Is there any effect of going concern audit opinion public announcements on the stock price behavior in a short term period?

Empirical evidence from Australia

Authors: Mariya Novoselova
Nhar Soklim

Supervisor: Tobias Svanström
Acknowledgements

We would like to take the occasion to express a profound gratitude to our supervisor Tobias Svanström for the valuable advice, constructive criticism and overwhelming helpfulness. It was a great pleasure to discuss our research problem with him and gain new insights while conducting the study. Therefore, we are deeply indebted to Tobias for his dedication and willingness to share the professional knowledge with us.

Furthermore, we are grateful to the persons from the Department of Statistics, more specifically Mojgan Padyab and Anders Lundquist, who helped us with a piece of advice on the event study statistic methods. Also we acknowledge the contribution to our academic and personal development on the part of the USBE professors from the previous courses.

With all my heart I, Mariya Novoselova, wish to thank Umeå University, in particular, and Sweden, as a country in general, which have provided me with the unique opportunity and challenge to study here. Also it worth mentioning how thankful I am to my home country Russia and professors from Perm State University, who created a fundament for my “grain” of knowledge. I have no words to express the gratitude and love to my family, the parents Ludmila Novoselova and Nickolai Novoselov, and brother Maxim Novoselov, since their encouragement and inevitable support made this rewarding experience possible. Also I wish to thank all my friends for day-to-day care and faith in me.

At last but not the least, I, Nhar Soklim, would like to gratitude my parents, brothers and sisters, and friends who always support and encourage me to make this research possible indirectly so that I can accomplish it without any obstacle.

Finally, it remains to acknowledge all readers of the research paper for the expressed interest and critical thinking.

Mariya Novoselova and Nhar Soklim
Abstract

The research paper explores the value of information content incorporated in the first-time going concern opinion from the perspective of investors. The signaling effects of the auditors’ opinion with going concern remark issued to financially distressed companies are of a great value in case the auditor statements deliver new information content which has not been incorporated in the previously disclosed financial information. Otherwise a going concern audit opinion remains not relevant for the purpose of investors’ decision making. If the going concern audit opinion adds new information content, we gain an ability to detect a stock market reaction to the relevant public announcement.

The paper examines the Australian stock market reaction to public announcements of going concern audit opinion in a short term period for the sample of the 29 first-time going concern listed companies during the 2007 to 2009 years observation period. High sample criteria are determined in order to avoid contamination effects of other price sensitive information. The impact of both the preliminary financial report and the final annual report is examined by means of the parametric and non-parametric tests aligned with the event study methodology.

Consistent with previous studies in Australia, no significant financial market reaction to the final going concern audit opinion announcements inherent to the Australian environment has been found. We document that the more negative impact on the market reaction is caused by the preliminary financial report rather than the final report, which contains an audit opinion note. Correspondently, the audit opinions with going concern qualification do not add new information content for the Australian stock market participants, who base their expectations on the previously disclosed financial information.

Key words: Going-concern audit opinion, investor reaction, abnormal returns, event study analysis.
# Table of Contents

CHAPTER 1: INTRODUCTION ............................................................................................................. 1

1.1 BACKGROUND .......................................................................................................................... 1

1.2 RESEARCH QUESTION .............................................................................................................. 4

1.3 RESEARCH PURPOSE .............................................................................................................. 4

1.4 LIMITATIONS ............................................................................................................................ 5

1.5 DISPOSITION .............................................................................................................................. 7

1.6 DEFINITION OF THE KEY WORDS ............................................................................................ 8

CHAPTER 2: THEORETICAL METHOD ............................................................................................... 9

2.1 INTRODUCTION ....................................................................................................................... 9

2.2 THE CHOICE OF THE SUBJECT ................................................................................................. 9

2.3 PRECONCEPTIONS .................................................................................................................... 9

2.4 RESEARCH PHILOSOPHY .......................................................................................................... 10

2.5 RESEARCH APPROACH ............................................................................................................ 11

2.5.1 Epistemological assumption .................................................................................................. 11

2.5.2 Ontological assumption ........................................................................................................ 12

2.6 RESEARCH STRATEGIES ......................................................................................................... 12

2.7 RESEARCH DESIGN .................................................................................................................. 14

2.8 LITERATURE SEARCH ............................................................................................................. 14

CHAPTER 3: THEORETICAL FRAMEWORK ...................................................................................... 16

3.1 INTRODUCTION ....................................................................................................................... 16

3.2 GOING CONCERN ISSUES ON AUDIT REPORTING .................................................................. 16

3.2.1 Going concern assumption .................................................................................................... 16

3.2.2 Types of audit opinion modifications .................................................................................... 19

3.3 INFORMATION CONTENT OF GOING-CONCERN AUDIT OPINION AND MARKET
REACTION ........................................................................................................................................... 21

3.4 HYPOTHESIS DEVELOPMENT .................................................................................................. 25

CHAPTER 4: PRACTICAL METHOD .................................................................................................. 27

4.1 INTRODUCTION ....................................................................................................................... 27

4.2 DATA COLLECTION ................................................................................................................... 27

4.2.1 Primary source of data ........................................................................................................... 27

4.2.2 Secondary source of data ....................................................................................................... 28

4.2.3 Criticism of primary and secondary source data .................................................................... 30

4.3 DETERMINATION OF THE SAMPLE SELECTION .................................................................... 31

4.4 EVENT STUDY ANALYSIS METHOD ......................................................................................... 33

4.4.1 Event definition ....................................................................................................................... 36

4.4.2 Estimation, event and post-event window periods ................................................................... 36
4.4.3 Actual returns ........................................................................................................... 37
4.4.4 Normal returns ........................................................................................................ 38
4.4.5 Abnormal returns .................................................................................................... 40
4.4.6 Significance tests of abnormal returns .................................................................... 42
4.4.7 Event study assumptions ......................................................................................... 43

CHAPTER 5: EMPIRICAL EVIDENCE AND ANALYSIS ................................................. 45

5.1 DESCRIPTIVE STATISTICS OF THE SAMPLE .................................................... 45
5.2 APPLIED EVENT STUDY ANALYSIS .................................................................. 51
  5.2.1 Actual returns ....................................................................................................... 51
  5.2.2 Normal returns ..................................................................................................... 51
  5.2.3 Abnormal returns .................................................................................................. 54
5.3 FINDINGS .................................................................................................................... 64

CHAPTER 6: CONCLUSIONS ......................................................................................... 67

6.1 GENERAL CONCLUSIONS ..................................................................................... 67
6.2 CONTRIBUTION TO EXISTING KNOWLEDGE ....................................................... 68
6.3 QUALITY CRITERIA .................................................................................................. 69
  6.3.1 Reliability .............................................................................................................. 69
  6.3.2 Validity .................................................................................................................. 70
6.4 SUGGESTION FOR FURTHER RESEARCH .......................................................... 71

REFERENCES .................................................................................................................. 72

APPENDIX 1: THE CONTENT OF A PRELIMINARY FINANCIAL REPORT ACCORDING TO THE ASX LISTED RULES 3.1 “CONTINUOUS DISCLOSURE”.

Figure 1. The main purpose and sub-purposes of the thesis ........................................5
Figure 2. Layout of the study ..........................................................................................7
Figure 3. Determination of the quantitative strategy by general research assumptions ........................................................................................................13
Figure 4. Linking going concern considerations and types of audit opinions ......20
Figure 5. Event study procedures outline.....................................................................35
Figure 6. Estimated and test periods for market-adjusted returns model.............37
Figure 7. Types of audit opinions issued to the ASX listed companies within the period of 2007 to 2009 .................................................................46
Figure 8. Average abnormal returns within the event window days during the final testing period.................................................................56
Figure 9. Cumulative abnormal returns within the event window days during the final testing period.................................................................58
Figure 10. Post-event cumulative abnormal returns for the preliminary and final announcement events .................................................................62
**List of Tables**

**Table 1.** Audit criteria signaling inconformity with going concern assumption .................................................. 18

**Table 2.** Sample selection process according established sample criteria .......... 47

**Table 3.** Types of going concern audit opinions issued to the sample companies .. 48

**Table 4.** Distribution of the sample companies based on the type of auditor ...... 48

**Table 5.** Distribution of the sample companies by years within observed time period.................................................................................................................. 49

**Table 6.** Industry distribution of the sample companies ........................................... 49

**Table 7.** Descriptive statistics of a sample of 29 non-finance companies with initial GCO audit opinion announcements, which are listed in ASX for the period from 2007 to 2009 ........................................................................................................ 50

**Table 8.** Other properties of the sample companies.......................................................... 50

**Table 9.** The market-adjusted model estimated by OLS regression based on the S&P/ASX Small Ordinaries Index ................................................................. 52

**Table 10.** The market-adjusted model estimated by OLS regression based on the S&P/ASX Emerging Companies Index .............................................................. 53

**Table 11.** T-test results of the average abnormal returns for the whole sample companies within the each day of the final testing period .......................... 55

**Table 12.** T-test results of the average abnormal returns aggregated across the days within the final testing period for each sample company ......................... 56

**Table 13.** T-test results of the cumulative abnormal returns across the event window for the all sample companies within the final testing period ............... 57

**Table 14.** T-test results for the AAR and CAR aggregated across the sample companies within the final testing period .................................................. 58

**Table 15.** Independent sample t-test results for the AAR and CAR for the pre-event and post-event windows within the final testing period ................. 59

**Table 16.** Mann-Whitney and Wilcoxon test results AAR and CAR within the pre-event and post-event windows for the final announcement event .......... 60

