hand, low profits increased cashflow problems and the likelihood of delisting. Furthermore, before the crisis, size of company measured by total assets was not an important determinant of delisting announcements. However, after the crisis, smaller companies were more likely to be delisted than larger companies whose total assets were relatively high.

In addition, it is found that the regression coefficient and p-value of AG and AGS during 1994-1996 were the same, (coefficient = 2.070 and p-value = .036) as shown in Model 1 and Model 4. This is because, as stated in Section 4.2, Chapter 4, before 1998, only modified opinions could be issued if the entity 's ability to continue in existence became an issue in financial statements. However, since 1998 audit reports for going concern reporting have been changed, allowing auditors to issue going concern reporting under unqualified opinions with explanatory paragraphs. Consequently, the qualifications could be issued under both unqualified and modified opinions. This is reflected in the same result for the regression coefficient and p-value of AG and AGS during 1994-1996 and the different results during 1997-2000. These results are also observed in Tables 7.2 and 7.3.

In the period 1997-2000, only going concern reporting issued under modified opinions (AGS) have useful incremental information content, as shown in Model 10. However, going concern reporting issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AG) are no longer important determinants of delisting announcements. Moreover, the lagged effects of audit reports with going concern reporting issued under modified opinion become statistically significant to delisting announcements as shown in Model 12.

In the overall data, 1994-2000, both going concern audit reports and their lagged effects are important determinants of delisting announcements. However, it is found that the change of non- to going concern reporting has no statistical significance to delisting announcements.

When considering the whole population (Models 13-18), it is found that both economic indicators, the Thai financial crisis (YAER1997) and Gross Domestic Product (GDP) are important determinants of delisting announcements. However, the significant level of the incremental information content of GDP is more than that of the YEAR1997. The significant level of bad trading record announcements (BTR) during the period 1997-2000 is strong enough to outweigh the non-significant level of BTR during 1994-1996, giving a significant level to the whole population. The significant level of gross cashflow ratios (GC) during the period 1997-2000 is strong enough to outweigh the non-significant level of GC during 1994-1996, giving a significant level to the whole population. However, the significant level of size of company (LNTA) during the period 1997-2000 is not strong enough.

In this section, the null hypothesis could not be rejected. It is found that, after controlling for other known effects, listed companies with going concern reporting are more likely to be delisted than are listed companies without going concern reporting.

Table 7. 1 Logit results of important determinants in delisting announcements - Going concern qualification models (coefficient in upper line, *p*-value in lower line)

H1.1: After controlling for other known effects, listed companies with going concern audit qualifications are more likely to be delisted than are listed companies without going concern audit qualifications.

Independent variables	1994-1996						1997-2000						1994-2000					
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-	**1.008** **.016**	**1.188** **.007**	**1.095** **.014**	**1.105** **.007**	**1.182** **.007**	**1.009** **.024**
GDP	-.769 .495	na	na	-.769 .495	-6.697 .971	na	**-1.225** **.002**	**-1.185** **.004**	**-1.264** **.002**	**-1.112** **.006**	**-1.222** **.003**	**-1.097** **.007**	**-1.227** **.001**	**-1.160** **.004**	**-1.266** **.002**	**-1.090** **.004**	**-1.184** **.003**	**-1.080** **.008**
BTR	-.394 .662	.242 .809	.351 .701	-.394 .662	.068 .949	.328 .719	**1.398** **.000**	**1.618** **.000**	**1.431** **.000**	**1.406** **.000**	**1.654** **.000**	**1.347** **.001**	**1.101** **.002**	**1.439** **.000**	**1.276** **.000**	**1.114** **.001**	**1.451** **.000**	**1.197** **.001**
BS	.031 .970	-.516 .568	-.474 .605	.031 .970	-.599 .519	-.480 .602	-.132 .724	-.093 .804	-.087 .818	-.158 .675	-.052 .891	-.092 .807	-.024 .542	-.219 .520	-.189 .578	-.229 .498	-.195 .567	-.193 .572
LNTA	-.228 .601	-.307 .503	-.347 .465	-.228 .601	-.211 .655	-.336 .479	**-.343** **.031**	**-.330** **.039**	**-.323** **.040**	**-.318** **.043**	**-.326** **.043**	-.301 .054	**-.291** **.041**	**-.310** **.035**	**-.290** **.046**	-.263 .064	**-.303** **.039**	-.266 .064
DT	-.001 .135	-.001 .337	-.001 .153	-.001 .135	-.001 .351	-.001 .160	.000 .649	.000 .686	.000 .675	.000 .677	.000 .699	.000 .715	.000 .685	.000 .705	.000 .706	.000 .726	.000 .719	.000 .750
QR	**-.075** **.023**	**-.067** **.049**	**-.083** **.020**	**-.075** **.023**	-.063 .058	**-.082** **.022**	.001 .514	.000 .845	.001 .607	.001 .539	.000 .886	.001 .533	.000 .972	-.001 .783	.000 .974	.000 .991	-.001 .751	.000 .937
GC	.006 .688	.006 .771	.022 .352	.006 .688	.004 .873	.022 .358	**-.009** **.004**	**-.011** **.000**	**-.010** **.002**	**-.009** **.005**	**-.013** **.000**	**-.009** **.007**	**-.009** **.003**	**-.012** **.000**	**-.010** **.001**	**-.008** **.003**	**-.012** **.000**	**-.009** **.004**
GR	.000 .729	.002 .608	.003 .385	.000 .729	.003 .693	.003 .383	.000 .843	.000 .713	.000 .762	.000 .789	.000 .593	.000 .658	.000 .908	.000 .790	.000 .783	.000 .839	.000 .731	.000 .679
RC	-.001 .630	-.001 .867	-.001 .412	-.001 .630	.000 .960	-.001 .418	.000 .951	.000 .700	.000 .889	.000 .793	.000 .516	.000 .948	.000 .901	.000 .716	.000 .848	.000 .701	.000 .617	.000 .912
AG	**2.070** **.036**						.717 .087						**1.013** **.010**					
CHAG		1.125 .310						-.359 .507						.010 .983				
AGP			1.760 .164						.728 .072						**.819** **.034**			
AGS				**2.070** **.036**						**-.902** **.033**						**1.185** **.002**		
CHAGS					1.657 .164						-1.355 .099						-.496 .409	
AGSP						1.738 .169						**1.189** **.004**						**1.244** **.001**
CONSTANT	.167 .965	.643 .873	1.596 .698	.167 .965	-.165 .968	1.500 .715	-1.390 .243	-1.304 .277	-1.492 .209	-1.550 .192	-1.327 .271	-1.728 .144	**-2.677** **.015**	**-2.483** **.030**	**-2.684** **.018**	**-2.930** **.008**	**-2.493** **.029**	**-2.833** **.011**
Negelkerke R Square	.326	.307	.316	.326	.313	.309	.197	.189	.197	.201	.199	.212	.204	.185	.196	.209	.184	.206

Bold shows significance at the .05 level.

na means this variable is constant for all selected cases. Since a constant is requested in the model, it will be removed from the analysis.

7.2.1.2 Voluntary delisting in relation to going concern audit reports

This section presents multivariate tests of the hypothesis,

H1.2: After controlling for other known effects, listed companies with going concern reporting are more likely to be voluntarily delisted than are listed companies without going concern reporting

Voluntary delisting announcements are the dependent variables. The analysis includes 18 models (M 1 – M 18). M 1 – M 6 give the empirical results of multivariate tests during 1994 – 1996, M 7 – M 12 give the empirical results of multivariate tests during 1997 – 2000, and M 13 – M 18 give the empirical results of multivariate tests during 1994 – 2000.

Table 7.2 shows the empirical results of the above hypothesis. It is unlikely that any factor adopted in this present study is useful for predicting voluntary delisting for all three periods. The only possible indicator for voluntary delisting is gross cashflow ratios (GC). However, the ratios are not statistically significant in all logistic regression models. Only Models 1 and 4 show statistical significance of GC in voluntary delisting. It does not appear that going concern audit reports are indicators to predict voluntary delisting.

The above empirical results should lead to the conclusion that voluntarily delisted companies are less likely to have any difficulty prior to delisting. Rather, voluntarily delisted companies have their own reasons to go out of stock markets. Those reasons do not reflect negative information. Therefore, after controlling for other known effects, the null hypothesis that listed companies with going concern reporting are more likely to be voluntarily delisted than are listed companies without going concern reporting, could be rejected. In other words, these findings lead to the idea that voluntary delisting is only "noise" information. This means that there is no information content of any factor used in the study in voluntary delisting announcements.

Table 7. 2 Logit results of important determinants in voluntary delisting - Going concern qualification models (coefficient in upper line, *p*-value in lower line)

H1.2: After controlling for other known effects, listed companies with going concern audit qualifications are more likely to be voluntarily delisted than are listed company without going concern audit qualifications.

Independent variables	1994-1996						1997-2000						1994-2000					
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-	1.090	1.227	1.276	**1.182**	1.278	1.177
													.061	.064	.053	**.038**	.052	.075
GDP	-.324	na		-.324	169.34		-.716	-.713	-.609	-.740	-.757	-.735	-.728	-.737	-.749	-.660	-.777	-.719
	.811			.811	.996		.194	.194	.269	.175	.165	.179	.146	.177	.175	.185	.154	.189
BTR	-27.423	-192.05		-27.423	-291.03		.597	.548	.763	.723	.668	.674	.087	.312	.345	.203	.419	.245
	.602	.994		.602	.994		.291	.313	.167	.188	.216	.221	.871	.555	.523	.702	.422	.653
BS	-.088	-23.128		-.088	-19.031		.169	.131	.167	.184	.193	.162	-.180	-.278	-.247	-.155	-.224	-.252
	.953	.984		.953	.993		.764	.816	.797	.744	.733	.774	.707	.571	.614	.747	.646	.605
LNTA	-.763	-67.238		-.763	-64.109		-.149	-.166	-.152	-.156	-.136	-.158	-.186	-.211	-.196	-.176	-.183	-.183
	.447	.966		.447	.964		.473	.432	.471	.457	.511	.452	.341	.299	.330	.368	.362	.359
DT	.000	-.007		.000	-.003		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.966	.995		.966	.999		.936	.946	.934	.934	.927	.939	.942	.959	.948	.993	.939	.945
QR	-.067	-1.132		-.067	-.800		.001	.002	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001
	.154	.991		.154	.995		.270	.208	.343	.325	.318	.295	.445	.370	.426	.551	.488	.385
GC	**-.160**	-2.532		**-.160**	-2.544		.000	.001	-.001	-.002	-.001	-.001	-.001	-.002	-.002	-.002	-.004	-.001
	.031	.968		**.031**	.970		.981	.897	.841	.798	.880	.919	.882	.704	.649	.713	.472	.796
GR	.000	.397		.000	.465		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.882	.986		.882	.983		.938	.922	.924	.934	.994	.917	.885	.890	.908	.899	.963	.927
RC	.012	1.068		.012	1.001		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.321	.966		.321	.976		.977	.919	.985	.893	.902	.974	.925	.942	.998	.953	.863	.978
AG	-.470						.005						.675					
	.770						.994						.254					
CHAG		-53.801						.650						.628				
		.990						.339						.352				
AGP									-1.258						.087			
									.248						.905			
AGS				-.470						-1.071							.292	
				.770						.345							.692	
CHAGS				-54.944							-6.145							-6.049
				.992							.733							.722
AGSP												-.716						.612
												.514						.398
CONSTANT	2.501	4.3.27		2.501	3.496		**-3.336**	**-3.274**	**-3.257**	**-3.220**	**-3.365**	**-3.213**	**-3.908**	**-3.778**	**-3.886**	**-3.991**	**-3.911**	**-3.926**
	.748	.975		.748	.980		**.036**	**.042**	**.044**	**.045**	**.034**	**.046**	**.011**	**.018**	**.015**	**.009**	**.014**	**.013**
Negelkerke R Square	.501	1.000		.510	1.000		.025	.030	.036	.032	.041	.028	.044	.042	.038	.039	.049	.039

Bold shows significance at the .05 level.

Note that there are no results in Models 3 and 6. na means this variable is constant for all selected cases. Since a constant is requested in the model, it will be removed from the analysis.

7.2.1.3 Mandatory delisting in relation to going concern audit reports

This section presents multivariate tests of the hypothesis,

H1.3: After controlling for other known effects, listed companies with going concern reporting are more likely to be mandatorily delisted than are listed companies without going concern reporting.

Mandatory delisting announcements are the dependent variables. The analysis includes 18 models (M 1 – M 18). M 1 – M 6 give the empirical results of multivariate tests during 1994 – 1996, M 7 – M 12 give the empirical results of multivariate tests during 1997 – 2000, and M 13 – M 18 give the empirical results of multivariate tests during 1994 – 2000.

Table 7.3 shows the empirical results for the above hypothesis. It is unlikely that any factor has useful incremental information content to mandatory delisting for the period 1994-1996. This is perhaps because there are only a few mandatorily delisted companies (see Table 6.2). In addition, the low number of mandatorily delisting companies may also cause no results in Models 3 and 6.

However, when applying the same independent variables to one period, the period 1997-2000, it is found that the statistical significance of independent variables is the same as had been found in delisting announcements as a whole (Section 7.2.1.1). The significant independent variables include Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA), gross cashflow ratios (GC), lagged effects of going concern reporting issued under both unqualified opinions with explanatory paragraphs and modified opinions (AGP), going concern reporting issued under modified opinions (AGS) and lagged effects of going concern reporting issued under modified opinions (AGSP). Their coefficient signs are the same as expected. However, in addition to the above statistical significance of the above independent variables, quick ratios (QR) are likely to indicate mandatory delisting as shown in Models 8 and 11. The statistical significance of QR leads to the idea that, in mandatory delisting, short-term liquidity is likely to be an important determinants.

When applying all data (1994-2000) into multivariate analysis, Models 13-24 show that Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA),

quick ratios (QR), gross cashflow ratios (GC), going concern reporting issued under modified opinions (AGS) and lagged effects of going concern reporting issued under modified opinions (AGSP) are statistically significant in providing useful incremental information content to delisting announcements. Their coefficient signs are the same as expected.

When analysing the development of the three periods, it is found that because there were only a few mandatorily delisting companies during the period 1994-1996, no potential factors could identify mandatorily delisting companies. However, with more cases of mandatory delisting, it is found that GDP, BTR, LNTA, GC, AGP, AGS, AGSP, and possibly QR are useful incremental information content to mandatory delisting. These independent variables have statistical significance also for the whole population, the period 1994-2000, except for going concern reporting. As a matter of fact, AGP is not statistically significant for the whole sample as shown in Model 15. This leads to the idea that the influence of AGP may not be strong enough to be considered as an important determinant of mandatory delisting.

Table 7. 3 Logit results of important determinants in mandatory delisting - Going concern qualification models (coefficient in upper line, *p*-value in lower line)

H1.3: After controlling for other known effects, listed companies with going concern audit qualifications are more likely to be mandatorily delisted than are listed companies without going concern audit qualifications.

Independent variables	1994-1996						1997-2000						1994-2000					
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-	.765	.791	.660	.850	.767	.635
													.213	.199	.290	.162	.212	.310
GDP	-49.26	na		-49.260	-5.429		**-1.634**	**-1.684**	**-1.701**	**-1.551**	**-1.630**	**1.435**	**-1.639**	**-1.547**	**-1.571**	**-1.550**	**-1.527**	**-1.368**
	.526			.526	.984		**.007**	**.007**	**.005**	**.012**	**.008**	**.020**	**.004**	**.009**	**.008**	**.007**	**.010**	**.021**
BTR	3.520	4.218		3.520	3.494		**2.192**	**2.512**	**2.136**	**2.091**	**2.495**	**2.091**	**2.030**	**2.295**	**2.079**	**1.946**	**2.264**	**2.028**
	.126	.160		.126	.206		**.001**	**.000**	**.002**	**.002**	**.000**	**.002**	**.001**	**.000**	**.000**	**.001**	**.000**	**.001**
BS	1.700	2.033		1.700	1.760		-.192	-.049	-.101	-.320	-.029	-.119	-.087	-.006	-.002	-.174	-.019	-.011
	.399	.345		.399	.422		.711	.926	.847	.551	.956	.822	.853	.990	.996	.716	.967	.982
LNTA	-.226	-.115		-.226	.110		**-.629**	**-.659**	**-.578**	**-.558**	**-.680**	**-.555**	**.467**	**-.510**	**-.455**	**-.415**	**-.514**	**-.435**
	.740	.867		.740	.888		**.010**	**.008**	**.018**	**.021**	**.007**	**.022**	**.028**	**.017**	**.033**	**.049**	**.016**	**.040**
DT	**-.008**	-.007		**-.008**	-.007		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.039	.066		**.039**	.070		.411	.476	.438	.442	.465	.510	.478	.533	.519	.503	.520	.578
QR	-.091	-.068		-.091	-.064		-.031	**-.040**	-.028	-.026	**-.040**	-.026	**-.033**	**-.041**	**-.034**	-.029	**-.041**	**-.031**
	.147	.284		.147	.300		.084	**.020**	.094	.122	**.020**	.121	**.035**	**.007**	**.026**	.054	**.008**	**.037**
GC	.052	.030		.052	.021		**-.009**	**-.011**	**-.009**	**-.008**	**-.010**	**-.008**	**-.008**	**-.009**	**-.008**	**-.008**	**-.009**	**-.008**
	.332	.573		.332	.678		**.024**	**.013**	**.023**	**.025**	**.013**	**.042**	**.019**	**.011**	**.020**	**.019**	**.012**	**.034**
GR	.004	.004		.004	.004		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.432	.458		.432	.544		.670	.426	.612	.600	.442	.443	.696	.556	.632	.632	.582	.527
RC	-.002	-.003		-.002	-.002		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
		.387		.327	.547		.840	.360	.766	.805	.357	.800	.891	.507	.736	.805	.538	.773
AG	2.668						.731						.749					
	.211						.256						.191					
CHAG		3.435						-1.358						-.540				
		.118						.099						.373				
AGP									**1.180**						.805			
									.031						.102			
AGS				2.668						**1.350**						**1.259**		
				.211						**.022**						**.017**		
CHAGS					3.884						-1.192						-.336	
					.076						.157						.587	
AGSP												**1.568**						**1.139**
												.004						**.020**
CONSTANT	1.891	-4.692		-1.891	-5.826		.361	1.023	-.177	-.314	1.132	-.497	-1.509	-.802	-1.470	-2.091	-.765	-1.713
	.788	.542		.788	.454		.857	.597	.929	.874	.563	.801	.394	.644	.408	.238	.660	.332
Negelkerke R Square	.571	.578		.571	.589		.393	.403	.409	.412	.398	.426	.379	.363	.370	.394	.358	.377

Bold shows significance at the .05 level.

Note that there are no results in Models 3 and 6. na means this variable is constant for all selected cases. Since a constant is requested in the model, it will be removed from the analysis.

In this section, the null hypothesis could not be rejected. It is found that, after controlling for other known effects, listed companies with going concern reporting are more likely to be delisted than are listed companies without going concern reporting.

Table 7.4 summarises the statistical significance of the independent variables of the three delisting announcements in going concern reporting models.

Table 7.4 Summary of the statistical significance of independent variables for delisting announcements – Going concern reporting models

Dependent variables	Years		
	1994-1996	1997-2000	1994-2000
Delisting as a whole	Significant variables • QR • AG, AGS	Significant variables • GDP • BTR • LNTA • GC • AGS, AGSP	Significant variables • YEAR1997 • GDP • BTR • LNTA • GC • AG, AGP, AGS, AGSP
Voluntary delisting	Significant variables • Nil	Significant variables • Nil	Significant variables • Nil
Mandatory delisting	Significant variables • Nil	Significant variables • GDP • BTR • LNTA • GC • AGP, AGS, AGSP	Significant variables • GDP • BTR • LNTA • QR, GC • AGS, AGSP

The overall conclusion of the hypotheses is that listed companies with going concern reporting are more likely to be delisted than are listed companies without going concern reporting. It is less likely that the factors adopted in the present study could be used as a pre-warning signal for voluntary delisting. On the other hand, Gross Domestic Product (GDP), bad trading record announced by the Thai stock markets (BTR), company size (LNTA), gross ratios (GR), both going concern issued under modified opinions (AGS) and lagged effects of going concern issued under modified opinions (AGSP) issued under modified opinions are more likely to be important determinant of delisting as a whole and of mandatory delisting. The Thai financial crisis (YEAR1997) may be considered as an important determinant of mandatory delisting. However, the variable may not be considered as a good indicator of delisting as a whole. This leads to the idea that the financial crisis may cause listed companies to have some difficulties and eventually being mandatory delisting. In addition, low profits causing cashflow problems (GC) may affect to delisted companies in general. However, listed companies which have experienced both short-term liquidity (QR) and low profits (GC) are likely to encounter mandatory delisting. Finally, the level of going concern reporting may cause different levels of delisting

announcements. Only going concern reporting under modified opinions were likely to be given prior to mandatory delisting.

7.2.2 All types of audit qualifications

All types of audit qualifications are adapted in the analysis. This is because, apart from going concern reporting, other qualifications may also have predictive value. In addition, the tendency of auditors to issue going concern audit reports together with other audit qualifications is very likely. Therefore, in this section all types of audit qualifications are the focus of this section. All types of audit reports include:

    1) all types of audit qualifications issued under modified opinions (AQR),

    2) change from clean or less serious to more serious modified audit opinions (CHAQR),

    3) lagged effects of AQR (AQRP),

    4) all types of audit qualifications issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AQT),

    5) change from clean or less serious to more serious unqualified opinions with explanatory paragraphs and also under modified audit opinions (CHAQT),

    6) lagged effects of AQT (AQTP),

    7) all types of audit qualifications without going concern reporting issued under modified opinions (AQRGC),

    8) change from clean or less serious to more serious modified audit opinions qualifications without going concern reporting (CHAQRGC),

    9) lagged effects of AQR (AQRGCP),

    10) all types of audit qualifications without going concern reporting issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AQTGC),

    11) change from clean or less serious to more serious unqualified opinions with explanatory paragraphs and also under modified audit opinions qualifications without going concern reporting (CHAQTGC),

    12) lagged effects of AQTGC (AQTGCP).

7.2.2.1 Delisting as a whole in relation to all types of audit qualifications

This section presents multivariate tests of the hypothesis,

H2.1: After controlling for other known effects, listed companies with qualified opinions are more likely to be delisted than are listed companies without audit qualifications.

Delisting announcements are the dependent variables. The analysis includes 18 models (M 1 – M 18). M 1 – M 6 give the empirical results of multivariate tests during 1994 – 1996, M 7 – M 12 give the empirical results of multivariate tests during 1997 – 2000, and M 13 – M 18 give the empirical results of multivariate tests during 1994 – 2000.

Table 7.5 shows the empirical results for the above hypothesis. The logit results of delisting announcements during 1994 – 1996 (Models 1 – 6) show that quick ratios (QR), are statistically significant in providing incremental information content to delisting announcements. There is no other factor importantly significant to delisting announcements including any of all the type of audit qualifications.

After the Thai financial crisis in 1997, the results of multivariate tests in the determinant of mandatory delisting changed from the period 1994-1996. During 1997 – 2000 (Models 7–12), more independent variables could be used to identify delisting announcements. Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA), gross cashflow ratios (GC), and all types of audit reports issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AQT) are statistically significant in providing useful incremental information content to delisting announcements. In addition, their coefficient signs are the same as expected.

When applying all data (1994-2000) into multivariate analysis, Models 13-24 show that the Thai financial crisis (YEAR1997), Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA), gross cashflow ratios (GC), all types of audit qualifications issued under modified opinions (AQR), lagged effects of AQR (AQRP), all types of audit qualifications issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AQT), and lagged effects of AQT (AQTP) are statistically

significant in providing useful incremental information content to delisting announcements. In addition, their coefficient signs are the same as expected.

The statistically significant coefficient of these independent variables during these three periods could be interpreted as follows. During 1994-1996 quick ratios were an important determinant of delisting announcements. However, during 1997-2000, there were quite a few factors which could be considered as a predictive tool. The negative and significant coefficient of GDP shows that delisting announcements occur more (less) frequently when the economy moves from boom (recession) to recession (boom). The positive and significant coefficient of BTR shows that listed companies experiencing bad trading announcement signs were more likely to be delisted companies than if the companies had had no or less experience of bad trading records. The negative and significant coefficient of LNTA means that companies whose total assets were relatively small were more likely to be delisted than companies whose assets were higher. The negative and significant coefficient of GC means that delisted companies were more likely to experience the difficulty of low profit. This leads to liquidity problems. In addition, delisting announcements were more likely to occur when listed company accounts were issued with all types of audit qualification issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AQT).

To observe the development of the results for all three periods of data, it is found that the multivariate results in 1997-2000 are similar to the ones during 1994-2000. On the other hand, the results during 1994-1996 are less likely to be the same as the other two periods. Only quick ratios (QR) have useful incremental content to delisting announcements in all three periods.

Before the financial crisis in the middle of 1997, only quick ratios provides incremental information content to delisting announcements. However, after the Thai bubble economy burst in the middle of 1997, other factors could be used to predict delisting announcements. The decrease in Thai Gross Domestic Product (GDP) results in more delisted companies. Bad trading announcement signs become more statistically significant to delisting announcements. The quick ratios representing short-term liquidity were no longer important determinants to delisting announcements after the crisis. On the other hand, low profits increased cashflow problems and the likelihood of delisting. Furthermore, before the crisis, size of company measured by total assets was not an important determinant of delisting announcements. However, after the crisis, smaller companies were more likely to be delisted than larger companies whose total assets were

relatively high. Finally, all types of audit qualifications issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AQT) are likely to be potential factors to predict delisting announcements.

In the whole period of 1994-2000, all types of audit reports (AQR, AQRP, AQT and AQTP) become more important determinants of delisting announcements (Models 25, 27, 28 and 30). However, the significant level of all types of audit qualifications is different. All types of audit qualifications issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AQT) are more likely to be superior to all types of audit qualifications issued under modified opinions (AQP) (*p-value* of .005 and .009 for AQTP and AQT, respectively and *p-value* of .013 and .033 for AQRP and AQR, respectively). In other words, listed companies whose accounts were given with all types of audit qualifications issued under both unqualified opinions with explanatory paragraphs and also under modified opinions are more likely to be delisted than listed companies whose accounts were given with all types of audit qualifications issued under modified opinions. However, the analysis does not appear to indicate that the change from clean or less serious audit reports to more serious audit reports is useful information for delisting announcements.

Also, when considering the whole population (Models 25-36), it is found that both economic indicators, the Thai financial crisis (YAER1997) and Gross Domestic Product (GDP) are important determinants of delisting announcements. However, the significant level of the incremental information content of GDP is more than that of YEAR1997. The significant level of bad trading record announcements (BTR) during the period 1997-2000 is strong enough to outweigh the non-significant level of BTR during 1994-1996 to a significant level for the whole population. Also, the significant level of gross cashflow ratios (GC) during the period 1997-2000 is strong enough to outweigh the non-significant level of GC during 1994-1996 to a significant level for the whole population. In addition, the significant level of size of company (LNTA) during the period 1997-2000 is strong enough to outweigh the non-significant level of LNTA during 1994-1996 to a significant level for the whole population, 1994-2000.

In this section, the null hypothesis could not be rejected. It is found that after controlling for other known effects, listed companies with all types of audit qualifications are more likely to be delisted than are listed companies without all types of audit qualifications.

177

Table 7. 5 Logit results of important determinants in delisting announcements - All types of audit qualification models (coefficient in upper line, *p*-value in lower line)

H2.1: After controlling for other known effects, listed companies with qualified opinions are more likely to be delisted than are listed companies without qualified opinions.

Independent variables	1994-1996											
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-
GDP	-.879	-7.685	na	-.873	-7.600	-6.457	-.852	-6.854	Na	-.854	na	-6.175
	.435	.968		.439	.978	.997	.446	.980		.444		.965
BTR	-.115	.536	.319	-.099	.482	.310	.068	.404	.325	.065	.407	.344
	.896	.564	.746	.910	.603	.753	.937	.664	.742	.940	.661	.728
BS	-.141	-.719	-.858	-.142	-.737	-.839	-.156	-.654	-.786	-.154	-.629	-.761
	.861	.430	.394	.860	.416	.407	.846	.473	.408	.848	.487	.423
LNTA	-.349	-.299	-.300	-.355	-.304	-.310	-.313	-.293	-.304	-.306	-.309	-.302
	.411	.509	.545	.402	.493	.530	.443	.527	.513	.454	.504	.515
DT	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001
	.189	.239	.416	.178	.243	.358	.147	.256	.495	.149	.267	.456
QR	**-.083**	**-.080**	**-.064**	**-.083**	**-.080**	**-.064**	**-.088**	**-.077**	**-.065**	**-.088**	**-.076**	**-.065**
	.010	**.017**	**.039**	**.009**	**.018**	**.040**	**.006**	**.020**	**.037**	**.006**	**.021**	**.036**
GC	.000	.012	.019	.000	.012	.019	-.001	.011	.005	-.001	.011	.005
	.970	.592	.417	.973	.593	.417	.941	.616	.839	.940	.619	.842
GR	.000	.002	.001	.000	.002	.001	.000	.002	.003	.000	.002	.003
	.635	.435	.875	.636	.441	.864	.709	.423	.668	.713	.424	.683
RC	-.001	-.001	-.004	-.001	-.001	-.004	-.001	-.001	-.001	-.001	-.001	-.001
	.461	.560	.688	.459	.570	.703	.518	.565	.914	.525	.575	.947
AQR	.829											
	.357											
CHAQR		-6.558										
		.834										
AQRP			26.420									
			.816									
AQT				.775								
				.388								
CHAQT					-6.605							
					.827							
AQTP						24.920						
						.832						
AQRGC							-.489					
							.576					
CHAQRGC								-6.136				
								.861				
AQRGCP									1.693			
									.098			
AQTGC										-.537		
										.539		
CHAQTGC											-5.950	
											.863	
AQTGCP												1.678
												.101
CONSTANT	1.192	1.305	-24.767	1.294	1.416	-23.155	1.793	1.139	-.364	1.751	1.210	-.374
	.744	.735	.827	.722	.710	.844	.609	.772	.927	.617	.758	.926
Negelkerke R Square	.292	.311	.413	.290	.307	.406	.285	.298	.333	.286	.297	.333

Bold shows significance at the .05 level. na means this variable is constant for all selected cases. Since a constant is requested in the model, it will be removed from the analysis.

