

# Financial crisis and corporate failure: The going concern assumption Findings from Athens stock exchange

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## Abstract

Corporate failure may be defined as the situation where a business unit becomes insolvent and progressively moves towards bankruptcy or into liquidation. The recent financial crisis has deteriorated dramatically the financial conditions in which the business units operate and has a significant impact on the companies that experience corporate failure. The going concern assumption constitutes a fundamental accounting principle for the preparation of financial statements and is even more important in times when global economy is facing such a financial crisis. The independent auditor's report attribute credibility to the financial statements prepared by management. The purpose of this paper is to develop a reliable model that classifies the risk of corporate failure on six levels using financial analysis ratios. The model is developed based on financial data of Athens Stock Exchange (ASE) listed firms for the year 2011.

**JEL Classification numbers:** M41, M42, M48

**Keywords:** IFRS, Going Concern, Insolvent, Auditor's Report.

## 1 Introduction

The bankruptcy of an entity has significant impact on a broad part of society. Investors lose their funds while suppliers and other creditors are subject to losses. In many cases, the bankruptcy of a large corporation may lead other associated entities to bankruptcy due to the interdependencies which will eventually cause a domino of bankruptcies. Banks may suffer losses, especially in the occasion where the entity has extended debt facilities and may cause the entire financial system to falter. In addition to the above, the bankruptcy of an entity entails job losses, increase of unemployment rate, decrease in consumer spending and loss of government revenues from contributions and taxes.

The going concern assumption constitutes a fundamental accounting principle for the preparation of financial statements and is even more important in times when global economy is facing such

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a financial crisis. Within a climate of continuous and intense economic changes, it is vital for the interested parties of the entity to make rational decisions. The timely acquisition of sufficient, appropriate and relevant financial information constitutes the basis for rational decision making. The need of interested parties for reliable accounting statements has led to the development of the auditing profession which ultimately aims to ensure the fair presentation of the financial position and performance of the entity in order to serve the public interest.

At this point, the role of the professional auditor should be highlighted as he represents an independent party in the relationship between the management of the entity and the users of the financial statements (Agency Theory). The independent's auditor's report makes financial statements credible. Therefore, the audit opinion is crucial in the economic decisions of the users of financial information which are prepared by the entity's management.

The remarkable increase in the number of entities that resort to bankruptcy in recent years, in combination with the auditor's failure to identify and disclose timely, events or conditions that raise significant doubts on the entity's ability to continue as a going concern, make imperative the study of the phenomenon and the diagnosis of its causes.

In most cases, the management of an entity that is under financial distress demonstrates unwillingness to disclose the events or conditions that raise doubt on the entity's going concern which leads to the issuance of a modified audit report. The modified audit report has as a consequence the deterioration of the conditions under which the entity operates. The available sources of funds reduce or additional collaterals are required to secure the debts, the credit period available by its creditors shortens, the customers prefer competitors' products and key employees leave the entity in the view of job opportunities with more prospective. These adverse conditions contribute to business failure, making the audit report itself a 'self-fulfilling prophecy'.

The most corporate failure prediction models that have been developed, with most popular Altman's Z-score, are based on financial analysis. Financial ratios are related to corporate failure the way that the speed of a car is related to the probability of crashing: there is a correlation, but there is no point at which failure is certain. To establish a bankruptcy prediction model, one must assess the no turning point. This point may be determined with reliability, only after the bankruptcy event has occurred. The requirement is to determine the point where the entity begins to "accelerate".

## **2 The going concern concept**

Financial statements are a structured representation of the financial position and financial performance of an entity. The objective of financial statements is to provide information about the financial position, financial performance and cash flows of an entity that is useful to a wide range of users in making economic decisions.

The going concern concept is fundamental concept for the preparation of financial statements. Some financial reporting frameworks contain an explicit requirement for management to make a specific assessment of the entity's ability to continue as a going concern, and standards regarding matters to be considered and disclosures to be made in connection with going concern. For

example, International Accounting Standard (IAS) 1, “Presentation of Financial Statements” requires management to make an assessment of an entity’s ability to continue as a going concern.

In accordance with IAS 1 par. 25, when preparing financial statements, management shall make an assessment of an entity’s ability to continue as a going concern. An entity shall prepare financial statements on a going concern basis unless management either intends to liquidate the entity or to cease trading, or has no realistic alternative but to do so. When management is aware, in making its assessment, of material uncertainties related to events or conditions that may cast significant doubt upon the entity’s ability to continue as a going concern, the entity shall disclose those uncertainties. When an entity does not prepare financial statements on a going concern basis, it shall disclose that fact, together with the basis on which it prepared the financial statements and the reason why the entity is not regarded as a going concern. In assessing whether the going concern assumption is appropriate, management takes into account all available information about the future, which is at least, but is not limited to, twelve months from the end of the reporting period. The degree of consideration depends on the facts in each case. When an entity has a history of profitable operations and ready access to financial resources, the entity may reach a conclusion that the going concern basis of accounting is appropriate without detailed analysis. In other cases, management may need to consider a wide range of factors relating to current and expected profitability, debt repayment schedules and potential sources of replacement financing before it can satisfy itself that the going concern basis is appropriate.

In accordance with ISA 570 “Going Concern”, an entity prepares financial statements on a going concern basis when, under the going concern assumption, the entity is viewed as continuing in business for the foreseeable future. It is worthwhile to make a specific reference to certain terms used in the Standard.

The term ‘**foreseeable future**’ is not defined within ISA 570, but IAS 1, Presentation of Financial Statements deems the foreseeable future to be a period of 12 months from the entity’s reporting date.

The concept of going concern is an underlying assumption in the preparation of financial statements, hence it is assumed that the entity has neither the intention, nor the need, to liquidate or curtail materially the scale of its operations. If management conclude that the entity has no alternative but to liquidate or curtail materially the scale of its operations, the going concern basis cannot be used and the financial statements must be prepared on a different basis (such as the ‘break-up’ basis). When the use of the going concern assumption is appropriate, assets and liabilities are recorded on the basis that the entity will be able to realize its assets and discharge its liabilities in the normal course of business.

The term “**material uncertainty**” is used in IAS 1 in to describe the uncertainties related to events or conditions which may cast significant doubt on the entity’s ability to continue as a going concern that should be disclosed in the financial statements.

### **3 Management’s responsibility**

The concept of going concern is particularly relevant in times of economic difficulties and in some situations management may determine that a profitable company may not be a going

concern, for example because of significant cash flow difficulties. It is the responsibility of management to make an assessment of whether the going concern presumption is appropriate, or not, when they are preparing the financial statements. In order to conclude as to whether, or not, an entity is able to continue in business for the foreseeable future, management will have to make judgments on various uncertain future outcomes of events or conditions. ISA 570 outlines three factors that are relevant and which management must take into consideration when determining whether, or not, an entity can prepare the financial statements on the going concern basis:

- The degree of uncertainty associated with the outcome of an event or condition increases significantly the further into the future an event or condition or the outcome occurs
- The size and complexity of the entity, the nature and condition of its business and the degree to which it is affected by external factors affect the judgment regarding the outcome of events or conditions.
- Any judgment about the future is based on information available at the time at which the judgment is made. Subsequent events may result in outcomes that are inconsistent with judgments that were reasonable at the time they were made.

Below are listed indicative factors that may have an impact on an entity's ability to continue as a going concern and events or conditions that, individually or collectively, may cast significant doubt about the going concern assumption:

### **Financial**

- Net liability or net current liability position.
- Fixed-term borrowings approaching maturity without realistic prospects of renewal or repayment; or excessive reliance on short-term borrowings to finance long-term assets.
- Indications of withdrawal of financial support by creditors.
- Negative operating cash flows indicated by historical or prospective financial statements.
- Adverse key financial ratios.
- Substantial operating losses or significant deterioration in the value of assets used to generate cash flows.
- Arrears or discontinuance of dividends.
- Inability to pay creditors on due dates.
- Inability to comply with the terms of loan agreements.
- Change from credit to cash-on-delivery transactions with suppliers.
- Inability to obtain financing for essential new product development or other essential investments.

### **Operating**

- Management intentions to liquidate the entity or to cease operations.
- Loss of key management without replacement.
- Loss of a major market, key customers, franchise, license, or principal suppliers.
- Labor difficulties.
- Shortages of important supplies.
- Emergence of a highly successful competitor.

**Other**

- Non-compliance with capital or other statutory requirements.
- Pending legal or regulatory proceedings against the entity that may, if successful, result in claims that the entity is unlikely to be able to satisfy.
- Changes in law or regulation or government policy expected to adversely affect the entity.
- Uninsured or underinsured catastrophes when they occur.

This above list is not exhaustive and the existence of one or more of the items does not always signify that a material uncertainty exists. However, if there are any material uncertainties relating to the going concern assumption, then management must make adequate going concern disclosures in the financial statements as analyzed below.

## 4 Auditor's responsibility

In accordance with ISA 570, the objectives of the auditor are:

- (a) To obtain sufficient appropriate audit evidence about whether management's use of the going concern assumption in the preparation and presentation of the financial statements is appropriate in the circumstances; and
- (b) To conclude, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the entity's ability to continue as a going concern and, and
- (c) if such a material uncertainty exists, to consider the implications for the auditor's report.