**Table 17.** Mann-Whitney and Wilcoxon test results for the AAR and CAR after the post-event window of the preliminary and final announcement
TABLE 18. MANN-WHITNEY AND WILCOXON TEST RESULTS FOR THE AAR AND CAR AFTER THE POST-EVENT WINDOW OF THE PRELIMINARY AND FINAL ANNOUNCEMENT EVENTS

TABLE 19. INDEPENDENT SAMPLE T-TEST RESULTS FOR THE PRELIMINARY ANNOUNCEMENT AAR AND CAR WITHIN PRE-EVENT AND POST-EVENT WINDOWS

TABLE 20. MANN-WHITNEY AND WILCOXON TEST RESULTS AAR AND CAR WITHIN THE PRE-EVENT AND POST-EVENT WINDOWS FOR THE PRELIMINARY ANNOUNCEMENT EVENT
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR</td>
<td>AVERAGE ABNORMAL RETURNS</td>
</tr>
<tr>
<td>AARF</td>
<td>AUSTRALIAN ACCOUNTING RESEARCH FOUNDATION’S</td>
</tr>
<tr>
<td>ASA</td>
<td>AUSTRALIAN STANDARD ON AUDITING</td>
</tr>
<tr>
<td>ASIC</td>
<td>AUSTRALIAN SECURITIES &amp; INVESTMENTS COMMISSION</td>
</tr>
<tr>
<td>ASX</td>
<td>AUSTRALIAN STOCK EXCHANGE</td>
</tr>
<tr>
<td>AUASB</td>
<td>AUDITING AND ASSURANCE STANDARDS BOARD’S</td>
</tr>
<tr>
<td>AUS</td>
<td>AUSTRALIAN ACCOUNTING STANDARD</td>
</tr>
<tr>
<td>CAR</td>
<td>CUMULATIVE ABNORMAL RETURNS</td>
</tr>
<tr>
<td>CAMP</td>
<td>CAPITAL ASSET PRICING MODEL</td>
</tr>
<tr>
<td>FIN</td>
<td>FINAL TESTING PERIOD</td>
</tr>
<tr>
<td>GCO</td>
<td>GOING CONCERN AUDIT OPINION</td>
</tr>
<tr>
<td>IAASB</td>
<td>INTERNATIONAL AUDITING AND ASSURANCE STANDARDS BOARD</td>
</tr>
<tr>
<td>IAS</td>
<td>INTERNATIONAL ACCOUNTING STANDARD</td>
</tr>
<tr>
<td>IASB</td>
<td>INTERNATIONAL ACCOUNTING STANDARD BOARD</td>
</tr>
<tr>
<td>IFAC</td>
<td>INTERNATIONAL FEDERATION OF ACCOUNTANTS</td>
</tr>
<tr>
<td>IFRS</td>
<td>INTERNATIONAL FINANCIAL REPORTING STANDARDS</td>
</tr>
<tr>
<td>ISA</td>
<td>INTERNATIONAL STANDARD ON AUDITING</td>
</tr>
<tr>
<td>OLS</td>
<td>ORDINAL LEAST SQUIRES</td>
</tr>
<tr>
<td>PRE</td>
<td>PRELIMINARY TESTING PERIOD</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction

1.1 Background

Recent recession in terms of financial crisis 2008 has raised the issue of increased numbers of bankrupted public companies. Diverse users of financial statements information expect auditors to provide an early warning towards the impending financial failure of the company in order to take proper business decisions. Being one of the main monitors, auditors strive to protect investors’ interests and assure the reliability of reported financial information. For this matter, going concern opinion (hereafter GCO) is a type of qualified audit opinion, which underlines a significant doubt of the auditor on the entity’s ability to continue as a going concern (Auditing standard ASA 570, 2009, p. 8). In other words, the issuance of GCO expresses a signal revealing the fact that the company is not likely to be viable in foreseeable future taken as a period of the following twelve months.

The impact of GCO announcement is tangible from the different perspectives. This type of audit opinion is perceived as adverse news by the site of a business company itself, current auditor, financial market participants and other users.

From the view of the company the consequence of received GCO is inherent to additional financial challenges, which in turn increase the incidence of the company’s bankruptcy (Mutchler, 1984, Loudder et al., 1992; Blay & Geiger, 2001). Consistently, the company may experience lower stockholders’ and creditors’ confidence in the company, downgraded ranking of rating agencies, reduction of the customers, inability to obtain new capital and increased cost of existing capital, as well as decline in a stock price.

From the perspective of auditor the issuance of GCO is costly for the reason of corresponding risk of losing the clients (Citron & Taffler, 1992; Carcello & Neal, 2003). GCO may hasten the collapse of already financial distressed companies. As a result, if the client goes bankrupt the auditor loses the future audit fees. Also in some cases the management of the company with modified going concern opinion tends to change the auditor, which is known as “opinion shopping” phenomena (Carey P.J et al., 2008).

Furthermore, from investor’s perspective the announcement of GCO may indicate increased probability of company’s failure within one year period, which is related to the expected value of the company and its’ stock price on the market. For this matter, the investors holding stocks of the company with GCO are exposed to the higher risks in a short term period. In other words, modification of audit opinion regarding going concern assumption may induce investors to sell off the stocks of “non-viable” companies coherent to subsequent decline in the stock prices.

At the same time increased number of auditor failures to predict bankruptcies and criticism of the audit profession in whole cast a doubt on the value of information content disclosed in GCO. For instance, Carey P.J et al (2008, p.78) summarized the accomplishments of researchers and experts concerning audit misstatements. Firstly, auditors issued modification of audit opinion regarding going concern only in 40-50 percent of the realized
studied cases. In addition, more than 80-90 percent of the public companies with the first-time GCO remained financially vital during over the next 12 months. In this respect, considerable group of scientists and experts challenge the predictive power of the going-concern audit opinion. Correspondently, we question whether information content of going concern audit opinion has limited impact on the investor’s decision making process. Thus the correlation of the going concern announcements and market participants’ reactions is of a great interest especially in terms of current financial distressed environment. Needless to say that during the recent financial crisis the number of financial deteriorated companies has tremendously increased and many of them are exposed to the risk of financial insolvency. For this matter, we consider it to be a burning issue for the sake of capital market participants. Therefore, in the paper we would like to focus our attention on the consequences of going concern announcements from the mentioned investor’s perspective.

Although the recent 2008 turmoil of financial markets may cause an impact on the auditors’ propensity to issue GCO for financially distressed companies and investors’ reaction to such announcements, we assume that these macro conditions do not affect our findings in a significant manner. Despite the fact that an increased number of GCOs in the financial crisis period affects our sample size, the short-term stock market reaction to such announcements is not extensively investigated. There was no relevant evidence from the previous studies found in order to support particular investors’ behavior features during the recent financial meltdown.

Increasing body of research in the market reaction to different types of audit opinion modifications indicates significance of the raised issue. The previous studies introduce discrepant results regarding the affect of the qualified audit opinion, and GCO in particular, to the stock price reaction. Significant adverse market reaction has been discovered by some researchers in the UK, USA, Australia and other markets (Citron et al., 2008, Fleak & Wilson, 1994, Jones, 1996). Other studies imply to the weak evidence of market reaction and no effect of GCO release to the stock prices and expected returns (Al-Thuneibat et al., 2008, Dodd et al., 1984; Elliot, 1982, Herbohn et al., 2007, Ogneva, 2007). Uncertainty concerning the impact of the GCO to the market participants’ decision making and mixed results of the theoretical research and empirical evidence concerning this issue encourage the further empirical investigation.

The current study examines the impact of first-time GCO announcement on the financial market reaction in a short-term period. To be able to assess the market reaction we approach to the question whether the GCO has a value for the users of the financial statements or not. The announcement of material uncertainty regarding future financial collapse of the company stimulates the changes of the stock prices if the new information is introduced to financial market participants. Taking into consideration that auditor has access to unique internal information, which is not explicitly disclosed in the public statements, his or her professional judgment concerning the company’s financial performance should add value to the degree of awareness of external users. Thus we contemplate that modified audit opinion possesses information content which is not incorporated in prices before the announcement. In case GCO has no information content the market participants will not react to the corresponding public announcements for the
reason that investors have had expectations consistent with the subject matter of the announcement.

Corresponding to the value of the GCO modification on the part of the investors, the information content indicating the impending bankruptcy aspects might be reflected in other sources of financial information apart of the final report with audit opinion notes, for instance preliminary financial statements. Shaky financial performance indicators disclosed prior to the GCO public announcement, such as considerable losses within extended time period partnered with low liquidity, high leverage, retained losses, discontinuing operations, etc., can predetermine the expectations of the market participants regarding the viability of the company. In this case, the audit opinion content will not add any value for the investors, since they base the stock price anticipations on the preliminary report information, which is disclosed earlier to the market than the final annual report with the audit opinion modification. Thus in our research we examine the financial market reaction to the GCO compared the preliminary disclosure market effect, which may have more adverse impact on the stock market and determine negligible reaction to the GCO in the light of discussed issues.

Confounding results of the researchers regarding information content of audit opinion argue two adverse positions. First group of economists (Dodd et al., 1984, O’Reilly, 2010) stands for the idea of the absence of audit opinion information content, assuming that the announcement regarding going concern assumption is expected by investors and has no impact on the market stock price behavior. The second group of studies (Firth 1978, Loudder et al., 1992) underlines that audit opinion possesses significant information content, which is correlated to subsequent changes of the stock price. In case GCO has no value for investors the consequence of issuance of such type of audit opinion may have no impact on decision making process.