(coefficient in upper line, *p*-value in lower line)

Independent variables	1997-2000											
	M 13	M 14	M 15	M 16	M 17	M 18	M 19	M 20	M 21	M 22	M 23	M 24
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-
GDP	**-1.082**	**-1.197**	**-1.139**	**-1.233**	**-1.193**	**-1.275**	**-1.175**	**-1.192**	**-1.200**	**-1.172**	**-1.180**	**-1.179**
	.008	**.003**	**.005**	**.002**	**.003**	**.002**	**.004**	**.003**	**.003**	**.004**	**.004**	**.004**
BTR	**1.441**	**1.606**	**1.477**	**1.406**	**1.586**	**1.588**	**1.595**	**1.601**	**1.594**	**1.605**	**1.587**	**1.591**
	.000	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
BS	-.106	-.107	-.088	-.272	-.103	-.196	-.115	-.133	-.123	-.129	-.114	-.124
	.779	.776	.816	.471	.784	.606	.758	.724	.742	.732	.761	.742
LNTA	**-.379**	**-.334**	**-.362**	**-.393**	**-.338**	**-.382**	**-.337**	**-.329**	**-.323**	**-.345**	**-.338**	**-.342**
	.020	**.038**	**.025**	**.014**	**.035**	**.019**	**.038**	**.040**	**.045**	**.033**	**.035**	**.035**
DT	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.615	.681	.664	.712	.654	.603	.673	.684	.680	.679	.664	.666
QR	.001	.000	.001	.001	.000	.001	.000	.000	.000	.000	.000	.000
	.508	.818	.585	.637	.764	.478	.796	.807	.835	.822	.783	.793
GC	**-.009**	**-.011**	**-.010**	**-.010**	**-.011**	**-.010**	**-.011**	**-.011**	**-.011**	**-.011**	**-.011**	**-.011**
	.003	**.000**	**.002**	**.002**	**.000**	**.002**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
GR	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.783	.754	.777	.780	.754	.750	.756	.759	.748	.743	.756	.756
RC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.799	.778	.784	.827	.777	.787	.786	.801	.810	.735	.780	.771
AQR	.725											
	.088											
CHAQR		-.357										
		.571										
AQRP			.583									
			.146									
AQT				**1.647**								
				.030								
CHAQT					-.196							
					.703							
AQTP						.904						
						.062						
AQRGC							-.018					
							.967					
CHAQRGC								-1.113				
								.281				
AQRGCP									-.247			
									.535			
AQTGC										.125		
										.740		
CHAQTGC											-.082	
											.872	
AQTGCP												.066
												.854
CONSTANT	-1.337	-1.270	-1.387	-2.050	-1.235	-1.570	-1.269	-1.267	-1.294	-1.266	-1.247	-1.256
	.268	.290	.252	.120	.305	.207	.292	.291	.279	.296	.300	.297
Negelkerke R Square	.197	.188	.194	.209	.187	.207	.187	.192	.188	.188	.187	.187

Bold shows significance at the .05 level.

Table 7. 5 (continued) Logit results of important determinants in delisting announcements - All types of audit qualification models
(coefficient in upper line, *p*-value in lower line)   Bold shows significance at the .05 level.

Independent variables	1994-2000											
	M 25	M 26	M 27	M 28	M 29	M 30	M 31	M 32	M 33	M 34	M 35	M 36
YEAR1997	**1.203**	**1.211**	**1.153**	**.954**	**1.176**	**.975**	**1.199**	**1.167**	**1.152**	**1.207**	**1.161**	**1.134**
	.003	**.006**	**.009**	**.021**	**.008**	**.029**	**.003**	**.008**	**.009**	**.003**	**.009**	**.010**
GDP	**-1.081**	**-1.191**	**-1.105**	**-1.209**	**-1.184**	**-1.291**	**-1.176**	**-1.176**	**-1.151**	**-1.168**	**-1.168**	**-1.179**
	.004	**.003**	**.006**	**.001**	**.004**	**.002**	**.002**	**.004**	**.005**	**.002**	**.004**	**.004**
BTR	**1.187**	**1.454**	**1.261**	**1.171**	**1.424**	**1.367**	**1.357**	**1.439**	**1.419**	**1.358**	**1.423**	**1.434**
	.001	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
BS	-.179	-.214	-.204	-.309	-.205	-.323	-.177	-.237	-.222	-.181	-.214	-.246
	.593	.529	.550	.358	.546	.348	.597	.486	.513	.591	.529	.470
LNTA	**-.332**	**-.302**	**-.336**	**-.339**	**-.307**	**-.346**	**-.291**	**-.295**	**-.312**	**-.299**	**-.308**	**-.324**
	.023	**.040**	**.023**	**.018**	**.036**	**.020**	**.046**	**.043**	**.035**	**.040**	**.036**	**.029**
DT	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.655	.716	.689	.760	.683	.616	.732	.718	.701	.726	.695	.683
QR	.000	-.001	.000	.000	.000	.000	-.001	-.001	-.001	-.001	-.001	.000
	.929	.762	.900	.850	.821	.803	.658	.793	.803	.661	.805	.811
GC	**-.010**	**-.012**	**-.010**	**-.010**	**-.011**	**-.010**	**-.012**	**-.012**	**-.012**	**-.012**	**-.011**	**-.012**
	.001	**.000**	**.001**	**.001**	**.000**	**.001**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
GR	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.822	.788	.822	.820	.789	.791	.803	.795	.796	.792	.791	.800
RC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.758	.718	.742	.790	.718	.769	.762	.748	.708	.710	.720	.687
AQR	**.803**											
	.033											
CHAQR		-.492										
		.428										
AQRP			**.934**									
			.013									
AQT				**1.454**								
				.009								
CHAQT					-.259							
					.604							
AQTP						**1.321**						
						.005						
AQRGC							-.108					
							.778					
CHAQRGC								-1.246				
								.224				
AQRGCP									.093			
									.786			
AQTGC										.040		
										.906		
CHAQTGC											-.117	
											.815	
AQTGCP												.310
												.338
CONSTANT	**-2.706**	**-2.517**	**-2.749**	**-3.037**	**-2.446**	**-2.921**	**-2.568**	**-2.494**	**-2.446**	**-2.556**	**-2.444**	**-2.443**
	.016	**.027**	**.017**	**.009**	**.032**	**.013**	**.022**	**.028**	**.032**	**.023**	**.032**	**.032**
Negelkerke R Square	.200	.187	.201	.209	.183	.211	.189	.188	.182	.188	.182	.184

7.2.2.2 Voluntary delisting in relation to all types of audit qualifications

This section presents multivariate tests of the hypothesis,

H2.2: After controlling for other known effects, listed companies with qualified opinions are more likely to be voluntarily delisted than are listed companies without audit qualifications.

Voluntary delisting is the dependent variable. The analysis includes 18 models (M 1 – M 18). M 1 – M 6 give the empirical results of multivariate tests during 1994 – 1996, M 7 – M 12 give the empirical results of multivariate tests during 1997 – 2000, and M 13 – M 18 give the empirical results of multivariate tests during 1994 – 2000.

Table 7.6 shows the empirical results of the above hypothesis. It is less likely that any factor adopted in this analysis is useful incremental information to predict voluntary delisting for all three periods. The possible indicator for voluntary delisting during 1994-1996 is gross cashflow ratios (GC), as shown in Models 7 and 10. In addition, another possible independent variable to predict voluntary delisting during 1994-2000 (Models 25-36) is the Thai financial crisis (YEAR1997), as shown in Models 25, 26, 31 and 34. However, these variables are not statistically significant in all models.

The above empirical results confirm the previous findings as discussed in section 7.2.1.2, that voluntarily delisted companies have their own reasons to go out of stock markets. Those reasons do not reflect negative information. Therefore, the null hypothesis, after controlling for other known effects, that listed companies with all types of audit qualifications are more likely to be voluntarily delisted than are listed companies without all types of audit qualifications, could be rejected.

Table 7. 6 Logit results of important determinants in voluntary delisting - All types of audit qualification models (coefficient in upper line, *p*-value in lower line)

H2.2: After controlling for other known effects, listed companies with qualified opinions are more likely to be voluntarily delisted than are listed companies without qualified opinions.

Independent variables	1994-1996											
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-
GDP	.124 .926	87.927 .997	na	-.133 1.334	20.267 1.000	122.238 .995	-.223 .868	157.723 .997		-.238 .859	na	220.35 .988
BTR	-29.012 .549	-379.99 .953	-260.155 1.000	-28.963 .549	-358.68 .999	-261.700 .983	-23.711 .648	-379.92 .975		-23.583 .650	-354.04 1.000	-330.45 .959
BS	-.142 .923	-.13.122 .993	12.636 1.000	-.162 .912	-1.270 1.000	16.448 .997	.059 .970	-13.809 .996		.039 .980	-12.913 1.000	-17.551 .982
LNTA	.771 .956	-.82.418 .952	-92.839 .997	-.759 .429	-85.538 .997	-114.245 .982	-.658 .494	-83.643 .953		-.632 .514	-85.251 .995	-59.155 .970
DT	.000 .987	.002 .993	-.004 1.000	.000 .971	.002 1.000	.002 .999	.000 .863	.002 .998		.000 .877	.002 1.000	.002 .974
QR	-.069 .143	-2.187 .938	-2.551 .999	-.609 .145	-2.268 .997	-2.261 .959	-.065 .177	-2.222 .968		-.064 .179	-2.295 .999	-2.716 .957
GC	-.177 .011	-1.052 .991	-.378 1.000	-.177 .011	-1.373 1.000	-2.253 .992	**-.133** **.024**	-1.044 .995		**-.132** **.025**	-1.201 1.000	-.366 .996
GR	.000 .925	.379 .979	.371 1.000	.000 .927	.337 1.000	.128 .990	.000 .917	.38 .982		.000 .919	.353 1.000	.581 .968
RC	.014 .410	.372 .974	.433 .999	.014 .414	.420 .999	.493 .988	.011 .314	.383 .974		.011 .316	.414 .999	.586 .967
AQR	-1.534 .321											
CHAQR		-11.064 .998										
AQRP			47.213 1.000									
AQT				-1.565 .309								
CHAQT					-4.768 1.000							
AQTP						40.537 .994						
AQRGC							-8.734 .914					
CHAQRGC								-12.193 .998				
AQRGCP												
AQTGC										-8.738 .912		
CHAQTGC											-9.023 1.000	
AQTGCP												7.552 .992
CONSTANT	3.076 .678	540.973 .955	593.151 .995	3.023 .685	561.74 .997	721.341 .983	2.113 .778	549.708 .958		1.939 .797	562.84 .997	384.71 .970
Negelkerke R Square	.530	1.000	1.000	.531	1.000	1.000	.536	1.000		.537	1.000	1.000

Bold shows significance at the .05 level. na means this variable is constant for all selected cases. Since a constant is requested in the model, it will be removed from the analysis.

Table 7. 6 (continued) Logit results of important determinants in voluntary delisting - All types of audit qualification models
(coefficient in upper line, *p*-value in lower line)

Independent variables	1997-2000											
	M 13	M 14	M 15	M 16	M 17	M 18	M 19	M 20	M 21	M 22	M 23	M 24
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-
GDP	-.793	-.749	-.749	-.762	-.669	-.681	-.754	-.776	-.739	-.684	-.672	-.780
	.151	.173	.172	.166	.227	.231	.173	.156	.179	.212	.222	.157
BTR	.723	.609	.712	.451	.598	.686	.598	.602	.596	.642	.600	.641
	.193	.260	.198	.405	.268	.215	.267	.265	.270	.237	.267	.237
BS	.159	.176	.149	.030	.125	.046	.162	.167	.152	.097	.121	.120
	.778	.754	.792	.957	.826	.936	.774	.766	.788	.864	.831	.832
LNTA	-.122	-.144	-.129	-.201	-.149	-.171	-.137	-.143	-.138	-.178	-.146	-.187
	.560	.487	.533	.335	.473	.429	.510	.490	.506	.393	.479	.375
DT	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.923	.931	.934	.921	.926	.940	.930	.930	.936	.920	.924	.946
QR	.001	.001	.001	.001	.001	.002	.001	.001	.001	.001	.001	.002
	.380	.279	.367	.206	.318	.176	.286	.285	.288	.312	.334	.211
GC	-.001	.000	-.001	.001	.000	.001	.000	.000	.000	-.001	.000	.000
	.857	.986	.909	.787	.998	.889	.975	.968	.986	.937	.998	.975
GR	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.931	.936	.929	.935	.935	.945	.929	.936	.939	.944	.936	.933
RC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.984	.979	.964	.962	.968	.988	.950	.967	.972	.967	.975	.988
AQR	-568											
	.353											
CHAQR		-.485										
		.644										
AQRP			-.550									
			.347									
AQT				1.087								
				.173								
CHAQT					.372							
					.540							
AQTP						.244						
						.679						
AQRGC							-.278					
							.674					
CHAQRGC								-6.008				
								.742				
AQRGCP									-.204			
									.732			
AQTGC										.629		
										.243		
CHAQTGC											.451	
											.456	
AQTGCP												.741
												.163
CONSTANT	**-3.336**	**-3.328**	**-3.286**	**-3.655**	**-3.384**	**-3.369**	**-3.346**	**-3.280**	**-3.333**	**-3.420**	**-3.410**	**-3.412**
	.035	**.036**	**.038**	**.026**	**.034**	**.040**	**.035**	**.039**	**.035**	**.033**	**.032**	**.035**
Negelkerke R Square	**.030**	**.026**	**.031**	**.039**	**.027**	**.028**	**.026**	**.039**	**.025**	**.034**	**.028**	**.037**

Bold shows significance at the .05 level.

Table 7. 6 (continued) Logit results of important determinants in voluntary delisting - All types of audit qualification models

(coefficient in upper line, *p*-value in lower line) , Bold shows significance at the .05 level.

Independent variables	1994-2000											
	M 25	M 26	M 27	M 28	M 29	M 30	M 31	M 32	M 33	M 34	M 35	M 36
YEAR1997	**1.202**	**1.300**	1.279	.976	1.174	1.018	**1.155**	1.240	1.221	**1.163**	1.156	1.160
	.034	**.048**	.052	.094	.077	.128	**.043**	.059	.063	**.042**	.082	.078
GDP	-.703	-.775	-.737	-.708	-.710	-.785	-.728	-.796	-.758	-.661	-.713	-.795
	.160	.157	.178	.156	.197	.162	.145	.145	.167	.184	.193	.147
BTR	.317	.375	.353	.123	.347	.367	.261	.361	.350	.262	.350	.370
	.547	.475	.509	.812	.507	.490	.613	.490	.504	.611	.503	.481
BS	-.156	-.241	-.244	-.247	-.276	-.388	-.164	-.253	-.255	-.175	-.282	-.284
	.744	.622	.617	.607	.574	.437	.732	.605	.601	.716	.566	.562
LNTA	-.163	-.190	-.199	-.226	-.196	-.240	-.152	-.186	-.187	-.193	-.195	-.230
	.407	.344	.325	.250	.328	.248	.436	.354	.355	.329	.332	.258
DT	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.927	.944	.948	.923	.939	.961	.922	.945	.948	.927	.936	.960
QR	.001	.001	.001	.001	.001	.002	.001	.001	.001	.001	.001	.001
	.654	.447	.431	.478	.473	.238	.637	.436	.450	.595	.490	.373
GC	-.004	-.003	-.003	-.001	-.003	-.001	-.003	-.003	-.003	-.003	-.003	-.003
	.499	.607	.629	.799	.599	.828	.625	.623	.613	.551	.590	.586
GR	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.894	.908	.907	.899	.905	.918	.885	.906	.907	.903	.905	.902
RC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.982	.993	.996	.988	.996	.995	.949	.993	.997	.963	1.000	.979
AQR	-.311											
	.552											
CHAQR		-.596										
		.566										
AQRP			.042									
			.935									
AQT				.932								
				.122								
CHAQT					.346							
					.554							
AQTP						.784						
						.165						
AQRGC							-.651					
							.309					
CHAQRGC								-5.751				
								.698				
AQRGCP									-.153			
									.775			
AQTGC										.277		
										.553		
CHAQTGC											.442	
											.451	
AQTGCP												.657
												.169
CONSTANT	-3.958	-3.898	-3.879	-3.991	-3.818	-3.822	-3.961	-3.821	-3.829	-3.940	-3.827	-3.818
	.010	.014	.015	.010	.016	.019	.009	.015	.016	.010	.016	.017
Negelkerke R Square	.040	.040	.038	.051	.037	.047	.044	.049	.036	.040	.038	.045

7.2.2.3 Mandatory delisting in relation to all types of audit qualifications

This section presents multivariate tests of the hypothesis,

H2.3: After controlling for other known effects, listed companies with qualified opinions are more likely to be mandatorily delisted than are listed companies without audit qualifications.

Mandatory delisting is the dependent variable. The analysis includes 18 models (M 1 – M 18). M 1 – M 6 give the empirical results of multivariate tests during 1994 – 1996, M 7 – M 12 give the empirical results of multivariate tests during 1997 – 2000, and M 13 – M 18 give the empirical results of multivariate tests during 1994 – 2000.

Table 7.7 shows the empirical results for the above hypothesis. It is less likely that any factor has useful incremental information content to mandatory delisting for the period 1994-1996. This is perhaps because there are only few mandatory delisted companies (see Table 6.2). The possible independent variable is quick ratios (QC) as shown in Models 7 and 10. However, there is no other factor including all types of audit reports that have useful incremental information content to mandatory delisting during 1994-1996.

When applying the same independent variables to the data during 1997-2000, it is found that the statistical significance of independent variables are the same as what was found in delisting announcements as a whole (Section 7.2.2.1) in the same period, except for audit reports. They include Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA), gross cashflow ratios (GC), and lagged effects of all types of audit reports issued under modified opinions (AQRP). Their coefficient signs are the same as expected. However, quick ratios (QR) are not important determinants to indicate mandatory delisting. The positive and significant coefficient of AQRP leads to the idea, that in mandatory delisting, only all types of audit qualifications issued under modified opinions, which are considered more serious audit reports than all types of audit qualifications issued under both unqualified opinions with explanatory paragraphs and modified opinions, are more likely to indicate mandatory delisting.

When applying all data (1994-2000), Models 25-36 show that the logit results are very similar to those results during 1997-2000, except for QR.

185

When analysing the development of the three periods, it is found that, because there were only a few mandatorily delisted companies during the period 1994-1996, no potential factors could identify mandatorily delisting companies. However, when more cases of mandatory delisting occurred during 1997-2000, it is found that GDP, BTR, LNTA, GC, and AQRP are useful incremental information content to mandatory delisting. For the whole population (1994-2000), the same independent variables are also statistically significant, including QR.

Table 7. 7 Logit results of important determinants in mandatory delisting - All types of audit qualification models (coefficient in upper line, *p*-value in lower line)

H2.3: After controlling for other known effects, listed companies with qualified opinions are more likely to be mandatorily delisted than are listed companies without qualified opinions.

Independent variables	1994-1996											
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-
GDP		-9.103	na	-5.339	-8.650		-57.603	-5.898	na	-57.403	na	-106.72
		.985		.790	.991		.438	.989		.440		.996
BTR		3.054	3.715	3.620	2.961		3.134	3.040	7.966	3.143	3.045	49.645
		.096	.178	.184	.108		.108	.108	.727	.106	.107	.263
BS		.758	-.380	.190	.732		1.109	.995	2.107	1.123	1.004	93.244
		.653	.840	.918	.665		.549	.567	.508	.545	.563	.261
LNTA		-.358	-.068	-.131	-.372		-.397	-.366	-.362	-.398	-.365	1.230
		.565	.917	.847	.548		.533	.566	.700	.531	.566	.639
DT		-.007	-.006	-.006	-.007		-.007	-.007	-.011	-.007	-.007	-.027
		.048	.119	.129	.048		.060	.052	.089	.059	.051	.205
QR		-.123	-.106	-.104	-.124		**-.120**	-.115	-.058	**-.120**	-.114	-.346
		.053	.072	.068	.052		**.046**	.055	.411	**.047**	.059	.203
GC		.050	.051	.047	0.050		.051	.051	-.090	.051	.050	-2.296
		.290	.172	.194	.294		.295	.302	.458	.296	.304	.269
GR		.005	-.007	-.007	.005		.005	.005	.079	.005	.005	1.727
		.342	.512	.523	.353		.332	.321	.155	.334	.322	.266
RC		-.003	-.019	-.019	-.003		-.003	-.003	.069	-.003	-.003	1.950
		.210	.231	.239	.218		.210	.207	.432	.212	.208	.269
AQR												
CHAQR		-7.654										
		.910										
AQRP			152.214									
			.322									
AQT				152.683								
				.731								
CHAQT					-7.482							
					.906							
AQTP												
AQRGC							-.087					
							.955					
CHAQRGC								-5.645				
								.909				
AQRGCP									55.036			
									.534			
AQTGC										-.118		
										.939		
CHAQTGC											-5.735	
											.905	
AQTGCP												752.09
												.539
CONSTANT		1.749	-152.232	-152.875	2.027		1.526	1.255	66.388	1.539	1.227	-1033.13
		.759	.324	.731	.721		.792	.827	.491	.790	.831	.453
Negelkerke R Square		.527	.586	.588	.521		.538	.511	.727	.512	.831	.450

Bold shows significance at the .05 level.

Note that there are no results in Models 1 and 6. na means this variable is constant for all selected cases. Since a constant is requested in the model, it will be removed from the analysis.

Table 7. 7 (continued) Logit results of important determinants in mandatory delisting - All types of audit qualification models
(coefficient in upper line, *p*-value in lower line)

Independent variables	1997-2000											
	M 13	M 14	M 15	M 16	M 17	M 18	M 19	M 20	M 21	M 22	M 23	M 24
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-
GDP	**-1.592**	**-1.643**	**-1.546**	**-1.671**	**-1.688**	**-1.738**	**-1.619**	**-1.634**	**-1.646**	**-1.629**	**-1.647**	**-1.617**
	.017	**.007**	**.013**	**.006**	**.006**	**.005**	**.009**	**.008**	**.007**	**.008**	**.007**	**.008**
BTR	**1.927**	**2.416**	**2.046**	**2.194**	**2.379**	**2.236**	**2.438**	**2.399**	**2.407**	**2.402**	**2.378**	**2.379**
	.004	**.000**	**.002**	**.001**	**.000**	**.001**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
BS	-.159	-.151	-.058	-.281	-.121	-.178	-.132	-.177	-.168	-.159	-.163	-.135
	.768	.772	.913	.590	.817	.735	.800	.734	.745	.760	.753	.794
LNTA	**-.705**	**-.670**	**-.705**	**-.701**	**-.663**	**-.682**	**-.727**	**-.669**	**-.657**	**-.668**	**-.666**	**-.635**
	.004	**.007**	**.005**	**.004**	**.007**	**.006**	**.005**	**.007**	**.008**	**.008**	**.007**	**.010**
DT	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.224	.433	.440	.446	.394	.384	.394	.431	.433	.427	.406	.453
QR	-.023	-.038	-.029	-.032	-.036	-.031	-.040	-.038	-.038	-.038	-.036	-.038
	.160	.026	.080	.058	.033	.063	.023	.028	.027	.031	.034	.028
GC	**-.008**	**-.009**	**-.008**	**-.009**	**-.009**	**-.009**	**-.009**	**-.009**	**-.009**	**-.009**	**-.009**	**-.009**
	.040	**.016**	**.040**	**.023**	**.017**	**.022**	**.016**	**.016**	**.016**	**.016**	**.016**	**.017**
GR	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.649	.571	.615	.587	.568	.574	.517	.575	.572	.580	.576	.582
RC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.644	.564	.572	.603	.569	.592	.416	.572	.593	.596	.576	.631
AQR	27.543											
	.358											
CHAQR		-.211										
		.790										
AQRP			**2.245**									
			.035									
AQT				6.978								
				.728								
CHAQT					-.992							
					.353							
AQTP						1.670						
						.119						
AQRGC							.513					
							.391					
CHAQRGC								-313				
								.770				
AQRGCP									.194			
									.717			
AQTGC										-.057		
										.924		
CHAQTGC											-.701	
											.512	
AQTGCP												-.510
												.335
CONSTANT	-25.712	1.056	-.447	-5.399	1.070	-.242	1.327	1.059	1.006	1.041	1.071	.957
	.393	.584	.837	.789	.580	.911	.500	.584	.602	.592	.580	.619
Negelkerke R Square	.450	.387	.422	.406	.392	.403	.390	.387	.387	.387	.389	.391

Bold shows significance at the .05 level.

Table 7. 7 (continued) Logit results of important determinants in mandatory delisting - All types of audit qualification models
(coefficient in upper line, *p*-value in lower line) Bold shows significance at the .05 level.

Independent variables	1994-2000											
	M 25	M 26	M 27	M 28	M 29	M 30	M 31	M 32	M 33	M 34	M 35	M 36
YEAR1997	.909	.778	.741	.671	.814	.646	.948	.762	.769	.888	.802	.741
	.137	.206	.236	.273	.186	.303	.118	.215	.211	.140	.193	.227
GDP	**-1.596**	**-1.542**	**-1.420**	**-1.653**	**-1.588**	**-1.625**	**-1.649**	**-1.519**	**-1.496**	**-1.658**	**-1.536**	**-1.523**
	.010	**.009**	**.017**	**.004**	**.008**	**.006**	**.005**	**0.010**	**.012**	**.004**	**.10**	**.010**
BTR	**1.753**	**2.261**	**1.861**	**1.979**	**2.220**	**2.023**	**2.255**	**2.235**	**2.215**	**2.251**	**2.214**	**2.236**
	.002	**.000**	**.001**	**.001**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
BS	-.079	-.046	-.007	-.168	-.037	-.100	-.054	-.069	-.061	-.073	-.055	-.056
	.869	.923	.989	.722	.938	.835	.908	.884	.897	.876	.906	.905
LNTA	**-.538**	**-.508**	**-.530**	**-.526**	**-.501**	**-.508**	**-.559**	**-.507**	**-.536**	**-.517**	**-.507**	**-.514**
	.011	**.017**	**.015**	**.013**	**.019**	**.017**	**.012**	**.018**	**.014**	**.018**	**.017**	**.017**
DT	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.229	.516	.506	.522	.483	.452	.454	.512	.492	.498	.478	.503
QR	-.027	**-.040**	**-.032**	**-.034**	**-.039**	**-.033**	**-.043**	**-.040**	**-.041**	**-.041**	**-.038**	**-.040**
	.065	**.008**	**.033**	**.024**	**.011**	**.027**	**.007**	**.009**	**.008**	**.009**	**.012**	**.008**
GC	**-.007**	**-.009**	**-.007**	**-.008**	**-.009**	**-.008**	**-.009**	**-.009**	**-.009**	**-.009**	**-.009**	**-.009**
	.031	**.012**	**.038**	**.017**	**.013**	**.021**	**.009**	**.012**	**.012**	**.010**	**.012**	**.012**
GR	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.684	.618	.681	.630	.616	.636	.543	.623	.633	.588	.623	.621
RC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.696	.601	.633	.679	.608	.661	.445	.610	.560	.595	.612	.597
AQR	26.216											
	.425											
CHAQR		-.382										
		.621										
AQRP			**2.508**									
			.017									
AQT				7.532								
				.712								
CHAQT					-1.146							
					.276							
AQTP						2.040						
						.053						
AQRGC							.557					
							.277					
CHAQRGC								-.423				
								.689				
AQRGCP									.327			
									.468			
AQTGC										.086		
										.867		
CHAQTGC											-.790	
											.455	
AQTGCP												.044
												.921
CONSTANT	-26.372	-.826	-2.593	-7.783	-.840	-2.386	-.740	-.811	-.717	-.893	-.820	-.776
	.424	.633	.193	.704	.627	.228	.672	.640	.680	.607	.636	.654
Negelkerke R Square	.433	.361	.400	.397	.363	.381	.377	.358	.359	.373	.360	.357

In this section, the null hypothesis could not be rejected. It is found that, after controlling for other known effects, listed companies with all types of audit reports are more likely to be mandatorily delisted than are listed companies without all types of audit reports.

Table 7.8 summarises the statistical significance of the independent variables for the three delisting announcements periods in all types of audit report models.