The auditor's responsibility is to evaluate the appropriateness of management's use of the going concern assumption in the preparation of the financial statements and conclude whether there is a material uncertainty about the entity's ability to continue as a going concern that need to be disclosed in the financial statements. When performing risk assessment procedures to obtain an understanding of the entity, the auditor shall:

- (a) Inquire of management as to whether events or conditions exist that, individually or collectively, may cast significant doubt about the going concern assumption; and either
- (b) Consider management's assessment of the entity's ability to continue as a going concern, if such an assessment has been performed, to determine whether management has identified events or conditions that may cast significant doubt on the entity's ability to continue as a going concern and management's plans to address them; or
- (c) Discuss with management the basis for its intended use of the going concern assumption, if management has not yet performed such an assessment.

It is the responsibility of the auditor to remain alert throughout the audit for audit evidence of events or conditions that may cast significant doubt on the entity's ability to continue as a going

concern. The auditor shall evaluate management's assessment of the entity's ability to continue as a going concern.

The management's assessment of the appropriateness of going concern assumption for the preparation of the financial statements shall cover at least twelve months from the reporting period end. If management's assessment of the entity's ability to continue as a going concern covers less than twelve months from the balance sheet date, the auditor shall request management to extend its assessment period to twelve months from the balance sheet date. In evaluating management's assessment, the auditor shall consider whether management has taken into account all relevant information of which the auditor is aware as a result of the audit.

It should be emphasized that, as mentioned earlier, it is not the auditor's responsibility to determine whether, or not, an entity should prepare its financial statements under the going concern presumption; this is the responsibility of management. The auditor's responsibility under ISA 570 is to obtain sufficient appropriate audit evidence about the appropriateness of management's use of the going concern assumption in the preparation of the financial statements, and to conclude whether there is a material uncertainty about the entity's ability to continue as a going concern.

The most usual procedures that the auditor may adopt to establish whether the use of the going concern presumption is appropriate in an entity's particular circumstances are the following:

- Analyzing and discussing cash flow, profit and other relevant forecasts with management.
- Analyzing and discussing the entity's latest available interim financial statements.
- Reading the terms of debentures and loan agreements and determining whether any have been breached.
- Reading minutes of the meetings of shareholders, those charged with governance and relevant committees for reference to financing difficulties.
- Inquiring of the entity's legal counsel regarding the existence of litigation and claims and the reasonableness of management's assessments of their outcome and the estimate of their financial implications.
- Confirming the existence, legality and enforceability of arrangements to provide or maintain financial support with related and third parties and assessing the financial ability of such parties to provide additional funds.
- Evaluating the entity's plans to deal with unfilled customer orders.
- Performing audit procedures regarding subsequent events to identify those that either mitigate or otherwise affect the entity's ability to continue as a going concern.
- Confirming the existence, terms and adequacy of borrowing facilities.
- Obtaining and reviewing reports of regulatory actions.
- Determining the adequacy of support for any planned disposals of assets.

When events or conditions have been identified which may cast significant doubt on the entity's ability to continue as a going concern, the auditor shall:

- (a) Obtain sufficient appropriate audit evidence to determine whether or not a material uncertainty exists through performing additional audit procedures, including consideration of

other mitigating factors. When analysis of a cash flow forecast is a significant factor in considering the future outcome of events or conditions the auditor shall:

- (i) Evaluate the reliability of the entity's information system for generating such information; and
  - (ii) Determine whether there is adequate support for the assumptions underlying the forecast.
- (b) Evaluate management's plans for future actions based on its going concern assessment and whether the outcome of these plans will improve the situation, and obtain sufficient appropriate audit evidence that management's plans are feasible in the circumstances.
- (c) Determine whether any additional facts or information have become available since the date on which management made its assessment.
- (d) Request specific written representations from management regarding its plans for future action.

## 5 Audit report

Based on the audit evidence obtained, the auditor shall conclude whether, in the auditor's judgment, a material uncertainty exists related to events or conditions that, individually or collectively, may cast significant doubt on the entity's ability to continue as a going concern. A material uncertainty exists when the magnitude of its potential impact is such that, in the auditor's judgment, appropriate disclosure of the nature and implications of the uncertainty is necessary for the fair presentation of the financial statements in accordance with a fair presentation financial reporting framework, or in the case of a compliance framework, for the financial statements not to be misleading.

Carson et al. (2011)<sup>4</sup> research revealed that the recent financial crisis has caused auditors to give greater weight on the going concern assumption which is supported by the significant increase of audit reports with emphasis of matter in respect of going concern uncertainties not only to USA but also to United Kingdom, Australia and France.

There are three situations that ISA 570 identifies in terms of the going concern assumption:

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*A. USE OF THE GOING CONCERN ASSUMPTION IS APPROPRIATE  
BUT A MATERIAL UNCERTAINTY EXISTS*

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<sup>4</sup> Carson E., R. Simnett, P.C. Tronnes (2011), International Consistency in audit reporting behavior: Evidence from going concern modifications, Report to International Auditing and Assurance Standards Board

A reporting entity that considers the going concern assumption to be **appropriate** in the circumstances, but still has a material uncertainty present will have to make **disclosure** of the fact in the financial statements that there are uncertain future transactions/events that may result in the entity being unable to continue in business in the foreseeable future. The disclosure should describe the principal events or conditions that may cast significant doubt on the entity's ability to continue as a going concern and management's plans to deal with these events or conditions and state clearly that the material uncertainty may cause the entity to be unable to realize its assets and discharge its liabilities in the normal course of business.

The auditor will consider the adequacy of the disclosures made in the financial statements by management. If the auditor considers the **disclosures** to be **adequate**, then the audit report will be modified by the inclusion of an **Emphasis of Matter** paragraph, as required by ISA 706 "Emphasis of Matter Paragraphs and Other Matter(s) Paragraphs in the Independent Auditor's Report", with a view to highlight the existence of a material uncertainty and draw user's attention to the note of the financial statements. The Emphasis of Matter paragraph will follow immediately after the opinion paragraph and will always cross-reference the reader's attention to the relevant disclosure in the financial statements, and the opinion will be unmodified.

If the auditor concludes that the disclosures are **inadequate**, or if management have not made any disclosure at all and management refuse to remedy the situation, the opinion will be **qualified or adverse**, as required by ISA 705 "Modifications to the Opinion in the Independent Auditor's Report". In both cases a paragraph explaining the basis for the qualified or adverse opinion will be included before the opinion paragraph and the opinion paragraph will be qualified 'except for' or express an adverse opinion.

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#### *B. USE OF THE GOING CONCERN ASSUMPTION IS INAPPROPRIATE*

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In event that, in the auditor's judgment, the entity will not be able to continue as a going concern and therefore the going concern basis is **inappropriate** in the entity's circumstances, the auditor shall express an adverse opinion if the financial statements have been prepared on a going concern basis, regardless of whether or not appropriate disclosure has been made. An adverse opinion states that the financial statements do not present fairly.

If the financial statements have been prepared on a going concern basis but, in the auditor's judgement, management's use of the going concern assumption in the financial statements is **inappropriate**, the auditor shall express an **adverse** opinion regardless of whether or not the financial statements include disclosure of the inappropriateness of management's use of the going concern assumption.

If the entity's management is required, or elects, to prepare financial statements when the use of the going concern assumption is not appropriate in the circumstances, the financial statements are prepared on an **alternative basis** (for example, liquidation basis). The auditor may be able to perform an audit of those financial statements provided that the auditor determines that the alternative basis is an acceptable financial reporting framework in the circumstances. The auditor may be able to express an **unmodified opinion** on those financial statements, provided there is



adequate disclosure therein but may consider it appropriate or necessary to include an **Emphasis of Matter** paragraph in the auditor's report to draw the user's attention to that alter.

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### C. MANAGEMENT UNWILLING TO MAKE OR EXTEND ITS ASSESSMENT.

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There are situations that may arise when the auditor may request management to make an assessment, or extend their original assessment of going concern. If management refuse to make, or extend, an assessment of going concern the auditor will consider the implications for the report. If management is unwilling to make or extend its assessment when requested to do so by the auditor, the auditor shall consider whether there is a need to modify the opinion in the auditor's report as a result of the auditor's inability to obtain sufficient appropriate audit evidence. It is not the auditor's responsibility to rectify the lack of analysis by management. In some circumstances, however, the lack of analysis by management may not preclude the auditor from being satisfied about the entity's ability to continue as a going concern.

When the auditor is unable to obtain sufficient appropriate audit evidence to enable the auditor to determine, in the absence of management's assessment, whether or not events or conditions exist that may cast significant doubt on the entity's ability to continue as a going concern, the auditor shall qualify the opinion or disclaim the auditor's opinion as appropriate as required in ISA 705.

The management's unwillingness to disclose going concern uncertainties or extend its assessment will probably lead the auditor to issue a modified audit report which has as a consequence the deterioration of the conditions under which the entity operates. The available sources of funds reduce or additional collaterals are required to secure the debts, the credit period available by its creditors shortens, the customers prefer competitors' products and key employees leave the entity in the view of job opportunities with more prospective. These adverse conditions contribute to business failure, making the audit report itself a "**self-fulfilling prophecy**".