The main problem that researchers face is inability to control the other factors of price behavior, especially when the market reaction is described from the long term perspective. The longer the period of time taken for analysis the more factors may influence the price changes. Another obstacle is uncertainty concerning the earliest public announcement date when GCO is revealed to market participants. In addition audit opinion is usually issued at the same time as other essential financial data like earnings, dividends, CEO announcement, etc. Subsequently, it is difficult to isolate the influence of other factors than going concern public announcement. Nevertheless, our research attempts to overcome mentioned obstacles of the previous studies and contributes to the previous studies’ findings.

In order to get over mentioned difficulties we have decided to investigate investor’s reaction on the Australian Stock Exchange (hereafter ASX) market in a short term period around final and preliminary reporting dates. The choice of the particular financial market was motivated by availability of relevant information concerning dates of public announcements, the content of public announcements, prior and final annual reports, and stock price data. For this matter we gain ability to control other factors than GCO announcement since the companies listed in the ASX are required to disclose non-audited financial statement information at least one month in advance the final financial statement,
which include the audit opinion. The control of dates of different public announcements within observed estimated and event windows enable to eliminate contamination effect of factors other than GCO. Prior announcement of financial content including expected earnings and dividend policies evades concurrent disclosure loophole. We precisely identified the GCO announcement date for each company included in the sample to avoid limitations of the previous studies. Therefore, the study reflects our approach to detect the stock market reaction based on the event study methodology introduced in the previous research papers.

1.2 Research question

Debate on the relevance of information content of audit opinion to predict the bankruptcy of financial distressed public companies highlights the necessity to investigate the value added by audit reports for the purpose of investor’s decision making process. If investors perceive that warning regarding going concern assumption by the site of the auditors to be valuable information, then the market reaction will follow shortly after the public announcement of going concern modification. We are of the opinion that empirical evidence from the Australian financial market within the recent time period enables us to find out whether investors perceive the GCO announcement as essential information content to value the stocks. The association between the going concern audit opinions issued to listed companies and investor’s expectations in the particular market is brought into focus of the study. Correspondently the main question of the research is formulated as follows;

*Is there any effect of going concern audit opinion on the stock price behavior in a short term period?*

While conducting the study we have faced with other related issues of a particular interest. Therefore the primal research problem is complemented by additional sub-questions:

- Do investors count for the going concern audit opinion as valuable information content?

- Is there any difference in Australian stock reaction to the preliminary financial information without audit opinion note and final public announcement, which contains GCO issued by the auditors, in regard of perceived value of the audit opinion statement?

- What are the possible reasons for the outlined market reaction to the GCO announcements of the ASX-listed companies, which have uncertainty regarding the going concern issue during the recent time period?

1.3 Research purpose

Consistently with the research question the primary purpose of our study is to examine whether the issuance of an audit opinion with a going concern modification has an impact
on the investors’ expectations interrelated with the subsequent stock price changes in the Australian stock market in the short-term period (See the Figure 1).

Figure 1. The main purpose and sub-purposes of the thesis

For this matter, we aim to obtain answers for the correlated questions mentioned above. In a way to contribute to the body of research we investigate the value of the information content of audit opinion signaling the impending bankruptcy in a short term period. Moreover, since nowadays many public companies are exposed to the higher risks of financial distress we examine the reaction of capital market participants to the preliminary and final disclosures of the financially troubled companies on subject of going concern for both dates separately. We assume that the mentioned way of timely disclosure of the audit reports may impact the awareness and expectations of investors regarding the ability of the company to continue as a going concern. As an argument to observe mentioned periods separately, the preliminary report usually contains financial information regarding company’s distressed financial situation, which already enables investors to predict the inherent difficulties regarding going concern assumption based on the financial statement figures. In this case, we would not expect any major reaction to the final GCO announcements, since the audit report confirms the going concern uncertainty only, which was taken into consideration by the investors based on the preliminary disclosures. Hence, we aim to test if there is any significant difference in the market participants’ reaction to the preliminary and final announcements regarding GCO in order to find out the value of the final GCO announcement. In addition, our purpose is to speculate potential reasons of the evidenced market behavior regarding the going concern issues within the recent period.

1.4 Limitations

The study is focused on the investors’ reaction in the Australian stock market environment. Hence, our findings should not be generalized to any other geographical area. We empathize that the choice of the particular stock market was driven by the availability of
sufficient information disclosed in a systematic manner. Since established Listing Rules of
the ASX require listed companies to release preliminary annual reports and final audit
reports at the different dates, we gain an opportunity to distinguish the effects of both
financial and audit content of the public announcements. Therefore, the aspect of our
conclusions can be generalized to the Australian country-specific environment.

Furthermore, the findings of the research are restricted to the mentioned time period from
2007 until 2009. We do not aim to generalize the study results beyond the other time frame
due to the unique financial lie of matters coherent to the present financial crisis.

Another limitation of the study concerned with the analysis of price response to the public
announcements of GCO in a short-term period. We do not consider long-term perspective
for the reason that many other factors may cause an influence to stock price changes within
the time. In order to have better control of the effects we have decided to limit our research
to the short-term market reaction.

Also the methodological approach taken in the study attributes to the essential control of
the factors, impending stock market reaction apart of the GCO announcements. As a result,
the sample size of the companies, which meet the sample criteria, is rather small.
Nevertheless, we stand assured of the advantage of improved quality of the sample
properties for the purpose of identification of the stock market reaction to the GCO
information. Examination of the all pubic companies listed in ASX during the 2007-2009,
which fulfill the predetermined conditions, was conducted to improve the reliability of the
empirical results.
1.5 Disposition

Hereafter we provide a short description of the main parts of the paper and reveal the interrelation between them. The reminder of the thesis is organized as follows in the Figure 2.

The **Theoretical method** defines the approach taken to resolve the established question. Here we discuss the critical assumptions in regard of epistemology and ontology. The framework for the method is stipulated as well, which in turn, determines the choice of the sources for the data collection.

The **Theoretical framework** clarifies the main concepts of the study, attributable to the going concern assumption and relevant types of audit opinions. Also the literature review on the subject of information content of the audit opinions and market reaction is presented here. As a result, the two sets of hypotheses are developed.

As a consequence of the previous parts, the **Practical method** depicts the data collection process, which is crucial aspect of the event study method. We establish the requirements for the sample composition inherent to the event study technique. The main steps of the analysis are explained as well.

In the **Empirical evidence and analysis** we introduce the descriptive statistics of the sample. Furthermore, the empirical findings are disclosed based on the event study procedures outlined previously.

In the **Conclusions** we provide the answer to the research question and subsequent discussion on the ground of the empirical findings. Also we bring suggestion to the future research forward.

*Figure 2. Layout of the study*
1.6 Definition of the key words

Abnormal return – a measure of the impact of an event on the value of a firm, which corresponds to the difference between the actual return and normal return on a security within observed event period (Campbell et al., 1997, p. 158).

Event study – a statistical method to assess the impact of an event on the value of a firm (Campbell et al., 1997, p. 149).

Going concern assumption – an entity is viewed as continuing in business for the foreseeable future. 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 (ISA 570:2009, para 2).

Modified audit opinion – a qualified opinion, an adverse opinion or a disclaimer of opinion (ISA 705:2008, para 5b). The auditor shall modify the opinion in the auditor’s report when (ISA 705:2008, para 6):

   a) The auditor concludes that, based on the audit evidence obtained, the financial report as a whole is not free from material misstatement; or
   b) The auditor is unable to obtain sufficient appropriate audit evidence to conclude that the financial report as a whole is free from material misstatement.

Unmodified audit opinion – the opinion expressed by the auditor when the auditor concludes that the financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework (ISA 700:2009, para 7c).
Chapter 2: Theoretical method

2.1 Introduction

In the Chapter we argue the choice of our subject on the market reaction to the GCO public announcements. Also we highlight the authors’ prior knowledge, which contributes to the current investigation. The discussion about the established research philosophy and assumptions, in regard of epistemology and ontology, determines our research strategy as a methodological framework for the further empirical implementation. The main sources of data are briefly presented lastly.

2.2 The choice of the subject

In terms of the financial crisis 2008 and increased number of financially distressed public companies we draw our attention to the particular impending bankruptcy signals on the part of the professional audit companies delivered to the financial market. Thus the choice of the subject came out naturally due to the recent debate on the value of information audit opinion content prompted by the capital market participants and other major users. The phenomenon of the going concern issue can be viewed from the different perspectives: as an auditor, who estimates the business performance of the client company and tests its ability to continue as a going concern; as an investor, who takes a risk and commit capital in favour of future yields. The outlined perspectives are of a great interest for both of us since we are determined to pursue an auditor professional career in the near future, whereas the deepen knowledge of the investor’s source for decision making process and market behavior may be rewarding in regard of the personal investment opportunities.

2.3 Preconceptions

Hereafter, we would like to discuss the prior knowledge of the authors, which definitely cause an impact on the way we contemplate the research problem. For the purpose of reliable investigation of the main study question the relevant prior knowledge and expertise remains to be a crucial factor. Our research problem regarding the stock market response to the GCO modifications requires the combination of knowledge from the finance and accounting fields. Since both of us are business students in pursue of Master degree majoring in Accounting and Finance disciplines, we take advantage of the mutually-rewarding cooperation of knowledge, ideas and skills while carrying out the research. The prior courses in the Auditing, Investments, Financial statement analysis, Analysis of financial data, etc. enable us to conduct the analysis and arrive at conclusions on the chosen subject. Also the impact of different cultural backgrounds from Russia and Cambodia enrich our understanding of the problem and provides an opportunity to share the standpoint.