Table 7.8 Summary of the statistical significance of independent variables of delisting announcements – All types of audit qualification models

Dependent variables	Years		
	1994-1996	1997-2000	1994-2000
Delisting as a whole	Significant variables • QR	Significant variables • GDP • BTR • LNTA • GC • AQT	Significant variables • YEAR1997 • GDP • BTR • LNTA • GC • AQR, AQRP, AQT, AQTP
Voluntary delisting	Significant variables • Nil	Significant variables • Nil	Significant variables • Nil
Mandatory delisting	Significant variables • Nil	Significant variables • GDP • BTR • LNTA • GC • AQRP	Significant variables • GDP • BTR • LNTA • QR, GC • AQRP

The overall conclusion of the hypothesis that listed companies with all types of audit qualifications are more likely to be delisted companies than are listed companies without all types of audit reports. It is less likely for any factor to be considered as a pre-warning signal for voluntary delisting. Only quick ratios (QR) representing short-term liquidity are likely to be a predictive tool for delisting announcements. On the other hand, Gross Domestic Product (GDP), bad trading record announced by the Thai stock markets (BTR), company size (LNTA), gross ratios (GR) and all types of audit qualifications issued under modified opinions are more likely to be important determinants of delisting as a whole and of mandatory delisting. The Thai financial crisis (YEAR1997) is less likely to be an important determinants of delisting as a whole. However, YEAR1997 may not be considered as a good indicator of mandatory delisting. In addition, low profit (GC) leading to cashflow problems is an important determinant of the probability of delisting. Only all types of audit qualifications under modified opinions were likely to be given prior to delisting as a whole and mandatory delisting.

It should be useful to compare the results of the statistical significance of the independent variables in delisting announcements using going concern reporting and all types of audit qualification models. Based on the empirical results in Table 7.4 and Table 7.8, the same conclusion could be drawn. It is less likely that any factors adopted in this study are useful to predict voluntary delisting. The significant determinants of delisting as a whole and mandatory delisting are very similar. The statistical significance of the independent variables in of both types of delisting include Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA) and gross cashflow ratios (GC). For audit reports, it is found that, during 1994-1996, going concern audit reports issued under modified opinions provided useful incremental information for all delisting announcements. However, it does not appear that all types of audit reports are useful information to all delisting announcements. During 1997-2000, both going concern audit reports and all types of audit qualifications provide useful incremental information to both delisting as a whole and mandatory delisting. The significance of these two reports are also useful in predicting both delisting as a whole and mandatory delisting.

7.3 Important determinants of audit reports

In the last section, the empirical analysis found the information used in delisting environments. It is also possible that further investigation of information used in audit qualifications could be analysis. Therefore, in this section, the analysis moves towards by investigating what information is used for issuing audit reports.

The independent variables of the following analysis include going concern reporting issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AG), going concern reporting issued under modified opinions (AGS), all types of audit qualifications issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AQT), and all types of audit qualifications issued under modified opinions (AQR). The rest of the audit reports, as outlined in Section 5.3.2.3, the analysis does not consider as independent variables.

For each type of audit report, the analysis considers the Thai financial crisis in the middle of 1997 as a cut-off period. This is because the crisis may cause different determinants of audit reports. The data set in the present study covers the population during 1994-2000. The statistical analysis is, therefore, divided into three main parts: before the crisis (1994-1996), after

191

the crisis (1997-2000) and the whole population (1994-2000). This is to investigate the effects of the crisis on audit reports in the period before, after the crisis, and the whole population.

In the following analysis of audit report models, the same independent variables as in the previous analysis are adopted. They include Gross Domestic Product (GDP), bad trading records announced by the Thai stock market (BTR), company size (LNTA), debt-turnover ratios (DT), quick ratios (QR), gross cashflow ratios (GC), gearing ratios (GR) and returns on capital (RC). The Thai financial crisis (YEAR1997) is also included for the analysis to include the whole population (i.e. 1994-2000). Also, in order to investigate the effects of audit firm size, audit firm size as a whole (BS), Big 5 firms excluding Ernst & Young (NONEY), and Ernst & Young (EY) are also included in the analysis.

Finally, as found by Lennox (1999a), the lagged effects of audit reports influenced following year audit reports, and the following analysis also applies this information. The lagged effects of audit reports include going concern opinions issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AGP), going concern opinions issued under modified opinions (AGSP), all types of audit qualifications issued under both unqualified opinions with explanatory paragraphs also under modified opinions (AQTP), and all types of audit qualifications issued under modified opinions (AQRP).

7.3.1 Going concern audit reports

The following analysis focuses on the information used in going concern audit reports. Even if audit standards class unqualified opinions with explanatory paragraphs as clean audit opinions, it should be useful to also consider the reports as modified opinions. Therefore, the following analysis classifies going concern audit reports into two dependent variables: going concern audit reports issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AG) and going concern audit reports issued under modified opinions (AGS).

7.3.1.1 Going concern audit reports issued under both unqualified opinions with explanatory paragraphs and also under modified opinions

Going concern reporting issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AG) are the dependent variables. The analysis includes 9 models (M 1 – M 9). M 1 – M 3 give the empirical results of multivariate tests during 1994 – 1996, M 4 – M 6 give the empirical results of multivariate tests during 1997 – 2000, and M 7 – M 9 give the empirical results of multivariate tests during 1994 – 2000.

Table 7.9 shows the empirical results for the above hypothesis. There is no result in the logit analysis for going concern reporting during 1994-1996 (Models 1-3). This is mainly perhaps because there are only a few cases of going concern reporting during 1994-1996, as shown in Table 6.4.

The logit results for the period 1997-2000 (Models 4-6) shows that Gross Domestic Product (GDP), bad trading record announcements (BTR), audit firm size (BS), Big 5 firms except Ernst & Young (NONEY), debt-turnover, (DT), quick ratios (QR), gross cashflow ratios (GC), returns of capital (RC) and lagged effects of going concern reporting issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AGP) are statistically significant in providing incremental information content to a going concern reporting. On the other hand, company size (LNTA) and gearing ratios (GR).

The logit results of the period 1994-2000 (Models 7-9) are very similar to the ones in the period 1997-2000. However, when including the Thai financial crisis in the middle of 1997 (YEAR1997) in the logit model, it is found that YEAR1997 is also statistically significant when issuing AG. For the rest of the independent variables, the statistical significance of independent variables in the period 1994-2000 are the same as those in the period 1997-2000.

The interpretation of the above empirical findings is as follows. The positive coefficient and significant regressions of Gross Domestic Product (GDP) demonstrates that going concern reporting under both unqualified opinions with explanatory paragraphs and also under modified opinions (AG) occurred more (less) frequently when the economy was expected to move from boom (recession) to recession (boom). The positive coefficient and significant regressions of bad trading record announcements (BTR) shows that listed companies which had experienced bad trading record announcements are more likely to be given with AG. Big 5 firms (BS)

seemed to more frequently issue AG than Non Big 5 firms. When excluding Ernst & Young from the Big 5 firms, it is found that Big 5 firms without Ernst & Young (NONEY) more frequently issued AG than Ernst & Young (EY). In other words, Ernst & Young is more likely to issue audit qualifications without AG.

Financial ratios are also considered as good predictors of AG. The unexpected positive coefficient signs of debt-turnover ratios (DT) shows that AG were more likely to be given when listed companies had experienced the increase of debt-turnover. This means that rather than considering the increase of debt-turnover as a positive sign, auditors did not appear to take the information not to issue AG. However, the statistical significance of DT did not appear in every case as shown in Model 10-19. Also the level of statistical significance is almost .05 which is close to no statistical significance. The expected negative coefficient sign of quick ratios (QR), gross cashflow ratios (GC), and returns on capital (RC) demonstrates that short-term liquidity was an important determinant of AG. Listed companies experienced low profits, increased cashflow problems and the likelihood of the issuance with AG. Finally, low profitability caused the financial statements of listed companies to be given with AG. The statistical significance of these financial ratios also agrees with the descriptive statistics in Table 6.7 describing the reasons cited for auditors giving going concern opinions.

It is also found that the positive and statistical significance of the lagged effects of going concern reporting (AGP) show that going concern opinions are based on previous year opinions. In other words, auditors are more likely to repeat last year's opinions if there is no clear evidence that going concern uncertainty is no longer an issue.

Table 7. 9 Logit results of important determinants when issuing AG (coefficient in upper line, *p*-value in lower line)

Independent variables	1994-1996			1997-2000			1994-2000		
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9
YEAR1997	-	-	-	-	-	-	**1.359** **.000**	**1.362** **.000**	**1.363** **.000**
GDP				**.540** **.004**	**.552** **.003**	**.507** **.006**	**.465** **.014**	**.475** **.012**	**.445** **.018**
BTR				**.820** **.000**	**.822** **.000**	**.834** **.000**	**.850** **.000**	**.856** **.000**	**.870** **.000**
BS				**.663** **.001**			**.493** **.012**		
NONEY					**.457** **.013**			**.350** **.047**	
EY						.131 .558			.099 .651
LNTA				.053 .447	.074 .284	.113 .089	.024 .731	.038 .582	.070 .285
DT				.000 .056	**.000** **.046**	.000 .074	**.000** **.047**	**.000** **.041**	.000 .059
QR				**-.017** **.000**	**-.016** **.000**	**-.016** **.000**	**-.018** **.000**	**-.017** **.000**	**-.017** **.000**
GC				**-.020** **.000**	**-.020** **.000**	**-.020** **.000**	**-.024** **.000**	**-.024** **.000**	**-.024** **.000**
GR				.000 .202	.000 .216	.000 .205	.000 .838	.000 .855	.000 .896
RC				**-.003** **.014**	**-.003** **.013**	**-.003** **.011**	**-.001** **.001**	**-.001** **.001**	**-.001** **.001**
AGP				**2.717** **.000**	**2.730** **.000**	**2.733** **.000**	**2.983** **.000**	**3.002** **.000**	**2.990** **.000**
CONSTANT				**-2.384** **.000**	**-2.340** **.000**	**-2.439** **.000**	**-3.399** **.000**	**-3.366** **.000**	**-3.472** **.000**
Negelkerke R Square				.544	.541	.536	.585	.584	.581

Bold shows significance at the .05 level.

Note that there were only few going concern audit reports during 1994-1996 (see Table 6.5). This reflects no results in Models M1 – M 3.

7.3.1.2 Going concern audit reports issued under modified opinions

Going concern reporting issued under modified opinions (AGS) are the dependent variables. The analysis includes 9 models (M 1 – M 9). M 1 – M 3 give the empirical results of multivariate tests during 1994 – 1996, M 4 – M 6 give the empirical results of multivariate tests during 1997 – 2000, and M 7 – M 9 give the empirical results of multivariate tests during 1994 – 2000.

Table 7.10 shows the empirical results for the above hypothesis. There is no result in the logit analysis for going concern reporting during 1994-1996 (Models 1 -3). It is perhaps because there are only a few cases of going concern reporting during 1994-1996, as shown in Table 6.4.

The logit results for the period 1997-2000 (Models 4-6) show that bad trading record announcements (BTR), quick ratios (QR), gross cashflow ratios (GC), returns of capital (RC) and lagged effects of going concern reporting issued under modified opinions (AGSP) are statistically significant in providing incremental information content to a going concern reporting. On the other hand, Gross Domestic Product (GDP), audit firm size (BS, NONEY, and EY), company size (LNTA), debt-turnover ratios (DT) and gearing ratios (GR) are not statistically significant in providing incremental information content to going concern reporting issued under modified opinions (AGS).

The logit results of the period 1994-2000 (Models 7-9) are very similar to the ones in the period 1997-2000. When including the Thai financial crisis in the middle of 1997 (YEAR1997) in the logit model, it is found that it is not statistically significant for the issue of AGS. For the rest of the independent variables, the statistical significance of the independent variables in the period 1994-2000 are the same as those in the period 1997-2000.

The interpretation of the above empirical findings is as follows. The positive and statistical significance of bad trading record announcements (BTR) causes modified going concern opinions (AGS). In addition, the decline of quick ratios (QR), gross cashflow ratios (GC) and returns on capital (RC) are likely to result in AGS. The lagged effects of going concern audit reports issued under modified opinions (AGS) are also considered as a predictive tool of modified going reporting. Neither are company size (LNTA), gearing ratios (GR), delisting announcements are important determinants of both AG and AGS. In addition, Gross Domestic

Product (GDP) may not influence auditors when issuing modified going concern reporting (AGS) and there are no difference in audit firm size (LNTA) as far as issuing AGS in concerned.

Table 7. 10 Logit results of important determinants when issuing AGS (coefficient in upper line, *p*-value in lower line)

Independent variables	1994-1996			1997-2000			1994-2000		
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9
YEAR1997	-	-	-	-	-	-	.447	.448	.452
							.111	.109	.106
GDP				-.172	-.163	-.203	-.339	-.335	-.359
				.465	.491	.390	.161	.168	.139
BTR				**.728**	**.741**	**.737**	**.778**	**.775**	**.791**
				.002	**.003**	**.002**	**.000**	**.000**	**.000**
BS				.423			.242		
				.098			.290		
NONEY					.226			.133	
					.339			.538	
EY						.240			.146
						.415			.595
LNTA				-.059	-.041	-.019	-.119	-.108	-.094
				.527	.662	.834	.182	.223	.270
DT				.000	.000	.000	.000	.000	.000
				.210	.201	.239	.154	.151	.168
QR				**-.032**	**-.031**	**-.032**	**-.033**	**-.033**	**-.033**
				.000	**.000**	**.000**	**.000**	**.000**	**.000**
GC				**-.019**	**-.019**	**-.019**	**-.022**	**-.022**	**-.022**
				.000	**.000**	**.000**	**.000**	**.000**	**.000**
GR				-.001	-.001	-.001	.000	.000	.000
				.110	.101	.103	.777	.790	.814
RC				**-.008**	**-.008**	**-.008**	**-.001**	**-.001**	**-.001**
				.004	**.004**	**.003**	**.001**	**.001**	**.001**
AGSP				**1.860**	**1.869**	**1.870**	**2.124**	**2.135**	**2.122**
				.000	**.000**	**.000**	**.000**	**.000**	**.000**
CONSTANT				-1.561	-1.543	**-1.640**	-1.434	-1.432	**-1.501**
				.052	.055	**.039**	.058	.060	**.047**
Negelkerke R Square				.489	.487	.487	.494	.494	.494

Bold shows significance at the .05 level.

Note that there were only few going concern audit reports during 1994-1996 (see Table 6.5). This reflects no results in Models M1 – M 3.

To compare the logit results for the above analysis, Table 7.11 summarises the statistical significance of all independent variables when AG and AGS are the dependent variables. It is less likely that the results of the period 1994-1996 should be used to investigate the information used in going concern reporting. This is perhaps because, in this period, not so many companies were given going concern reporting. However, after the Thai financial crisis in the middle of 1997, it is found that many independent variables could be used as predictive tools. Bad trading record announcements (BTR), quick ratios (QR), gross cashflow ratios (GC), returns on capital (RC) and lagged effects of audit qualifications are important determinants of going concern reporting. Unlike modified going concern reporting (AGS), more indicators may be considered as useful information when issuing going concern reporting issued under both unqualified opinions and also under modified opinions. These include Gross Domestic Product (GDP), the Thai financial crisis (YEAR1997) and audit firm size (BS).

Table 7.11 Summary of the statistical significance of independent variables of AG and AGS

Dependent variables	Years		
	1994-1996	1997-2000	1994-2000
AG	Significant variables • NA	Significant variables • GDP • BTR • BS, NONEY • DT, QR, GC, RC • AGP	Significant variables • YEAR1997 • GDP • BTR • BS, NONEY • DT, QR, GC, RC • AGP
AGS	Significant variables • NA	Significant variables • BTR • QR, GC, RC • AGSP	Significant variables • BTR • QR, GC, RC • AGSP

7.3.2 All types of audit qualifications

The following analysis focuses on the information used in all types of audit reports. Even if audit standards class that unqualified opinions with explanatory paragraphs as clean audit opinions, it should be useful to consider the reports as modified opinions. Therefore, the following analysis classifies all types of audit qualifications into two dependent variables: all types of audit qualifications issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AQT) and all types of audit qualifications issued under modified opinions (AQR).

7.3.2.1 All types of audit qualifications issued under both unqualified opinions with explanatory paragraphs and also under modified opinions

All types of audit qualifications issued under both unqualified opinions with explanatory paragraphs and also under modified opinions (AQT) are the dependent variables. The analysis includes 9 models (M 1 – M 9). M 1 – M 3 give the empirical results of multivariate tests during 1994 – 1996, M 4 – M 6 give the empirical results of multivariate tests during 1997 – 2000, and M 7 – M 9 give the empirical results of multivariate tests during 1994 – 2000.

Table 7.12 (Models 1-3) shows the empirical results for the above hypothesis. The logit results for all types of audit qualifications issued under unqualified opinions with explanatory paragraphs and also under modified opinions (AQT) show that, during the period 1994-1996, company size (LNTA), gross cashflow ratios (GC) and lagged effects of all types of audit qualifications are statistically significant to AQT.

When applying the variables in logit analysis using the data in the period 1997-2000 (Models 4-6), it is found that, apart from LNTA, GC, and AQTP, bad trading record announcements (BTR), audit firm size (BS, NONEY and EY), quick ratios (QR) become statistically significance as regards of AQT.

The whole data for the period 1994-2000 (Models 7-9) is also applied to logit analysis. It is found that the results are similar those from the 1997-2000 data. The statistically significant independent variables include the Thai financial crisis (YEAR1997), bad trading record announcements (BTR), audit firm size (BS) and company size (LNTA).

The above three-period logit analysis could be interpreted as follows. After the Thai financial crisis, listed companies experiencing bad trading record announcements were more likely to be given AQT. In addition, Big 5 firms were more likely to issue qualified audit reports than were Non Big 5 firms. Financial statements of larger listed companies measured by total assets (LNTA) were more likely to be given with AQT than those of smaller companies. Listed companies experiencing low profits causing cashflow problems tended to be given with AQT. Auditors are most likely to repeat their opinions based on lagged audit opinions. All types of delisting announcements had no influence on auditors when issuing audit opinions.

Table 7.12 Logit results of important determinants when issuing AQT (coefficient in upper line, *p*-value in lower line)

Independent variables	1994-1996			1997-2000			1994-2000		
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9
YEAR1997	-	-	-	-	-	-	**1.066**	**1.074**	**1.080**
							.000	**.000**	**.000**
GDP	7.149	6.852	9.023	.049	.143	.044	-.125	-.073	-.122
	.589	.606	.800	.753	.369	.776	.442	.659	.456
BTR	.417	.421	.397	**1.008**	**1.005**	**1.010**	**.738**	**.725**	**.747**
	.186	.184	.212	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
BS	-.409			**.662**			**.365**		
	.138			**.000**			**.006**		
NONEY		-.337			**.973**			**.531**	
		.199			**.000**			**.000**	
EY			-.056			**-.437**			-.299
			.875			**.019**			.069
LNTA	**.273**	**.260**	**.224**	**.323**	**.310**	**.390**	**.250**	**.240**	**.288**
	.012	**.015**	**.040**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
DT	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.422	.436	.418	.595	.612	.568	.584	.587	.565
QR	.000	.000	.000	**-.001**	**-.002**	**-.001**	-.001	**-.001**	-.001
	.607	.648	.683	**.011**	**.006**	**.021**	.053	**.042**	.071
GC	**-.047**	**-.047**	**-.049**	**-.019**	**-.019**	**-.017**	**-.022**	**-.022**	**-.021**
	.014	**.014**	**.019**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
GR	-.001	-.001	-.001	.000	.000	.000	.000	.000	.000
	.774	.766	.920	.749	.770	.754	.920	.914	.946
RC	.001	.001	.003	-.001	-.001	-.001	.000	.000	.000
	.829	.828	.681	.301	.326	.344	.935	.974	.940
AQTP	**4.036**	**4.029**	**3.988**	**1.839**	**1.806**	**1.847**	**2.535**	**2.523**	**2.541**
	.000	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
CONSTANT	**-3.571**	**-3.553**	**-3.442**	**-2.943**	**-2.848**	**-2.988**	**-3.475**	**-3.410**	**-3.514**
	.000	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
Negelkerke R Square	.654	.653	.651	.380	.397	.370	.509	.513	.507

Bold shows significance at the .05 level.

7.3.2.2 All types of audit qualifications issued under modified opinions

All types of audit qualifications issued under modified opinions (AQR) are the dependent variables. The analysis includes 9 models (M 1 – M 9). M 1 – M 3 give the empirical results of multivariate tests during 1994 – 1996, M 4 – M 6 give the empirical results of multivariate tests during 1997 – 2000, and M 7 – M 9 give the empirical results of multivariate tests during 1994 – 2000.

Table 7.13 (Models 1-3) shows the empirical results of the above hypothesis. The logit results of all types of audit qualifications issued under modified opinions (AQR) show that, during the period 1994-1996, company size (LNTA), gross cashflow ratios (GC), returns on capital (RC) and the lagged effects of all types of audit qualifications issued under modified opinions (AQRP) are statistically significant to AQR.

When applying the variables in logit analysis using the data from the period 1997-2000 (Models 4-6), it is found that Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA), quick ratios (QR), gross cashflow ratios (GC) and lagged effects of all types of audit qualifications issued under modified opinions (AQR) become statistically significant to AQR.

The whole data for the period 1994-2000 is also applied in logit analysis. It is found that the results are similar to those from 1997-2000 (Models 7-9). The statistically significant independent variables include Gross Domestic Product (GDP), bad trading record announcements (BTR), company size (LNTA), quick ratios (QR), gross cashflow ratios (GC), and lagged effects of all types of audit qualifications issued under modified opinions (AQRP).

The above three-period logit analysis could be interpreted as follows. After the Thai financial crisis in the middle of 1997, it seems that GDP caused auditors to issue qualified audit opinions. In addition, listed companies experiencing bad trading record announcements were more likely to be given AQR. Financial statements of larger listed companies measured by total assets (LNTA) are more likely to be given AQT than smaller companies. Listed companies experiencing short-term liquidity and low profits causing cashflow problems tended to be given AQR. Auditors were most likely to repeat their opinions based on lagged audit reports.

However, all types of delisting announcements had no influence on auditors when issuing audit opinions.

Table 7. 13 Logit results of important determinants when issuing AQR (coefficient in upper line, *p*-value in lower line)

Independent variables	1994-1996			1997-2000			1994-2000		
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9
YEAR1997	-	-	-	-	-	-	-.036 .817	-.042 .787	-.041 .794
GDP	na	na	na	**-.788 .000**	**-.792 .000**	**-.783 .000**	**-.877 .000**	**-.883 .000**	**-.863 .000**
BTR	.431 .179	.427 .185	.392 .226	**.573 .002**	**.570 .002**	**.563 .002**	**.530 .001**	**.523 .001**	**.512 .001**
BS	**-.589 .036**			-.121 .482			-.233 .106		
NONEY		-.436 .102			-.092 .574			-.152 .266	
EY			-.184 .619			-.027 .894			-.099 .582
LNTA	**.295 .009**	**.274 .014**	**.220 .049**	**.179 .004**	**.176 .004**	**.168 .005**	**.205 .000**	**.196 .000**	**.184 .000**
DT	.000 .436	.000 .441	.000 .405	.000 .425	.000 .424	.000 .417	.000 .402	.000 .400	.000 .385
QR	.000 .781	.000 .851	.000 .850	**-.004 .002**	**-.004 .002**	**-.004 .002**	**-.002 .017**	**-.002 .014**	**-.002 .014**
GC	**-.048 .017**	**-.048 .016**	**-.051 .015**	**-.020 .000**	**-.020 .000**	**-.020 .000**	**-.023 .000**	**-.023 .000**	**-.023 .000**
GR	-.002 .693	-.002 .678	.000 .969	.000 .708	.000 .695	.000 .697	.000 .868	.000 .887	.000 .904
RC	.001 .818	.001 .812	.005 .539	**-.001 .027**	**-.001 .025**	**-.001 .026**	.000 .171	.000 .168	.000 .180
AQRP	**4.172 .000**	**4.156 .000**	**4.084 .000**	**2.800 .000**	**2.799 .000**	**2.802 .000**	**3.205 .000**	**3.202 .000**	**3.200 .000**
CONSTANT	**-3.877 .000**	**-3.842 .000**	**-3.661 .000**	**-2.663 .000**	**-2.670 .000**	**-2.652 .000**	**-3.027 .000**	**-3.026 .000**	**-2.983 .000**
Negelkerke R Square	.667	.666	.663	.555	.555	.555	.582	.582	.582

Bold shows significance at the .05 level.

na means this variable is constant for all selected cases. Since a constant is requested in the model, it will be removed from the analysis.

Table 7.14 compares the statistical significance of independent variables of AQT and AQR. During 1994-1996, it is found that the same independent variables could be used to predict both AQT and AQR. This is because, before 1998, unqualified opinions with explanatory paragraphs were not allowed to be issued. This results in the fact that same independent variables could be used to predict AQT and AQR. In addition, BTR, LNTA, GC and lagged effects of audit reports are important determinants for audit reports in both AQT and ARR. However, after unqualified opinions with explanatory paragraphs were allowed, and perhaps after the occurrence of the Thai financial crisis in the middle of 1997, it is found that there are in the differences of independent variables used in AQT and AQR. GDP could be used to predict AQR, but not AQT whilst larger audit firms (Big 5 firm) and Big 5 firm, except Ernst & Young (NONEY), were more likely to issue AQT than AQR.

Table 7.14 Summary of the statistical significance of independent variables of AQT and AQR

Dependent variables	Years		
	1994-1996	1997-2000	1994-2000
AQT	Significant variables • LNTA • GC • AQTP	Significant variables • BTR • BS, NONEY, EY • LNTA • QR, GC • AQTP	Significant variables • YEAR1997 • BTR • BS, NONEY • LNTA • GC • AQTP
AQR	Significant variables • BS • LNTA • GC • AQRP	Significant variables • GDP • BTR • LNTA • QR, GC, RC • AQRP	Significant variables • GDP • BTR • LNTA • QR, GC • AQRP

It should be useful to compare the important determinants of information used in going concern audit reports and all types of audit qualifications. It is found that the lagged effects of audit reports influence following year audit reports. In other words, auditors are more likely to issue the same audit opinions as last year. Bad trading records announced by the Thai stock market are important determinants of qualified audit reports. Furthermore, the decline in gross cashflow ratios is most likely to be a pre-warning signal of audit qualifications. However, listed companies whose total assets were relatively low were more likely to be qualified with all types of audit reports than listed companies whose total assets were relatively high. On the other hand, company size has no influence on going concern reporting.

7.4 Comparisons of information used in delisting announcements and audit reports

The objective of this section is to compare the information used to determine delisting announcements and audit reports. Section 7.2 finds that delisting announcements are more likely to be predicted, using many possible factors, such as bad trading record announcements (BTR), gross cashflow ratios (GC) audit reports, among the other factors. BTR and GC are also found to be statistically significant in issuing audit reports, as found in Section 7.3. The factors influencing delisting announcements and audit reports are different. As shown in Tables 7.4, 7.8, 7.11 and 7.14, Gross Domestic Product (GDP) is one of the factors influencing delisting announcements, whilst GDP does not appear to be a possible factor in audit reports. In addition, financial ratios are more likely to be important determinants in audit reports than are delisting announcements. Finally, company size (LNTA) is an important determinant of delisting announcements, whilst it is statistically significant in some types of audit reports.

7.5 Concluding remarks

The empirical findings of this chapter make several contributions. It is found that the independent variables adopted in this present study have no incremental information content to predict voluntary delisting. On the other hand, similar information could be used to predict delisting announcements as a whole and mandatory delisting. The information including Gross Domestic Products (GDP), bad trading record announcements (BTR), company size (LNTA), gross cashflow ratios (GC), including some types of audit reports are statistically significant. The interpretation of these findings could be as follows. Delisting occurred more (less) frequently when the economy was expected to move from boom (recession) to recession (boom). Listed companies with bad trading record announcements were more likely to be delisted than listed companies without bad trading record announcements. Listed companies whose total assets were relatively large were less likely to be delisted than were listed companies whose total assets were relative small. Delisted companies were more likely to experience difficulty with low profits which finally increased cashflow problems. Financial statements with audit qualifications were more likely to result in delisting. However, the level of each audit report may indicate different effects. It is found that going concern reporting issued are likely to be considered as a pre-warning of delisting probability. In addition, the lagged effect of all types of audit qualifications issued under modified opinions could be important determinants of delisting. However, when considering the incremental information content in audit reports, it is more likely

that auditors used to other information to issue audit reports. Only bad trading record announcements and gross cashflow ratios were used in both delisting announcements and qualified audit reports. This reflects the fact that, the information used in delisting environments and audit reports is dissimilar.

Chapter 8

Conclusions and contributions

8.1 Introduction

This chapter reviews the principal research questions as to whether audit reports have incremental content to predict delisting announcements; it also provides hypothesis development. The data and research methodology are then summarised. Furthermore, the chapter condenses the empirical findings of the study and compares with the previous study, by replicating the research methodology used by Lennox (1999a) on the data set. This is to investigate the differences between the two studies. Finally, the chapter discusses the major contributions of the study. These include methodological contributions, theoretical contributions and practical contributions. The final section of the chapter attempts to link this research with future research.