Researches performed by Garsombke and Choi (1992), Geiger et al. (1998), Pryor and Terza (2002)<sup>5</sup> confirm that an audit report with going concern issue involves increased likelihood of bankruptcy immediately after the issuance of the report. Nevertheless, researches performed by Kida (1980) and Mutchler (1984)<sup>6</sup>, indicate that auditors do not take into account the "self-fulfilling prophecy" phenomenon in the formation of the audit report.

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<sup>5</sup> Garsombke H.P. and S. Choi (1992), The association between auditor's uncertainty opinions and business failures, *Advances in Accounting*, Vol.10, pp.45-60

Geiger M.A., K. Raghundanan, D.V. Rama (1998), Going Concern audit report recipients before and after SAS No. 59, *The National Public Accountant*, Vol.43, Iss.8, pp.24-25

Pryor and Terza (2002), Are going concern audit opinions a self-fulfilling prophecy?, *Advances in Quantitative Analysis of Finance and Accounting*, Vol.10, pp. 89-116

<sup>6</sup> Kida T. (1980); An investigation into auditors' continuity and related qualification judgments, *Journal of Accounting Research*, Vol.18, pp.506-523

Mutchler J.F. (1984), Auditors' perceptions of the going concern opinion decision, *Auditing: A journal of Practice and Theory*, (Spring), pp.17-29

On the contrary, more recent researches of Citron and Taffler (1992 και 2001), Gaeremynck and Willekens (2003), Carey et al. (2008)<sup>7</sup>, have concluded that there is no significant difference in the probability of default between companies with going concern in the audit report and companies without going concern in the audit report.

The diagram below summarized the audit report that should be issued when a material uncertainty that may cast doubt on the entity's ability to continue as a going concern exists.

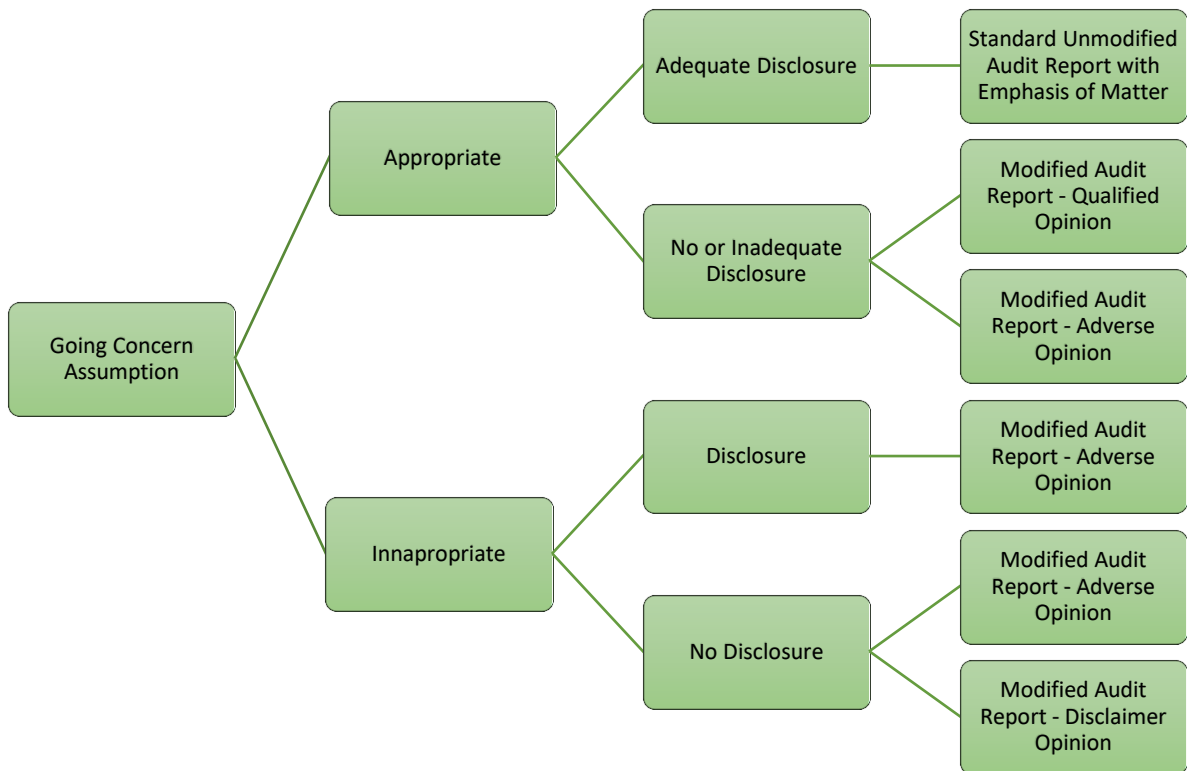


Diagram 1: Audit Report on Going Concern

<sup>7</sup> Citron D., R. Taffler (1992), The audit report under going concern uncertainties: An empirical analysis; Accounting and Business Research, Vol.22, Iss.88, pp.337-347

Gaeremynck A., M. Willekens (2003); The endogenous relationship between audit-report type and business termination: evidence on private firms in a non-litigious environment; Accounting and Business Research, Vol.33, Iss.1, pp.65-79

Finally, it should be pointed out that, the auditor cannot predict future events or conditions that may cause an entity to cease to continue as a going concern. Accordingly, the absence of any reference to going concern uncertainty in an auditor's report cannot be viewed as a guarantee as to the entity's ability to continue as a going concern.

On the contrary, multiple surveys that have been conducted, Mutchler and Williams (1990); Garsombke and Choi (1992); Geiger et al. (1998); Pryor and Terza (2002); Geiger and Rama (2006); Citron and Taffler (1992); Lennox (1999a); Carey et al. (2008); Carey et al. (2011); Xu et al. (2011b)<sup>8</sup>, indicate that approximately 80%-90% of listed companies that has emphasis of matter or qualified audit opinion in respect of going concern do not go bankrupt in the following year.

It is worth noting that a broader approach to the concept of corporate failure, could alter the accuracy with which the auditors predict failure and issue reports with qualification for going concern uncertainties. Nogler (1995)<sup>9</sup> studied 157 companies with qualified audit opinion and observed that in the next five years that followed, approximately 33.1% went bankrupt and approximately 31.8% either acquired or merged with another company. Similarly, Franks and Loranth (2004)<sup>10</sup> observed that the majority of companies that were included in the sample and whose audit report revealed going concern uncertainties, remained in operational existence. However, the net result of these companies has fallen sharply and almost three quarters went bankrupt or were acquired by another company.

Therefore, the relationship between corporate failure and the ability of the auditor to predict the insolvency in the audit report depends firstly from the definition of corporate failure and secondly on the time horizon under review.

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<sup>8</sup> Mutchler J.F., D.D. Williams (1990), The relationship between audit technology, client risk profiles and the going concern opinion decision, *Auditing: A Journal of Practice and Theory*, Vol. 9, pp. 39-54

Garsombke H.P. and S. Choi (1992), The association between auditor's uncertainty opinions and business failures, *Advances in Accounting*, Vol.10, pp.45-60

Geiger M.A., K. Raghundanan, D.V. Rama (1998), Going Concern audit report recipients before and after SAS No. 59, *The National Public Accountant*, Vol.43, Iss.8, pp.24-25

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Lennox C. (1999a), The accuracy and incremental information content of audit reports in predicting bankruptcy, *Journal of Business, Finance and Accounting*, Vol.26, Iss.5&6, pp.757-778

Carey P.J., M.A. Geiger, B.T. O'Connell (2008), Costs associated with going-concern modified audit opinions: An analysis of the Australian audit market, *Abacus*, Vol.48, pp.61-81

Carey P.J., S. Kortum, R.A. Moroney (2011), Auditors' modified going concern opinions post 2001: Increased conservatism or improved accuracy, *Accounting and Finance*, under publish

Xu Y., E. Carson, N. Fargher (2011b); Audit Reports in Australia during the global financial crisis, *Accounting and Finance*, under publish

<sup>9</sup> Nogler G.E. (1995), The resolution of auditor going concern opinions, *Auditing: A journal of Practice and Theory*, Vol. 14, pp.54-7

<sup>10</sup> Julian Franks and Gyongyi Loranth(2004), A study of inefficient going concerns in bankruptcy, under publish ([www.ssrn.com](http://www.ssrn.com))

## 6 Data and research methodology

The dataset was obtained from the financial statements of all listed firms traded in ASE for the year ended 2011, when the effects of the financial crisis had begun to be obvious and impact the listed firms' operations. During the respective period, the listed firms were subject to full and compulsory application of IFRS, which ensures the comparability of financial data. Furthermore, listed companies were subject to compulsory statutory audit of financial statements under applicable L. 2190/1920, which imply that an audit report has been issued by external auditors based on the ISA.