In addition, one of the authors has working experience in accounting and auditing areas, which adds certain professional knowledge relevant to the audit reporting issues. Although we do not have any relevant professional experience in the analysis of the stock exchange market data, we apply our theoretical knowledge based on the courses studied previously.
Overall, we assume our prior knowledge in the business administration and statistics fields partnered with rewarding personal collaboration of the ideas and ambitions determine our preconceptions of the research.

2.4 Research philosophy

Research is a process about the discovery, interpretation and communication of new knowledge, which has the potential to amend understanding of the outside world (Ryan et al., 2003). Saunders et al. (2009) argue why research philosophy is important. The reason is that it refers to the development of knowledge and its nature, and in particular it demonstrates the way that researchers perceive the world based on certain assumptions. These assumptions should strengthen the research strategy and methods used to conduct the study. Authors emphasized that a researcher’s particular aspect of the relationship between knowledge and the developed process of research is likely to be the main influence to the philosophy. For this matter there are three general approaches regarding the relationship between a research and theory: inductive, deductive and abductive approaches (Bryman & Bell, 2007, pp. 15-16).

**Deductive** approach, which is of a particular interest in our thesis, deals with drawing a conclusion or developing a theory by means of empirical data testing. First of all, hypotheses are generalized on the basis of scientific knowledge; further empirical evidence is collected in order to test the hypotheses that have been put forward by a researcher previously. Finally, confirmation of the original knowledge should be made (Bryman & Bell, 2007, Saunders et al., 2009).

Regarding the research, our view of the relation between the research and theory is in line with the deductive approach, whereby we start with hypotheses development regarding the investors’ reaction to the public announcements of GCO based on the existing knowledge and theories that are stated in the theoretical framework part. Consequently, we examine prior developed hypotheses by the empirical data of types of going concern modifications, stock prices of the companies received GCO, market indexes and other relevant information, collected from the Australian Stock Exchange, public financial statements of the companies and public announcements lodged to ASX. Analysis of retrieved data enables us to proceed an even study analysis and draw conclusions in order to reject or confirm proposed hypotheses. Therefore, the research philosophy we hold is concerned with hypothesis testing aiming to add value to the body of research.

Per contra **inductive** theory has an opposite direction of the research process. It involves drawing theory, laws, propositions or hypotheses from empirical observations in order to understand some new phenomena by prior data collection. So the theory development is followed by the systematic observation and analysis of empirical data. Moreover, it is concerned with the context of such phenomena taking place and works with qualitative data that are obtained by using many ways in a purpose to build up distinctive views of phenomena (Saunders et al., 2009). For this matter, we have argued that inductive approach is not suitable for the framework of financial market reaction hypotheses testing. Since
inductive theory has no link to the research methods used to answer our research questions, we have decided to set it aside and consequently follow the deductive approach.

As a combination of both deductive and inductive views, the abductive approach could be applied by researchers. However, this approach is not relevant to the current paper.

2.5 Research approach

The choice of scientific approach is driven by the nature of the research question as well as the research philosophy applied. As mentioned above, we have already defined the interaction between the theory and research, but what is our view to the theoretical knowledge? There are two major considerations in order to identify the way we treat scientific knowledge.

Ontological stance deals with the nature of social reality and defines the matter we can know about it. Meanwhile, epistemological position is concerned with the question what should be respected as an acceptable knowledge (Bryman & Bell, 2007, p.16). In addition, it concerns with the issue of whether or not the social reality, i.e. the truth or the scientific knowledge, should be studied owing to the same principles, procedures, and ethos as natural sciences. Hereafter we summarize scientifically recognized research approaches and then justify our choice in respect to the subject and main purpose of the thesis.

2.5.1 Epistemological assumption

According to Bryman & Bell (2007, p.16) the primary epistemological positions appear to be positivism, realism and interpretivism. Positivistic position asserts that social reality can be investigated by applying natural science methods for the reason that reality exists independently from the social actors. Some distinctive characteristics are attributable to this position. Firstly, the phenomena can be confirmed by the senses implying the principle of phenomenalism. Furthermore, the theory aims to develop hypotheses, which subsequently should be tested in order to generate new knowledge, i.e deductive principle. Also scientific examinations must be free of value assuming researchers’ objective view to the findings. Lastly, the scientific study does not have to deal with normative statements, but with scientific statements. Therefore, as to positivism position, research is conducted by a highly structured methodology being valid for all the types of analysis; hence it is easy to facilitate the replication (Saunders et al., 2009).

The second approach stated by Bryman & Bell (2007, p.16) appeals to realism, which asserts that natural and social science should combine the methods to collect and interpret the data. The form of empirical realism argues that social reality can by investigated by application of the proper methods. The form of critical realism aims to provide explanations in terms of hidden generative structures, including the exploration of particular events and discourses of the social world.

On the other hand, interpretivism dismisses the use of natural science model to study the social reality. The approach relates to subjective meanings of the social actions for the sake
of discrepancy between people and objects of the social reality (Bryman & Bell, 2007, p.19).

Regarding to epistemological assumption, the paper implies to positivism orientation since we focus on examining Australian capital market reaction to the going concern modifications by means of natural science methods. The study examines the tendency of abnormal returns within the event window and afterwards the conclusions are drawn based on the carried out analysis. In this case, the authors observe a subject, i.e. market reaction, from an outstanding perspective which cannot be influenced. Thus the independent way of interpreting the facts of the reality regarding going concern contingency is implemented in the research. Also our positivistic view of knowledge is characterized by finding causality and relations between public announcements of audit opinion going concern modifications and stock price fluctuations, which also refers to the features of the positivism.

### 2.5.2 Ontological assumption

After determining the positivistic epistemological consideration within the deductive approach we aim to define our ontological position in line with applied research framework. In general the ontological stance possesses two sides implying objectivism and constructivism as an opposite views. Objectivism ascertains that social phenomena, i.e. social reality, exists separately or independent from the social actors (Bryman & Bell, 2007, p.22). At the same time constructivism claims social actors construct social reality by actively interacting with it. Therefore, social phenomena are not considered to be independent.

Consistently with the framework of the research from general to particular knowledge and the higher regard of natural science methods, we argue objective stance to prevail in our thesis. We estimate the stock prices reaction by means of the market-adjusted model, which requires no subjective way of interpreting the data. Although investors as social actors construct social reality i.e. share prices on the particular financial market, we do not investigate the market participants’ decision making process by interviewing or inquiring personal opinions of them. Therefore, our objective perspective leaves a limited gap for a subjective interpretation of the stock market reaction. Thus by following the ontological assumption, our paper applies objective consideration in order to conduct the research.

### 2.6 Research strategies

To be able to specify employed research methodology furthermore, we would like to state our research strategy. The choice of the methods is mainly determined by techniques of data collection and procedures of data analysis, as well as the holistic view of the research framework. Bryman and Bell (2007, p. 154) distinguish two main research strategies, namely quantitative and qualitative. According to the authors, quantitative research can be constructed by quantification in the collection and analysis of data, that entails a deductive approach to the relationship between theory and research, incorporates the practices and norms of the natural scientific model and of positivism in particular; and embodies a view of social reality as an external, objective reality. By contrast, qualitative research emphasizes words rather than quantification in the collection and analysis of data. It refers
to non-numerical data that are pictures and video clips rather than words, and especially it is more concerned with the deep understanding, perception and quality of raw data Saunders et al. (2009).

As to our research, the choice of quantitative strategy came out naturally since the following assumptions have been made formerly: deductive research philosophy, epistemological position of positivism, ontological position of objectivism, and dominance of natural science methods (See the Figure 3).

Quantitative methods enable us to collect descriptive and measurable data concerning stock prices and returns of Australian listed companies and conduct the analysis of causality between the public announcement of impending bankruptcy signals by the side of auditors and stock market reaction to these announcements in the form of abnormal returns based on statistical methods. The archived data have been retrieved from ASX website and official websites of the companies disclosing public annual financial reports for the sake of investors’ awareness. Furthermore, we have applied quantitative methods such as the event study analysis with corresponding descriptive statistic analysis, OLS regression analysis, parametric t-tests and non-parametric significance tests.

Nevertheless, we incorporate quantitative research with a certain extent of qualitative techniques used in detecting the type of audit opinion issued to the financial distressed companies and disclosed in the annual financial reports. In order to categorize the audit opinions to unmodified with “Emphasis on matter” and modified with “Except for”, “Adverse” and “Declaimer” parts we scrutinize thoroughly the content of Notes to financial statements, which contain an audit opinion statement. Since requirements to issuing and formulation of mentioned audit opinion types are established by legal authorities in the International Standards on Auditing (ISA 570, ASA 570) we are not inclined to interpret the content of audit opinions in a subjective way. Thus objective view of the data remains unaffected. Also by examining the sample of the companies we gain opportunity to generalize the findings within the Australian financial market environment.

**Figure 3.** Determination of the quantitative strategy by general research assumptions
To conclude, predominantly quantitative strategy is considered to be the most suitable technique for our purpose of analysis since precise measurement of the Australian stock market reaction is conducted by means of statistical methods.

2.7 Research design

Among commonly used types of research design such as experimental, cross-sectional, longitudinal, comparative and case study, emphasized by Bryman and Bell (2007, p. 55), we have made a choice in favor of longitudinal and cross-sectional approaches.