8.2 Principal research questions and hypothesis development

This study was motivated by the Thai financial crisis in the middle of 1997. Even if it is understandable that predicting an event is difficult for a particular profession, as professionals, auditors have some social responsibilities to do so. In this case, proper audit reports should be issued as a pre-warning signal prior to financial crisis. Therefore, this study has sought to determine whether audit reports could be useful as a predictive tool. The study started by investigating what information can be considered to predict failure. Considerable empirical evidence exists in support of the theory that financial statements (i.e. financial ratios) provide useful incremental information in the area of prediction. However, the association between audit reports and business failure have been less explored. Therefore, the present study extends the previous studies by investigating the incremental information content of audit reports and its relationship with business failure.

There are two main groups of hypotheses. The first group of hypotheses intended to investigate what information is used in delisting announcements. Audit reports, mainly going concern reporting, and all types of audit qualifications are the main independent variables which the analysis focuses on. There are numerous advantages in adopting delisting announcements as a dependent variable. Unlike bankruptcy criteria at the very last stage of liquidation, delisting

announcements should be considered as a pre-warning prior to business failure. This is not only to protect investors and creditors but also to help them to make informed decisions affecting their returns. Investors and creditors should get some returns for the risks they take, or the risks borne by them. In addition to the pre-announced rules for mandatory delisting, there are other advantages to using mandatory delisting as a business failure point. Delisting typically occurs prior to and more frequently than bankruptcy. In addition, delisting is an important failure-type event from the investors' standpoint, especially minor investors. On the other hand, liquidation may decrease the investment returns of minor investors. Finally, because delisting occurs with much greater frequency, it provides greater power to examine the relation with audit reports. Therefore, delisting should provide some opportunity for minor investors to recover, once a delisting has been announced. Voluntary delisting, mandatory delisting and delisting as a whole are used as the dependent variables for the analysis. Potential factors adopted from business failure studies and introduced by this study comprise macroeconomic factors, company internal factors and audit reports. For audit reports, various types and levels of audit reports are adopted in the analysis. This is to ensure that the aspects of audit reports, which provide useful information in the areas of prediction, are tested.

The second group of hypotheses intended to investigate what information is used in audit qualification. Going concern reporting and all types of audit qualifications are used as the dependent variables in the analysis. Similarly, the independent variables adopted in the first group of hypotheses are used to investigate the second group of hypotheses.

8.3 Data and research methodology

The functionalist paradigm was selected because the study attempts to verify whether the existing theory is still valid. The study therefore re-investigates, by developing the research methodologies of previous studies on different data sets. The data set in this study is the whole population of the Stock Exchange of Thailand during 1994 - 2000. The financial data in the data set, including financial ratios and audit reports, was mainly collected from the I-SIMS CD-ROMs prepared by the Security Exchange of Thailand (SET). To fulfil some missing data, data was also collected from the Registrar Department (RD), Ministry of Commerce. After the data collection had been completed, random verification of the information from the database against the hard copy of annual reports indicated high accuracy of database information. The financial

ratios and audit reports were collected from the year incurred. This was to avoid evolution of that information.

Conditional probability was adopted as the statistical technique in the analysis. However, logistic analysis (logit) was the main statistical technique used in the determination of the predictive power of individual independent variables, even if probit was also possible. There were two main reasons not to use the probit model as the main statistical technique. First, some independent variables of the data set in this present study are financial ratios, which may have a difficulty as regards normal distribution and homoscedasticity. Unlike the probit model, the logit model does not assume linearity of the relationship between independent and dependent variables. In addition, the logit model does not require normally distributed variables and does not assume homoscedasticity. Another superiority of the logit model is that probit coefficients are more difficult to interpret. This is because probit analysis does not allow calculation of the equivalent of odds ratios, and makes calculation of changes in probabilities more difficult than in the logit model. Probit is used to compare the results of the present study and the similar research conducted by Lennox (1999a). SPSS software package, version 10.0 was employed in this present study.

8.4 Empirical findings

Previous studies concentrating on the relationship between business failure and audit reports are quite rare. The work of Hopwood et al. (1989) could be recognised as a pioneer work. The study found that audit reports had incremental information content in bankruptcy. However, the recent research by Lennox (1999a) contradicts the work of Hopwood et al. (1989). Lennox argued that omitting publicly available information may have produced incorrect results. With publicly available information capturing company size, the economic cycles and industry sector, audit reports do not signal useful information on the probability of bankruptcy. The empirical findings, as shown in Chapter 7, agree more with Hopwood et al (1989), that audit reports are useful incremental information to delisting announcements, even if publicly available information is also included in the delisting models.

The intention of the following analysis is to compare this study with Lennox (1999a) in more detail. The analysis investigates as to whether audit reports are important determinants of delisting in the Lennox (1999a) context on the same data setting. It is realised that the dependent

and some independent variables are different to those adopted by Lennox (1999a). This may produce different results. However, the results may help to bring out more of the characteristics of the data used in this analysis as well as being interesting in their own right.

For the dependent variable, Lennox (1999a) used bankruptcy as a business failure point. UK bankruptcy covers five distinct legal regimes, which are 1) administrative receivership, 2) administration, 3) winding up (liquidation), 4) statutory compromises, and 5) reorganisations (Goode, 1997, p. 14). However, the following analysis uses delisting announcements, including voluntary and mandatory delisting as the dependent variable. These two criteria should be recognised as similar events, because they include both voluntary and mandatory cases.

There are two proxy independent variables in the following analysis. Lennox used the Quarterly Industrial Trends Survey to represent an economic condition and the number of employees to represent company size. However, this study introduces Gross Domestic Product (GDP) and Total assets, respectively, to substitute for these two variables. GDP should more represent a macroeconomic factor than Quarterly Industrial Trends Survey and there is no such a survey in Thailand. In addition, the number of employees is more suitable in capital incentive economy; however in labour incentive economy, like Thailand, total assets should present company size. Finally, the following analysis uses both probit and logit analysis to compare the results of the two statistical techniques. Table 8.1 summarises the variables used by Lennox (1999a) and this study. Table 8.2 provides variables and expected coefficient signs for the following analysis.

Table 8.1 Comparisons on variables between Lennox (1999a) and the study

	Lennox (1999a)	Present study
Independent variable	Bankruptcy	Delisting
Dependent variable	Number of companies entering bankruptcy	Number of companies entering delisting
	Quarterly Industry Trends Surveys	Gross Domestic Product
	Types of business[a]	Types of business
	Number of employees	Natural Log of Total assets
	Five financial ratios	Five financial ratios
	Audit reports	Audit reports
Statistical technique	Probit analysis	Probit and logit analysis
Data set	All listed companies in UK	All listed companies in Thailand

[a]Note that Lennox (1999a) classified types of business into six categories: energy and water, mining, manufacture, construction, financial services and real estate. Initially, the present study individually applied these six types of business in probit models. However, the financial service dummy variable is constant for all selected cases. This caused no results in probit analysis. Therefore, the analysis included all business types in the same variable.

Table 8.2 Variables and expected coefficient signs of this study under Lennox (1999a) context

Model	Variables	Definitions	Type	Expected sign
Dependent	DELISTED	1 if company issued final annual reports; 0, otherwise	(0,1)	NA
Independent	TOTAL	Number of companies entering delisting	Discrete	+
Independent	GDP	1 if Gross Domestic Products increases from last year; 0, otherwise	(0,1)	-
Independent	TYPE	1 if company business is in energy and water, mining, manufacture, construction, financial services and real estate and; 0, otherwise	(0,1)	+
Independent	AQR	1 if company's accounts are issued with modified opinions; 0, otherwise	(0,1)	+
Independent	CHAQR	1 if change from clean or less serious to more serious audit reports; 0, otherwise	(0,1)	+
Independent	AGS	1 if company's accounts were issued with going concern reporting under modified opinions; 0, otherwise	(0,1)	+
Independent	CHAGS	1 if change from non-going concern to going concern audit reports; 0, otherwise	(0,1)	+
Independent	LNTA	Natural Log of Total assets	Continuous	-
Independent	DT	Debtor turnover	Continuous	-
Independent	QR	Short-term liquidity (quick ratios)	Continuous	-
Independent	GC	Gross cash flow	Continuous	-
Independent	GR	Gearing ratios	Continuous	-
Independent	RC	Return on capital	Continuous	-

212

Table 8.3 summarises the results of all models in the analysis. The first model was extracted from the Lennox (1999a) study. The probit model shows that the number of companies entering bankruptcy (TOTAL), the proportion of respondents replying 'less optimistic' minus the proportion replying 'more optimistic', some business types (i.e. energy or water sector, construction sector, and real estate), the number of employees, gross cashflow ratios (GC), gearing ratios (GR), and returns on capital (RC) are statistically significant to bankruptcy models. However, audit qualifications including all types of audit reports and going concern audit reports are not statistically significant to the bankruptcy model.

In order to investigate the Thai financial crisis in the middle of 1997, the analysis is classified into 3 periods: 1994-1996, 1997-2000, and 1994-2000. For the period 1994-1996, it is unlikely that any factor could be considered as a predictive tool of delisting announcements. This is mainly perhaps because there were few occurrences of delisting companies before 1997. Also, no type of audit reports had useful incremental information content on delisting announcements in the period 1994-1996. No information content of audit reports in this study agrees with the Lennox (1999a) study.

However, after the Thai financial crisis, in the period 1997-2000, both probit and logit analysis show different results from what Lennox (1999a) had found. It is found that Gross Domestic Product (GDP), gross cashflow ratios (GC), going concern reporting issued under modified audit reports (AGS), and the change from non-going concern to going concern reporting issued under modified opinions (CHAGS) are important determinants of delisting announcements. The negative and significant coefficient of GDP shows that delisting announcements occur more (less) frequently when the economy moves from boom (recession) to recession (boom). The negative coefficient on gross cashflow (GC) indicates that low profits increased cashflow problems and the likelihood of delisting. In addition, the positive and significant coefficient of AGS and CHAGS could lead to the interpretation that delisting announcements were more likely to occur when listed company accounts were issued with going concern reporting issued under modified opinions than were listed companies without going concern audit reports. The informativeness of the change from non-going concern to going concern reporting increases the possibility of delisting. The results for the period 1994-2000 are similar to those in the period 1997-2000.

Overall, bankruptcy and delisting announcements share two common factors: economic indicators and gross cashflow ratios. However, it is more likely that financial difficulties in bankruptcy environments are more severe than in delisting environments. Financial ratios indicating bankruptcy include gearing ratios (GR) and returns on capital (RC). This means that companies experiencing cashflow problems may become delisted, whilst companies experiencing cashflow problems, high gearing ratios and low profitability are likely to go bankrupt. However, going concern audit reports may not be suitable to indicate bankruptcy, but the reports may be useful to indicate delisting announcements.

Table 8.3 Probit and logit models in bankruptcy and delisting

Independent variables	Lennox (UK) (Dependent variable: Bankruptcy)	Present study (Dependent variable: Delisting)					
	1988-1994	1994-1996		1997-2000		1994-2000	
	Probit	Probit	Logit	Probit	Logit	Probit	Logit
TOTAL	**-.018** **-4.013**		NA	.018 1.520	.046 .092	**.021** **2.978**	**.051** **.002**
GDP	**-.031** **-6.565**		NA	**-.505** **-2.765**	**-1.150** **.006**	**-.466** **-2.606**	**-1.089** **.008**
TYPE	na		-.268 .791	**.475** **2.091**	.825 .086	.334 1.794	.654 .118
LNTA	**-.000** **-2.245**		-.227 .625	-.084 -1.182	-.216 .166	-.081 -1.282	-.219 .128
DT	-.000 -1.788		-.001 .272	.000 .250	.000 .690	.000 .236	.000 .687
QR	-.000 -1.165		-.057 .093	.000 .615	.001 .566	.000 .254	.000 .867
GC	**-.000** **-2.334**		.015 .488	**-.006** **-3.729**	**-.011** **.001**	**-.005** **-3.713**	**-.010** **.001**
GR	**.000** **6.848**		.002 .761	-.000 -.300	.000 .687	-.000 -.194	.000 .774
RC	**-.000** **-2.136**		.000 .993	.000 .330	.000 .803	.000 .273	.000 .753
AQR	.674 1.739		1.089 .387	.183 .877	.589 .224	.258 1.434	.735 .092
CHAQR	-.279 -.729		-7.365 .827	-.073 -.245	-.266 .693	-.260 -.943	-.676 .302
AGS	-.381 -.786		1.797 .177	**.876** **3.419**	**1.734** **.001**	**.817** **3.563**	**1.712** **.000**
CHAGS	.159 .349		.539 .697	**-1.285** **-3.142**	**-2.411** **.004**	**-.809** **-2.590**	**-1.547** **.016**
CONSTANT	**-2.528** **-11.000**		-1.016 .811	**-2.105** **-3.222**	**-3.770** **.009**	**-2.114** **-3.992**	**-3.833** **.001**

Notes: 1. Coefficient is shown in the upper line.
2. The lower line shows *t-statistics* for probit and *p-value* for logit.   Bold shows significance at the .05 level.
3. NA means there are no results for probit analysis between 1994-1996. This is because two independent variables: TOTAL and GDP are constant for all selected cases. However, logit analysis provides the results of analysis. This leads to the idea that probit is more sensitive when there is a constant variable in the model.

This section attempts to look for reasons why the results found by Lennox (1999a) and the above analysis are different, especially audit reports. Lennox (1999a) found that audit reports do not provide incremental information content to predict failure, but the results of the above analysis contradict that.   Apart from the independent variables, which are used differently in Lennox (1999a) and this analysis, the reason might be that because there are factors which may outweigh other variables.   The Thai financial crisis in the middle of 1997 resulting in the decline of Gross Domestic Product (GDP) should be the most suspect variable.   The consequences of the decline of GDP may, for example, cause auditors to be careful when issuing audit reports. The result is that the number of audit qualifications fit well in the statistical analysis. In addition, the Thai

auditing society may differ from that of the UK. Before the Thai financial crisis, only a few lawsuits against Thai auditors were incurred. This resulted in very "relaxed opinions" in audit reports. However, this feeling has vanished since 1997. The number of lawsuits against Thai auditors has dramatically increased. Later, more qualified audit reports (including unqualified opinions with explanatory paragraphs) have been issued. This results in audit reports giving useful incremental information in delisting announcements. However, there was no economic crisis in the UK during the period of the Lennox (1999a) study. Furthermore, lawsuits are more common in the UK than in Thailand, and consequently are considered less serious.

In this section, it was found that the empirical findings of the above analysis are very similar to the work of Hopwood et al (1989). Even if the analysis included publicly available information, the empirical results show that audit reports are useful information for business failure, whilst the work of Lennox (1999a) resulted in the opposite direction.

8.5 Methodological contributions

The thesis has identified a number of improvements which could be made to the methodology of research in the future. There are three main areas of empirical research to which scholars pay attention: variables (both dependent and independent variables), data sets and statistical techniques. The following suggestions include these three main areas.

8.5.1 Variables

Research related to business failure prediction has been carried out for many decades. Bankruptcy is the most common criterion determining business failure. However, from the investment standpoint, it seems that this criterion gives too late a signal. The present study successfully introduces a delisting announcement as a criterion of business failure. The empirical finding shows that liquidity problems, which are an early stage of liquidation described by Boritz (1991), could be a business failure starting point and liquidity problems could be captured by delisting models. Therefore, the present study suggests that a delisting announcement should be used as a business failure criterion.

Previous research related to business failure has introduced a number of independent variables into business failure models. The independent variables can be classified into two main groups:

only financial ratios and financial ratios with other factors (see Table 2.2). However, recent research (e.g. Peel, 1989) and Lennox, 1999a) is unlikely to agree about the omission of factors capturing other useful information such as company size and economic cycle. Therefore, recent research tends to adopt other potential factors into failure prediction models. The present study initially replicated the research methodology mainly used by Lennox (1999a). In the later stages, the study extended previous work by introducing other variables into predictive models. For example, the data set contains all listed companies in the Thai Stock market. Therefore, the present study introduces bad trading records announced by the Thai Stock market as a potential factor in delisting models.

Based on the empirical results of this study, apart from factors replicated from previous studies, the analysis shows that bad trading records are statistically significant to delisting models. In addition the growth of Gross Domestic Product (GDP) and company size are important determinants of the probability of delisting. The present study introduces other potential factors, but they are not statistically significant, in the probability of delisting. The potential factors include the financial crisis year, the rehabilitation status announced by the stock market, audit firm size and different types of audit qualifications. For the financial crisis year, based on the empirical findings, even if the Thai financial crisis in the middle of 1997 is not statistically significant to all delisting models, the present study encourages further research to adopt this variable into the probability of business failure models. This is because the crisis may affect the probability of business failure.

8.5.2 Data set

Most previous studies have adopted a matching technique to select healthy companies once failed companies have been identified. However, many technical problems may cause the results to be misleading. For example, it is somewhat difficult to justify matching techniques, such as industry sectors, total assets and year of failure. In addition, the use of a relative small sample could lead to model overfit. Therefore, the data set should contain all possible samples such as all listed companies in stock markets. Even if data collection costs may be the greatest concern, it should be more useful to include all possible data into the data set, especially for an emerging stock market, in which the number of listed companies is relatively low. This is to investigate the overall results rather than to select non-representative samples which may be leading to wrong conclusions.

8.5.3 Statistical techniques

Previous business failure studies have been carried out with two main purposes: to increase the accuracy rate of the mathematical models and to investigate the statistical significance of individual factors. Therefore, statistical techniques have been adopted according to these two purposes. Univariate and discriminant analysis had long been used to classify failed companies as opposed to non-failed companies. However, the recent research finds that these two statistical techniques may contain theoretical mistakes. Neural network and multidimensional scaling statistical techniques are adopted when researchers intend to gain knowledge about how failed and non-failed companies are represented graphically. However, these two techniques do not provide information about the statistical coefficients of individual variables. Only the accuracy of the models is provided.

Recent research tends to adopt conditional probability statistical techniques in failure prediction studies. Within conditional probability techniques, logistic regression (logit) and probit are the most popular. When comparing these two techniques, logit analysis is adopted in preference to probit. This is mainly because of the advantages of the no normal distribution requirement and because it is easier to interpret coefficients than in probit. However, the present study compares the two techniques by applying the same variables as well as the same data set to them. It is found that the results for the two techniques are very similar. In some cases when a variable is constant, no outputs are shown in probit analysis, but they are in logit analysis. This leads to the idea that probit analysis is more sensitive than logit when one of variables is constant. Therefore, based on the advantages and non-sensitivity of logit analysis, this present study suggests that logistic regression should be preferred over probit analysis.

8.6 Theoretical contribution: audit qualifications as failure predictive tool

Based on the empirical research in the present study, going concern audit reports and all types of audit qualifications are important determinants of mandatory delisting announcements. For going concern audit reports, it should be no surprise that qualifications could be considered as a pre-warning of business failure. However, although auditing standard setters are unlikely to format auditing reports to predict future events or conditions that may cause an entity to cease to continue as a going concern, in fact, as mentioned in Section 1.3, Chapter 1, going concern is one of the fundamentals of auditing standards. Therefore, auditors are most likely to take going

concern into consideration when performing auditing work. In addition, auditors are required to express opinions as to whether financial statements are presented in true and fair view and in accordance with generally accepted accounting principles. (ICAAT, TSA No. 1, 1975, para. 4 and ICAAT, TSA No. 700, 2001, para. 17). This leads to the idea that, even if auditing standards explicitly state that there is no intention for audit reports to predict future events or conditions, it is possible that auditors also take going concern uncertainty into account.

For all types of audit qualifications, although auditors are less likely to indicate business failure using going concern audit reports, qualified audit reports may implicitly state some concerns relating to going concern uncertainty. The following explanation should give some idea as to why all types of audit qualifications could be considered as a pre-warning of business failure.

As stated in Section 3.3, Chapter 3, auditors are required to issue audit qualifications if financial statements exhibit (1) departure from generally accepted accounting principles (GAAP), (2) inconsistency in applying GAAP, (3) inadequate disclosure, (4) limitation of scope, and (5) uncertainty. These audit qualifications, especially limitation of scope and uncertainty, may imply that that the entity may have some problems which eventually reflect business failure. For example, a company may have difficulties in estimating losses to completion of long-term construction contracts. There are a number of assumptions, including those relating to substantially increased production and productivity, which have not yet been achieved. Alternative audit procedures have been performed, but failed to prove uncertainty. This results in a qualified audit opinion mentioning uncertainly audit qualifications. Subsequently, it is found that large amounts of money are needed to cancel the long-term contracts, resulting in the entity being unable to continue in existence. If the going concern uncertainty had been known before, modified audit reports mentioning the going concern uncertainty would have been given in the financial statements. However, at the point of issuing uncertainty audit qualifications, there was no information. This example leads to the idea that all types of audit reports may lead to an entity's ability to continue to exist.

In addition, based on the descriptive statistics of the present study, as shown in Table 8.4, it is found, that apart from going concern reporting, other audit qualifications were issued to the mandatorily delisted companies prior to delisting. Furthermore, Table 8.4 also gives rise to the idea that scope limitation and uncertainty qualifications are the most frequent audit qualifications given to mandatorily delisting companies prior to delisting. These two audit qualifications are

issued when alternative auditing procedures have been performed, but auditors are unable to express any opinion as to whether the financial statements present a true and fair view. It is possible that, if proper audit procedures had been performed, auditors would have been able to express their opinions. For example, auditors issued "Year 2000" qualifications because they were unable to perform any audit procedure to satisfy themselves as to whether computer systems would be infected from Year 2000. Therefore, auditors issued modified audit opinions regarding this matter. Similarly, after the Thai financial crisis in the middle of 1997, auditors were unable to find persuasive evidence as to what would be the consequences of the crisis. Therefore, "Economic crisis" qualifications were given to the companies that might encounter financial problems as a result of the crisis.

In addition, as mentioned in Section 2.3, Davis et al. (1982) state that no one image could capture fully the essence of accounting information. This leads to the idea that even if audit reports do not aim to predict events or conditions that may cause an entity to cease to continue as a going concern, it is possible that audit reports contain useful incremental information to predict business failure.

Therefore, it makes some sense to conclude with overall implications that audit reports should be not only steward reports, but in their qualifications they should be considered as containing useful incremental information about the probability of business failure.

Table 8.4 Uncertainty audit qualifications (except going concern) issued to mandatorily delisted companies (1994-1999)

No.	Years	Uncertainty qualifications							
		Economic crisis	Scope limitation	Non-audit subsidiary	Impairment of assets	Under allowance for bad debt	Contingent liabilities	Year 2000	Others
1	1 year prior to delisting	4	2	2	1	9	1	5	2
2	2 years prior to delisting	3	2	3	3	9	2		1
3	3 years prior to delisting	1	2	5	1	5	1		2
4	4 years prior to delisting		1	4	1	1			3
5	5 years prior to delisting		2	4	1				2

Note: The number in the table shows how many uncertainty audit qualifications were issued in particular qualifications.

8.7 Practical contributions

The research has indicated that a number of improvements to audit practice could and should be made. They include:

8.7.1 Liquidity problems: a business failure symptom

As mentioned in Section 5.3.1, Chapter 5, the previous research on business failure had problems in identifying at which particular stage a business should be considered as a failure. It is found in this study that liquidity problems could be considered as a pre-warning signal of business failure. Based on the empirical findings of this study, that quick ratios and gross cashflow ratios were important determinants of mandatory delisting announcements. Both of these ratios signal corporate liquidity problems which occur at the early stage of business failure, as outlined by Boritz (1991). This finding should be useful for investors. This is because, if the liquidity problems could be identified prior to business liquidation, it would be useful to help investors in stock markets to be wary of unhealthy companies as early as possible. Furthermore, when compared with bankruptcy business failure, as frequently referred to in the previous literature, mandatory delisting should be a better indicator, because bankruptcy might be too late for minor shareholders. The returns might not compensate investors and creditors for the risks they had taken. They lose the opportunity to invest in better sources of deposits, loans or investments in an entity's securities.

In sum, business failure should be identified as early as possible. The present study recommends that instead of using bankruptcy as a business failure point, mandatory delisting should be adopted as a pre-warning sign of business failure. The pre-warning of business failure point could be linked to the decline in liquidity ratios (i.e. quick ratios and gross cashflow ratios). Some of the advantages of considering mandatory delisting as the pre-warning of business failure is that minor shareholders can prepare against further damage by cutting down or avoiding investing in unhealthy companies. At the same time, investors should be more careful about considering mandatory delisting as a starting point for business failure.

8.7.2 Proposed adjustments of current auditing standards

The main objective of this section is to make use of the present opportunity to discuss auditing standards. The empirical results and descriptive statistics show important implications. Firstly, the descriptive statistics and empirical results show that all types of audit qualifications and going concern reporting issued under unqualified audit opinions with explanatory paragraphs and modified opinions have no incremental information content about the probability of mandatory delisting. On the other hand, all types of audit qualifications and going concern reporting issued under modified opinions are important determinants of mandatory delisting probability. Secondly, when going concern uncertainty becomes material, it is less possible that adverse opinions would be issued. In addition, all types of audit qualifications are more likely to be given to mandatorily delisted companies. Finally, as also found by Lennox (1999a), lagged audit reports are important determinants. The following sections propose some possible solutions to the above implications of descriptive statistics and empirical findings.

The following proposed adjustments on current audit standards are described. They include two main proposals: to adjust the auditor's report on financial statements, (i.e. the Thai Standard on Auditing 700 or International Standards on Auditing 700 *"The auditor's report on financial statements"* and to propose adjustments on going concerns (i.e. Thai Standard on Auditing 570 or International Standards on Auditing 570 *"Going Concerns"*).

8.7.2.1 Auditor's report on financial statements

There are three suggestions as regards the auditing standards on the auditor's report on financial statements.

8.7.2.1.1 For unqualified opinion with explanatory paragraphs: a new compromise audit opinion

As stated in Section 4.2, Chapter 4, one of the main objectives in changing from 2- to 3- paragraph audit reports was to eliminate "subject to" compromise audit opinions. However, even if "subject to" was already eliminated, the same idea of a compromise audit opinion still remained. Evidence has been found in the present study. As shown in Table 6.4, Chapter 6, the number of unqualified opinions with explanatory paragraphs has noticeably increased since the

new auditing standards became effective. On the other hand, the number of qualified audit opinions has noticeably decreased during the same period. This means that auditors have changed audit opinions from qualified opinions to unqualified opinions with explanatory paragraphs.

In addition, the empirical results of the present study show that, if the variables of audit qualifications and going concern reporting include audit qualifications issued under unqualified opinions with explanatory paragraphs and modified opinions, these variables do not appear to have useful incremental information content about the probability of mandatory delisting. However, when audit qualifications issued under unqualified audit opinions with explanatory paragraphs are excluded, it is found that there is useful incremental information content in modified audit qualifications about the probability of mandatory delisting. Even if the empirical results show that there is no incremental information content in unqualified opinions with explanatory paragraphs, which are considered as clean audit opinions, it leads to some idea that auditors are more likely to look for compromise opinions when there are some doubts in financial statements. Therefore, auditing standards setters should take this empirical finding into consideration.

The present study recommends reconsidering which audit qualifications should be allowed to be issued under unqualified opinions with explanatory paragraphs. Based on the empirical findings, going concern reporting should not be allowed to be issued under unqualified opinions with explanatory paragraphs. This is because the going concern reporting should be considered as "self-fulfilling prophecy", which gives rise to the concern as to whether the entity would remain a going concern in the subsequent period. It would not be beneficial to the audit society if going concern reporting or any other qualifications were considered as "self-defensive" audit qualifications.

8.7.2.1.2 For all types of audit reports leading to business failure

The empirical evidence finds that all types of audit qualifications signalled useful incremental information prior to mandatory delisting. In other words, all types of audit qualifications might reflect the entity's ability to continue to exist in the near future. However, professional auditing bodies do not aim, in either an implicit or an explicit way, to predict any future event through qualifications. In order to make auditors aware when issuing all types of audit reports, the

present study proposes that auditors should be required to state that the audit qualifications given in financial statements may not affect the entity's ability to continue to exist in the near future. Even if the general rule of audit qualifications is that there are no other audit qualifications unless otherwise stated, the main intention of the standards is to ask auditors to be aware as to whether the audit qualifications might affect the companies' going concern.

If the qualifications are not related to a company's going concern, auditors should be required to clearly state in their audit reports that "the qualifications do not lead to a company's inability to continue to exist in the near future". Rather than stating this after audit opinions, the statements should be made between the audit qualifications and the opinion paragraphs. This is to emphasise the importance of the going concern issue. The following audit report is an example of the wordings, when all types of audit qualification are issued, but there are no consequences to business failure.

Auditor's report to the shareholders of ABC Co.

We have audited the accompanying balance sheet of the ABC Company as of December 31, 200x, and the related statements of income, and cash flows for the year then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with International Standards on Auditing (or refer to relevant national standards or practices). Those Standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

(the middle paragraphs state audit qualifications)

(the proposed statement)
"The above audit qualifications do not necessarily imply the company's inability to continue to exist in the near future.

In our opinion, the financial statements give a true and fair view (or present fairly, in all material respects,') the financial position of the company as of December 31, 200x, and of the results of its operations and its cash flows for the year then ended in accordance with...(and compliance with...)