We have used Bloomberg in order to collect the financial statements' data and ASE in order to collect the auditor's report. We have disaggregated the listed firms based on the ASE sector. The Athens Stock Exchange consists of the following 18 sectors:

- Real Estate
- Insurance
- Industrial Goods & Services
- Retail
- Construction & Materials
- Media
- Oil & Gas
- Personal & Household Goods
- Basic Resources
- Travel & Leisure
- Technology
- Telecommunications
- Banks
- Food & Beverage
- Health Care
- Utilities
- Chemicals
- Financial Services

For each sector, we have calculated the following 10 financial ratios that are considered to be representative indicators of the financial statement and performance of an entity. We have selected ratios from the liquidity, profitability, gearing, solvency and investing/market categories of ratios in order to reflect a wide range of information for the listed firms.

### **Financial Ratios**

1. Quick Ratio [Beaver (1966), Kida (1980), Mutchler(1985), Menon and Schwartz(1987), Zeytinoglou and Akarm (2013)]
2. Operating Cash Flows to Short Term Liabilities [Menon and Schwartz(1987), Raghunandan and Rama (1995)]
3. Return On Equity [Altman and McGough(1974), Beaver (1966), Koh and Killough(1990), Doputch et al.(1987), Menon and Schwartz(1987)]
4. Net Profit Margin [Mutchler(1985)]
5. Asset Turnover [Zeytinoglou and Akarm (2013), Shen, Wu and Huang (2007)]
6. Return On Assets [Altman (1968, Kida (1980), Mutchler(1985), Doputch et al.(1987) ]
7. Reserves to Total Equity [Altman and McGough(1974), Koh and Killough(1990), Doputch et al.(1987), Menon and Schwartz(1987)]
8. Financial Leverage [Doputch et al.(1987), Raghunandan and Rama (1995)]
9. Debt to Equity [Beaver (1966), Kida (1980), Mutchler(1985)]

10. Price to Book Value [Dopuch et al. (1987), Mutchler and Williams (1990), Bell and Tabor(1991), Monroe and The (1993), DeFond at al. (2002), Carey and Simnett (2006), Fargher and Jiang (2008), Xu et al.(2011), Kausar and Lennox (2011)]

Subsequently, we calculated the weighted average for each ratio with the market capitalization and the standard deviation. We ranked each ratio from 0 to 4 based on the ratio value in order to concentrate the ratings into the final score which represents the risk classification of the firm as follows:

Table 1: Risk Classification

Score	Grade	Risk
From 3,00 to 4,00	A+ / A	Supreme
From 2,50 to 2,99	A / A-	Outperform
From 2,00 to 2,49	B+ / B-	Average Risk
From 1,50 to 1,99	B- / C+	Increased Risk
From 1,00 to 1,49	C / C-	High Risk
From 0,00 to 0,99	D	Excessive Risk

Based on the ASE, we concentrated the audit report of each listed firm for the year ended 2011. We categorized firms based on the 5 types of audit opinion: Unmodified Audit Report, Emphasis of Matter, Qualified Opinion, Negative Opinion, and Disclaimer. For all types of audit opinion, except from the unmodified, we recorded whether the reason for modification was attributable to going concern matters. In addition to the above, we collected information on the audit firm that performed the audit of the financial statements with a view to associate the firm size with the audit report.

## 7 Empirical findings

Figure 1 illustrates that 68% of listed firms were traded on the main market but a significant proportion 32% of listed firms in ASE were either suspended or in surveillance or to be delisted in year 2011.

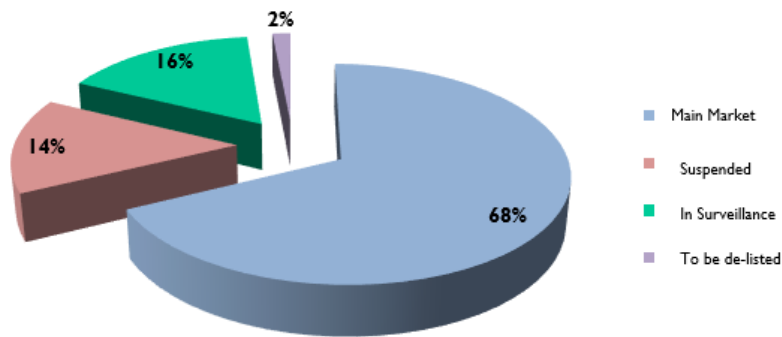


Figure 1: ASE Trade Category

Based on the application of research methodology developed above, we reached the conclusion that the risk of corporate failure for 39% of the listed firms is lower than average. However, the majority of listed firms, approximately 61%, faces financial difficulties and risk of failure is above average. Figure 2 demonstrates the distribution of firms per risk classification.

Grade	No. of Listed per risk class	
A+ / A	6	3%
A / A-	28	13%
B+ / B-	52	23%
B- / C+	76	34%
C / C-	41	18%
D	21	9%
<b>TOTAL</b>	<b>224</b>	<b>100%</b>

Figure 2: Distribution of Listed Firms per Risk Classification

Obviously, the financial crisis has affected the listed firms in the year 2011. Approximately 34% of listed are under increased risk of failure, 18% have high risk while 9% of the listed have excessive risk to go bankrupt unless they take measures to reverse the downturn.

On the other hand, only 3% of the total could be categorized as supreme with no reason to expect a bankruptcy in the foreseeable future. However, another 13% and 23% of the firms is classified as outperform and average risk respectively. Figures 3 is indicative of the risk distribution.

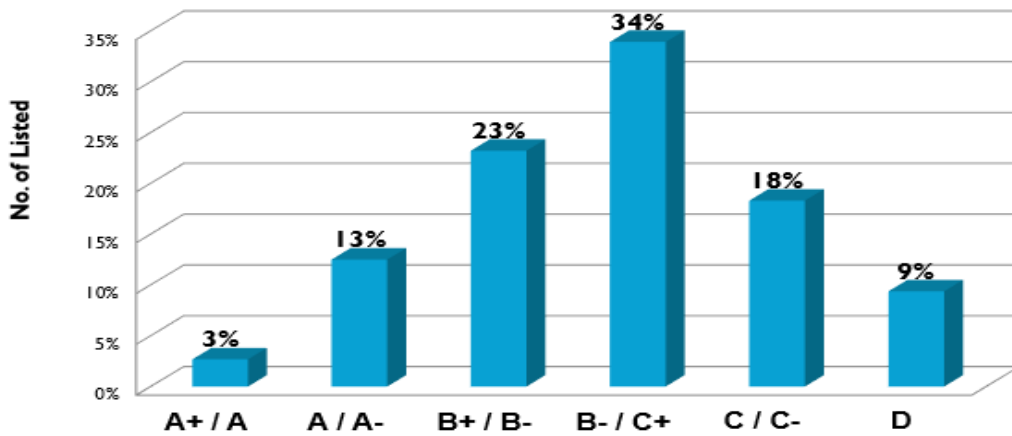


Figure:3 Distribution of Listed Firms per Risk Classification

Figure 4 illustrates the Altman’s Z-score model<sup>11</sup> results for the ASE listed companies based on the financial data for the year 2011. Based on the Z-score, the 77% of the listed firms was expected to go bankrupt in the next 2 years (until the end of 2013). Fortunately, this prediction has not realised. Although a significant number of firms has either gone bankrupt or merged/acquired in order to survive. Z-score predicted that 13% of the firms will continue as a going concern while 10% was in grey area where the model cannot give safe conclusion.

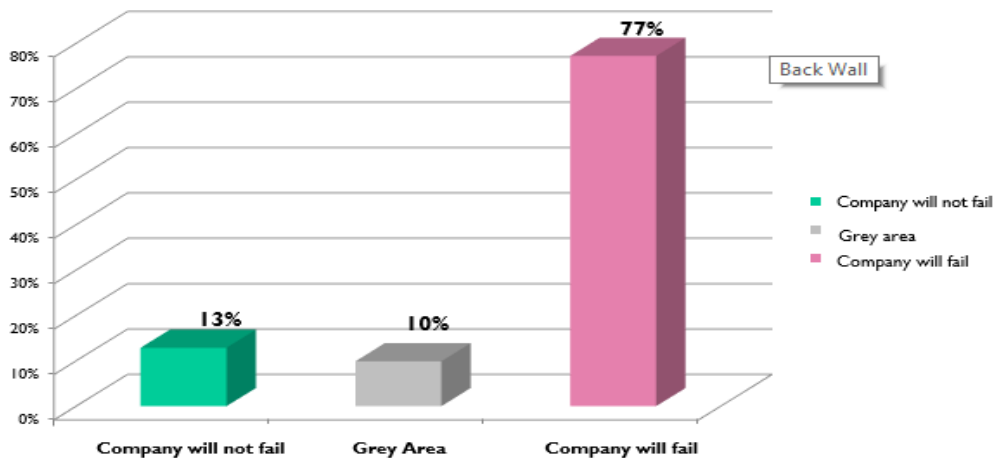


Figure 4: Altman Z - Score

<sup>11</sup> Altman E.I. (1968), Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy, The Journal of Finance, Vol. 23, Iss.4 p. 589-609

Assuming that the first two classes of risk (A+/A and A/A-) correspond to non-failing entities of Altman's Z – score model, the last two classes of risk (C/C- and D) correspond to failing entities and the interim classes (B+/B and B-/C) correspond to grey area, we conclude that the model developed in this paper is in conformity with Altman's Z – score by 93%.