In terms of longitudinal design the focus of the study changes and develops within the time period. Adams & Schvaneveldt (1991, p. 91) pointed out that longitudinal studies aim to observe people or events over time by measuring the variables being studied and prove that they are not affected by the research process itself. In our case the time period have been chosen from 2007 to 2009 corresponding to the financial troubled business conditions in the light of the recent financial crisis with increased number of financial distressed companies receiving going concern modification. To be more exact, while carrying out the research we aim to collect the time series data regarding the frequencies of different types of audit modifications inherent to going concern assumption within the restricted time period. Thus some issues of the research are concerned with longitudinal perspective.

The second and presumably prevalent research design, which is employed in the study, attributes to the cross-sectional framework. Easterby-Smith et al. (2008) define it as a survey strategy to search for information in order to describe an incidence of a phenomenon or to explain how variables are related in different entities. Therefore, the data is collected for more than one case at a single time point (Bryman & Bell, 2007, p. 55), which enables researchers to find the relation between different variables at a certain point in time. Consistently with the purpose of the research of proving the evidence of any market participants’ reaction, we examine listed companies from the diverse industries at the certain time point and detect the relation between the type of issued audit qualification and the change of abnormal returns. For this matter, we argue that cross-sectional design of study to be consistent with the data collection and analysis techniques of the study.

2.8 Literature search

As to the quality and trustworthiness of the research, full-scale information and the most valuable knowledge concerning the issues of research question should be scrutinized. Therefore, literature search is considered to be a crucial stage of the research process. The choice of sources of information was made based on the main areas inherent to the research problem. In terms of the paper, the theoretical framework covers the following issues: going concern assumption, the types of audit opinion modification, information content of audit opinions, and financial market reaction. After defining the most important areas of the study we have searched relevant sources of information including books, scientific articles, legislative accounting framework, relevant surveys, experimental studies, and other sources. We have made maximum use of the databases, being provided by the Umeå University library, including Business Source Premier (EBSCO), Emerald Fulltext,
EconPapers, and EconBiz – ECONIS. Some keywords were applied in order to retrieve the corresponding scientific articles: *going concern opinion*, *market reaction*, *information content of audit opinion*, etc. In case we faced difficulty to get the access to the papers, we managed to use other indirect sources like the Internet with a Google Search option.

In addition, the legislative accounting framework regarding the International Financial Reporting Standards (IFRS) and International Standards on Auditing (ISA) was retrieved from the official websites of the legal authorities, i.e. International Accounting Standard Board (IASB) and International Auditing and Assurance Standards Board (IAASB) respectively. Since our research is focused on Australian market reaction we acquired information about IFRS and ISA adopted in the Australian context. Thus, the Australian Accounting Research Foundation’s (AARF) and Auditing and Assurance Standards Board’s (AUASB) websites were of a great value. Also ASX Database was primary used in order to retrieve collect the data as an input for our event study analysis. Alongside with ASX source we gained access to the Thomson Reuters Datastream database in order to gather stock price and returns related data.

Overall, literature search was determined by the type of information required to answer the research question by using wide variety of primary and secondary sources. More detailed discussion regarding the types of sources is held in the Chapter 4.
Chapter 3: Theoretical framework

3.1 Introduction

In general, the role of audit from the perspective of diverse users in providing discharge of fairness of an entity’s business performance disclosures has been the subject of on-going debate. The aim of audit serves the interests of current and prospective owners, creditors, financiers, employees, private and public institutions, and society taken as a whole. Thus, audit reports correspond to an everlasting demand on the trustworthy public information for the decision makers and appear to be a medium of communication between the auditor and the users of the financial statements (Al-Thuneibat et al., 2008, p.84). As to audit report perception by the different users, Bomber and Stratton (1997, p.1) provide an evidence that bank loan officers find the modified audit reports informative when taking decision of granting a loan. Also capital market researchers deduce the mixed inferences on the subject of investors’ evaluation of audit reporting. In order to find out if audit report users perceive it as a relevant source of information, we refer to the empirical evidence of the previous researches and attempt to find the information content delivered by audit reports in the Australian context. The Chapter is structured in a way to introduce the issue of going concern from the perspective of auditor. Hereafter we overview the types of audit opinions, which reflect the going concern uncertainty. Modification of the audit opinion regarding the ability to continue as a going concern may affect the value of the company as far as investors are concerned. For this reason we discuss the information content of audit opinion modifications and capital market reaction to the relevant public announcements, which is accomplished by a review of the prior literature. Based on the overview of theoretical knowledge and empirical evidence, we finally put forward the hypotheses, which determine the rest part of the research.

3.2 Going concern issues on audit reporting

3.2.1 Going concern assumption

Going concern assumption is a fundamental principle of preparing financial reports. Based on this assumption an entity is viewed as continuing in business for the foreseeable future. When preparing financial statements the management of the entity has to assess the appropriate use of going concern assumption and auditor is in charge of testing it when issuing the audit opinion. Under the assumption the users of financial statements consider that the management does not intend to liquidate the company or cease operations. Also assets and liabilities are recorded in a way that the entity will be able to realize its assets and discharge its liabilities in the normal course of business (ASA 570, p.8). For the reason of communicating reliable and realistic information to investors the financial data disclosed in financial reports have to comply with going concern assumption, otherwise the accurate value of the company is not publically disclosed.

Presumably there are two main parties making assessment of a company’s as a going concern: management of the company and its auditors. Nevertheless, other interested
parties as creditors, bankers, lend lords, government representatives, investors are also involved in the analysis of matters related to going concern assumption.

Primary position of the regulating authority such as International Federation of Accountants (IFAC) stands for a key role of auditor to consider whether the going concern principle is valid or not. At the same time “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” (ASA 570, p.7). Therefore auditors’ duty is to alert the potential problem regarding a going concern assumption without any guarantee of impending liquidation of the company.

In order to assess the company’s ability to continue in a business in foreseeable future some criteria are used. Dodd P. et al (1984, p.4) mentioned typical events such as pending lawsuits, doubts in future financing, and concerns that the book value of assets exceeds their realizable value, which lead to modification of audit opinion regarding going concern. Also non-exhaustive list of events and conditions, which provide a signal of inconformity with the going concern assumption, has been recommended by IAASB. Those events have been categorized to the three types: financial, operating and other (ASA 570, p.17, para. A2) as illustrated in Table 1.

Table 1. illustrates the main three types of events and conditions, which cast a doubt on the going concern assumption of the company. We consider financial factors to be more evident for the public financial statement users, while operating and other factors are more attributable to insider information. Having access to public and non-public data an auditor is able to add incremental information concerning viability of the company, hence, enrich perceptions of its users. Presented list is not comprehensive due to the fact that many other factors may hinder company’s ability to continue as a going concern.
TABLE 1
Audit criteria signaling inconformity with going concern assumption.
Source: ASA 570, p.17, para. A2

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
</tr>
</thead>
</table>
| **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 report  
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 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 customer(s), franchise, license, or principal supplier(s)  
Labour 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 |

In addition, Jones (1996, p. 4) mentioned some further information, which is initially acquired by an independent auditor, but not by investors and analysts. For instance, the auditor also considers labour problems, excessive reliance on a few customers, and such mitigating factors as the company's ability to cut costs, sell assets, and obtain additional credit. This rationale determines the assumption that initial knowledge of the auditor about financial situation and future plans of the company, which is revealed in audit opinion qualifications, may possess incremental information content for the external users of financial reports.
3.2.2 Types of audit opinion modifications

Since audit report aims to communicate an independent opinion about fairness of disclosed financial information, the going concern uncertainties trigger modification of audit opinion with fourth explanatory paragraph, which draws heightened attention of its users. In many European countries the auditors are required to modify the audit report by issuing qualified or adverse audit opinion in case no adequate disclosure is made by the management in financial statements and material going concern uncertainty exists (ISA 570, 2009, p. 550, para 20). In another case if the management has made proper disclosure of going concern assumption but a material uncertainty exists, the auditor shall express unmodified audit opinion by adding an “Emphasis on matter paragraph” to draw attention of the users and highlight a material uncertainty on the company’s ability to continue as a going concern. In terms of Australian regulation the common approach is followed (ASA 570, p.24, para A20).

The present position of legislative accounting framework in Australia is specified in AUS570 which was amended in 2009. The following report formats can be chosen by an auditor in terms of going concern issue:

- **Unmodified audit opinion** with an “Emphasis on matter paragraph” (AUS570, para A21). This report is used when management has adequately disclosed going concern uncertainty in the financial statements. The “Emphasis on matter paragraph” fulfils a function of a red flag for the readers of the audit report.

- **Modified audit opinion** with an “Except for” or “Basis for Qualification” formulation (AUS570, para A23). This report should be expressed if the management has not appropriately disclosed going concern issue while a material uncertainty exists and it is severe enough to warrant “Adverse” opinion. Also in extreme cases of inherent uncertainty inability to form an auditor’s opinion is required, which is reflected in the “Disclaimer” type of opinion (AUS570, para 21).

An overview of auditor’s decision making process when issuing audit opinion with going concern uncertainties is shown in Figure 4.
For the purpose of testing market reaction, it is important to distinguish issued audit opinions with going concern uncertainties based on the market expectations. Expected going concern modification will not convey new information to the users of financial reports, hence, the market reaction to the public announcement is inferred to be insignificant.