8.7.2.1.3 For repeated qualified audit reports

As also found in the present study and Lennox (1999a), lagged audit reports are important determinants of audit opinions. In other words, auditors are most likely to repeat their opinions as from the previous year. However, Lennox (1999a) did not suggest any solution to the persistency in audit reports. The present study proposes that auditing standards for audit reports should be adjusted, with auditors required to issue more serious opinions, for example, from clean or less serious audit reports to more serious audit reports, if there is no development from previous year qualifications. For instance, a qualified audit report regarding "under allowance for bad debt" has been issued in the last year audit reports; however, the same qualifications are still audit issues in the following year. Rather than repeating a qualified audit opinion, an adverse

opinion should be given. A disclaimer of opinion is perhaps not appropriate. This is because a disclaimer of opinion gives rise to the idea that no substantial evidence could support whether the financial statements present a true and fair view. On the other hand, an adverse opinion gives rise to the sense that financial statements do not present a true and fair view in that there is no improvement as regards the accounting problems from the last year. This forces the company to solve the previous year's auditing problems. Furthermore, it would be more beneficial to users if auditors were able to give some notion of development in their reports, rather than having the same audit qualifications being repeated.

However, there may be some arguments against such a proposal. A company might change auditors in order to maintain minimum audit qualifications. This is not likely to occur, because previous research has shown that a change in auditors is unlikely to reduce the seriousness of the audit report. In fact, succeeding auditors are more likely to be aware of the necessity to issue more serious audit opinions (e.g. Kluger and Shields, 1989).

8.7.2.2 Going concern auditing standards

Auditing standards for going concern uncertainty remain divergent. The US auditing standards for going concern certainty allow disclaimers of opinions only when the entity's ability to continue becomes more serious. However, the Thai and International auditing standards allow both disclaimers of opinions and adverse opinions when the entity's ability to continue becomes more serious, as explained in Section 4.2, Chapter 4.

The Thai and International auditing standards allow adverse opinions to be issued when the auditors have substantial doubt about the entity being able to continue as a going concern and when there is no adequate disclosure related to going concern uncertainty. However, the descriptive statistics in Table 6.8 Panel B show that going concern reporting were not frequently cited reasons for adverse and mixed audit opinions being given. This leads to the conclusion that adverse opinions about going concern uncertainty may not be appropriate. This is perhaps because it is unlikely that any company where going concern uncertainty is material would prefer financial statements given with adverse opinions. In addition, auditors are less likely to issue adverse opinions. This is perhaps because it is somewhat difficult to find any concrete evidence to identify whether financial statements present a true and fair view as regards a going concern. Instead, disclaimers of opinions may be deemed more appropriate when going concern

227

uncertainty becomes material. This is because disclaimers of opinions give rise to the sense that auditors have not obtained sufficient evidential matter to form opinions on the fairness of the presentation of financial statements as a whole. On the other hand, adverse opinions give rise to the issue that financial statements do not present a true and fair view. As a result, adverse opinions regarding going concern uncertainty should not be allowed as an option in the Thai and International Standards on Auditing for going concerns.

8.8 Suggestions for future research

This study should be considered as a springboard for future research. Previous studies to investigate whether audit reports provide information content to predict failure are quite few. The literature review by Asare (1990) states that the research on going concern uncertainty was not always consistent. Furthermore, previous business failure studies have been mainly conducted in Anglo-Saxon countries where data settings have been developed. This is a potential opportunity to extend future research by adopting different settings such as other emerging stock markets. This is to verify existing theories of audit reports as well as to re-confirm the implications suggested by the study.

In addition, even if the study attempts to induce potential factors influencing delisting events, the circumstances of business failure may not be similar from one stock market to another. Future research should consistently look for other potential factors. The potential factors should be in the areas involving business failure, which is always changing, according to the particular business environments in each period. As mentioned in footnote 5 in Chapter 5, one of the potential signals causing business failure should include the rehabilitation status. The main object is to find out if the phenomenon is operative in other situations and to extend its scope because of variations that other substantive areas may generate.

The empirical finings of the study show that other non-going concern reporting, especially uncertainty audit reports, could be considered as a predictor of business failure. Another possible opportunity for future research is to investigate the information content of audit reports which may indirectly imply a going concern uncertainty. The results of the future study should suggest that auditing standards should allow uncertainty audit qualifications, which imply a going concern uncertainty, to be issued.

Finally, As mentioned in the literature review, judgement plays a great role in auditing work, for example, the evaluation of internal control and risk assessment. These are potentially rich sites where future research should be carried out. Future studies should emphasise on auditors' perceptions when issuing audit qualifications. The main objective of this research should result in factors which auditors tend to use to qualify audit opinions. Qualitative research methodologies would be potentially more recommended than quantitative analysis.

In summary, this chapter accomplishes one major objective, by offering the key idea that audit reports could be considered as a predictive tool of business failure. Several contributions have been made both in theoretical and practical views. The final section has attempted to link this research with future research.

Appendix A[a]

Examples of modified audit reports

Types of audit reports	Paragraphs	Examples of the phrasing of such report forms
Qualified opinions		
"Except for" (Departure from GAAP)	Additional	No provision has been made against an amount of £.... Owning by a company which has been placed in liquidation since the year-end. The liquidator has indicated that unsecured creditors are unlikely to receive any payment and in our opinion full provision should be made.
	Opinion	**Except for** the failure to provide for the amount described above, in our opinion the financial statements, which have been prepared under the historical cost convention, give a true and fair view of the sate of the company's affairs at 31 December 19.. and of its profit and source and application of funds for the year then ended and company with the Companies Acts 1948 and 1967.
"Except for" (inadequate disclosure)	Additional	As explained in note ... the information concerning overseas investment acquired during the year has not been disclosed in accordance with Section 4(1) of the Companies Act 1967.
	Opinion	In our opinion the financial statements, which have been prepared under the historical cost convention, give a true and fair view of the state of the affairs of the company and the group at 31 December 19... and of the profit and source and application of funds of the group for the year then ended and **except for** the omission of the disclosure concerning overseas investments referred to above comply with the Companies Acts 1948 and 1967.
"Subject to" (lack of stock count)	Additional	One branch of the company did not carry out a physical count of stock at 31 December 19... and there were no practicable alternative auditing procedures that we could apply to confirm quantities. Accordingly, we have been unable to obtain all the information and explanations considered necessary to satisfy ourselves as to the existence of stock value at £... at 31 December 19... which is included as part of the total of £... in the balance sheet. In our opinion, in the case of the stocks referred to above, proper accounting records have not been kept as required by section 12, Companies Act 1976.
	Opinion	**Subject to** the effects of any adjustments which might have been shown to be necessary had a physical count of the branch stock been carried out, in our opinion the financial statements, which have been prepared under the historical cost convention, give a true and fair view of the sate of the company's affairs at 31 December 19.. and of its profit and source and application of funds for the year then ended and comply with the Companies Acts 1948 and 1967.

230

Appendix A (continued)

Types of audit reports	Paragraphs	Examples of the phrasing of such report forms
Qualified opinions		
"Subject to" (remaining unresolved from previous period)	Additional	As indicated in note .... to the financial statements debtors include an amount of £ ... which is the subject of litigation but against which no provision has been made. We have not been able to satisfy ourselves that this amount will be recoverable in full. We qualified our audit report on the financial statements at 31 December 19... (date of preceding financial statements) with regard to this same uncertainty.
	Opinion	**Subject to** the adjustment, if any, that may be required when the litigation is resolved in our opinion the financial statements, which have been prepared under the historical cost convention, give a true and fair view of the state of the company's affairs at 31 December 19.. and of its profit and source and application of funds for the year then ended and comply with the Companies Acts 1948 and 1981.
Disclaimer opinions		
Fundamental uncertainty (Loss contingency)	Additional	As indicated in note ... the estimates of losses to completion of long-term construction contracts depend on a number of assumptions including those relating to substantially increased production and productivity which have yet to be achieved. In view of these uncertainties we are unable to confirm that the provision of £... is adequate.
	Opinion	Because of the significance of this matter, **we are unable to form an opinion** as to whether the financial statements give a true and fair view of the state of company's affairs at 31 December 19... and of its profit and source and application of funds for the year then ended.
Adverse opinions		
Cash basis of recognising income	Additional	As stated in accounting policy note C on page..., the company recognises rental income from its hired equipment on a cash basis, without regard to the period to which the receipt relates. In our view this conflicts with the accruals accounting principle laid down in Schedule 8 to the Companies Act 1948, which requires that revenue be recognised in the financial statements for the period in which it is earned rather than when it is received.
	Opinion	Because of the significance of the matter referred to above, in our opinion **the financial statements do not give a true and fair view** of the state of the company's affairs at 31 December 19... or of its profit or of its source and application of funds for the year then ended. In our opinion the financial statements otherwise comply with the Companies Acts 1948 to 1981.

Types of audit reports	Paragraphs	Examples of the phrasing of such report forms
Unqualified opinions with explanatory paragraph		
Emphasis matters	Additional (the explanatory paragraph may appear before of after the opinion paragraph)	**We draw attention to note** ... with outlines a number of transactions with the parent company during the year without which the company would have incurred a loss.
	Opinion	In our opinion the financial statements, which have been prepared under the historical cost convention, give a true and fair view of the sate of the company's affairs at 31 December 19... and of its profit and source and application of funds for the year then ended and company with the Companies Acts 1948 and 1967.

[a] Sources: Hopkins, Leon (1981) *The audit report*. Butterworths, London.

Appendix B

Examples of going concern audit reports

(extracted from listed companies' financial statements from the Integrated-SET Information Management Systems (I-SIM), CD ROMs version)

A. MALEE SAMPRAN FACTORY PUBLIC COMPANY LIMITED

AUDITOR'S REPORTS

To the Shareholders of Malee Sampran Factory Public Company Limited

We have examined the consolidated balance sheet as at December 31, 1996 and 1995, the related consolidated statements of income, and cash flows for the years then ended of Malee Sampran Factory Public Company Limited and subsidiaries and have examined the balance sheets as at December 31, 1997 and 1996, and the related statements of income, and cash flows for the years then ended of Malee Sampran Factory Public Company Limited. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As described in Note 1 to financial statements, the group of companies has experienced losses from operations and the considerable amount of deficits as at year end date. However, the group of company has intended to continue its operations. As a result, the financial statements are prepared under a going concern.

In our opinion, subject to the effects as described in the middle paragraph, the consolidated financial statements referred to above present fairly the financial position as at December 31, 1996 and 1995 and the results of operations, and the cash flows for the year then ended of Malee Sampran Factory Public Company Limited, and the financial statements present fairly the financial position as at December 31, 1996 and 1995, and the results of operations, and the cash flows for the years then ended of Malee Sampran Factory Public Company Limited, in conformity with generally accepted accounting principles applied on a consistent basis.

Ruth Chaowanakawee
Certified Public Accountant 3247

Ernst &Young
Bangkok: 4 February 1997

MALEE SAMPRAN FACTORY PUBLIC COMPANY LIMITED
NOTES TO THE CONSOLIDATED AND EQUITY METHOD FINANCIAL STATEMENTS
FOR THE YEARS ENDED DECEMBER 31, 1996 AND 1995

1 GOING CONCERN

The group of companies has experienced losses from operations and the considerable amount of deficits as at yearend date. However, the group of company has intended to continue its operations. As a result, the financial statements are prepared under a going concern.

B. KARAT SANITARYWARE PUBLIC COMPANY LIMITED

REPORT OF THE AUDITORS

To the shareholders and the board of directors
Karat Sanitaryware Public Company Limited

We have examined the consolidated balance sheet as at December 31, 1997, and the related consolidated statements of income, changes in shareholders' equity, retained earnings and cash flows for the year then ended of Karat Sanitaryware Public Company Limited and subsidiary, and have examined the balance sheets as at December 31, 1997 and 1996, and the related statements of income, changes in shareholders' equity, retained earnings and cash flows presented by the equity method for each year then ended respectively of Karat Sanitaryware Public Company Limited. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

The accompany financial statements have been prepared assuming that the Company will continues as a going concern. As discussed in Note 1 to the financial statements, the Company has been experiencing recurring losses from operations and negative cash flows. The operations of the Company have been affected, to a certain extent, and will continue to be affected for the foreseeable future, by the country's unstable economy, caused in part by the currency volatility in the Asia-Pacific region. These matters may further continue to affect the operations of the Company. The financial statements do not include any adjustment that might result from the outcome of this uncertainty.

In our opinion, subject to the effects on the 1997 consolidated and equity method financial statements of such adjustments, if any, as might have been required had the outcome of the uncertainties about the Company ability to continue as a going concern referred to in the aforementioned paragraph been known, the consolidated financial statements referred to in the first paragraph present fairly the financial position as at December 31, 1997 and the results of operations, the changes in shareholders' equity and the cash flows for the year then ended of Karat Sanitaryware Public Company Limited and subsidiary, and the financial statements by the equity method, present fairly the financial position as at December 31, 1997 and 1996, and the results of operations, the changes in shareholders' equity and the cash flows for each year then ended respectively of Karat Sanitaryware Public Company Limited, in conformity with generally accepted accounting principles applied on a consistent basis.

Toemsakdi Krishnamra
Certified Public Accountant
DELOITTE TOUCH TOHMATSU JAIYOS

Bangkok
February 16, 1998

KARAT SANITARYWARE PUBLIC COMPANY LIMITED
NOTES TO THE CONSOLIDATED AND EQUITY METHOD FINANCIAL STATEMENTS
FOR THE YEARS ENDED DECEMBER 31, 1997 AND 1996

1 PROBLEM OF GOING CONCERN

Many Asia-Pacific countries, including Thailand are experiencing severe economic difficulties related to currency devaluations, volatile stock markets and slowdown in growth. The operations on the Company have been affected, and will continue to be affected for the foreseeable future, by the country' s unstable economy, caused in part by currency volatility in the Asia-Pacific region. The recoverability of the Company's assets and the ability of the Company to maintain or pay its debts as they mature are dependent to a large extent on the efficacy of the fiscal measures and other actions beyond the Company's control to achieve economic recovery. Nevertheless the Company has plan for financial restructuring to maintain as a going concern.

C. THE ROYAL CERAMIC INDUSTRY PUBLIC COMPANY LIMITED

REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANT

To: The Shareholders and the Board of Directors of

THE ROYAL CERAMIC INDUSTRY PUBLIC COMPANY LIMITED

We have audited the balance sheets of THE ROYAL CERAMIC INDUSTRY PUBLIC COMPANY LIMITED as at December 31, 1999 and 1998, the related statements of income, changes in shareholder's equity and the statement of cash flows for the years then ended. These financial statements are the responsibility of the Company's management as to their correctness and completeness of the presentation. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As disclosed in Note 1 to the financial statement, the operations of the Company have been affected by the economic difficulty since 1997. In 1999 and 1998, the Company has substantial losses from operations, and has capital deficiency and substantial liabilities. Furthermore, the Company has revaluation surplus of Property, Plant and Equipment and relevant assets in the amount of Baht 724.81 million as at December 31, 1999. The carrying value of these assets and related assets presents not less than book value subjected to the level of adequacy of recoverable amount. These matters raise substantial doubt about its ability to continue as a going concern. Management's plans concerning these matters are also described in Note 1. As these financial statements have been prepared on a going concern basis, they do not include any adjustments relating to the recoverability and classification of recorded asset amounts or to the amounts and classification of liabilities that might be necessary should the Company not be able to continues as a going concern.

Because the uncertainties of the matters as described in the third paragraph may have material affect on the Company's continuance as a going concern, we are unable to express, and we do not express, any opinion on the Company's financial statements for the year ended December 31, 1999.

In our opinion, the aforementioned financial statements present fairly, in all material respects, the financial position of THE ROYAL CERAMIC INDUSTRY PUBLIC COMPANY LIMITED as at December 31, 1998 and the results of operations for the years then ended in conformity with generally accepted accounting principles.

Mr. Somsit Techamontrikul
Certified Public Accountant No 430
United Auditing PKF Limited

Bangkok.

February 11, 2000.

THE ROYAL CERAMIC INDUSTRY PUBLIC COMPANY LIMITED

NOTES TO FINANCIAL STATEMENTS

For the years ended December 31, 1999 and 1998

1. Asia Pacific Economic Turmoil and going concern
Thailand and many Asia-Pacific countries continue to experience economic difficulties since 1997. The accompanying financial statements reflect management's current assessment of the possible impact of the economic conditions on the financial position of the Company. The ultimate effect of such uncertainties on the financial position of the Company cannot be presently determined.
In 1999, the Company has substantial losses from operations, and has capital deficiency and substantial liabilities. Management believed that it was appropriate to adopt the going concern basis in the preparation the financial statements because the Company is in the process of filing filed to the court asking to be a planner of restructuring plan under the rehabilitation law.

If the Company is unable to continue as a going concern, it may be required to realise its assets and extinguish its liabilities other than in the normal course of business and at amounts different from those stated in the financial statements. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or to the amounts and classification of liabilities that might be necessary should the Company not be able to continue as a going concern.

D. SAHAVIRIYA STEEL INDUSTRIES PUBLIC COMPANY LIMITED

REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

TO: THE SHAREHOLDERS AND BOARD OF DIRECTORS SAHAVIRIYA STEEL INDUSTRIES
    PUBLIC COMPANY LIMITED

We have audited the consolidated balance sheet of Sahaviriya Steel Industries Public Company Limited and its subsidiaries and the balance sheet of Sahaviriya Steel Industries Public Company Limited as at December 31, 1999, and the related consolidated and the Company's statements of income, changes in shareholders' equity, retained earnings and cash flows for the year then ended. These financial statements are the responsibility of the Company's management as to their correctness and completeness of the presentation. Our responsibility is to express an opinion on these financial statements based on our audit. The consolidated and the Company's financial statements for the year ended December 31, 1998 were audited by another auditor of the same firm, whose report thereon dated February 19, 1999 expressed an unqualified opinion with explanatory paragraphs concerning matters that raise substantial doubt as to the Company's ability to continue as a going concern and incremental amounts resulting from the assets appraisal.

We conducted our audit in accordance with generally accepted auditing standards in Thailand. Those standards require that we plan and perform the audit to obtain reasonable assurance as to whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated and the Company's financial statements referred to in the first paragraph present fairly, in all material respects, the financial position of Sahaviriya Steel Industries Public Company Limited and its subsidiaries and of Sahaviriya Steel Industries Public Company Limited as at December 31, 1999, and the results of operations, the changes in shareholders' equity, the retained earnings and the cash flows for the year then ended in conformity with generally accepted accounting principles in Thailand.

As described in Note 1 to the financial statements the Company has accumulated losses and has recently completed a debt restructuring. The Company's ability to perform under the restructuring is dependent on the Company and subsidiary's continuing ability to attain profitable operations.

Chongchitt Leekbhai
Certified Public Accountant (Thailand)
Registration No. 2649
DELOITTE TOUCHE TOHMATSU JAIYOS

BANGKOK
February 9,2000

SAHAVIRIYA STEEL INDUSTRIES PUBLIC COMPANY LIMITED AND SUBSIDIARIES
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEARS ENDED DECEMBER 31, 1999 AND 1998

1. ECONOMIC TURMOIL

Thailand and many Asia-Pacific countries continue to experience economic difficulties since 1997. The accompanying consolidated and the Company's financial statements reflect management's current assessment of the possible impact of the economic conditions on the financial position of the Company and its subsidiaries.

In 1998, the Company's current liabilities were substantially higher than its current assets. Part of current liabilities was the reclassification of long-term liabilities and convertible bonds to current liabilities as a result of the default in repayment of debts. In addition, the Company and a subsidiary Prachuap Port Company Limited, a subsidiary, had accumulated losses and liquidity problems.

In 1999, the Company and Prachuap Port Company Limited entered into debt restructuring agreements with their financial institution lenders (see Notes 1012 and 1113). The Company's ability to perform under the restructuring is dependent on the Company and subsidiary's continuing ability to attain profitable operations.

E. AYUDHYA INVESTMENT ANDTRUST PUBLIC COMPANY LIMITED

REPORT OF THE INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

TO: THE SHAREHOLDERS AND BOARD OF DIRECTORS AYUDHYA INVESTMENT AND TRUST PUBLIC COMPANY LIMITED

We have audited the consolidated balance sheet of Ayudhya Investment and Trust Public Company Limited and its subsidiary and the balance sheet of Ayudhya Investment and Trust Public Company Limited as at December 31, 1999 and the related consolidated and the Company's statements of income, changes in shareholders' equity, retained earnings (deficit), and cash flows for the year ended. These financial statements are the responsibility of the Company's Management as to their correctness and completeness of the presentation. Our responsibility is to report on these financial statements based on our audit. The consolidated financial statements and the Company's financial statements for the year ended December 31, 1998 were audited by another auditor of the same firm, whose report thereon dated February 12, 1999 disclaimed any opinion on the consolidated and the Company's financial statements due to the uncertainties of the Company's continuance as a going concern.

We conducted our audit in accordance with generally accepted auditing standards in Thailand. Those standards require that we plan and perform the audit to obtain reasonable assurance as to whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our report.

As described in Notes 3.5 and 4.6 to the financial statements, the Company and its subsidiary have estimated the required allowance for doubtful accounts using the guidelines established by the Bank of Thailand as issued on March 31, 1998 of Baht 2,791 million for the consolidated financial statements and of Baht 2,790 million for the Company's financial statements. Under these guidelines, the minimum allowance prorated effective for the year ended December 31, 1999 is 60% of the total estimated allowance. Under generally accepted accounting principles, an allowance for doubtful accounts should be fully recorded at the time it is estimated. The Company is additionally in the process of following various criteria that will affect the estimate, which include qualitative reviews. Had such qualitative reviews been completed the results may have been different from the amount estimated and computed. As at December 31, 1999 the Company and its subsidiary have recorded an allowance for doubtful accounts of Baht 1,696 million and Baht 1,695 million for the consolidated and the Company's financial statements, which represented 61% of the total allowance for doubtful accounts estimated by the management on December 31, 1999.

As discussed in Note 1 to the financial statements, Thailand and many other Asia-Pacific countries continue to experience economic difficulties since 1997. These difficulties have had a significant impact on the operations of the Company and its subsidiary. From the economic deterioration, it is not possible to forecast the effect to the operations of the Company and its subsidiary. In the event the level of non-performing assets exceeds the amount estimated by management, additional allowances may be required which could affect the capital adequacy of the Company and its subsidiary as described in Note 4.22. As at December 31, 1999, the Company has maintained adequate capital fund to risk assets but has not maintained adequate capital fund to 3 / 4 of the issued and paid-up share capital according to regulatory requirement. The Bank of Thailand allowed the Company to maintain capital fund less than regulator required within the requested period. However the Company has proposed a plan of changing the rehabilitation plan to the Bank of Thailand as described in Note 4.30.1. The Company plans to issue the additional ordinary share capital and issue ordinary shares to support the future exercise of newly issued warrants. The plan includes the restructuring process to increase new credits. The ability of the Company to continue as a going concern is dependent upon the profitability of operations, selling and receiving capital increase according to such plan of changing the rehabilitation plan. The consolidated and the Company's financial statements for the year ended December 31, 1999 have been prepared on a going concern basis assuming that the Company will realize its assets and extinguish its liabilities in the normal course of business, and be able to meet certain capital requirements of the Bank of Thailand and the Securities and Exchange Commission (Thailand). Had the Company been unable to comply with those requirements the Company will be subject to regulatory action by the Bank of Thailand or other governmental regulators, which raises a substantial doubt about its ability to continue as a going concern. The Company may be required to realize its assets and extinguish its liabilities other than in the normal course of business and at amounts different from those stated in the financial statements. These financial statements do not include any adjustments relating to the recoverability and the classification of recorded assets or the amount and the classification of liabilities that might be necessary should the Company not continue as a going concern.

Because the uncertainties of the matters as described in the fourth paragraph may have material affect on the financial statements for the year 1999, we are unable to express, and we do not express, any opinion on the consolidated financial statements of Ayudhya Investment and Trust Public Company Limited and subsidiary and the Company's financial statements of Ayudhya Investment and Trust Public Company Limited for the year ended December 31, 1999.

As described in Notes 3 and 4.29 to the financial statements, for the year ended December 31, 1999 the Company has changed its accounting for recognition of interest income, investment in securities and adopted other new accounting standards.

Dr. Suphamit Techamontrikul
Certified Public Accountant (Thailand)
Registration No. 3356
DELOITTE TOUCHE TOHMATSU JAIYOS

BANGKOK
February 7, 2000

AYUDHYA INVESTMENT AND TRUST PUBLIC COMPANY LIMITED
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEARS ENDED DECEMBER 31, 1999 AND 1998

1. ECONOMIC TURMOIL AND OPERATIONS OF THE COMPANY AND ITS SUBSIDIARY

1.1 Asia Pacific Economic turmoil

Thailand and many Asia-Pacific countries continue to experience economic difficulties since 1997. These difficulties have had a significant impact on the operations of the Company and its subsidiary. From the economic deterioration, it is not possible to forecast the effect to the Company and its subsidiary. As at December 31, 1999, the Company and its subsidiary have estimated that allowances for doubtful accounts of Baht 2,791 million, for the consolidated financial statements and Baht 2,790 million for the Company's financial statements would be adequately provided against the effects of the deteriorating economy and the resultant likely rise in loan payment defaults. In the face of possible further economic deterioration, the adequacy of these estimates will be dependent on many external factors to the Company and its subsidiary which they cannot control or accurately forecast at this time. It is therefore not possible to forecast the effect of adverse economic conditions that might have on the earnings and balance sheets of the Company and its subsidiary. Should further increase in non-performing loans above the amount estimated occurs, then additional allowances would be required, with resultant impact on the adequacy of the Company capital base.

However, the Financial Institutions Development Fund has guaranteed to repay debts to depositors and borrowers of the Company.

These continuing and increasing difficulties have caused the Thai Governmental regulators to take actions to try to restore liquidity and viability to the financial institution system. Absent a reversal of the deterioration in the Thai economy, the regulators would likely take further actions or make further policy changes which could adversely affect the Company and its subsidiary.

1.2 The accompanying financial statements have been prepared on the going concern basis, which contemplates the relaxation of assets, liquidation of liabilities in the normal course of business and the Company being able to meet the ratio of total and Tier 1 capital to risk-weighted assets and the net capital rules of the Bank of Thailand and the Office of the Securities and Exchange Commission (Thailand). If the Company is unable to continue as a going concern, the Bank of Thailand or other governmental regulators may take action which may materially affect its ability to continue as a going concern. However, the Company is now operating in accordance with the plan of changing the rehabilitation plan dated January 24, 2000 and the Memorandum of Understanding with the Bank of Thailand dated January 31, 2000 in relation to the Company's preparation for the capital fund to be not less than that stipulated by regulation. In the event that the Company is unable to successfully increase its capital and official regulators consider that it is necessary to intervene in the Company's operations, the Company's Board of Directors shall willingly be cooperative with regards to the detailed procedures for the smooth transition and to limit the damage to the financial institution system (see Note 4.30.1).

F. SEA HORSE PUBLIC COMPANY LIMITED

AUDITORS REPORT

To the Shareholders of Sea Horse Public Company Limited:

I have audited the balance sheets of Sea Horse Public Company Limited as at December 31, 1999 and 1998, and the related statements of income, changes in shareholders equity, deficit and cash flows for each of the years then ended. The Company's management is responsible for the correctness and completeness of information presented in these financial statements. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audits in accordance with generally accepted auditing standards. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. I believe that my audits provide a reasonable basis for my opinion.

In my opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Sea Horse Public Company Limited at December 31, 1999 and 1998, and the results of its operations and its cash flows for each of the years then ended in conformity with generally accepted accounting principles.

Without qualifying my opinion, I draw attention to Note 1 to the financial statements.

The operations of Sea Horse Public Company Limited may continue to be influenced by the economic conditions in Thailand and the Asia Pacific Region in general. As shown in the 1999 and 1998 financial statements, the Company incurred net loss on operations of Baht 31.58 million and Baht 114.58 million, respectively and as at December 31, 1999 and 1998, the Company's current liabilities exceeded current assets by Baht 238.77 million and Baht 216.29 million and deficit by Baht 503.77 million and Baht 472.19 million, respectively and default in loans from domestic bank as mentioned in Notes 2.9, 2.10 and 2.13 to the financial statements and the ability to continue as a going concern depends on successful planning organised by management, for example to negotiate for debt restructuring with bank, to find additional sources of funds, cease branch operations and disposal of assets which are not fully utilised.

These factors raise substantial doubt about the Company's ability to continue as a going concern. The financial statements do not include any adjustments necessary should the Company be unable to continue as going concern. In addition, I draw attention to Note 2.1 to the financial statements, regarding transactions with related parties and its property, plant and equipment has net book value as at December 31,1999 amounting to Baht 195.43 million which the Company is in the process on revaluation and expected to finalise on April, 2000.

Nirand Lilamethwat
Certified Public Accountant
Registration Number 2316
KPMG Audit (Thailand) Limited

Bangkok, February 28, 2000

As required by Thai law and regulatory requirements, the Company's financial statements and auditors report thereon have been prepared in the Thai language. They have been translated into English for the convenience of the reader.

SEA HORSE PUBLIC COMPANY LIMITED
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEARS ENDED DECEMBER 31, 1999 AND 1998

Note 1 ECONOMIC ENVIRONMENT AND GOING CONCERN

The operations of Sea Horse Public Company Limited (the Company) may continue to be influenced by economic conditions in Thailand and the Asia Pacific Region in general. The financial statements of the Company reflect the management's current assessment of the impact of current economic conditions on the financial position of the Company. However, actual results could differ from the management estimates.