The assumption used seems reasonable as firms that belong to the higher level of hierarchy faces lower risk to fail compared to the lower levels. The advantage of the model developed in this paper is that it provides more realistic classes of risk and it does not leave grey areas.

Risk Classification	Μοντέλο του Altman		
	Will not fail	Grey Area	Will fail
A+/A	5	1	0
A/A-	7	8	12
B+/B-	7	7	35
B-/C+	6	3	55
C/C-	1	1	34
D	0	0	20
<b>TOTAL</b>	<b>26</b>	<b>20</b>	<b>156</b>

Figure 5: Comparison with Altman Z score

Figure 6 and the associated table below reflect the comparison of the results of the model developed in this paper with Altman's Z-score. The diagram depicts the failing and non-failing entities per Altman per risk class. It is apparent that at the edges, where it more obvious if the firm is performing well (A+/A) or if it faces difficulties (D), the two models are in agreement 100%.

Both models indicate the same trend on the risk of corporate failure although there are some exceptions where models do not agree. These exceptions were observed on the middle levels of the risk hierarchy.

The fact that the model developed gives a fairer representation of risk through more risk classes and the fact that it does categorise all firms instead of leaving grey areas make this model to outperform Altman's disadvantages in respect of these matters.

In addition to the above, this model takes into consideration the industry specific conditions that each entity operates and the size of the firm. On the contrary, Altman's Z-score<sup>12</sup> was developed based on manufacturing USA listed firms which may not be applicable to other business sectors, such as retail.

<sup>12</sup> Altman E.I. (1968), Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy, The Journal of Finance, Vol. 23, Iss.4 p. 589-609



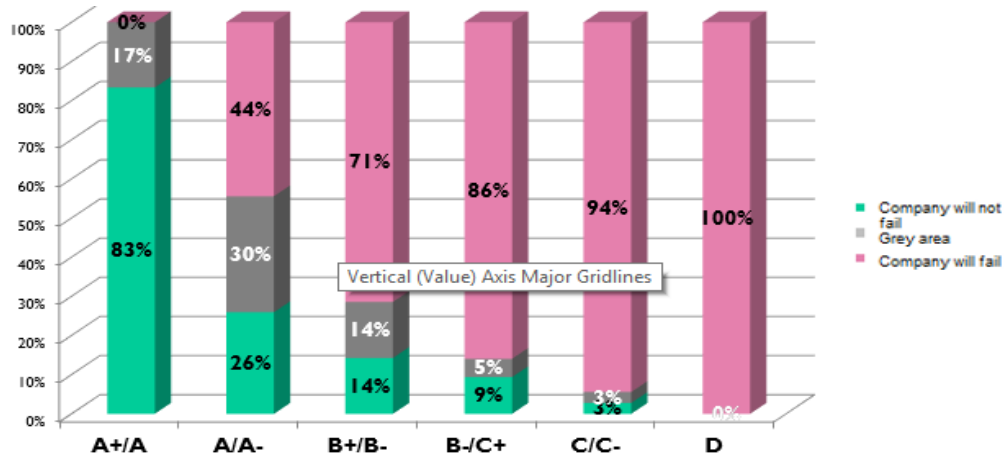


Figure 6: Model Comparison with Altman's Z - score

	Will not Fail	Grey Area	Will Fail
A+/A	83%	17%	0%
A/A-	26%	30%	44%
B+/B-	14%	14%	71%
B-/C+	9%	5%	86%
C/C-	3%	3%	94%
D	0%	0%	100%

Figure 7: Comparison Table

The risk assessment model has classified 93% of listed firms traded in the surveillance category as increased (B-/C+), high (C/C-) or excessive (D) risk while 7% was classified in the average risk (B+/ B-) category. This confirms the predictive ability of the model.

The audit reports of 59% of these firms reported events or conditions that may cast doubt on the entity’s ability to continue as a going concern in the foreseeable future. The going concern matter was included in the audit opinion in the form of modified opinion (either emphasis of matter or qualification and in extreme occasions as adverse opinion or disclaimer). This finding becomes apparent in figure 9.

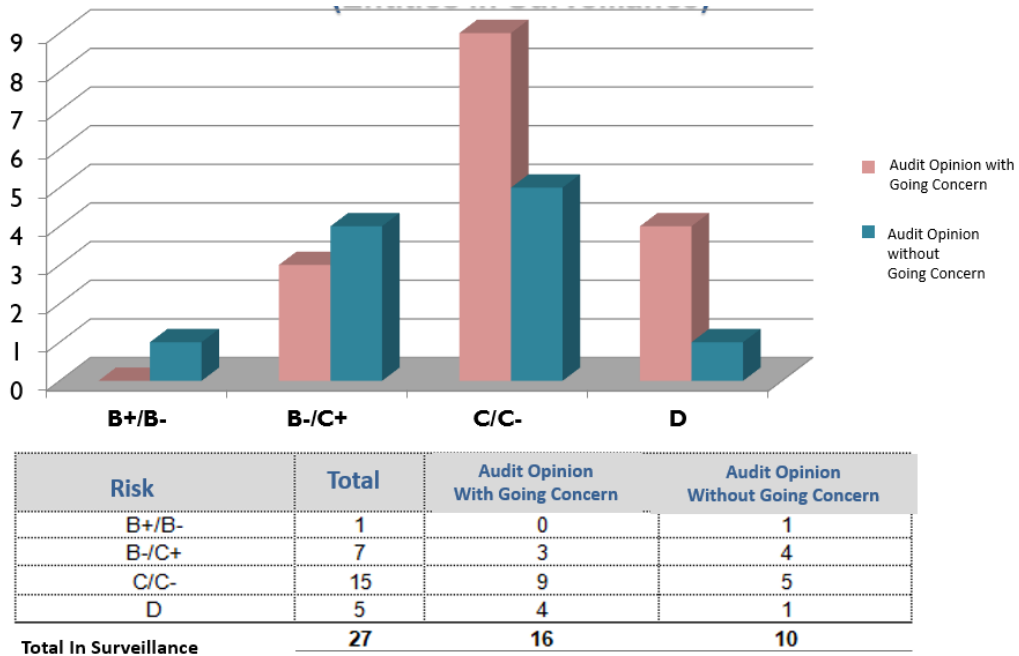


Figure 8: Audit Opinion for Listed Firms in Surveillance per risk class

In figure 8 we may observe that the probability that certified auditors issue a modified audit report in respect of going concern increases as the risk level increases from B+/B- to D. It should be emphasized that the majority of listed firms traded in the surveillance category has been assessed as increased risk (C/C-) firm.

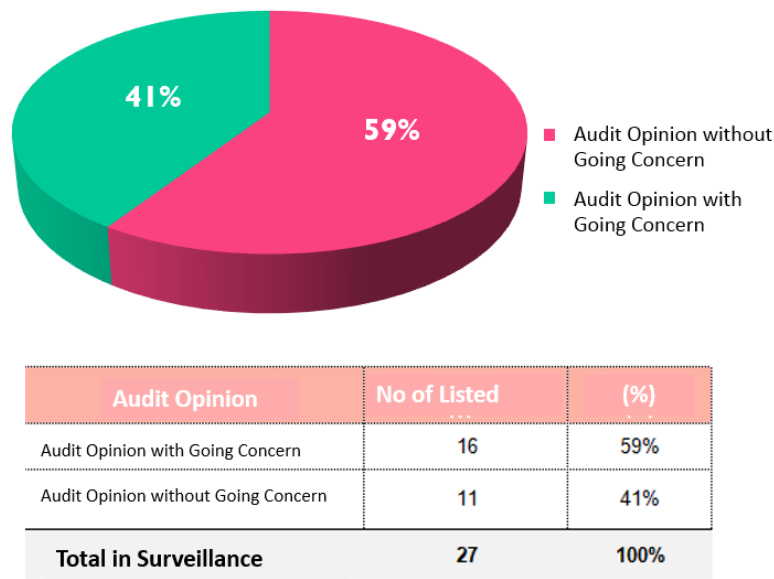


Figure 9: Audit Opinion for Listed Firms in Surveillance

The same findings apply to the listed firms to be delisted. More specifically, the risk assessment model has classified 100% of listed firms traded in the delisted category as above average risk. It revealed that the 24% faces increased risk (B-/C+), the 55% faces high risk (C/C-) while 21% faces excessive (D) risk of corporate failure. Figure 10 presents the cumulative results of listed firms traded in surveillance category or to be delisted category.