Several measures of expectations for going concern modifications were proposed in the previous researches. In order to identify the error in qualified going concern opinions and
unqualified clean audit opinions. Mutchler (1985, p. 670) used a discriminant model based on the financial statement ratios characterizing the level of financial distress of the companies. Fleak and Wilson (1994, p. 152) divided “financially troubled” firms into “expected” and “unexpected” groups based on the future cash flows deteriorating or improving condition respectively. A naive model for market expectations was utilized by Blay and Geiger (2001, p. 210), implying that subsequently viable recipients of going concern modification tends to be unexpected, while subsequently bankrupt companies follow the expectations of the market to fail in foreseeable future. As mentioned earlier, the issuance of going concern modification may apparently impend the bankruptcy of a financial distressed firm, which raises the question on application of the naive model based on the future viability of the company.

In the paper expectations of the ASX investors regarding the going concern uncertainty are viewed from the perspective of the preliminary and final reporting. Since in the most cases the both types of financial reports contain the same financial information on the business performance including financial statements and directors’ declarations, we emphasize the crucial dissimilarity between the two. Referring to the ASX Listing Rules 3.1 “Continuous disclosure”, the preliminary report, i.e. the ASX form “Appendix E4”, contains the “information that emerges in the preparation of the final report, which might be relevant to the achievement of projections or indications of profit or revenue, or of business plans previously released to the market” with brief explanations on the financial figures and commentary on the results. The Appendix 1 details the content of the considered preliminary reports in terms of GCO stock reaction effect within ASX environment. Thus, compared to the final financial report, the preliminary disclosure does not include the audit opinion note, which enables us to examine the market reaction to the additional audit opinion information content, disclosed at the final public announcement date only. Correspondently, we assume that different types of audit opinions contain heterogeneous information content concerning investors’ future expectations and, more importantly, preliminary financial information may predetermine the investors’ anticipations regarding the viability of financially distressed companies, based on the financial figures and relevant statements. In this case the information content of the audit opinion with the going concern modification does not bring any new information to the market, whereas only unexpected incremental information delivered by the auditor will cause the stock price effect in terms of going concern issue.

3.3 Information content of going-concern audit opinion and market reaction

Australian Securities & Investments Commission (hereafter ASIC) has emphasized in review of 30 June 2009 financial reports the importance of the going concern assumption in the preparation of financial statements in current Australian market context (ASX, 2009). Going concern issue has been announced in audit firm inspection report to be the one of three focus areas along with impairment of assets, and determination of fair values of assets. The report states that 18 percent of the listed companies’ audit reports contained an “Emphasis on matter paragraph” related to a going concern assumption, which is significantly more than the figures reported by ASIC in the previous years. Increasing
number of going concern uncertainties demands of the further audit opinion value acknowledgement.

Most of the researches have been conducted to examine the information content of the explanatory paragraph in a modified audit type of reports in general. Only some studies were devoted to the information value of the going concern modifications in particular.

Earlier academic papers (Firth 1978, Elliot 1982, Dodd et al 1984) have been investigating market reaction to “subject to” audit opinion, which was eliminated in 1988 due to the lack of information value for its users. In whole only weak information content of going concern modifications was documented. Poor evidence of a negative market reaction can be explained by inability to control the announcement dates as well as separate the influence of other price-sensitive factors.


Taffler et al (2004, p 296) provided empirical evidence from UK over the period from 2000-2005 regarding the negative impact of the initial going concern public disclosures in the fill one-year period following the announcement. New information incorporated in the going concern audit opinions induced investors to misprice the stocks in a medium-term period.

Blay and Geiger (2001, p. 224) argue that receipt of initial going concern audit report was interpreted by USA market as significantly more negative for ultimately viable companies when compared to the firms that subsequently went bankrupt. Thus multivariate regression analysis resulted in minimal additional information content in the going concern modification for the subsequently bankrupted firms, while modified reports of the viable companies were perceived to be of a greater value. Important conclusion was made that the market reacted differently to expected and unexpected going concern audit reports.

The results of Chen and Church (1996, p. 117) are consistent with going concern opinions having information value. They state that going concern opinions are useful in predicting bankruptcy and provide some explanatory power in predicting bankruptcy resolution. The sample of 98 American firms filing to bankruptcy was examined by conducting univariate tests to investigate excess returns occurring around the date of bankruptcy filing. The limitation of the study refers to bankrupted firms only, while the majority of the companies receiving going concern opinion remain viable.

Fleak and Wilson (1994, p. 150) highlight that unexpected going concern opinions are significantly associated with negative abnormal security returns. The authors define an unexpected going concern opinion as one which is inconsistent with previously known information about firm's financial viability. The findings might be confounding due to the inaccurate announcement dates control. We question the event date of interest stated as the
earliest of the release of annual report, 10-K, or media disclosure of the audit report. Mentioned announcements incorporate different type of financial and non-financial information simultaneously, which may cause cumulative impact on the stock reactions documented.

Kausar et al (2009, p. 236) show that the market does not process the going concern opinion signal on a timely basis in the USA, leading to a market underreaction of -14 percent over the following one-year period. The findings show that despite auditors’ going concern opinions having clear information content, these bad news signals are not being fully impounded by the market on a timely basis, leading to trades taking place at prices apparently inconsistent with fundamental values.

Interesting conclusions regarding short-term market reaction to going concern modification were drawn by Schaub (2006, p. 1164) in the US market in the period from 1984 to 1996. The author argued that investors overreact to the going concern announcements implying that average losses of over 25 percent on the announcement date is followed by the significant 20.98 percent gain in the subsequent 10 days. The stock reversal is explained in a way that after the first GCO announcement adverse effect the stock prices move in the opposite direction as the investors realize the stock price movements were too extreme. Bearing it in mind, the choice of the event window for testing market reaction in our study should be made in a way to eliminate the effect of overreaction opposite price movement.

In contrast to the previous position other scientists (Al-Thuneibat et al 2008, Amen et al 1994, Elliott 1984, Dodd et al 1984, Martinez et al 2004, Ogneva and Subramanyam 2007) claim that going concern modification announcement is unable to convey new information to market participants since financial deterioration of a company can be predicted by using preliminary publically available financial information. Therefore, this group of researchers holds a view that GCO is of a “little” surprise to investors. Correspondently, weak effect on the capital market reaction is observed.

Amen et al (1994, p. 997) provide with empirical evidence from USA stock markets of relevant information content of the modified audit opinions. Event-study analysis based on measuring of the abnormal market returns ascertains no significantly negative response associated with the announcement of qualification. At the same time strong market reaction to the modified opinion announcements occurred if uncertainties facing the company were less severe than expected. The limitation of the study attributes to inability to control other factors than prior earnings announcements such as dividend expectations, CEO announcements, etc. Therefore the results might possess confounding effects.

In the study of Al-Thuneibat et al (2008, p. 84) no significant short-term market reaction was placed on record in the emerging financial market of Jordan. The negligible effect of qualified audit reports to the stock prices and returns implies to conclusion that users of the reports do not appreciate its value for decision-making purposes.

Martinez et al (2004, p. 278) used event study methodology to investigate the Spanish market reaction to the qualified audit reports issued during the period 1992-1995. There
were found no association between stock prices and qualifies audit opinion announcements, meaning the absence of information content of the reports.

Ogneva and Subramanyam (2007, p. 450) investigated post-going concern abnormal returns and concluded that market underreaction to the going concern opinion does not exist in the USA. Concerns regarding the research method of the paper are related to sample selection, treatment of the delisted companies’ returns and treatment of outliers (Kausar et al 2009, p. 223).

Since most of the studies on the subject were conducted in the USA and UK we bring into focus of our paper Australian market environment. To be able to contribute to the body of research the overview of knowledge developed in Australian context is on demand. Ball et al (1979), Bessell et al (2003), Herbohn et al (2007), Ogneva and Subramanyam (2007) pursued investigation on the issue of the going concern modification effect, thus we draw our attention to their findings regarding Australian stock market.

Ball et al (1979, p. 23) conclude that valuation qualifications are not associated with a significant reduction in share price. Thus the qualification of audit opinion does not convey any new information to the investors. The sample of audit qualifications was obtained for the companies received one of the eight types of qualifications during the 1961-1972 time periods. We emphasize that the sample of the study may produce bias results for the reason that the authors excluded audit qualifications related to the delisted firms, which subsequently failed to perform in foreseeable future within observed study period. Also research was carried out relatively long time ago and did not explicitly investigate going concern issues. In addition legislative environment in Australia requires new approaches to measure the value of audit opinion content nowadays.

Bessell et al (2003, p. 261) studied that reaction of the loan officers to different formats of modified audit opinions of financially distressed companies in Australia. The researchers conclude that modification does not appear to improve the perceptions of risk or decision making. Thus no incremental information content has been evidenced by a finance industry officers’ valuation in the particular market. The study is not testing the impact of formulation of audit opinion in the explanatory paragraph, which might affect the decision making of loan officers as well. For this matter, we assume the results might be confounded with reaction of the officers to the different expression of opinions issued by auditors.

Herbohn et al. (2007, p. 473) documented no short-term and medium-term market reaction to the initial going concern modifications within the 1999-2003 time period in Australia. Short-term reaction is tested by the market-adjusted returns model, while medium-term effect is examined using the buy-and-hold and control firm approaches. Based on the analysis the authors state that market is fully informed due to continuous price-sensitive disclosure regime established in the ASX. Thus researchers do not observe adverse market reaction after twelve months from the announcements. In addition, the study is of a great interest regarding our research since the authors claim to examine the two testing periods, i.e. preliminary and final. Despite the fact the preliminary period was not investigated intensively due to the insignificant stock market reaction to the both preliminary and final
announcements, the study bring up the idea to consider preliminary reporting information content.