The Company incurred net loss on operations in 1999 and 1998 of Baht 31.58 million and Baht 114.58 million and, as at December 31, 1999 and 1998, the Company's current liabilities exceeded current assets by Baht 238.77 million and Baht 216.29 million and deficit of Baht 503.77 million and Baht 472.19 million, respectively and default in loans from domestic bank. See Notes 2.9, 2.10 and 2.13 to the financial statements. The financial statements in 1999 and 1998 have been prepared on a going concern basis, which assumes that the Company will continue in operation. The validity of this assumption is dependent upon the Company's ability to meet its financial requirements, and the success of future operations. If the Company were unable to continue in operation, adjustments would have to be made to reduce the value of assets to their recoverable amounts, to provide for any additional liabilities that might arise and to consider the classification of those assets and liabilities.

To rectify the ability to continue as a going concern, the Company has planned to negotiate for debt restructuring with bank, to find additional sources of funds, cease branch operations and disposal of assets which are not fully utilised.

G. SIAM STELL SERVICE CENTER PUBLIC COMPANY LIMITED

REPORT OF CERTIFIED PUBLIC ACCOUNTANT

To the Shareholders of
Siam Steel Service Center Public Company Limited

I have audited the balance sheets of Siam Steel Service Center Public Company Limited as at December 31, 1999 and 1998, and the related statements of income, changes in shareholders' equity, deficit and cash flows for the years then ended. These financial statements are the responsibility of the Company's management as to their correctness and completeness of the presentation. My responsibility is to express an opinion on these financial statements based on my audits.

I conducted my audits in accordance with generally accepted auditing standards in Thailand. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. I believe that my audits provide a reasonable basis for my opinion.

In my opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Siam Steel Service Center Public Company Limited as at December 31, 1999 and 1998, and the results of its operations and its cash flows for the years then ended in conformity with generally accepted accounting principles in Thailand.

As explained in Note 13 to the financial statements, the Company has given retroactive effect to the change in accounting for underwriting fees and deferred charged. As discussed in Note 1 to the financial statements, the accompanying financial statements include the effects of the economic crisis to the extent
they are known and estimable. The operations of the Company have been affected and may continue to be affected for the foreseeable future, by the volatile foreign exchange rates, slowdown in economic growth and the general deterioration of the economies of countries in the Asia Pacific region. The Company incurred a net loss for the year 1999 approximately Baht 511.1 million. As at December 31,1999, the Company's current liabilities exceed its current assets by approximately Baht 1,150.9 million and deficit of approximately
Baht 1,638.3 million. As a result, there are uncertainties that may affect the Company future operations, the recoverability of the Company's assets and the ability of the Company to maintain or pay its debts as they mature. However, the financial statements have been prepared in conformity with principles of accounting applicable to a going concern. The financial statements do not include any adjustments relating to the realisation of the carrying value of assets and the restatement of liabilities at the amount to be paid or the
Classification of assets and liabilities that might be necessary should the Company be unable to continue as a going concern. The ultimate outcome of this matter cannot presently be determined.

SOMCKID TIATRAGUL
C.P.A. (THAILAND)
Registration No. 2785

Bangkok
February 15, 2000

1.3 The Effects from Economic Crisis

The operations of the Company have been affected, and may continue to be affected for the foreseeable future, by the adverse economic conditions in Thailand and Asia Pacific, including the volatile foreign exchange rates, restriction of credit, high interest rates, slowdown in economic growth and the general deterioration of the economies of countries in the Asia Pacific region. The Company incurred a net loss for the year approximately Baht 511.1 million. As at December 31, 1999, the Company's current liabilities exceed its current assets by approximately Baht 1,150.9 million and deficit of approximately Baht 1,638.3 million. Further, it is not possible to determine the future effect a continuation of the economic crisis may have on the Company's liquidity and earnings, including the effect on transactions with the Company's customers and suppliers. As a result, there are uncertainties that may affect future operations, the recoverability of the Company's assets, and the ability of the Company to maintain or pay its debts as they mature. The financial statements have been prepared in conformity with principles of accounting applicable to a going concern. The financial statements do not include any adjustments of liabilities to the realisation of the carrying value of assets and the restatement of liabilities to a repayable amount or the classification of assets and liabilities that might be necessary should the Company be unable to continue as a going concern. The ultimate effect, which may be material, of these uncertainties on the stated amounts of assets and liabilities at the balance sheet date cannot presently be determined.

H. WATTANA KARNPAET PUBLIC COMPANY LIMITED AND SUBSIDIARY

AUDITORS' REPORT

TO: THE SHAREHOLDERS AND THE BOARD OF DIRECTORS OF
     WATTANA KARNPAET PUBLIC COMPANY LIMITED

I have audited the balance sheets of WATANA KARNPAET PUBLIC CO., LTD. and consolidated balance sheets of WATANA KARNPAET PUBLIC CO., LTD. AND SUBSIDIARY as at December 31, 1999 and 1998, the related statements of income, retained earnings (deficits), changes in shareholders' equity, and cash flows for the years then ended of WATANA KARNPAET PUBLIC CO., LTD. And the related consolidated statements of income, retained earnings (deficits), and changes in shareholders' equity, and cash flows for the years then ended of WATANA KARNPAET PUBLIC CO., LTD. AND SUBSIDIARY. These financial statements are the responsibility of the Company's management as to their correctness and completeness of the presentation. My responsibility is to express an opinion on these financial statements based on my audits.

I conducted my audits in accordance with generally accepted auditing standards. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. I believe that my audit provides a reasonable basis for my opinion.

As discussed in Note 2, the consolidated financial statements for the year ended December 31, 1999, had included the financial statements of the Company's subsidiary, which have been prepared in conformity with principles of accounting applicable to a going concern, which contemplate the realisation of assets and the liquidity of liabilities in the normal course of business. However, the Subsidiary's financial statements, for the year ended December 31, 1999, incurred a net loss of Baht 33.85 million, and as of that date, the Subsidiary's deficit amounted to Baht 109.09 million, and its total current liabilities exceeded its total current assets by Baht 132.28 million, and its capital deficiency of Baht 7.71 million. The accompanying consolidated financial statements for the year ended December 31, 1999, do not include any adjustments
relating to the realisation of the carrying value of assets or the amount and classification of liabilities that might be necessary should the Subsidiary be unable to continue as a going concern. The Subsidiary's continued operations are dependent upon its ability to operate profitably and to generate additional
funds to meet its obligations as these fall due.

In our opinion, subject to the effects of such adjustment if any, as might have been required to the consolidated statements for the year ended December 31, 1999, had the outcome of the uncertainty referred to in the preceding paragraph been known, the financial statements referred to above
present fairly, in all material respects, the financial positions of WATANA KARNPAET PUBLIC CO., LTD. as at December 31, 1999 and 1998, and the results of its operations and its cash flows for the years then ended, and the above mentioned consolidated financial statements present fairly, in all material
respects, the consolidated financial positions of WATANA KARNPAET PUBLIC CO., LTD. AND SUBSIDIARY as at December 31, 1999 and 1998, and the consolidated results of its operations, and its consolidated cash flows for the years then ended, in conformity with generally accepted accounting principles.

In addition, we have the following observations:
1. As discussed in Note 1, the accompanying financial statements do not include any adjustments that might be incurred from the uncertainties which have been resulted from the country's economic crisis. Such crisis was derived from declining in economic growth, interest rate volatility, restriction in credit facilities by financial institutions, etc.
2. As discussed in Note 11, we did not audit the Company's and Subsidiary's computer preparations for the impact of year 2000, we therefore, do not express an opinion on such matter.

(MISS SUWANNEE KASEMSRITHANAWAT)
Certified Public Accountant
Registration No. 3394

January 18, 2000, except for Note 6.2
as to which the date is February 7, 2000

WATTANA KARNPAET PUBLIC COMPANY LIMITED AND SUBSIDIARY
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1999, and 1998

1. BASIS FOR FINANCIAL STATEMENTS

The accompanying financial statements do not include any adjustments that might be incurred from the uncertainties which have been resulted from the country's economic crisis. Such crisis was derived from declining in economic growth, interest rate volatility, restriction in credit facilities by financial institutions, etc. Since the said economic crisis might affect the Company and its Subsidiary, their shareholders, other entities with whom the Company and Subsidiary undertake business. The Company and Subsidiary will reflect such effects when they can be known and estimated.

I. THE INTERNATIONAL ENGINEERING PUBLIC COMPANY LIMITED

AUDITOR'S REPORT

To the Shareholders of The International Engineering Public Company Limited

I have audited the accompanying consolidated and company balance sheets of The International Engineering Public Company Limited as at 31 December 2000 and 1999 and the related consolidated and company statements of income, changes in shareholders' equity, retained earnings and cash flows for the years then ended. These financial statements are the responsibility of the company's management. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audits in accordance with generally accepted auditing standards. Those standards requires that I plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. I believe that my audits provide a reasonable basis for my opinion.

In my opinion, the aforementioned consolidated and company financial statements present fairly, in all material respects, the consolidated and company financial position of The International Engineering Public Company Limited as at 31 December 2000 and 1999 and the consolidated and company results of operations and cash flows for the years then ended in accordance with generally accepted accounting principles.

Without qualifying my opinion, I draw your attention to note 1 to the consolidated and company financial statements concerning the uncertainties regarding the company's ability to continue as a going concern. The factors giving rise to the uncertainties can be summarised as follows:

1) As at 31 December 2000, the Group has consolidated current liabilities of Baht 883 million (1999: Baht 2,226 million) and consolidated current assets of Baht 750 million (1999: Baht 821 million). Included in the consolidated current liabilities are a US dollar loan, a local currency loan from a financial institution and debentures amounting to Baht 326 million (1999: Baht 1,358 million), Baht 15 million (1999: Baht 98 million) and Baht 231 million (1999: Baht 428 million), respectively, which were due for repayment since October 1998, November 1998 and May 2000, respectively. The company has defaulted in the repayment of the loans and the debentures and is in the process of negotiating with lenders and debenture holders a reduction of outstanding debt and/or an extension of repayment terms. The ultimate outcome of the negotiations cannot be determined at present.

2) During the years 2000 and 1999, most of the company's lenders which include short term loan creditors and bank overdraft creditors mutually filed lawsuits demanding the company to repay the loan principals and interest totalling Baht 296 million (1999: Baht 1,334 million). In addition, on 23 July 1999, the trustee of the debenture holders mutually filed a lawsuit with the Civil Court demanding the company to repay the principals and interest to the debenture holders amounting to Baht 428 million (1999: Baht 428 million) and Baht 22 million (1999: Baht 22 million) respectively. During the year 2000, the company negotiated with the debenture holders and redeemed the debentures of totalling 196,360 units with a book value of Baht 196 million, resulting in an outstanding balance of debentures of Baht 231 million as at 31 December 2000.

3) As at 31 December 2000, the company has a guarantee commitment to a bank over specific loans of the M. Group Public Company Limited amounting to Baht 1,198 million (1999: Baht 1,198 million). The guarantee was made in April 1996. The company's management who has responsibility for financial and accounting matters was unaware of the guarantee and no supporting documentation was available to substantiate its existence. The guarantee has been disclosed for the first time in the interim consolidated and company financial statements for the nine-month period ended 30 September 1999. At the extraordinary shareholders meeting No. 1/2542 on 21 January 2000, all shareholders unanimously voted to ratify the loan guarantee. On 20 August 1999, a lender of The M. Group Public Company Limited filed a lawsuit with the Civil Court demanding the company as a guarantor and The M. Group Public Company Limited to repay loan principal with interest amounting to Baht 1,740 million. Although The M. Group Public Company Limited has pledged land and property and share certificates of Asia Broadcasting and Communication Network, Limited as collateral, the collateral value may be insufficient to extinguish the loan and therefore the company as a guarantor may incur additional liabilities. No provision for such additional liabilities has been made in the financial statements as the company, being a guarantor, is unable to estimate the amount of the liabilities.

The above factors indicate the existence of material uncertainties which may cast significant doubt about the company's ability to continue as a going concern. However, the consolidated and company financial statements for the years ended 31 December 2000 and 1999 have been prepared on the assumption that the company is a going concern and do not include any adjustments relating to the recoverability and classification of recorded assets amounts, or to amounts and classification of liabilities that may be necessary if the company is unable to continue as going concern.

NATTAPORN PHAN-UDOM
Certified Public Accountant
  (Thailand) No. 3430
PricewaterhouseCoopers ABAS Limited

Bangkok
9 February 2001

The International Engineering Public Company Limited
Notes to the Consolidated Financial Statements and Company Financial Statements
For the years ended 31 December 2000 and 1999

1. Going concern uncertainties

The company has uncertainties regarding the company's ability to continue as a going concern from the following factors:

1) As at 31 December 2000, the Group has consolidated current liabilities of Baht 883 million (1999: Baht 2,226 million) and consolidated current assets of Baht 750 million (1999: Baht 821 million). Included in the consolidated current liabilities are a US dollar loan, a local currency loan from a financial institution and debentures amounting to Baht 326 million (1999: Baht 1,358 million), Baht 15 million (1999: Baht 98 million) and Baht 231 million (1999: Baht 428 million), respectively, which were due for repayment since October 1998, November 1998 and May 2000, respectively. The company has defaulted in the repayment of the loans and the debentures and is in the process of negotiating with lenders and debenture holders a reduction of outstanding debt and/or an extension of repayment terms. The ultimate outcome of the negotiations cannot be determined at present.

2) During the years 2000 and 1999, most of the company's lenders which include short term loan creditors and bank overdraft creditors mutually filed lawsuits demanding the company to repay the loan principals and interest totalling Baht 296 million (1999: Baht 1,334 million). In addition, on 23 July 1999, the trustee of the debenture holders mutually filed a lawsuit with the Civil Court demanding the company to repay the principals and interest to the debenture holders amounting to Baht 428 million (1999: Baht 428 million) and Baht 22 million (1999: Baht 22 million) respectively. During the year 2000, the company negotiated with the debenture holders and redeemed the debentures of totalling 196,360 units with a book value of Baht 196 million, resulting in an outstanding balance of debentures of Baht 231 million as at 31 December 2000.

3) As at 31 December 2000, the company has a guarantee commitment to a bank over specific loans of the M. Group Public Company Limited amounting to Baht 1,198 million (1999: Baht 1,198 million). The guarantee was made in April 1996. The company's management who has responsibility for financial and accounting matters was unaware of the guarantee and no supporting documentation was available to substantiate its existence. The guarantee has been disclosed for the first time in the interim consolidated and company financial statements for the nine-month period ended 30 September 1999. At the extraordinary shareholders meeting No. 1/2542 on 21 January 2000, all shareholders unanimously voted to ratify the loan guarantee. On 20 August 1999, a lender of The M. Group Public Company Limited filed a lawsuit with the Civil Court demanding the company as a guarantor and The M. Group Public Company Limited to repay loan principal with interest amounting to Baht 1,740 million. Although The M. Group Public Company Limited has pledged land and property and share certificates of Asia Broadcasting and Communication Network, Limited as collateral, the collateral value may be insufficient to extinguish the loan and therefore the company as a guarantor may incur additional liabilities. No provision for such additional liabilities has been made in the financial statements as the company, being a guarantor, is unable to estimate the amount of the liabilities.

The above factors indicate the existence of material uncertainties which may cast significant doubt about the company's ability to continue as a going concern. However, the consolidated and company financial statements for the years ended 31 December 2000 and 1999 have been prepared on the assumption that the company is a going concern and do not include any adjustments relating to the recoverability and classification of recorded assets amounts, or to amounts and classification of liabilities that may be necessary if the company is unable to continue as going concern.

Appendix C (Diagnostics of the data set)

Appendix C.1 Pearson correlation of variables (1994-1996)

	DELISTED	MAN	VOL	YEAR 1997	GDP	LNTA	BTR	BS	NONEY	EY	AG	CHAG	AGP	AGS	CHAGS	AGSP
DELISTED	1.000															
MAN	.924 / .000	1.000														
VOL	.373 / .000	.373 / .000	1.000													
YEAR1997																
GDP	-.103 / .000	-.105 / .000	-.015 / .595		1.000											
LNTA	.117 / .000	.148 / .000	-.053 / .059		-.078 / .006	1.000										
BTR	.009 / .762	.023 / .424	-.032 / .251		.109 / .000	.014 / .620	1.000									
BS	.044 / .118	.063 / .025	-.038 / .182		-.009 / .740	.280 / .000	.072 / .010	1.000								
NONEY	.068 / .016	.068 / .016	-.018 / .520		-.010 / .725	.306 / .000	.065 / .020	.751 / .000	1.000							
EY	-.039 / .172	-.031 / .268	-.025 / .376		.002 / .952	-.063 / .024	.004 / .899	.272 / .000	-.431 / .000	1.000						
AG	.114 / .000	.065 / .020	.139 / .000		-.035 / .212	-.118 / .000	.177 / .000	-.061 / .029	-.058 / .041	.000 / .998	1.000					
CHAG	.073 / .032	.081 / .018	-.008 / .805			-.058 / .089	.141 / .000	-.058 / .088	-.021 / .532	-.048 / .154	.610 / .000	1.000				
AGP	.100 / .003	.019 / .581	.236 / .000			-.122 / .000	.173 / .000	-.046 / .176	-.072 / .034	.042 / .214	.760 / .000	-.017 / .608	1.000			
AGS	.114 / .000	.065 / .020	.139 / .000		-.035 / .212	-.118 / .000	.177 / .000	-.061 / .029	-.058 / .041	.000 / .998	1.000 / .000	.610 / .000	.760 / .000	1.000		
CHAGS	.104 / .003	.114 / .001	-.008 / .831		-.005 / .881	-.053 / .135	.130 / .000	-.053 / .131	-.020 / .578	-.043 / .221	.550 / .000	.830 / .000	-.016 / .658	.550 / .000	1.000	
AGSP	.108 / .002	.022 / .534	.235 / .000			-.124 / .000	.173 / .000	-.047 / .187	-.072 / .043	.040 / .258	.760 / .000	-.019 / .593	1.000 / .000	.760 / .000	-.016 / .658	1.000
AQR	.017 / .558	.017 / .558	.010 / .723		-.007 / .794	.018 / .527	.149 / .000	.018 / .529	.031 / .264	-.022 / .443	.250 / .000	.176 / .000	.202 / .000	.250 / .000	.146 / .000	.202 / .000
CHAQR	-.004 / .916	-.004 / .916	-.018 / .603		-.015 / .653	.010 / .777	.051 / .132	-.055 / .104	-.039 / .249	-.018 / .587	.031 / .365	.085 / .013	-.037 / .279	.031 / .365	.068 / .054	-.039 / .273
AQRP	.035 / .305	.035 / .305	.066 / .051			.011 / .737	.177 / .000	.043 / .209	.046 / .178	-.008 / .804	.240 / .000	.125 / .000	.214 / .000	.240 / .000	.105 / .003	.215 / .000
AQT	.020	.020	.008		-.025	.019	.153	.021	.025	-.007	.241	.168	.192	.241	.139	.192

	.473	.473	.789		.382	.509	.000	.449	.385	.817	.000	.000	.000	.000	.000	.000
CHAQT	.018	.018	-.020		-.014	.019	.024	-.051	-.035	-.017	.022	.077	-.041	.022	.061	-.041
	.608	.608	.574		.691	.582	.500	.151	.317	.621	.525	.028	.241	.525	.086	.241
AQTP	.043	.043	.063		.045	.001	.156	.045	.044	-.003	.232	.120	.210	.232	.102	.210
	.225	.225	.074		.200	.971	.000	.199	.207	.934	.000	.001	.000	.000	.004	.000
AQRGC	-.025	-.025	-.041		.005	.062	.087	.041	.054	-.022	-.113	-.059	-.091	-.113	-.072	-.099
	.374	.374	.146		.846	.028	.002	.147	.057	.431	.000	.083	.007	.000	.042	.005
CHAQRGC	.009	.009	-.017		-.009	.027	.021	-.053	-.046	-.005	-.047	-.031	-.036	-.047	-.026	-.036
	.797	.797	.626		.808	.442	.546	.136	.196	.884	.182	.376	.310	.182	.463	.310
AQRGCP	.015	.015	-.007			.047	.112	.059	.075	-.028	.005	.132	-.096	.005	.112	-.096
	.663	.663	.835			.183	.001	.096	.034	.421	.879	.000	.007	.879	.002	.007
AQTGC	-.021	-.005	-.043		-.012	.062	.092	.044	.046	-.007	-.118	-.064	-.097	-.118	-.075	-.104
	.465	.870	.130		.659	.028	.001	.117	.102	.813	.000	.060	.004	.000	.033	.003
CHAQTGC	.030	.039	-.018		-.016	.033	-.017	-.014	-.014	.001	-.049	-.033	-.037	-.049	-.027	-.037
	.392	.265	.611		.660	.342	.628	.688	.690	.974	.164	.355	.289	.164	.442	.289
AQTGCP	.016	.016	.004		-.018	.042	.107	.053	.062	-.018	-.008	.119	-.098	-.008	.097	-.098
	.644	.652	.918		.607	.233	.002	.130	.077	.617	.813	.001	.006	.813	.006	.006
DT	-.015	-.025	.002		.025	-.087	-.009	.005	-.026	.043	-.003	-.039	.019	-.003	-.031	.017
	.634	.436	.953		.428	.006	.766	.879	.418	.175	.916	.307	.624	.916	.440	.667
QR	-.021	-.035	.005		.022	-.037	.009	.087	.043	.057	-.089	-.060	-.080	-.089	-.052	-.079
	.499	.271	.883		.487	.239	.778	.006	.175	.073	.005	.116	.037	.005	.191	.046
GC	-.125	-.101	-.081		.038	-.066	-.233	-.008	-.046	.056	-.498	-.302	-.438	-.498	-.266	-.440
	.000	.000	.004		.182	.020	.000	.775	.103	.047	.000	.000	.000	.000	.000	.000
GR	.013	.009	.012		.039	.013	.010	.018	.024	-.011	.053	.099	.184	.053	.106	.184
	.659	.756	.669		.183	.646	.739	.548	.412	.700	.068	.005	.000	.068	.004	.000
RC	-.019	-.018	-.006		.026	-.034	-.006	-.018	-.030	.019	-.059	-.035	-.048	-.059	-.038	-.047
	.500	.520	.839		.358	.232	.836	.515	.285	.505	.035	.307	.158	.035	.284	.180

Appendix C.1 (continued) Pearson correlation of variables (1994-1996)

	AQR	CHAQR	AQRP	AQT	CHAQT	AQTP	AQRGC	CHAQRGC	AQRGC	AQTGC	CHAQTGC	AQTGC	DT	QR	GC	GR	RC
DELISTED																	
MAN																	
VOL																	
YEAR1997																	
GDP																	
LNTA																	
BTR																	
BS																	
NONEY																	
EY																	
AG																	
CHAG																	
AGP																	
AGS																	
CHAGS																	
AGSP																	
AQR	1.000																
CHAQR	.372 .000	1.000															
AQRP	.778 .000	-.141 .000	1.000														
AQT	.961 .000	.354 .000	.754 .000	1.000													
CHAQT	.314 .000	.857 .000	-.162 .000	.366 .000	1.000												
AQTP	.741	-.184	.975	.758	-.167	1.000											

	.000	.000	.000	.000	.000												
AQRGC	.934 .000	.371 .000	.706 .000	.898 .000	.314 .000	.668 .000	1.000										
CHAQRGC	.333 .000	.904 .000	-.167 .000	.317 .000	.803 .000	-.171 .000	.361. .000	1.000									
AQRGCP	.721 .000	-.171 .000	.952 .000	.703 .000	-152 .000	.927 .000	.739 .000	-.159 .000	1.000								
AQTGC	.893 .000	.351 .000	.680 .000	.936 .000	.366 .000	.685 .000	.960 .000	.343 .000	.718 .000	1.000							
CHAQTGC	.283 .000	.800 .000	-.163 .000	.331 .000	.826 .000	-.168 .000	.310 .000	.820 .000	-.155 .000	.359 .000	1.000						
AQTGCP	.695 .000	-.175 .000	.927 .000	.717 .000	-.157 .000	.949 .000	.718 .000	-.163 .000	.977 .000	.736 .000	-.159 .000	1.000					
DT	-.065 .042	.049 .206	-.045 .239	-.048 .137	.061 .129	-.016 .683	-.065 .041	.087 .030	-.056 .159	-.047 .139	.086 .031	-.025 .527	1.000				
QR	-.125 .000	.009 .817	-.108 .005	-.124 .000	.009 .815	-.104 .008	-.093 .003	.017 .666	-.076 .055	-.091 .004	.014 .731	-.074 .061	.344 .000	1.000			
GC	-.250 .000	-.001 .970	-.263 .000	-.246 .000	.001 .979	-.259 .000	-.072 .010	.022 .542	-.133 .000	-.071 .012	.017 .622	-.125 .000	.032 .319	.137 .000	1.000		
GR	.011 .712	.000 .989	.113 .001	.010 .741	-.003 .932	.110 .002	-.009 .757	-.006 .874	-.057 .117	-.010 .735	-.001 .969	.054 .138	-.018 .571	-.033 .307	-.187 .000	1.000	
RC	-.002 .945	.011 .756	-.001 .970	-.001 .966	.012 .740	.001 .968	.020 .479	.011 .763	.015 .665	.020 .470	.011 .754	.016 .648	.010 .753	.017 .589	-.006 .832	.205 .000	1.000

Notes   1. Upper level is Pearson correlation, lower line is statistical significance.