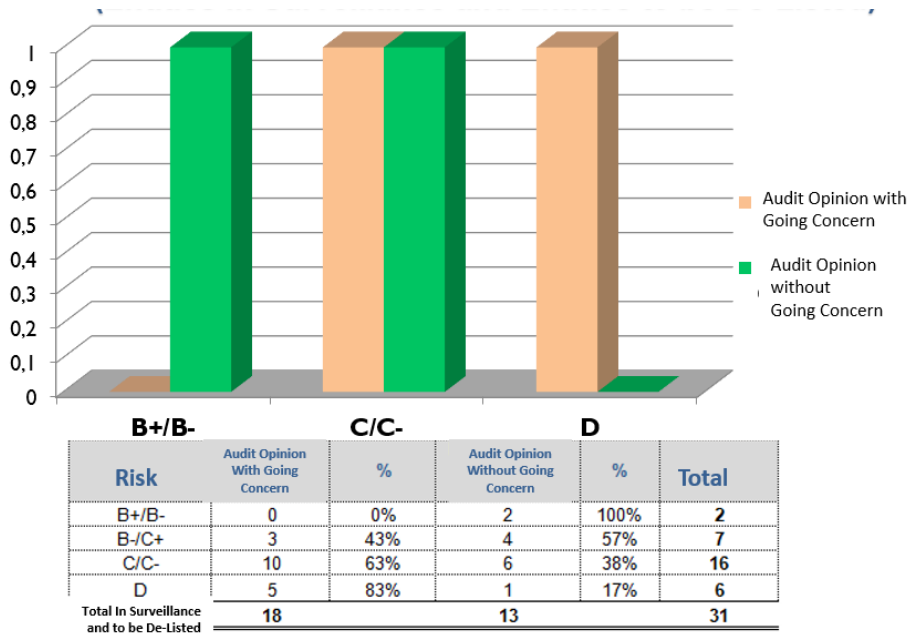


Figure 10: Audit Opinion for Listed Firms in Surveillance and to be Delisted per risk class

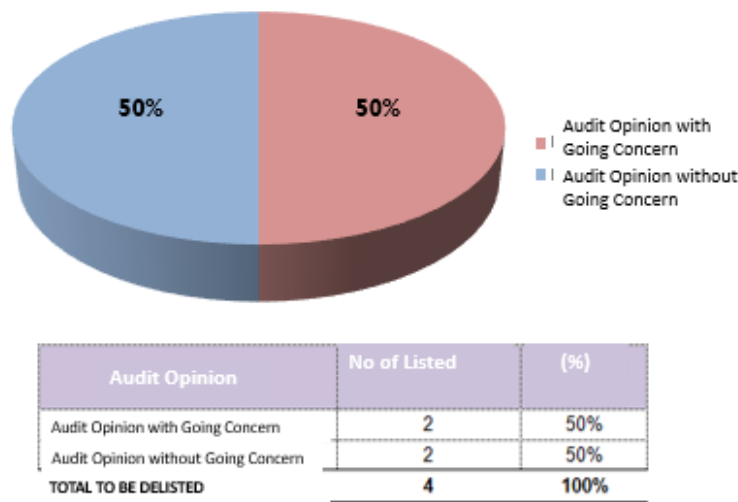


Figure 11: Audit Opinion for Listed Firms to be Delisted

As illustrated in Figure 11, the auditor has issued modified audit report in respect of going concern for 50% of the firms to be delisted. The remaining 50% had an unmodified audit report with no reference to going concern uncertainties (either in the form of qualification nor in the form of emphasis of matter).

The predictive ability of the model is further supported by the fact that as the risk increases, the probability of a modified audit report in respect of events or conditions that may cast doubt on the entity’s ability to continue in operational existence (going concern) increases. However, it should be noted that certified auditors take into consideration other mitigating factors such as future business plans and management’s intentions in order to evaluate the if the going concern assumption is appropriate for the entity. These factors may not be reflected in the financial data as they relate to qualitative information. This may justify the deviation between the auditor’s opinion and the risk assessment model. However, it is apparent that both figures follow the same trend.

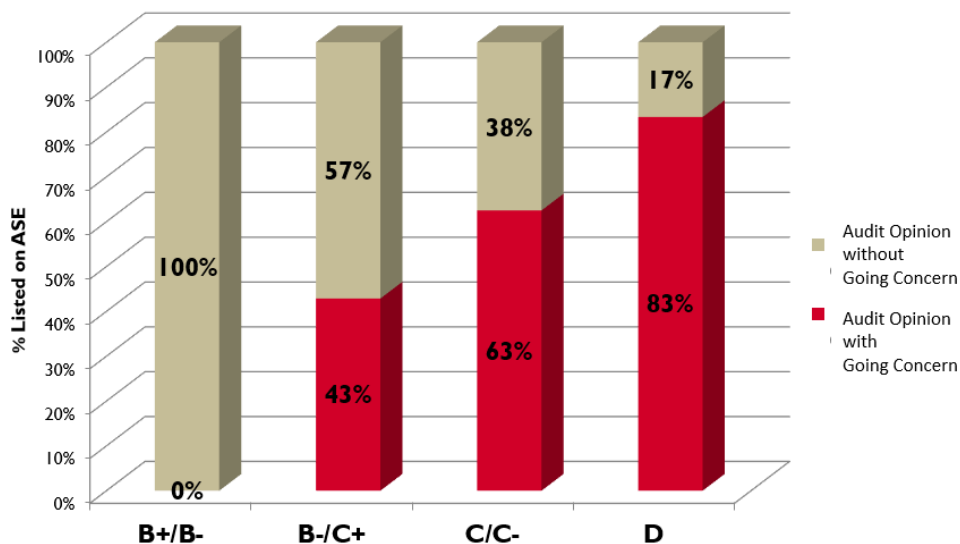


Figure 12: Audit Opinion per Risk Class

Figure 12 demonstrates that the audit opinion of the listed firms classified as Supreme (A+/A-), Outperform (A/A-) and average risk (B+/B-) was unmodified with regard to going concern matters for all firms. On the contrary, listed firms classified as above average risk (B-/C+), high risk (C/C-) and excessive risk (D), had modified audit report in proportion 43%, 63% and 83% respectively.

Figure 13 depicts the audit opinion for the financial statements of the listed firms in ASE for the year ended 2011. The 68% of listed firms received a clean standard unmodified audit report and 27% received an unmodified audit report with an emphasis of matter. Only 4% of the total firms had a modified audit report out of which 3% was qualified opinion, 1% was adverse opinion and 1% was a disclaimer of opinion.

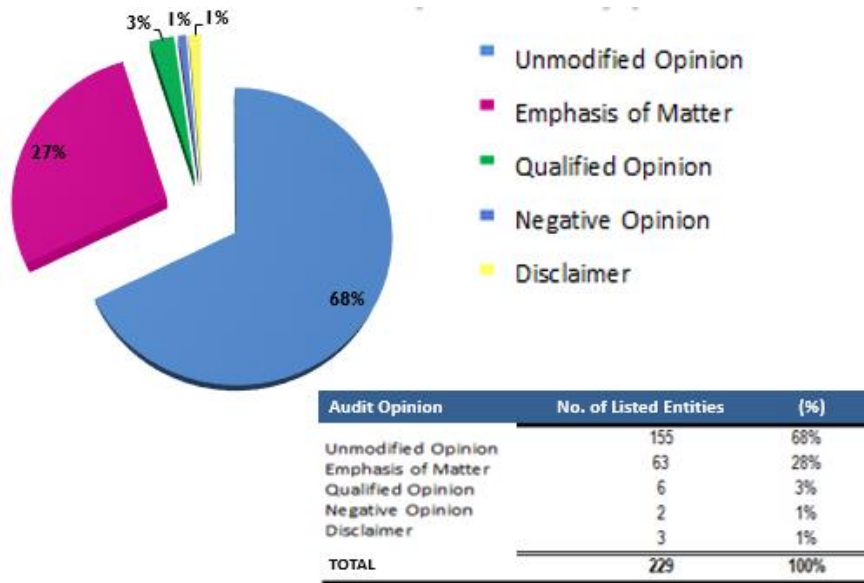


Figure 13: Audit Opinion for ASE Listed Firms in year 2011

It is remarkable that 24% of the listed firms had a modified audit report with regard to the going concern as illustrated in Figure 14.

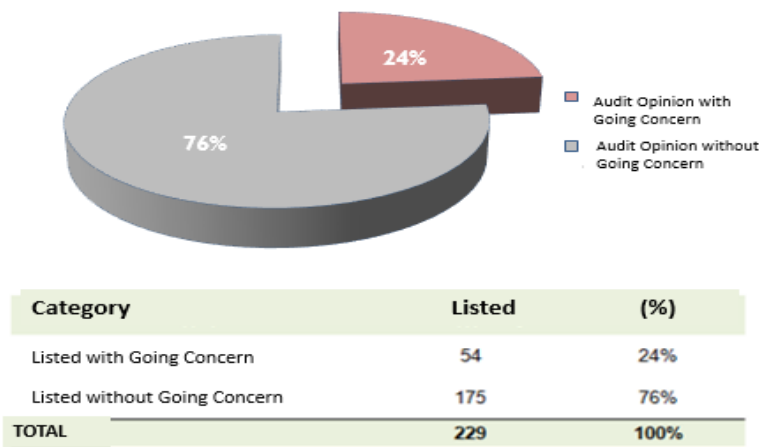
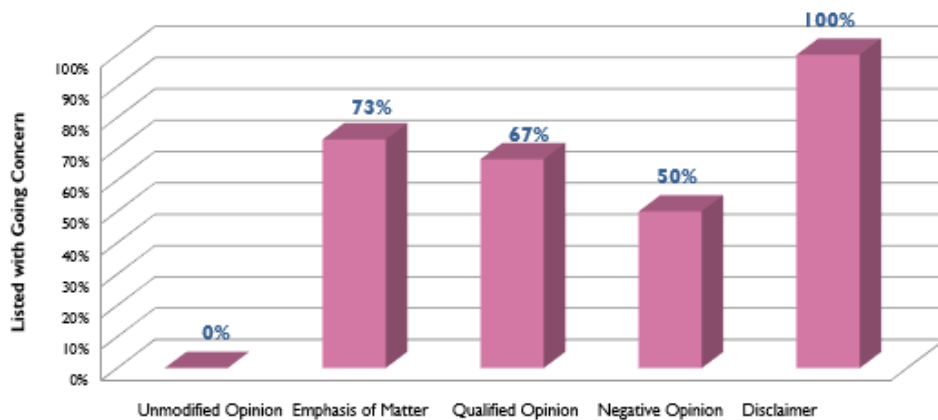