No significant market reaction to any price-sensitive information of the both preliminary and final reports casts a doubt on the soundness of the research. Even in the rigorous disclosure legislative regime of the Australian stock market the earnings and dividend announcements, the director’s report and other relevant information is considered to be price-sensitive. Since the study does not register any statistically significant buy-and-hold abnormal returns the information content of going concern announcements is considered to be weak.

Similar results were discovered by Ogneva and Subramanyam (2007, p. 439) in terms of Australian market. Meaning no evidence of significant negative abnormal returns associated with going concern opinions was documented in a medium-term period. The paper does not focus on a short-term market reaction, which is the issue of the thesis.

To mention, the impact of the preliminary financial report to the market reaction in respect of the subsequent final annual disclosure was not discussed previously mainly due to the lack of the continuous-disclosure requirements on the part of the stock exchange markets. Only the paper of Herbohn et al. (2007) brings a light to this question limited to the weak empirical evidence on the financial effect determined by the preliminary and final financial report announcements.

Overall previous Australian research papers are inclined to view audit opinion with going concern modification to possess weak information content for the capital market participants. Outlined limitations of the studies, lack of the up-to-date empirical evidence and controversial results on the subject discovered in other geographical contexts creates a knowledge gap for the further research.

3.4 Hypothesis development

Consistently with the research purpose and objectives set up in the beginning of the paper we develop the following hypothesis for testing.

Firstly, we would like to test the market reaction to GCO modification. The question was intensively discussed in the previous literature, though inconclusive findings were documented in the different market environments and lack of evidence in the Australian context was denoted. For this matter, the first set of hypothesis (H1) to test in our paper is as follows:

\textit{H1a: There is an adverse financial market reaction to the initial going concern audit opinion public announcements in a short term period.}

\textit{H1b: There is no adverse financial market reaction to the initial going concern audit opinion public announcements in a short term period.}
Based on the hypotheses above we enable to conclude whether going concern audit opinion possess valuable information content. We postulate that in case statistically significant market reaction is detected, the new information content, which is provided by audit opinion announcements, has an impact on the investors’ decision making process.

To go to the heart of the matter, to a large extent the market reaction depends on an unanticipated component of the announcement. In terms of the preliminary ASX disclosure requirements for the public companies, the essential financial information regarding the current business performance and future perspectives of the company is announced one month in advance of the final financial report disclosure. Correspondently, the market participants’ anticipations concerning the viability of the company might be based on the preliminary earnings announcements, dividend announcements, management declaration, etc. Thus going concern contingency might be predicted by means of the analysis of the preliminary report’s financial content, which does not include the GCO auditor opinion note. In this case we do not expect to find the evidence of the adverse market reaction to the final annual statement announcements since the investors are already aware of the going concern uncertainty based on the preliminary disclosed information. To mention, the major essential difference of the final financial report content compared to the preliminary report is the official audit opinion declaration, while the rest financial information remains the same. Thus, the final disclosure of the financial report, ceteris paribus, is the only reason that may cause the market reaction to the audit opinion content at the stage of the final announcement.

Following this logic, in order to obtain the evidence that market reaction to the GCO is merely based on the final announcement, we suggest the second set of hypothesis \((H2)\) regarding the difference of the market reaction to the announcements on the preliminary and final report dates:

- **H2a:** The preliminary financial report announcement of a company with going concern uncertainty has a greater impact on the financial market reaction than the final financial report announcement.

- **H2b:** The preliminary financial report announcement of a company with going concern uncertainty does not have a greater impact on the financial market reaction than the final financial report announcement.

Based on the hypotheses we compare the stock market reaction to the announcement events at the preliminary and final dates. In case the information content of the GCO possesses value for the investors, we expect to evidence the more adverse reaction to the GCO announcements on the final date. Otherwise the market will not react to the audit opinion announcements regarding going concern issues, since the prices have already incorporated the relevant information formerly on the preliminary stage. As to market reaction, we acknowledge that some other factors may exert an influence on the magnitude of the stock market reaction to GCO announcements. For instance, the tone of the audit opinion note itself may have an impact on the stock price effect. Nevertheless, we ascertain that the established sample criteria for the companies with GCO enable to eliminate the impact of the other irrelevant factors.
Chapter 4: Practical method

4.1 Introduction

In the Chapter we discuss the data collection methods in terms of primary and secondary sources since it is relevant to the quality of the data utilized in the event study analysis. Correspondently, the established criteria for a sample composition provides an argument for the strict selection process of the public companies with issued GCO as an input set for the event study method application. After setting the requirements for the sample we follow the chain of the event study procedures in order to detect the stock market reaction to the particular event of the GCO public announcement. The Chapter in general establishes the guidelines for the event study method prior to the empirical analysis and interpretation of the results.

4.2 Data collection

The choice of the data collection methods was made in line with the defined research strategies and research design of the study. Since there are many methods available to proceed both qualitative and quantitative data, a researcher should thoroughly select one method or more considering the factors like suitability to the problem, available resources, kind of data required to be produced and the level of precision required (Sridhar 2007, p. 56).

First of all, we consider the type of information required for the event study analysis in order to establish the methods to collect this data. For the research purpose of examining the financial market reaction to the announcements of GCO modifications, the two particular concepts form the basis of it. In order to measure the first concept, namely financial market reaction, we employ constant-mean and market-adjusted abnormal returns models (Campbell et al., 1997, p. 154). Precise quantitative data concerning closing market prices of the companies, which received audit opinion modification, and market indexes within the estimated and event windows around the announcement date was retrieved from the ASX primary source database. Further calculations for testing developed hypotheses and event study analysis are carried out in SPSS software. The second concept, which attributes to qualitative data of the type of going concern audit opinion modification, refers to the content of the audit opinion paragraph stated in the public annual financial statements. As a result, there are two types of collected data, i.e. qualitative and quantitative, which were extracted by means of the different sources, i.e. primary and secondary respectively.

4.2.1 Primary source of data

Many sources can be considered either primary or secondary, depending on the context in which they are examined (Kragh 1989, p. 121). In terms of our study the information about the stock prices of Australian listed companies retrieved from the ASX website database is regarded to be the primary source data for the following reasons. Firstly, since financial market participants are the ones, who establish a market price by means of balancing
between supply and demand, they determine the price changes without any collateral effects of interpretation of the original price data. Secondly, the stock exchange market is the initial place of occurring transactions, thus there is no other source of stock price information, which is first-hand recorded and disclosed. Also share information is committed to writing immediately during the trade event. Moreover, the stock price data is tabulated in ASX database, but not interpreted or changed by other authors through the time. Consequently, the content of quantitative stock price data is constant irrespective of any other events or time period.

Complementary to the ASX database for the purpose of convenience and time saving we obtained some price/returns and market indexes data from another secondary source the Thomson Reuters Datastream database, which contains the same price related information but in more systematic manner. Due to the fact that our research is concerned with the control of public announcement dates in order to eliminate the impact of other announcements than GCO, we thoroughly detected the dates of the particular interest within the estimated and event windows. Therefore, Datastream database source facilitated the execution of collecting the empirical data.

4.2.2 Secondary source of data

The secondary sources were primarily used to enhance understanding of the subject, establish legislative framework of the research concepts, examine the previous body of research on the subject, and to some extent collect the empirical audit opinion data.

Official documentary data

For the purpose of determining our sample of listed companies, which received the going concern modification in the form of modified or unmodified audit opinion, we scrutinized manually the information content of prior and annual public financial statements of each company listed in ASX. As the source of audit opinion type data we referred to the official public annual financial reports disclosed in the ASX database and official companies’ websites. Though original audit reports issued by the audit firms, which remain in the paper-base form, do not appeal to the wide public accessibility, the electronic copy of the audit opinion is widely recognized as an equivalent for its public users. Since the annual reports are the only public source of the audit opinion statement, which is commonly accounted by the capital market participants, in the light of our research question from the perspective of investor we assume the public annual financial statements to be the only relevant source.

Furthermore, we aim to hold a control over the other price sensitive public announcements not bearing relation to going concern. For this matter, we actively used the date and content information of ASX Company Announcement Platform, which enables simultaneous and rapid dissemination of disclosures made by listed entities, since there are strict ASX requirements of continuous disclosure of the material information in order to keep the market fully informed. ASX Rules (ASX Listing Rules, Chapter 3, p. 302) require listed companies to make “timely disclosure of information which may affect security values or influence investment decisions, and information in which security holders, investors and
ASX have a legitimate interest”. ASX announcement database contains all public announcements to investors (ASX Listing Rules, Chapter 3, pp. 302-314) regarding to capital changes, making a takeover bid, making buy-back, director meetings; change of chairperson, director, chief executive officer (or equivalent), responsible entity, auditors, etc.; documents sent to security holders, additional disclosures concerning loan as an asset, ownership limits, director’s interests, and other essential information for the investor’s decision making process. It is of critical importance to our research to be able to access free from audit opinion preliminary financial reports, which are lodged to ASX at least one month in advance of the final audited annual statements.

Another significant secondary source of data is inherent to legislative accounting framework in the form of IFRS and ISA, established and adopted by certain authorities in Europe and Australia in particular. The concepts of the research question determine special emphasis on the following standards:

- International Accounting Standard IAS 1: Presentation of Financial Statements;
- International Standard on Auditing ISA 570: Going Concern;
- International Standard on Auditing ISA 700: Forming an Opinion and Reporting on Financial Statements;
- International Standard on Auditing ISA 705: Modifications to the Opinion in the Independent Auditor's Report;

Ad notam, Australia has adopted national standards that are recognized as IFRS-equivalents. Therefore, in terms of the research we refer to the Australian standards, meaning generally accepted accounting and auditing standards within European system.