2. No correlation results in YEAR1997 column because YEAR1997 is constant.

Appendix C.2 Pearson correlation of variables (1997-2000)

	DELISTED	MAN	VOL	YEAR 1997	GDP	LNTA	BTR	BS	NONEY	EY	AG	CHAG	AGP	AGS	CHAGS	AGSP
DELISTED	1.000															
MAN	.773 .000	1.000														
VOL	.623 .000	-.015 .552	1.000													
YEAR1997	-.090 .000	-.096 .000	-.023 .352													
GDP	-.088 .000	-.083 .001	-.036 .153		1.000											
LNTA	-.009 .722	-.002 .946	-.012 .634		-.044 .077	1.000										
BTR	.158 .000	.172 .000	.038 .129		-.052 039	.134 .000	1.000									
BS	-.034 .169	-.056 .026	.014 .563		-.031 .211	.219 .000	.046 .063	1.000								
NONEY	.014 .581	-.009 .717	.033 .188		-.093 .000	.264 .000	.066 .008	.669 .000	1.000							
EY	-.058 .020	-.055 .029	-.024 .328		.081 .001	-.075 .003	-.028 .256	.340 .000	-.472 .000	1.000						
AG	.097 .000	.124 .000	.000 .987		.093 .000	.001 .966	.279 .000	.054 .031	.068 .006	-.022 .374	1.000					
CHAG	.005 .848	-.013 .617	.023 .359		-.037 .143	.043 .083	.104 .000	.077 .002	.071 .004	.001 .006	.628 .966	1.000 .000				
AGP	.093 .000	.143 .000	-.029 .246		.156 .000	-.027 .281	.249 .000	.011 .655	.019 .459	-.010 .683	.585 .000	-.135 .000	1.000			
AGS	.136 .000	.188 .000	-.017 .486		-.046 .066	-.035 .157	.253 .000	.006 .814	.027 .283	-.027 .280	.644 .000	.405 .000	.373 .000	1.000		
CHAGS	-.010 .677	.008 .744	-.027 .289		-.078 .002	.029 .244	.157 .000	.038 .132	.047 .464	-.014 .568	.464 .000	.590 .000	.016 .521	.721 .000	1.000	
AGSP	.169 .000	.224 .000	-.010 .687		-.042 .093	-.057 .022	.238 .000	-.012 .639	-.002 .938	-.011 .649	.418 .000	-.095 .000	.697 .000	.457 .000	-.070 .005	1.000
AQR	.116 .000	.161 .000	-.016 .520		-.149 .000	.239 .000	.271 .000	.010 .675	.054 .032	-.055 .026	.320 .000	.201 .000	.208 .000	.420 .000	.303 .000	.252 .000
CHAQR	-.005 .849	.006 .816	-.015 558		-.190 .000	.110 .000	.097 .000	.057 .022	.042 .094	.015 .546	.090 .000	.206 .000	-.076 .002	.190 .000	.285 .000	-.076 .003
AQRP	.107 .000	.150 .000	-.017 .499		-.038 .124	.178 .000	.217 .000	-.009 .726	.015 .537	-.030 .231	.294 .000	.090 .000	.306 .000	.251 .000	.087 .000	.360 .000
AQT	-.095 .000	.086 .001	.044 .081		.013 .606	.279 .000	.226 .000	.184 .000	.263 .000	-.114 .000	.328 .000	.206 .000	.226 .000	.211 .000	.153 .211	.161 .000
CHAQT	-.013 .597	-.038 .131	.026 .305		-.180 .000	.037 .136	.012 .636	.105 .000	.105 .000	-.009 .731	-.090 .000	.051 .041	-.186 .000	.005 .840	.084 .001	-.127 .000
AQTP	.075	.092	.003		.199	.191	.124	.102	.125	-.037	.276	.082	.317	.130	.025	.221

	.003	.000	.902		.000	.000	.000	.000	.000	.144	.000	.001	.000	.000	.324	.000
AQRGC	.029	.044	-.008		-.170	.278	.067	-.004	.016	-.025	-.293	-.184	-.147	-.189	-.136	-.087
	.243	.080	.752		.000	.000	.007	.879	.512	.312	.000	.000	.000	.000	.000	.001
CHAQRGC	-.035	-.020	-.030		-.159	.106	.084	.041	.005	.042	.144	-.091	.029	-.093	-.067	.047
	.167	.435	.224		.000	.000	.001	.105	.851	.093	.000	.000	.240	.000	.007	.058
AQRGCP	.028	.039	-.005		-.095	.213	.058	-.011	.000	-.013	-.045	.176	-.257	-.026	.086	-.182
	.267	.115	.846		.000	.000	.020	.655	1.000	.597	.072	.000	.000	.303	.001	.000
AQTGC	.006	-.024	.040		-.064	.251	-.025	.122	.182	-.085	-.522	-.328	-.275	-.336	-.243	-.197
	.800	.334	.112		.010	.000	.326	.000	.000	.001	.000	.000	.000	.000	.000	.000
CHAQTGC	-.010	-.036	.028		-.147	.027	.013	.097	.096	-.007	-.225	-.135	-.019	-.150	-.108	-.016
	.693	.154	.275		.000	.286	.601	.000	.000	.773	.000	.000	.445	.000	.000	.525
AQTGCP	.008	-.016	.032		.079	.202	-.055	.090	.107	-.028	-.146	.174	-.400	-.135	.012	-.282
	.740	.534	.204		.002	.000	.029	.000	.000	.259	.000	.000	.000	.000	.627	.000
DT	-.004	.000	-.006		.030	.057	-.026	.038	.061	-.032	-.029	-.021	-.022	-.017	-.017	-.012
	.880	.986	.836		.270	.038	.335	.161	.025	.249	.284	.440	.417	.541	.546	.675
QR	-.026	-.060	.030		.076	-.047	-.117	.036	.013	.027	-.212	-.127	-.141	-.158	-.110	-.127
	.350	.028	.278		.005	.088	.000	.182	.628	.318	.000	.000	.000	.000	.000	.000
GC	-.126	-.156	-.006		.014	.012	-.182	.022	.016	.006	-.239	-.094	-.145	-.274	-.184	-.125
	.000	.000	.809		.581	.619	.000	.384	.527	.817	.000	.000	.000	.000	.000	.000
GR	.003	-.002	.004		-.042	.008	.020	.022	.026	-.007	-.028	-.048	.010	-.020	-.061	.029
	.895	.952	.892		.105	.749	.436	.396	.312	.782	.281	.066	.709	.451	.020	.265
RC	-.005	-.005	-.001		.034	-.033	-.012	.044	-.044	.070	-.092	-.092	-.009	-.180	-.150	-.024
	.855	.838	.972		.172	.189	.632	.076	.586	.005	.000	.000	.733	.000	.000	.344

Appendix C.2 (continued) Pearson correlation of variables (1997-2000)

	AQR	CHAQR	AQRP	AQT	CHAQT	AQTP	AQRGC	CHAQRGC	AQRGC	AQTGC	CHAQTGC	AQTGC	DT	QR	GC	GR	RC
DELISTED																	
MAN																	
VOL																	
YEAR1997																	
GDP																	
LNTA																	
BTR																	
BS																	
NONEY																	
EY																	
AG																	
CHAG																	
AGP																	
AGS																	
CHAGS																	
AGSP																	
AQR	1.000																
CHAQR	.389 .000	1.000															
AQRP	.625 .000	-.236 .000	1.000														
AQT	.502 .000	.200 .000	.382 .000	1.000													
CHAQT	-.031 .217	.427 .000	-.353 .000	.257 .000	1.000												
AQTP	.345	-.212	.613	.440	-.558	1.000											

	.000	.000	.000	.000	.000												
AQRGC	.709	.308	.420	.356	.006	.223	1.000										
	.000	.000	.000	.000	.796	.000											
CHAQRGC	.348	.705	-.123	.175	.309	-.132	.491	1.000									
	.000	.000	.000	.000	.000	.000	.000										
AQRGCP	.470	-.190	.781	.273	-.274	.479	.532	-.164	1.000								
	.000	.000	.000	.000	.000	.000	.000	.000									
AQTGC	.191	.106	.104	.635	.305	.170	.561	.276	.283	1.000							
	.000	.000	.000	.000	.000	.000	.000	.000	.000								
CHAQTGC	-.050	.284	-.271	.274	.801	-.440	.092	.437	-.270	.431	1.000						
	.045	.000	.000	.000	.000	.000	.000	.000	.000	.000							
AQTGCP	.188	-.151	.377	.263	-.410	-735	.320	.148	.646	.357	-.415	1.000					
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000						
DT	-.039	-.017	-.017	.035	.012	.014	-.027	-.013	-.007	.057	.014	.030	1.000				
	.157	.548	.544	.202	.658	.618	.322	.643	.804	.039	.618	.283					
QR	-.218	-.080	-.201	-.171	.037	-.118	-.090	-.050	-.115	.027	.043	-.010	-.012	1.000			
	.000	.003	.000	.000	.178	.000	.001	.065	.000	.315	.119	.715	.652				
GC	-.202	-.071	-.110	-.155	.018	-.098	-.007	-.001	-.032	.055	.026	.007	.005	.103	1.000		
	.000	.005	.000	.000	.477	.000	.790	.978	.195	.028	.295	.790	.870	.000			
GR	-.013	.013	-.022	-.008	.012	-.014	.015	.006	-.030	.017	.010	-.021	000	.006	.009	1.000	
	.617	.633	.411	.765	636	.583	.577	.807	.260	.515	.709	.429	.988	.833	.726		
RC	-.060	-.029	-.017	-.032	-.011	-.006	.032	.005	-.014	.045	.003	.000	.004	.016	.167	-.066	1.000
	.017	.254	.494	.195	.658	.813	.198	.834	.584	.069	.908	.997	.886	.548	.000	.011	

Notes   1. Upper level is Pearson correlation, lower line is statistical significance.

2. No correlation results in YEAR1997 column because YEAR1999 is constant.

Appendix C.3 Pear son correlation of variables (1994-2000)

	DELISTED	MAN	VOL	YEAR 1997	GDP	LNTA	BTR	BS	NONEY	EY	AG	CHAG	AGP	AGS	CHAGS	AGSP
DELISTED	1.000															
MAN	.839 .000	1.000														
VOL	.532 .000	-.013 .476	1.000													
YEAR1997	.008 .655	-.010 .579	.032 .092	1.000												
GDP	-.091 .000	-.094 .000	-.021 .259	.171 .000	1.000											
LNTA	.045 .016	-.069 .000	-.025 .188	-.015 .437	-.060 .001	1.000										
BTR	.097 .000	.102 .000	.020 .291	.069 .000	.024 .192	.083 .000	1.000									
BS	-.001 .972	.000 .980	-.002 .918	-.004 .850	-.022 .233	.246 .000	.057 .002	1.000								
NONEY	.037 .051	.034 .066	.014 .463	-.061 .001	-.068 .000	.283 .000	.061 .001	.704 .000	1.000							
EY	-.050 .008	-.045 .015	-.021 .267	.078 .000	.063 .001	-.071 .000	-.011 .568	.310 .000	-.457 .000	1.000						
AG	.093 .000	.089 .000	.032 .085	.268 .000	.102 .000	-.029 .122	.251 .000	.022 .239	.017 .364	.005 .793	1.000					
CHAG	.013 .515	.000 .995	.024 .228	.154 .000	.046 .022	.018 .385	.120 .000	.048 .017	.041 .042	.005 .800	.638 .000	1.000				
AGP	.080 .000	.088 .000	.009 .646	.200 .000	.226 .000	-.048 .018	.242 .000	.000 .999	-.010 .620	.013 .513	.618 .000	-.091 .000	1.000			
AGS	.125 .000	.135 .000	.020 .79	.139 .000	-.017 .364	-.060 .001	.232 .000	-.015 .437	-.008 .688	-.008 .664	.700 .000	.437 .000	.426 .000	1.000		
CHAGS	.010 .621	.025 .219	-.020 .323	.106 .000	-.014 .503	.009 .651	.156 .000	.019 .341	.027 .185	-.012 .567	.481 .000	.617 .000	.033 .102	.700 .000	1.000	
AGSP	.145 .000	-.152 .000	.030 .139	.113 .000	.021 .315	-.073 .003	.229 .000	-.018 .366	-.022 .285	.006 .768	.466 .000	-.068 .001	.728 .000	.506 .000	-.051 .012	1.000
AQR	.074 .000	.091 .000	-.005 .783	.064 .001	-.078 .000	.144 .000	.225 .000	.013 .475	.040 .032	-.037 .049	.291 .000	.193 .000	.203 .000	.363 .000	.265 .000	.237 .000
CHAQR	-.005 .785	.002 .921	-.013 .505	.049 .015	-.117 .000	.077 .000	.089 .000	.022 .280	.013 .509	.009 .644	.291 .000	.185 .000	-.056 .005	.159 .000	.246 .000	-.062 .002
AQRP	.077 .000	.087 .000	.006 .755	.088 .000	.016 .429	.119 .000	.212 .000	.008 .692	.020 .320	-.017 .410	.087 .000	.104 .000	.286 .000	.252 .000	.094 .000	.676 .000
AQT	.060 .001	.042 .025	.044 .017	.371 .000	.060 .001	.145 .000	.205 .000	.101 .000	.121 .000	-0.5 .061	.284 .000	.226 .000	.257 .000	.246 .000	.168 .000	.677 .000
CHAQT	-.007 .719	-.023 .265	.022 .286	.138 .000	-.073 .000	.027 .189	.027 .190	.063 .002	.060 .003	-.001 .951	.351 .000	.073 .000	-.134 .000	.024 .247	.094 .000	.061 .003
AQTP	.054	.047	.026	.286	.276	.111	.153	.080	.079	-.006	-.039	.123	.322	.177	.066	.465

	.009	.022	.211	.000	.000	.000	.000	.000	.000	.776	.054	.000	.000	.000	.001	.000
AQRGC	.005	.019	-.021	-.062	-.102	.181	.071	.017	.037	-.029	.306	-.156	-.135	-.164	-.123	.801
	.809	.321	.271	.001	.000	.000	.000	.371	.048	.127	.000	.000	.000	.000	.000	.000
CHAQRGC	-.021	-.007	-.026	.029	-.103	.081	.069	.012	-.012	.031	-.234	-.073	.024	-.078	-.055	.344
	.315	.723	.199	.152	.000	.000	.001	.568	.544	.134	.000	.000	.244	.000	.007	.000
AQRGCP	.024	.032	-.006	-.015	-.075	.158	.073	.012	.026	-.019	-.114	.155	-.215	-.019	.085	.552
	.249	.120	.773	.459	.000	.000	.000	.542	.202	.355	.000	.000	.000	.340	.000	.000
AQTGC	-.004	-.019	.023	.190	-.009	.166	.035	-.087	.110	-.039	-.036	-.235	.189	-.232	-.184	.483
	.851	.317	.224	.000	.615	.000	.063	.000	.000	.038	.075	.000	.000	.000	.000	.000
CHAQTGC	-.002	-.019	.025	.148	-.044	.022	.019	.067	.059	.005	-.331	-.097	.008	-.114	-.080	.035
	.903	.348	.218	.000	.030	.285	.346	.001	.004	.825	.000	.000	.687	.000	.000	.087
AQTGCP	.008	-.011	.032	.173	.139	.142	.008	.077	.082	-.013	-.159	.180	-.293	-.083	.043	.348
	.075	.575	.117	.000	.000	.000	.713	.000	.000	.526	.000	.000	.000	.000	.034	.000
DT	-.001	.002	-.003	.042	.031	.043	-.019	.030	.044	-.021	-.072	-.014	-.013	-.009	-.012	-.031
	.959	.939	.875	.041	.134	.038	.365	.155	.034	.307	.000	.521	.572	.672	.595	.136
QR	-.026	-.052	.019	-.038	.046	-.044	-.065	.058	.028	.037	-.014	-.112	-.127	-.135	-.097	-.178
	.212	.012	.352	.070	.027	.034	.002	.005	.181	.074	.487	.000	.000	.000	.000	.000
GC	-.110	-.120	-.016	-.078	.002	.002	-.172	.015	.010	.005	-.172	-.113	-.168	-.292	-.192	-.187
	.000	.000	.392	.000	.931	.931	.000	.417	.583	.779	.000	.000	.000	.000	.000	.000
GR	.004	.003	.004	-.017	-.029	.008	.015	.019	.024	-.008	-.265	-.045	.010	-.014	-.057	-.009
	.826	.884	.857	.383	.143	.669	.429	.326	.222	.676	.000	.031	.634	.466	.008	.632
RC	-.011	-.011	-.002	-.002	.030	-.033	-.009	.016	-.021	.048	-.026	-.070	-.14	-.136	-.112	-.034
	.560	545	.897	.916	.111	.076	.613	.382	.265	.010	.189	.000	.502	.000	.000	.066

Appendix C.3 (continued) Pearson correlation of variables (1994-2000)

	AQR	CHAQR	AQRP	AQT	CHAQT	AQTP	AQRGC	CHAQRGC	AQRGC	AQTGC	CHAQTGC	AQTGC	DT	QR	GC	GR	RC
DELISTED																	
MAN																	
VOL																	
YEAR1997																	
GDP																	
LNTA																	
BTR																	
BS																	
NONEY																	
EY																	
AG																	
CHAG																	
AGP																	
AGS																	
CHAGS																	
AGSP																	
AQR	1.000																
CHAQR	.385 .000	1.000															
AQRP	.676 .000	-.202 .000	1.000														
AQT	.677 .000	.250 .000	.507 .000	1.000													
CHAQT	.061 .003	.524 .000	-.289 .000	.308 .000	1.000												

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
AQTP	.465	-.182	.717	.592	-.392	1.000											
	.000	.000	.000	.000	.000												
AQRGC	.801	.323	.512	.542	.077	.339	1.000										
	.000	.000	.000	.000	.000	.000											
CHAQRGC	.344	.760	-.134	.218	.423	-.130	.443	1.000									
	.000	.000	.000	.000	.000	.000	.000										
AQRGCP	.552	-.184	.833	.395	-.239	.598	.605	-.162	1.000								
	.000	.000	.000	.000	.000	.000	.000	.000									
AQTGC	.483	.185	.300	.767	.332	.361	.707	.297	.416	1.000							
	.000	.000	.000	.000	.000	.000	.000	.000	.000								
CHAQTGC	.035	.395	-.228	.312	.809	-.307	.132	.517	-.237	.423	1.000						
	.087	.000	.000	.000	.000	.000	.000	.000	.000	.000							
AQTGCP	.348	-.148	.549	.441	-.315	.805	.431	-.145	.738	.487	-.318	1.000					
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000						
DT	-.031	-.012	-.012	.037	.016	.020	-.027	-.009	-.009	.047	.018	.029	1.000				
	.136	.588	.577	.077	.480	.369	.196	.695	.696	.023	.419	.202					
QR	-.178	-.052	-.172	-.153	.027	-.116	-.086	-.028	-.101	-.028	.032	-.033	.000	1.000			
	.000	.020	.000	.000	.239	.000	.000	.220	.000	.182	.158	.143	.986				
GC	-.187	-.062	-.121	-.163	.007	-.119	-.010	-.000	-.039	-.017	.015	-.018	.002	.096	1.000		
	.000	.002	.000	.000	.733	.000	.599	.985	.058	.362	.463	.387	.935	.000			
GR	-.009	.010	-.014	-.010	.009	-.010	.010	.005	-.022	.008	.007	-.017	-.001	.000	.000	1.000	
	.632	.635	.491	.603	.661	.621	.611	.820	.312	.684	.741	.426	.948	.993	.980		
RC	-.034	-.014	-.010	-.018	-.003	-.001	.027	.007	-.002	.034	.006	.007	.003	.017	.120	-.016	1.000
	.066	.493	.608	.348	.892	.974	.155	.719	.909	.072	.762	.725	.878	.420	.000	.409	

Upper level is Pearson correlation, lower line is statistical significance.

Appendix C.4 Variance inflation factors (VIFs) (Dependent variables: DELISTED, VOL, MAN)

Independent variables	1994-1996						1997-2000						1994-2000					
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-	1.117	1.343	1.329	1.058	1.315	1.320
GDP	1.035	na	na	1.035	1.020	na	1.035	1.013	1.052	1.014	1.017	1.014	1.047	1.315	1.359	1.042	1.303	1.304
BTR	1.101	1.135	1.134	1.101	1.147	1.139	1.141	1.062	1.132	1.116	1.074	1.118	1.105	1.069	1.119	1.093	1.076	1.110
BS	1.074	1.088	1.086	1.074	1.092	1.090	1.088	1.090	1.084	1.083	1.084	1.084	1.077	1.084	1.081	1.075	1.081	1.082
LNTA	1.105	1.113	1.128	1.105	1.122	1.134	1.087	1.091	1.088	1.088	1.088	1.095	1.083	1.086	1.085	1.087	1.086	1.094
DT	1.123	1.018	1.021	1.123	1.019	1.022	1.003	1.003	1.003	1.002	1.003	1.002	1.003	1.003	1.003	1.002	1.003	1.003
QR	1.138	1.040	1.040	1.138	1.038	1.033	1.075	1.048	1.057	1.052	1.043	1.047	1.048	1.041	1.047	1.036	1.036	1.040
GC	1.490	2.672	2.697	1.490	2.641	2.712	1.113	1.078	1.076	1.120	1.083	1.077	1.120	1.074	1.073	1.129	1.080	1.075
GR	1.094	7.556	7.636	1.094	7.613	7.704	1.009	1.011	1.008	1.009	1.014	1.008	1.003	1.006	1.003	1.002	1.007	1.004
RC	1.055	6.016	6.115	1.055	6.081	6.169	1.305	1.036	1.028	1.058	1.045	1.028	1.016	1.016	1.012	1.028	1.021	1.012
AG	1.411						1.252						1.293					
CHAG		1.126						1.060						1.076				
AGP			1.304						1.158						1.187			
AGS				1.411						1.206						1.205		
CHAGS					1.100						1.088						1.085	
AGSP						1.306						1.104						1.111

Significance at the .05 level.

Note: na means in models where DELISTED, VOL, and MAN are dependent variables, GDP is constant or there are missing correlations. GPD was deleted from the analysis.

Appendix C.5 Variance inflation factors (VIFs) (Dependent variables: DELISTED, VOL, MAN)

Independent variables	1994-1996											
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-
GDP	1.033	1.007	na	1.034	1.009	1.004	1.033	1.003	na	1.033	na	1.008
BTR	1.103	1.138	1.137	1.105	1.139	1.140	1.099	1.138	1.138	1.100	1.136	1.141
BS	1.072	1.096	1.088	1.073	1.098	1.091	1.073	1.099	1.093	1.073	.091	1.091
LNTA	1.098	1.127	1.114	1.099	1.129	1.119	1.105	1.137	1.123	1.106	1.130	1.125
DT	1.123	1.022	1.019	1.122	1.025	1.019	1.124	1.030	1.022	1.123	1.029	1.020
QR	1.141	1.043	1.050	1.142	1.039	1.046	1.140	1.040	1.045	1.140	1.039	1.045
GC	1.208	2.557	2.649	1.205	2.577	2.670	1.138	2.567	2.610	1.137	2.567	2.597
GR	1.096	7.559	7.560	1.096	7.633	7.611	1.095	7.627	7.659	1.095	7.624	7.645
RC	1.049	6.023	6.022	1.049	6.082	6.067	1.050	6.076	6.105	1.051	6.074	6.100
AQR	1.107											
CHAQR		1.024										
AQRP			1.115									
AQT				1.107								
CHAQT					1.022							
AQTP						1.106						
AQRGC							1.031					
CHAQRGC								1.033				
AQRGCP									1.050			
AQTGC										1.033		
CHAQTGC											1.021	
AQTGCP												1.044

Significance at the .05 level.

Note: na means in models where DELISTED, VOL, and MAN are dependent variables, GDP is constant or there are missing correlations. GPD was deleted from the analysis.

.

Appendix C.5 (continued) Variance inflation factors (VIFs) (Dependent variables: DELISTED, VOL, MAN)

Independent variables	1997-2000											
	M 13	M 14	M 15	M 16	M 17	M 18	M 19	M 20	M 21	M 22	M 23	M 24
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-
GDP	1.037	1.035	1.018	1.019	1.032	1.060	1.049	1.024	1.034	1.016	1.023	1.016
BTR	1.109	1.057	1.105	1.085	1.057	1.071	1.055	1.056	1.056	1.063	1.056	1.061
BS	1.083	1.083	1.083	1.104	1.090	1.091	1.086	1.084	1.086	1.085	1.089	1.086
LNTA	1.103	1.090	1.095	1.126	1.089	1.118	1.104	1.091	1.103	1.107	1.088	1.111
DT	1.003	1.002	1.002	1.003	1.004	1.003	1.003	1.002	1.002	1.004	1.004	1.002
QR	1.066	1.040	1.062	1.053	1.043	1.055	1.040	1.037	1.043	1.038	1.043	1.037
GC	1.097	1.070	1.075	1.090	1.069	1.076	1.070	1.070	1.070	1.071	1.070	1.070
GR	1.008	1.008	1.009	1.008	1.008	1.008	1.008	1.008	1.009	1.008	1.008	1.008
RC	1.028	1.028	1.028	1.028	1.028	1.028	1.031	1.028	1.028	1.031	1.028	1.028
AQR	1.198											
CHAQR		1.034										
AQRP			1.120									
AQT				1.174								
CHAQT					1.035							
AQTP						1.136						
AQRGC							1.065					
CHAQRGC								1.016				
AQRGCP									1.049			
AQTGC										1.049		
CHAQTGC											1.026	
AQTGCP												1.035

Significance at the .05 level.

Appendix C.5 (continued) Variance inflation factors (VIFs) (Dependent variables: DELISTED, VOL, MAN)

Independent variables	1994-2000											
	M 25	M 26	M 27	M 28	M 29	M 30	M 31	M 32	M 33	M 34	M 35	M 36
YEAR1997	1.040	1.319	1.324	1.159	1.335	1.330	1.055	1.303	1.303	1.057	1.337	1.306
GDP	1.050	1.330	1.320	1.041	1.319	1.336	1.050	1.310	1.319	1.041	1.313	1.297
BTR	1.086	1.064	1.100	1.072	1.061	1.076	1.051	1.061	1.063	1.049	1.061	1.061
BS	1.075	1.081	1.080	1.082	1.083	1.086	1.076	1.083	1.082	1.077	1.084	1.084
LNTA	1.093	1.089	1.089	1.103	1.088	1.101	1.096	1.091	1.097	1.099	1.087	1.101
DT	1.003	1.003	1.003	1.003	1.004	1.003	1.003	1.003	1.003	1.003	1.004	1.003
QR	1.044	1.033	1.053	1.038	1.036	1.048	1.030	1.032	1.039	1.026	1.037	1.034
GC	1.086	1.063	1.071	1.079	1.062	1.071	1.059	1.062	1.062	1.061	1.062	1.062
GR	1.002	1.003	1.004	1.002	1.003	1.003	1.002	1.003	1.004	1.002	1.003	1.003
RC	1.012	1.012	1.012	1.012	1.012	1.012	1.014	1.012	1.012	1.014	1.012	1.012
AQR	1.126											
CHAQR		1.025										
AQRP			1.100									
AQT				1.247								
CHAQT					1.037							
AQTP						1.183						
AQRGC							1.050					
CHAQRGC								1.013				
AQRGCP									1.041			
AQTGC										1.044		
CHAQTGC											1.035	
AQTGCP												1.042

Significance at the .05 level.

Appendix C.6 Variance inflation factors (VIFs) (Dependent variables: AG)

Independent variables	1994-1996									1997-2000								
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GDP										1.061	1.068	1.064	1.053	1.061	1.057	1.061	1.068	1.064
BTR										1.146	1.146	1.145	1.134	1.133	1.133	1.147	1.147	1.146
BS										1.084			1.084			1.084		
NONEY											1.078			1.078			1.078	
EY												1.015			1.014			1.015
LNTA										1.093	1.082	1.021	1.088	1.076	1.016	1.095	1.084	1.023
DT										1.003	1.004	1.003	1.003	1.004	1.003	1.003	1.004	1.003
QR										1.058	1.057	1.056	1.058	1.058	1.057	1.057	1.057	1.056
GC										1.092	1.091	1.092	1.076	1.075	1.075	1.104	1.103	1.103
GR										1.008	1.008	1.007	1.008	1.008	1.007	1.008	1.008	1.007
RC										1.028	1.024	1.030	1.028	1.024	1.030	1.028	1.024	1.030
AGP										1.166	1.167	1.165	1.160	1.160	1.159	1.181	1.181	1.180
DELIST										1.062	1.062	1.063						
VOL													1.004	1.005	1.005			
MAN																1.100	1.100	1.101

Significance at the .05 level.

Independent variables	1994-2000								
	M 19	M 20	M 21	M 22	M 23	M 24	M 25	M 26	M 27
YEAR1997	1.334	1.334	1.334	1.332	1.332	1.332	1.331	1.331	1.331
GDP	1.369	1.374	1.371	1.361	1.367	1.364	1.368	1.373	1.371
BTR	1.129	1.129	1.126	1.120	1.120	1.117	1.132	1.132	1.129
BS	1.081			1.081			1.081		
NONEY		1.078			1.078			1.078	
EY			1.012			1.012			1.012
LNTA	1.089	1.081	1.019	1.086	1.077	1.016	1.089	1.080	1.019
DT	1.003	1.004	1.003	1.003	1.004	1.003	1.003	1.004	1.003
QR	1.048	1.047	1.045	1.048	1.047	1.045	1.048	1.047	1.045
GC	1.090	1.089	1.090	1.073	1.072	1.073	1.099	1.098	1.098
GR	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003
RC	1.012	1.011	1.014	1.012	1.011	1.014	1.012	1.011	1.014
AGP	1.197	1.196	1.196	1.187	1.186	1.186	1.203	1.202	1.202
DELIST	1.060	1.059	1.060						
VOL				1.004	1.004	1.004			
MAN							1.082	1.082	1.083

Significance at the .05 level.

Note There were only a few going concern audit reports during 1994-1996 (see Table 6.4). Thus, there were no VIF results during 1994-1996.

Appendix C.7 Variance inflation factors (VIFs) (Dependent variables: AGS)

Independent variables	1994-1996									1997-2000								
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GDP										1.019	1.025	1.022	1.015	1.022	1.019	1.017	1.023	1.021
BTR										1.129	1.129	1.128	1.120	1.120	1.119	1.130	1.130	1.129
BS										1.084			1.084			1.084		
NONEY											1.078			1.077			1.077	
EY												1.015			1.014			1.015
LNTA										1.099	1.087	1.025	1.095	1.083	1.021	1.099	1.088	1.026
DT										1.002	1.004	1.003	1.002	1.004	1.003	1.002	1.004	1.003
QR										1.047	1.047	1.046	1.047	1.047	1.046	1.047	1.046	1.045
GC										1.092	1.091	1.092	1.077	1.076	1.077	1.103	1.102	1.103
GR										1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008	1.008
RC										1.028	1.024	1.030	1.028	1.024	1.030	1.029	1.025	1.031
AGSP										1.130	1.130	1.130	1.104	1.104	1.104	1.159	1.158	1.158
DELIST										1.080	1.080	1.081						
VOL													1.004	1.004	1.004			
MAN																1.133	1.132	1.134

Significance at the .05 level.

Independent variables	1994-2000								
	M 19	M 20	M 21	M 22	M 23	M 24	M 25	M 26	M 27
YEAR1997	1.323	1.323	1.323	1.322	1.322	1.322	1.321	1.320	1.321
GDP	1.309	1.314	1.312	1.305	1.311	1.309	1.307	1.313	1.311
BTR	1.117	1.118	1.114	1.110	1.111	1.107	1.120	1.121	1.118
BS	1.082			1.082			1.082		
NONEY		1.078			1.078			1.078	
EY			1.012			1.011			1.012
LNTA	1.096	1.087	1.025	1.094	1.084	1.023	1.096	1.086	1.025
DT	1.003	1.004	1.003	1.003	1.004	1.003	1.003	1.004	1.003
QR	1.040	1.039	1.037	1.040	1.039	1.037	1.040	1.039	1.037
GC	1.090	1.089	1.090	1.075	1.074	1.075	1.098	1.097	1.098
GR	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004
RC	1.012	1.012	1.015	1.012	1.012	1.015	1.012	1.012	1.015
AGSP	1.137	1.137	1.138	1.112	1.112	1.112	1.148	1.148	1.148
DELIST	1.075	1.075	1.076						
VOL				1.004	1.004	1.004			
MAN							1.103	1.103	1.104

Significance at the .05 level.

Note There were only a few going concern audit reports during 1994-1996 (see Table 6.4). Thus, there were no VIF results during 1994-1996.