Figure 14: Listed Firms with Modified Opinion in respect to Going Concern

Figure 15 presents the percentage of listed firms with going concern uncertainties per each type of audit opinion. The number of listed firms whose modification of audit report was attributable to going concern matters exceeded 50% for each type of modified opinion. The 73% of emphasis of matter paragraph in the audit report made reference to going concern doubts appropriately disclosed in the notes of the financial statements. The 67% of qualifications related also to going concern matters that management had not appropriately disclosed in the financial statements. Finally, 1 out of two adverse opinion resulted from the inappropriate use of going concern assumption as a basis for the preparation of financial statements while the disclaimer of opinion arose from the lack of sufficient and appropriate audit evidence to support that the going concern assumption is appropriate.



Opinion Type	Audit Opinion Type		Total Listed in ASE
	Audit Opinion with Going Concern	Audit Opinion Without Going Concern	
Unmodified Opinion	0	155	155
Emphasis of Matter	46	17	63
Qualified Opinion	4	2	6
Negative Opinion	1	1	2
Disclaimer	3	0	3
<b>TOTAL</b>	<b>54</b>	<b>175</b>	<b>229</b>

Figure 15: Listed Firms with Modified Audit Report for Going Concern per Opinion Type

It is worth noting that 25% of the listed firms that are classified as facing excessive risk (D) and the 53% of those classified as high risk (C/C-) received a clean unmodified audit report.

	Unmodified Opinion	Emphasis of Matter	Qualified opinion	Negative Opinion	Disclaimer	Total
A+/A	6	0	0	0	0	6
A/A-	25	3	0	0	0	28
B+/B-	43	6	0	0	0	49
B-/C+	52	22	1	0	1	76
C/C-	21	18	1	0	0	40
D	5	14	1	0	0	20
<b>Total</b>	<b>152</b>	<b>63</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>219</b>

	Unmodified Opinion	Emphasis of Matter	Qualified Opinion	Negative Opinion	Disclaimer	Total
A+/A	100%	0%	0%	0%	0%	100%
A/A-	89%	11%	0%	0%	0%	100%
B+/B-	88%	12%	0%	0%	0%	100%
B-/C+	68%	29%	1%	0%	1%	100%
C/C-	53%	45%	3%	0%	0%	100%
D	25%	70%	5%	0%	0%	100%

Figure 16: Listed Firms with Modified Audit Report for Going Concern per Opinion Type

Feldmann and Read (2010)<sup>13</sup> performed research on listed companies that operated in USA which revealed that approximately 50% of the entities that became insolvent in the years 2000-2009 received standard unmodified audit report.

Weil (2001)<sup>14</sup> has noted that a key issue that has troublemake lawmakers, regulatory and supervisory bodies as well as audit profession is the case where a company becomes insolvent shortly after the issuance of a standard unmodified audit report without reference to going concern uncertainties. Possible factors that may interpret this issue includes:

- mitigating factors known by the auditor but are not reflected in financial data and therefore are not taken into consideration by the financial model developed,
- incompetence of auditor to identify events or conditions that may cast doubt on the entity’s ability to continue as a going concern,
- impairment of auditor’s independence due to the ethical threats to the fundamental principles.

<sup>13</sup> Feldman D., W. Read (2010), Auditor Conservatism after Enron, Auditing: A Journal of Practice and Theory, Vol. 29, Iss.1, pp.267-278

<sup>14</sup> Weil J. (2001), Going Concerns: Did accountants fail to flag problems at dot-com casualties?, The Wall Street Journal

The market share per audit firm in conjunction with the research findings presented above may be of interest in the evaluating whether the size of the audit firm affects the independence of the auditor. The market share of audit services is dominated by three audit firms, SOL S.A. that holds 35% of the market share followed by Grant Thornton and PricewaterhouseCoopers with shares 25% and 16% respectively.

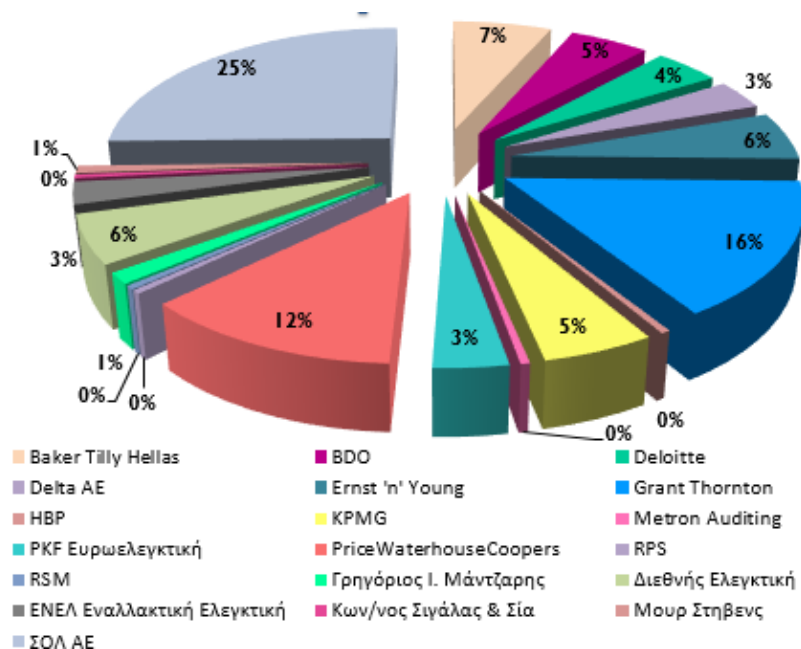
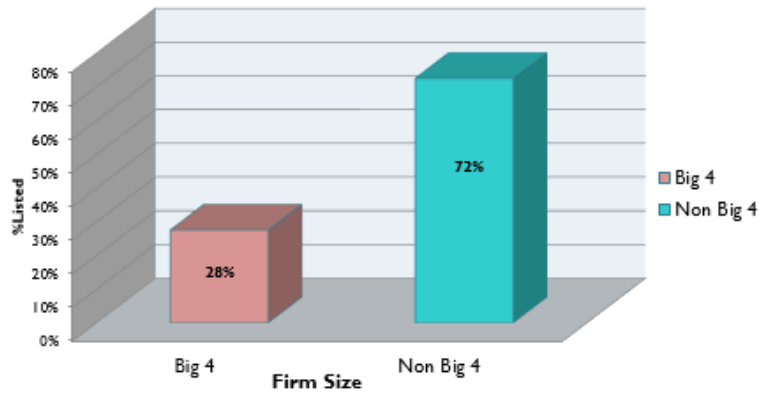


Figure 17: Market Share of Audit Firms

The 68% of the market is audited by 6 audit firms, the Big 4 (PricewaterhouseCoopers, Deloitte, Ernst'n'Young, KPMG) and 2 non-Big 4 (SOL, Grant Thornton) while the remaining 32% is shared between the remaining 13 audit firms.

It is surprising that the 72% of listed firms prefers a non-Big 4 audit firm for the audit of financial statements as shown in Figure 18. Despite the fact that Big 4 are multinational companies well recognized by the public, only 28% have appointed a Big 4 audit firm.

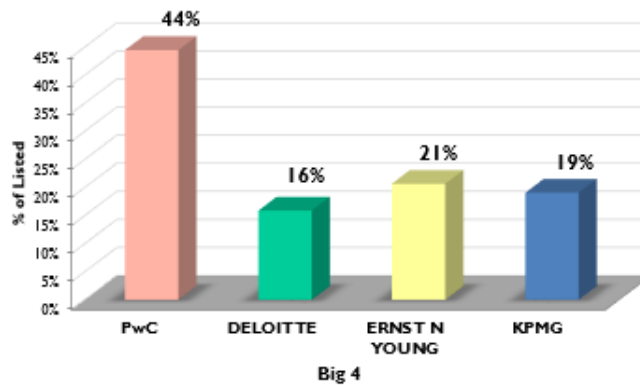




Firm Size	No of Entities	Market Share
Big 4	63	28%
Non Big 4	166	72%
<b>Total</b>	<b>229</b>	<b>100%</b>

Figure 18: Market share per Big 4 and non-Big 4 audit firms

The 28% of the market is shared between Big 4 as follows: PwC holds the most significant share 44% while the remaining 56% is approximately equal between the other three firms (Deloitte 16%, EY 21%, KPMG 19%)



Big 4	No of Listed	Market Share
PwC	28	44%
DELOITTE	10	16%
ERNST N YOUNG	13	21%
KPMG	12	19%
<b>Total</b>	<b>63</b>	<b>100%</b>

Figure 19: Distribution of audit services for listed firms between Big 4

The question of whether the size of the audit firm is associated with the issuance of a modified audit report has been a matter of research. Mutcler et al.(1997)<sup>15</sup>, examined audit reports issued by Big 6 and non-Big 6 audit firms, and concluded that there is no significant difference on the quality of audit services between the two groups. A more recent research of Boone et al. (2010)<sup>16</sup> has indicated that there is slightly higher probability of Big 4 audit firms to issue an audit report with going concern matter compared to non-Big 4. Foroughi and Shahshahani (2012)<sup>17</sup>, examined a sample of 54 listed companies that filed for bankruptcy in the years 2001-2010 to investigate whether the audit report prior to the year of bankruptcy makes reference to doubt of going concern. The results demonstrate that large auditing firms do not present significant difference in the accuracy of their assessment in relation to smaller audit firms.

Contrary to the above, many researches, Reichelt and Wang (2010), DeFond et al. (2011), DeFond and Lennox (2011), Numan and Willekens (2011)<sup>18</sup> argue that, the Big 4 clients have significantly lower probability of receiving an audit report with going concern issue. The above finding is attributed to the fact that Big 4 audit firms audit more solvent clients with better financial performance and condition which do not justify the issuance of a qualified audit report. Another research of Francis and Yu (2009)<sup>19</sup>, examined sample of 6.568 audit reports on USA firms that were performed by 285 different audit offices of Big 4 firms, and concluded that the larger in terms of size offices has greater probability to issue a modified audit opinion. Therefore, the size of the Big 4 offices offer higher quality audit services compared to those of smaller audit firms and have greater probability to identify and report events or conditions that may cast doubt on the entity's ability to continue as a going concern. Geiger and Rama (2006)<sup>20</sup>, studied the audit reports of the auditors for a series of 11 years and concluded that the Big N companies have significantly lower rates of type I and II error with regard to going concern assumption and provide higher assurance to the users of financial statements.

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<sup>15</sup> Mutchler J.F, W. Hopwood, J. McKeown (1997), The influence of contrary information and mitigating factors in audit opinion decision, *Journal of Accounting Research*, Vol.35, pp.295-310

<sup>16</sup> Boone J., I. Khurana, K. Raman (2010), Do the Big 4 and the second-tier firms provide audits of similar quality?, *Journal of Accounting and Public Policy*, Vol.29, Iss.4, p.330

<sup>17</sup> Daruosh Foroghi and Amir Mirshams Shahshahani (2012), Audit Firm Size and Going-Concern Reporting Accuracy, *Interdisciplinary Journal of Contemporary Research in Business*, Vol.3, No 9

<sup>18</sup> Reichelt K., D.Wang (2010), National and office specific measures of auditor industry expertise and effects on audit quality, *Journal of Accounting Research*, Vol.48, Iss.3, pp.647-686

DeFond M.L., J.R. Francis, X.Hu (2011), The geography of SEC enforcement and auditor reporting for financially distressed clients, under publish

DeFond M.L., C. Lennox (2011), The effect of SOX on small auditor exits and audit quality, *Journal of Accounting and Economics*, Vol.52, Iss.1, pp.21-40

Numan W., M. Willekens (2011). Competitive pressure, audit quality and specialization, under publish

<sup>19</sup> Francis J.R., M. Yu (2009), Big 4 office size and audit quality, *The Accounting Review*, Vol.84, Iss.5, pp.1521-1552,

<sup>20</sup> Marshall A. Geiger and Dasaratha V. Rama (2006), Audit Firm Size and Going Concern Reporting Accuracy. *Accounting Horizons*, Vol. 20, No. 1, pp. 1-17.

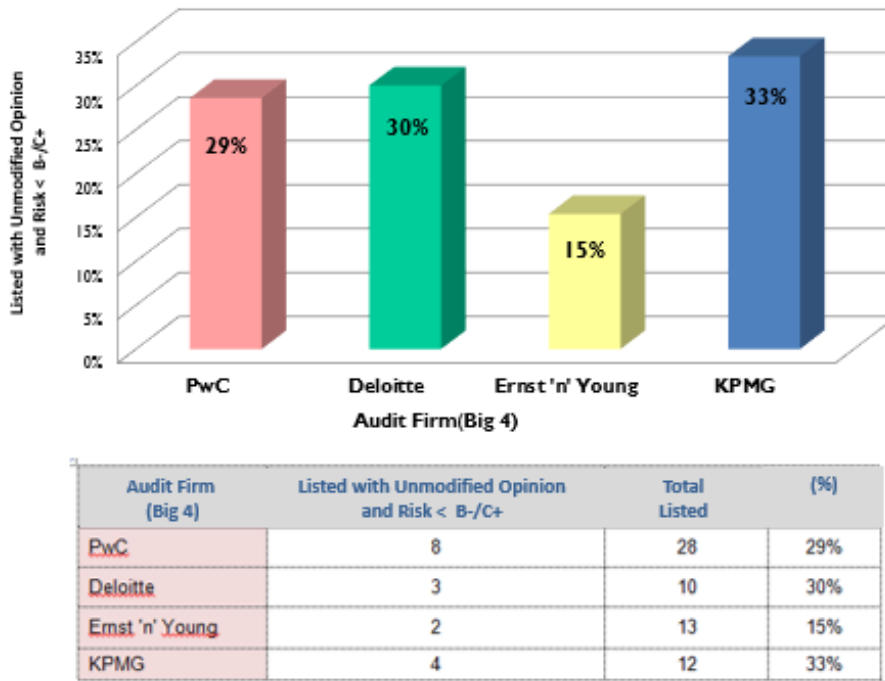


Figure 20: Listed firms with unmodified audit report and risk classification above average per Big 4

Figure 20 represents the listed firms that received an unmodified audit report for the year ended 2011 per Big 4 audit firm and whose risk assessment was above average (B-/C+, C/C-, D) in an attempt to evaluate the quality of the audit report taking as granted the predictive capability of the model. We conclude that the average number of listed firms that should have an audit report modified with regard to going concern (and is not unmodified) approximates 27% which is considered to be material.

## 8 Conclusion

In this paper, we have developed a reliable model that is based on ten financial ratios in order to classify listed firms in risk classes. We have compared these results to Altman’s Z-score model and the auditor’s report and we have assessed the impact of audit firm size on the service quality. The key findings are presented below.

Proportion 32% of listed firms in ASE were either suspended or in surveillance or to be delisted in year 2011. Based on the application of research methodology developed in the paper, we reached the conclusion that the risk of corporate failure for 39% of the listed firms is lower than average. However, the majority of listed firms, approximately 61%, faces financial difficulties and risk of failure is above average. Obviously, the financial crisis has affected the listed firms in the year 2011. Approximately 34% of listed are under increased risk of failure, 18% have high risk while 9% of the listed have excessive risk to go bankrupt. Altman’s Z-score model compared to the model developed in this paper is in agreement in 93% of cases, under certain

assumptions. However, this model gives a fairer representation of risk classification and does not leave grey areas.

The predictive ability of the model is further supported by the fact that as the risk increases, the probability of a modified audit report in respect of events or conditions that may cast doubt on the entity's ability to continue in operational existence (going concern) increases. The model has been applied to listed firms traded in surveillance and to be delisted categories. The model classified 93% of these firms as above average risk and 7% as average risk. The audit report in respect of 58% of these firms included either an emphasis of matter or a modification with regards to going concern. In 42% of the cases, the auditor's report made no reference to events or conditions that cast doubt on the ability to continue as a going concern.

The 68% of ASE listed firms received a standard unmodified audit report for the year 2011 while the remaining 32% was modified. The 24% of listed firms audit report's made reference to going concern uncertainties. The research indicates that the independent auditors fail to identify and report going concern uncertainties as 25% of the firms classified as excessive risk and 53% of the firms classified as high risk received a standard unmodified audit report.

The Big 4 audit firm have cumulatively only 28% of the market share. As far as the size of the audit firm and the quality of the audit are concerned, we identified that in the 27% of firms classified as above average risk, the Big 4 issued standard unmodified audit report.

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**ACCOUNTING AND AUDITING STANDARDS**

International Financial Reporting Standards (IFRS), International Accounting Standards Board (IASB)

1. IAS 1 “Presentation of Financial Statements”

Handbook of International Quality Control, Auditing, Review, Other Assurance and Related Services Pronouncements (New York 2010), International Federation of Accountants (IFAC)

2. ISA 570 “Going Concern”
3. ISA 700 “Forming an opinion and Reporting on Financial Statements”
4. ISA 705 “Modifications to the Opinion in the Independent Auditor’s Report”
5. ISA 706 “Emphasis of Matter Paragraphs and Other Matter(s) Paragraphs in the Independent Auditor’s Report”