Appendix C.8 Variance inflation factors (VIFs) (Dependent variables: AQT)

Independent variables	1994-1996									1997-2000								
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GDP	1.004	1.002	1.005	1.004	1.002	1.005	1.004	1.002	1.005	1.068	1.077	1.071	1.062	1.071	1.066	1.067	1.076	1.071
BTR	1.141	1.141	1.132	1.147	1.147	1.139	1.149	1.150	1.141	1.091	1.091	1.090	1.073	1.073	1.072	1.094	1.094	1.093
BS	1.093			1.096			1.091			1.091			1.091			1.091		
NONEY		1.088			1.088			1.086			1.090			1.090			1.090	
EY			1.009			1.009			1.010			1.017			1.016			1.017
LNTA	1.123	1.119	1.061	1.121	1.118	1.060	1.121	1.118	1.059	1.125	1.112	1.059	1.118	1.104	1.052	1.127	1.113	1.061
DT	1.019	1.019	1.019	1.019	1.019	1.019	1.019	1.020	1.019	1.003	1.004	1.003	1.003	1.004	1.003	1.003	1.004	1.003
QR	1.046	1.043	1.040	1.046	1.043	1.040	1.046	1.043	1.040	1.055	1.055	1.053	1.057	1.057	1.054	1.055	1.055	1.053
GC	2.673	2.668	2.671	2.696	2.693	2.696	2.717	2.713	2.714	1.093	1.092	1.092	1.076	1.075	1.075	1.105	1.104	1.1.04
GR	7.935	7.934	7.932	7.613	7.612	7.612	8.235	8.235	8.234	1.008	1.008	1.007	1.008	1.008	1.007	1.008	1.008	1.007
RC	6.332	6.332	6.328	6.067	6.067	6.066	6.552	6.554	6.552	1.028	1.024	1.030	1.028	1.024	1.030	1.028	1.024	1.030
AQTP	1.116	1.118	1.113	1.110	1.112	1.107	1.112	1.113	1.109	1.041	1.047	1.137	1.137	1.143	1.132	1.142	1.149	1.138
DELIST	1.107	1.108	1.105							1.060	1.060	1.061						
VOL				1.041	1.038	1.036							1.004	1.004	1.004			
MAN							1.122	1.123	1.124							1.085	1.084	1.085

Significance at the .05 level.

Independent variables	1994-2000								
	M 19	M 20	M 21	M 22	M 23	M 24	M 25	M 26	M 27
YEAR1997	1.334	1.334	1.334	1.332	1.332	1.332	1.332	1.332	1.332
GDP	1.343	1.351	1.347	1.337	1.345	1.342	1.342	1.350	1.346
BTR	1.088	1.088	1.086	1.076	1.076	1.074	1.093	1.093	1.091
BS	1.087			1.087			1.086		
NONEY		1.086			1.087			1.086	
EY			1.013			1.013			1.013
LNTA	1.106	1.095	1.039	1.101	1.091	1.035	1.105	1.095	1.039
DT	1.003	1.004	1.003	1.003	1.004	1.003	1.003	1.004	1.003
QR	1.048	1.048	1.045	1.049	1.048	1.045	1.048	1.048	1.045
GC	1.088	1.087	1.087	1.071	1.070	1.070	1.098	1.097	1.097
GR	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003
RC	1.012	1.011	1.014	1.012	1.011	1.014	1.012	1.011	1.014
AQTP	1.189	1.194	1.186	1.184	1.189	1.181	1.188	1.193	1.185
DELIST	1.057	1.056	1.057						
VOL				1.005	1.005	1.005			
MAN							1.073	1.072	1.073

Significance at the .05 level.

Appendix C.9 Variance inflation factors (VIFs) (Dependent variables: AQR)

Independent variables	1994-1996									1997-2000								
	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18
YEAR1997	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GDP	na	na	na	na	na	na	na	na	na	1.023	1.030	1.026	1.020	1.027	1.023	1.021	1.028	1.025
BTR	1.137	1.137	1.129	1.143	1.144	1.136	1.145	1.145	1.137	1.122	1.121	1.119	1.106	1.106	1.104	1.124	1.124	1.122
BS	1.090			1.093			1.088			1.083			1.083			1.083		
NONEY		1.088			1.089			1.086			1.077			1.077			1.077	
EY			1.006			1.006			1.007			1.015			1.014			1.015
LNTA	1.117	1.115	1.056	1.115	1.114	1.055	1.116	1.114	1.053	1.102	1.091	1.029	1.096	1.084	1.023	1.103	1.093	1.032
DT	1.020	1.020	1.020	1.019	1.020	1.020	1.020	1.020	1.020	1.002	1.004	1.003	1.002	1.004	1.003	1.002	1.004	1.003
QR	1.050	1.046	1.043	1.050	1.046	1.043	1.050	1.046	1.043	1.062	1.062	1.061	1.062	1.062	1.062	1.062	1.062	1.061
GC	2.651	2.647	2.649	2.674	2.671	2.673	2.694	2.690	2.691	1.092	1.091	1.092	1.075	1.074	1.075	1.104	1.103	1.104
GR	7.880	7.878	7.878	7.561	7.561	7.562	8.173	8.173	8.173	1.009	1.008	1.008	1.009	1.008	1.008	1.009	1.008	1.008
RC	6.283	6.283	6.280	6.022	6.022	6.021	6.499	6.500	6.498	1.028	1.024	1.030	1.028	1.024	1.030	1.028	1.024	1.030
AQRP	1.126	1.128	1.124	1.120	1.122	1.118	1.120	1.123	1.119	1.123	1.123	1.122	1.120	1.121	1.119	1.130	1.130	1.129
DELIST	1.107	1.108	1.106							1.058	1.059	1.059						
VOL				1.041	1.039	1.036							1.004	1.004	1.004			
MAN							1.122	1.122	1.123							1.089	1.089	1.090

Significance at the .05 level.

Independent variables	1994-2000								
	M 19	M 20	M 21	M 22	M 23	M 24	M 25	M 26	M 27
YEAR1997	1.330	1.329	1.330	1.327	1.327	1.327	1.326	1.326	1.327
GDP	1.325	1.330	1.328	1.321	1.327	1.324	1.323	1.329	1.326
BTR	1.111	1.111	1.108	1.100	1.101	1.097	1.115	1.115	1.112
BS	1.080			1.080			1.080		
NONEY		1.077			1.077			1.077	
EY			1.012			1.012			1.012
LNTA	1.093	1.085	1.024	1.089	1.081	1.020	1.093	1.085	1.024
DT	1.003	1.004	1.003	1.003	1.004	1.003	1.003	1.004	1.003
QR	1.053	1.052	1.051	1.053	1.053	1.051	1.053	1.052	1.051
GC	1.088	1.087	1.088	1.071	1.070	1.071	1.097	1.097	1.097
GR	1.004	1.004	1.003	1.004	1.004	1.003	1.004	1.004	1.003
RC	1.012	1.011	1.014	1.012	1.011	1.014	1.012	1.011	1.014
AQRP	1.105	1.105	1.105	1.100	1.100	1.100	1.108	1.108	1.108
DELIST	1.056	1.055	1.056						
VOL				1.004	1.004	1.004			
MAN							1.076	1.076	1.076

Significance at the .05 level.

Note: na means in models where AQR is the dependent variable, GDP is constant or there are missing correlations. GPD was deleted from the analysis.

References

Accountants International Study Group (1975) *Going concern problems.*

Accounting Standards Board (1999) *Statement of principles for financial reporting.* ASB, London.

Accounting Standards Steering Committee (ASSC) (1975) *The corporate report: A discussion paper published for comment.* ASSC, London.

Alderman, C W (1977) The role of uncertainty qualifications: evidence to support the tentative conclusion of the Cohen Commission. *Journal of Accountancy.* November, pp. 97-100.

_____ (1979) An empirical analysis of the impact of uncertainty qualifications on the market risk components. *Accounting and Business Research.* Autumn, pp. 258-266.

Altman, E I (1968) Financial ratios, discriminate analysis and the prediction of corporate bankruptcy. *The Journal of Finance.* Vol. 14 No. 4, pp. 589-609.

_____ (1982) Accounting implications of failure prediction models. *Journal of Accounting, Auditing, & Finance.* Fall, pp. 4-19.

_____ and McGough, T P (1974) Evaluation of a Company as a Going Concern. *Journal of Accountancy.* December, pp. 50-57.

American Institute of Certified Public Accountants (AICPA) (1988) *Statement on Auditing Standards 58:Reports on Audited Financial Statements.* AICPA, New York.

_____ (1988) *Statement on Auditing Standards 59: The Auditor's consideration of an entity's ability to continue as a going concern.* AICPA, New York.

Anthony, R N (1983) *Tell it like it was: a conceptual framework for financial accounting.* Richard D. Irwin, Inc., Illinois.

Asare, S (1990) The auditor's going-concern decision: a review and implication for future research. *Journal of Accounting Literature.* Vol. 9, pp. 39-64.

_____ (1992) The auditor's going concern decision: interaction of task variables and the sequential processing of evidence. *The Accounting Review.* April, pp. 379-393.

Auditing Practices Board (APB) (1993) *Statement of Auditing Standards 600: Auditors' reports on financial statements.* APB, London.

_____ (1993) *Statement of Auditing Standards No. 130:The going concern basis in financial statements.* APB, London.

_____ (1994) *Statement of Auditing Standards 130: The going concern basis in financial statement.* APB, London.

_____ (1994) *Bulletin 1993/1 Review of interim financial information.* APB, London.

_____ (1995) *Statement of Auditing Standards 220: Material and the audit.* APB, London.

Bailey, W T (1981) The effects of audit report on chartered financial analysts' perception of the sources of financial statements and audit report messages. *The Accounting Review.* October, pp. 882-896.

_____ (1982) An appraisal of research designs used to investigate the information content of audit reports. *The Accounting Review.* January, pp. 141-146.

Ball, R, Walker, R G and Whittred, G P (1979) Audit qualification and share prices *Abacus.* pp.23-34.

Bangkok Bank (1998) 1997 *Annual report.* Bangkok.

Banks, D W and Kinney, W R (1982) Loss contingency reports on stock prices – an empirical study. *Journal of Accounting Research.* pp. 240-254.

Barns, P (1987) The analysis and use of financial ratios: a review article. *Journal of Business Finance & Accounting.* Winter, pp. 449-461.

Baskin, E F (1972) The communication effectiveness of consistency exceptions. *The Accounting Review.* January, pp. 38-51.

Beaver, W H (1966) Financial ratios as predictors of failure. *Supplementary of Journal of Accounting Research.* pp. 71-111.

_____ (1981) *Financial reporting: an accounting revolution.* Prentice Hall Inc., Englewood Cliffs, New Jersey.

_____, Kennelly, J W and Voss, W M (1968) Predictive ability as a criterion for the evaluation of accounting data. *The Accounting Review.* October 1968, pp. 675-683.

Behn, B K, Kaplan, S E and Krumwiede, K R (2001) Further evidence on the auditor's going-concern report: the influence of management plans. *Auditing: A Journal of Practice & Theory.* Vol. 20, No. 1, pp. 13-28.

Belkaoui, A R (2000) *Accounting theory* (4th edition). Thomson Learning, London.

Bell, D (1974) *The coming of post-industrial society: a venture in social forecasting.* Heinemann, London.

Boritz, J E (1992) *The going concern assumption: Accounting and auditing implication.* The Canadian Institute of Chartered Accountant, Toronto.

Bryer , R A (2000) The history of accounting and the transition to capitalism in England, Part two: evidence. *Accounting, Organisation and Society.* Vol. 25, pp. 327-381.

Burrell, Gibson and Morgan, Gareth (1979), *Sociological paradigms and organisational analysis*, Heinemann, London.

Business on Line Limited (www.bol.co.th), retrieved on 19-20 July 2002.

Campisi, S and Trotman, K T (1985) Auditor consensus in going concern judgement. *Accounting and Business Research.* Autumn, pp. 303-310.

Carmichael, D R and Winters, A, J (1982) The evolution of auditing reporting. In: *Auditing Symposium VI: Proceeding of the 1982 Touch Ross/University of Kansas Symposium on Auditing Problems* edited by Nichols, D R and Stettler, H. University of Kansas Publisher: Kansas, pp. 1-20.

Carsberg, B, Hope, A and Scapens, R W (1974) The objective of published accounting reports. *Accounting and Business Research.* Summer, pp. 162-173.

The Chambers Dictionary (1999) Chambers Harrap Publishers, Edinburgh.

Chambers, R J (1955) Blueprint for a theory of accounting. *The Accounting Review.* pp.17-25.

_____ (1961) *Towards a general theory of accounting.* The University of Adelaide, The Australian Society of Accountants Annual Report.

_____ (1966) *Accounting, evaluation and economic behaviour.* Prentice Hall Inc., Englewood Cliffs, New Jersey.

_____ (1995) *An accounting thesaurus 500 years of accounting.* Pergamon, Oxford.

Chen, C J, Su, X and Zhao, R (2000) An emerging market's reaction to initial modified audit opinions: evidence from the Shanghai Stock Exchange. *Contemporary Accounting Research.* Fall, pp. 429-455.

Chen, C J P, Chen, S, and Su, X (2001) Profitability regulation, earnings management, and modified audit opinions: evidence from China. *Auditing: A Journal of Practice & Theory.* Vol. 20 No. 2, pp. 9-30.

Chen, K C W and Schoderbek, M P (1999) The role of accounting information in security exchange delisting. *Journal of Accounting and Public Policy.* Vol. 18, pp. 31-57.

Choi, S K and Jeter, D C (1992) The effect of qualified audit opinions on earning response coefficients. *Journal of Accounting and Economics*. Vol. 15, pp. 229-247.

Chow, C W and Rice, S J (1982) Qualified audit opinion and share prices – an investigation. *Auditing: A Journal of Practice and Theory*. Winter, pp. 35-53.

Coats, P and Fant, L F (1993) Reconizing financial distress patterns using a neural network tool. *Financial management*. Autumn, pp. 142-154.

Coopers&Lybrand (1981) *Manual of Auditing (3rd edition)*. Gee & Co (Publishers), London.

Corless, J C and Norgaard, T N (1974) User reactions to CPA reports on forecast. *The Journal of Accountancy*. August, pp. 46-54.

Craswell, A T (1985) Studies of the information content of qualified audit reports. *Journal of Business Finance and Accounting*. Vol. 12, No. 1, pp. 93-115.

Davis, P R (1982) An empirical evaluation of auditors' "subject-to" opinion. *Auditing: A Journal of Practice and Theory*. Fall, pp. 13-32.

Davis, S W, Menon, K, and Mprgan, G (1982) The images that have shaped accounting theory. *Accounting, Organizations and Society*. Vol. 4, No. 4, pp. 307-318.

Deakin, E B (1977) Business failure prediction: an empirical analysis, In: *Financial crisis: institutions and markets in a fragile environment*, edited by Altman, E I and Sametz, A W, John Wiley & Son, New York, pp. 72-98.

Demski, J S and Felthem, G A (1972) Forecast evaluation. *The Accounting Review*. July, pp. 531-548.

Demski, J S (1974) Choices among financial reporting alternatives. *The Accounting Review*. April, pp. 221-232.

_____ (1994) Market response to financial reports. *Journal of Accounting and Economics*. Vol. 17, pp. 3-40.

_____ and Felthem, G A (1976) *Cost determination: a concept approach*. The Iowa State University Press, Iowa.

Dev, S (1974) Ratios analysis and the prediction of company failure, In: *Debit, credit and Profitability*, edited by Edey, H and Yamey, B S. Sweet and Maxwell, London, pp. 61-74.

Dielman, T E (1991) *Applied regression analysis for business and economics*. PWS-Kent, Boston.

Dodd, P, Dopuch, N Holthusen, R and Leftwich, R (1984) Qualified audit opinions and stock prices: information content, announcement date and concurrent disclosures. *Journal of Accounting and Economics.* Vol. 6, pp. 3-38.

Dopuch, N, Holthausen, R W and Leftwich, R W (1986) Abnormal stock returns associated with media disclosures of 'subject-to' qualified audit opinions. *Journal of Accounting and Economics.* Vol. 8, pp. 93-117.

Elliott, J A (1982) 'Subject-to' audit opinions and abnormal security returns: outcomes and ambiguities. *Journal of Accounting Research.* Autumn, pp. 617-638.

Estes, R and Reimer, M (1977) A study of the effect of qualified auditor' opinions on bankers' lending decision. *Accounting and Business Research.* Autumn, 250-259.

_____ (1979) An experimental study of the differential effect of standard and qualified auditors' opinion and investors' price decisions. *Accounting and Business Research.* Spring, pp. 157-162.

_____ (1982) *The auditors' report and investor behaviour.* Lexington Books, London.

Fama, E F (1970) Efficient capital market: a review of theory and empirical work. *Journal of Finance.* May, pp. 383-417.

Firth, M (1978) Qualified audit reports: their impact on investment decision. *The Accounting Review.* July, pp. 642-650.

_____ (1980) The impact of audit qualifications on lending and credit decisions. *Journal of Banking and Finance.* September, pp. 257-268.

Fischer, S and Dornbusch, R (1983) *Economics.* McGraw-Hill, New York.

Fleak, S and Wilson, E R (1994) The incremental information content of the going concern audit opinion. *Journal of Accounting, Auditing & Finance.* Vol. 9, No. 1, pp. 146-166.

Foulke, Roy (1968) *Practical financial statement analysis* (6th edition). McGraw-Hill Book Company, New York.

Friedman, M (1953) The methodology of positive economics, In *Essays in Positive Economics.* University of Chicago Press, Chicago.

Frost, Carol A (1997) Disclosure policy choices of UK firm receiving modified audit reports. *Journal of Accounting and Economics.* Vol. 11, No. 2, pp. 30-40.

Furey, N and Park, D (1990) *The Companies Acts 1989: a practitioners' guide.* Jordans & Son, Bristol.

Gill, J and Johnson, P (1997) *Research methods for managers* (2nd edition). Paul Chapman, London.

Gioia, D A and Pitre, E (1990) Multiparadigm perspectives on theory building. *Academy of Management.* Vol. 15, No. 4, pp. 584-602.

Gonedes, N J (1972) Efficient capital market and external accounting. *The Accounting Review.* January, pp. 11-21.

Goode, R (1997) *Principles of corporate insolvency.* Sweet & Maxwell, London.

Griffin, P A (1982) *Usefulness to investor and creditor of information provided by financial reporting: a review of empirical accounting research.* Financial Accounting Standards Board, New York.

Gul, F A (1987) The effects of uncertainty reporting on lending officers' perceptions of risk and additional information required. *Abacus.* September, pp. 172-181.

Gwilliam, D (1987) *A survey of auditing research.* Prentice-Hall International.

Hatherly, D J (1997) Audit reports. In *Current Issues in Auditing (3rd edition)* edited by Sherer, M and Turley, S, Paul Chapman, London. pp. 181-197.

Holder-Webb, L M and Wilkins, M S (2000) The incremental information content of SAS No. 59 going concern opinions. *Journal of Accounting Research.* Vol. 38, No. 1, pp. 209-219.

Holt, G and Moizer, P (1990) The meaning of audit reports. *Accounting and Business Research.* Vol. 20, No. 78, pp. 111-121.

Hopkin, L (1984) *The Audit Report.* Butterworths, London.

Hopwood, W M J and Mutchler, J (1989) A test of the incremental explanatory power of opinions qualified for consistency and uncertainty. *The Accounting Review.* January, pp. 28-48.

_____ (1994) A Reexamination of audit versus model accuracy within the context of the going concern opinion decisions. *Contemporary Accounting Research.* Vol. 10, No. 2, pp. 409-431.

Horrigan, J O (1965) *Financial ratio analysis: an historical perspective.* Arno Press, New York.

Horrigan, J (1966) The determination of long-term credit standing with financial ratios. *Supplement of Journal of Accounting Research.* pp. 44-70.

_____ (1978) *Financial ratio analysis: an historical perspective.* Arno Press, New York.

Houghton, K A (1983) Audit reports: their impact on the loan decision process and outcome: an experiment. *Accounting and Business Research.* Winter, pp. 5-20.

Ijiri, Y (1980) An introduction to corporate accounting standards: a review. *The Accounting Review*. Vol. 55 No. 4, pp. 620-630.

Innes, J, Brown, T and Hatherly, D (1997) The expanded audit report - a research study within the development of SAS 600. *Accounting Auditing & Accountability Journal*. Vol. 10 No. 5, pp. 702-717.

The Institute of Certified Accountants and Auditors of Thailand (ICAAT) (1975) *Statement of Auditing Standards No. 1: Auditing Standards*. ICAAT, Bangkok.

_____ (1988) *Statement of Auditing Standards 25 Going Concern*. ICAAT, Bangkok.

_____ (1995) *Statement of Auditing Standards 39: Other auditors' involvement*. ICAAT, Bangkok.

_____ (1998) *Document for conference on 3-paragraph audit reports*. ICAAT, Bangkok.

_____ (1998) *Statement of Auditing Standards 700: The auditor's reports on financial statements*. ICAAT, Bangkok.

_____ (1999) *Accounting Framework*. ICAAT, Bangkok.

_____ (2000) *Statement of Auditing Standards 200: Objective and general principles governing an audit of financial statements*. ICAAT, Bangkok.

_____ (2001) *Statement of Auditing Standards 570: Going Concern*. ICAAT, Bangkok.

The International Auditing Practice Committee (IAPC) (1994) *International Standards on Auditing 570 Going concern*. IFAC, New York.

_____ (1994) *International Standards on Auditing 700: The auditor's reports on financial statements*. IFAC, New York.

_____ (2001) *International Standards on Auditing 320: Auditing materiality*. IFAC, New York.

_____ (2001) *International Standards on Auditing 810: The examination of prospective financial information*. IFAC, New York.

_____ (2001) *International Standards on Auditing 910: Engagement to review financial statements*. IFAC, New York.

Jenson, R E. (1983) *Review of forecasts: scaling and analysis of expert judgements regarding cross-impacts of assumptions on business forecasts and accounting measures, Studies in Accounting Research # 19*. American Accounting Association, New York.

Johnson, D A and Pany, K (1984) Forecast, audit review, and bank loan decisions. *Journal of Accounting Research*. Autumn, pp. 731-743

Johnson, D A, Pany, K and White, R (1983) Audit reports and the loan decision: action and perceptions. *Auditing: A journal of Practice and Theory*. Spring, pp. 38-51.

Jones, F L (1987) Current techniques in bankruptcy prediction. *Journal of Accounting Literature*. Vol. 6, pp. 131-164.

_____ (1996) The information content of the auditor's going concern evaluation. *Journal of Accounting and Public Policy*. Vol. 15, pp. 1-27.

Jones, R H (1994) Accounting in English local government from the middle ages to c1835. In *Accounting history: some British contributions*, edited by Parker, R K and Yamey, B S, pp. 377-403, first published in *Accounting and Business Research*. Summer, 1985.

Keasey, K and Watson, R (1991) Financial distress prediction models: a review of their usefulness. *British Journal of Management*. Vol. 2, pp. 89-102.

Keynes, J M (1904) *The scope and method of political economy*. Macmillan.

Kida, T (1980) An investigation into auditors' continuity and related qualification judgement. *Journal of Accounting Research*. Autumn, pp. 506-523.

_____ (1984) The impact of hypothesis-testing strategies on auditors' use of judgement data. *Journal of Accounting Research*. Spring, pp. 332-340.

Killough, L N and Koh, H C (1986) The going concern concept. *The CPA Journal*. July, pp. 24-33.

Klecka, W R (1980) *Discriminant analysis: series of quantitative applications in the social sciences*. Sege Publication.

Kluger B D and Shields, D (1989) Auditor changes, information quality and bankruptcy prediction. Managerial and Drcision Economics. Vol. 10, pp. 275-282.

Koh, H C and Killough, L N (1990) The use of multiple discriminant analysis in the assessment of the going-concern status of an audit client. *Journal of Business Finance & Accounting*. Vol. 17 No. 2, pp. 179-191.

Koh, H C (1991) Model predictions and auditor assessments of going concern status. *Accounting and Business Research*. Vol. 21, No. 84, pp. 331-338.

Kuhn, T S (1970) *The structure of scientific revolutions*. University of Chicago Press, Chicago.

LaSalle, R E and Anandarajan, A (1997) Bank loan officers reactions to audit reports issued to entities with litigation and going concern uncertainty. *Accounting Horizons*. June, 33-40.

Lennox, C S (1999a) The accuracy and incremental information content of audit reports in predicting bankruptcy. *Journal of Business Finance & Accounting*. June-July, pp. 757-778.

_____ (1999b) Identifying failing companies: a re-evaluation of the Logit, Probit and DA approaches. *Journal of Economics and Business*. Vol. 53, pp. 347-364.

_____ (1999c) Audit quality and auditor size: an evaluation of reputation and deep pockets hypotheses. *Journal of Business Finance & Accounting*. September/October, pp. 779-805.

Levitan, A S and Knoblett, J A (1985) Indicators of exceptions to the going concern assumption. *Auditing: A Journal of Practice & Theory*. Vol. 5 No. 1, pp. 26-39.

Libby, R (1975) The use of simulation decision makers in information evaluation. *The Accounting Review*. July, pp. 475-489.

Libby, R (1979) Impact of uncertainty reporting on the loan decision. *Journal of Accounting Research*. Supplement, pp. 35-57.

Littleton, A (1981) *Accounting evolution to 1900*. The University of Alabama: Alabama, reprint of the 1933, American Institute Publishing Co., New York.

Manson, S and Zaman, M (2001) Auditor communication in an evolving environment: going beyond SAS 600: Auditors' reports on financial statements. *British Accounting Review*, Vol. 33, pp. 113-136.

Mautz, R K and Sharaf, H A (1961) *The philosophy of auditing*. American Accounting Association (AAA) Monograph No. 6, AAA: Florida.

McEnroe, J E and Martens, S C (1998) Individual investors' perceptions regarding the meaning of US and UK audit report terminology: 'Present fairly in conformity with GAAP' and 'give a true and fair view'. Journal of Business Finance & Accounting, Vol. 25, No. 3-4, pp. 289-307.

Meeks, G (1998) Profit forecasts in the annual report: the problem of economic assumptions. *British Accounting Review*. Vol. 30, pp. 15-172.

Menon, K and Schwartz, K (1987) An empirical investigation of audit qualification decision in the presence of going concern uncertainties. *Contemporary Accounting Research*. Vol. 3 No. 2, pp. 302-315.

Mutchler, J F (1984) Auditors' perception of the going concern opinion decision. *Auditing: A Journal of Practice & Theory*. Vol. 3 No. 2, pp. 17-30.

_____ (1985) A Multivariate analysis of the auditor's going-concern opinion decision. *Journal of Accounting Research*. Vol. 23, No. 2, pp. 668-682.

Napier, C (1995) The history of financial reporting in the United Kingdom. In: Walton, Peter (ed) *European financial reporting: a history*, pp. 259-283. Academic Press, London.

Ohlson, J A (1980) Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research*. Vol. 15, No. 1, pp. 109-131.

Pampel, Fred C (2000) *Logistic regression: series of quantitative applications in the social sciences*. Sege Publication.

Pany, K and Smith, C H (1982) Auditor association with quarterly financial information: an empirical test. *Journal of Accounting Research*. Autumn, pp. 472-481.

Paton, W A and Littleton A C (1940) *An introduction to corporate accounting standards, Monograph No. 3*. American Accounting Association, New York.

Peel, M J (1989) The going-concern qualification debate: some UK evidence. *British Accounting Review*. Vol. 21, pp. 329-350.

Peel, M J, Peel, D A and Pope, P F (1986) Predictive corporate failure: some results for the UK corporate sector. *Omega*. Vol. 14, No.1, pp. 5-12.

Raghunandan, K and Rama, D V (1995) Audit reports for companies in financial distress: before and after SAS No. 59. *Auditing: A Journal of Practice & Theory*. Vol. 14 No. 1, pp. 50-63.

Recker, P M J and Pany, K (1979) Quarterly statement reliability and auditor association. *Journal of Accountancy*. October, pp. 97-100.

Reynolds, J K and Francis, J R (2001) Does size matter? The influence of large clients on office-level auditor reporting decisions. *Journal of Accounting and Economics*. Vol. 30, pp. 375-400.

Robertson, J C (1988) Analysts' reactions to auditors' messages in qualified reports. *Accounting Horizon*. January, pp. 82-89.

Schiffman, S S, Reynolds M L and Young, F W (1981) *Introduction to multidimensional scaling*. Academic Press, London.

Schnusenberg, O and Skantz, T R (1998) A test of the abandonment hypothesis using voluntaliry liquidating firms and unprofitable surviving firms. *Journal of Accounting and Finance*, Vol. 13, No. 4, pp. 395-415.

Staubus, G J (1977) *Making accounting decisions*. Scholars Book Company, Houston, Texas.

Sterling, Robert R (1970) *Theory of the measurement of enterprise income*. The university press of Kansas, Kansas.

The Stock Exchange of Thailand (2001) *Rules of the Stock Exchange of Thailand*. The Stock Exchange of Thailand, Bangkok.

Strawser, J R (1991) The role of accountant reports in users' decision-making process: a review of empirical research. *Journal of Accounting Literature*. Vol. 10, pp. 181-208.

Taffler, R and Tissaw, H (1977) Going, going, gone – four factors which predict. *Accountancy*. March, pp. 50-54.

Tamari, M (1978) *Financial ratios: analysis and prediction*. Paul Elek, London.

Trigueiros, D and Taffler, R (1996) Neural network and empirical research in Accounting. *Accounting and Business Research*. Vol. 26, No. 4, pp. 347-355.

Wallace, W A (1991) *Auditing* (2nd edition). PWS-KENT Publishing Company, Boston.

Woolf, E (1983) Tackling the delicate question of going concern. *Accountancy*. November, pp. 99-102.

Zavgren, C V (1983) The prediction of corporate failure: the state of the art. *Journal of Accounting Literature*. Vol. 2, pp. 1-38.

Zeff, S A (1999) The increasing importance of current values in accounting: A comment on the ASB's revised draft on principles, In *Try again, Proceeding of the ACCA conference on the ASB's 1999 revised draft statement of principles* by Mumford, M J and Page, M J (ed). ACCA, London.