Academic literature

Besides mentioned secondary sources of data we intensively used the books, academic articles, research surveys, experimental studies, and Internet sources. Scientific articles of Citron D.B., Chen K.C., Church B.K., Dodd P., Dopuch N., Herbohn K., Firth M.A., Mutchler J. F., Schaub M., Taffler R. J. were devoted to the issues of going concern audit opinion modifications, its information content and market reaction. We find the outlined authors’ papers to be of a particular interest in regard of our study.

Also some academic journals were valuable source of information. We find Journal of Accounting, Auditing and Finance, Auditing: A Journal of Practice & Theory, Accounting and Finance, and Journal of Accounting Research academic magazines to be of a particular interest on the subject of our research.

Information has also been collected from electronic sources including the official websites of such authorities as IASB, IAASB, IFAC, AUASB, and Australian Stock Exchange
market, which are deemed to be reliable. Also the official websites of the listed companies with going concern modifications were examined in order to control the identical content of publicly disclosed financial statements in the ASX announcement database, which appeared to be the main source of the studied events.

Indeed, literature review enabled to systematize the body of research on the subject of the market participants’ reaction to the going concern modification announcements. In whole the primary and secondary sources were employed in the study with considerable use of the primary source empirical data.

4.2.3 Criticism of primary and secondary source data

The main problem of collecting the relevant empirical data from the outlined primary source refers to the considerable amount of time spent to carry out the data of each listed company manually. Nevertheless, we note that it contributes merely to the quality of the selected sample companies.

Another obstacle of primary source of ASX historic announcements database is concerned with inability to control public announcements in the mass media other than announcements provided by ASX Company Announcement Platform. As to previous studies, many researchers (Ball, R., Dodd, P., Dopuch, N., Holthausen, R., Leftwich, R., Walker, R., & Whittred, G.) examined the public announcement dates by means of reviewing the major financial press like Wall Street Journal, and Lexis Nexis in the Business Wire. We consider this method of obtaining the data to be unsystematic in a way that out beyond number of financial magazines and news websites cannot be scrutinized to cover all the amount of the relevant credible announcements. Thus the option to pick only some well-known financial newspapers out of plenty sources seems to be questionable. For this matter, ASX Company Announcement Platform provides with systematic, up-to-date and precise information regarding public announcements in Australian context since the stringent rules of ASX require listed companies to lodge immediately the comprehensive price sensitive information.

Since Internet source is criticized for the low quality of delivered information we take into consideration four criteria of the official documents’ quality suggested by John Scott (1990 p.6): authenticity, credibility, representativeness and meaning. The main body of the official documents used in the study was issued by trustworthy professional organizations and institutions like IASB, IAASB, IFAC, AUASB and ASX. In order to overcome the problem of Internet resources reliability we have limited the sources to the web pages of that well-recognized professional organizations and institutions. Thus the content of the information published on the websites applied in the paper remains to be of a high credibility.
4.3 Determination of the sample selection

The main purpose of the study is to examine Australian financial market reaction to the public announcements of going concern audit opinion modifications. Therefore, the objects of the study appear to be the companies, which listed in ASX and received modified or unmodified audit opinions within the studied period. As mentioned previously, we conduct testing of the developed hypotheses applying cross-sectional and longitudinal designs. Since Bryman & Bell (2007, p. 171) warn that the “concern with generalizability or external validity is particularly strong among quantitative researchers cross-sectional and longitudinal designs” we take into consideration the matters of sample representativeness.

The research does not include probability sampling, which is based on the random selection of the sample companies using probability theory principles (Bryman & Bell, 2007, p. 171). Instead we exercise an opportunity to observe the whole amount of the ASX listed companies, which received initial GCO for the year starting from 2007 to 2009. Thus we use non-probability purposive sampling without any random selection among the companies for the reason that we are determined to include all the companies, which fit a certain criteria, in order to increase precision of the sample.

We are aware of the fact that purposive sampling possesses limitation on the possibility of generalizing the results of study (Sanders, M. L., & Thornhill A., 2003, pp. 230-233). Also this type of sampling is concerned with the objectivity of chosen criteria. Nevertheless, in our case we examine all the ASX listed companies in line with the reasonable criteria requirements, eliminating those which do not comply with it. Thus the method of sample formulation overcomes potential difficulties of findings generalization. In order to overcome controversial results of the previous studies on the stock market reaction due to the contaminated samples we set the strict criteria for the sample selection procedure. Taking into consideration the best practice of the previous researchers on the subject, we provide our argumentation of the sample criteria.

In this respect, in order to collect the proper sample and control contaminating complications on the results we establish the certain criteria for the companies, which are described below.

1. First-time GCO modification.
2. Diversity of industry sectors, excluding financial and mining sector.
3. Identical earnings content of preliminary and final financial statement announcements.
4. Nonoccurrence of the occasional announcements within estimated and event windows around the event date.
5. Delimitation of the companies with zero trading volume within the event window.
6. Delimitation of the companies, which entered bankruptcy procedures prior to the issuance of the auditor’s report.

First of all, the initial GCO modifications are the focus of the study since an indicator of the market reaction measure refers to the calculating of abnormal returns. First-time GCO is defined as modification of qualified and unqualified audit opinion regarding going concern assumption, which was not the case for the company in the preceding year. The argument for excluding the companies with recurring going concern modifications stands for the fact that investors’ expectations are already determined by the previous year bankruptcy negative signal. Consequently, the market reaction effect during the current year may be diminished.

Secondly, the sample should consist of diverse industry sectors. Australian financial market contains issuers from the clean technology, customer, energy and utilities, healthcare and biotechnology, industrials and materials, IT and telecommunications, financial, metals and mining sectors. Variety of presented industries supports the cross-sectional approach of the research. In spite of this fact we exclude financial sector due to the unique capital requirements, financial accounting and reporting framework, and regulatory system within the sector. The approach is supported by many other researchers (Citron, D.B., et al. (2008, p. 27), Herbohn K., et al (2007, pp. 473–493), McKe T. (2003, p. 576), Ogneva, M. (2007, p. 441)). Furthermore, mining sector should be omitted for the reason that the ASX rules do not require mining companies to disclose preliminary financial statements. In terms of our study, the control over announcements of the price sensitive information prior to the event is of a great importance to eliminate the impact of the factors other than GCO modifications.

Thirdly, since we aim to investigate market reaction to the GCO announcements only, the change of earnings information, disclosed in the preliminary and final financial statements, may contaminate the findings of the event analysis. Discrepancy in the prior and ultimate figures of an income statement, balance sheet, cash flow statement, and dividend announcements can cause an impact on the investors’ expectations. For instance, the less loss reported in the final report compared to the higher loss in the preliminary report may be perceived as a good news, thus the price of the company is likely to experience the upward change in a short-term time period. Correspondently, the sample should consist of the companies with identical preliminary and final financial statements figures.

The fourth, to hold further control over the robustness of the results we set aside the GCO modifications with additional price sensitive public announcements within the estimated and event windows. We eliminated the GCO companies, which have any price-sensitive public announcements within the 7 days prior and after the GCO announcement event. For the purpose of the improved quality of the sample to enable identification of the market reaction to the particular type of the announcement, i.e. audit opinion disclosure, we argue this criterion to be of a great importance to control the factors, which trigger market price changes.

Moreover, thin or zero trading of the stocks, which represents the infrequently trading during the event window, reduces the chance to identify the market reaction since zero
trading is coherent to the constant prices. As a result, there is no chance to detect the abnormal returns as a measure of the capital market effect within event window. Bearing it in mind, we eliminate the companies with zero volume trading to avoid contaminated results of the tests.

Lastly, we eliminate the companies with the prior bankruptcy announcements to the issuance of the independent auditor’s report with going concern uncertainty since the company is already being in the process of discontinuing performance. For this reason the GCO modification of the report cannot deliver any new information content to the investors and financial analysts.

Taking all the foregoing into account, we acknowledge that the sample size of the companies with initial GCOs should be rather large. Further elimination of the particular companies may decrease significantly the sample and its representativeness subsequently. In order to get over this obstacle we examine the whole population of the listed companies in Australian financial market during the period from 1 January 2007 to 31 December 2009 on the subject of GCO modification subsequently excluding those companies, which do not comply with the established criteria. Indeed, the considerable amount of firm-year observations enables us to obtain the optimal size of the sample.

4.4 Event study analysis method

Previous studies on the subject of financial market reactions to the different types of events indicate a wired variety of methods used by researchers to examine investors’ reaction. Multiple regression model to test the hypothesis of market reaction was implemented by Citron, D.B., et al (2008, p. 26). Experimental study techniques enabled O’Reilly (2010, p.8) to get the evidence of the investors’ perception of GCO. For instance, O’Reilly conducted experiment in order to investigate the value of audit opinion information content, in which the auditor’s opinion and the opinion of industry specialists (proxy for market expectations) were manipulated. To examine the value of audit opinion content Bessel et al (2003, p.269) employed survey approach based on the questionnaire, which was addressed to the loan officers granting the loans to financially distressed companies.

Our choice of the event study analysis, i.e. constant-mean and market-adjusted returns models in particular, was determined by the best practice of the recent studies as well as availability of collected empirical data. Another advantage of the models is that GCO announcement effect can be captured spanning a short-time interval compared to the long-term Buy-and-Hold abnormal returns model. Also the applied models contribute to the cross-sectional approach within the specific Australian market environment, hence market-based methodology appears to be appropriate for our research.

In order to examine market reaction to the GCO modifications we detect the change in stock prices and returns as a result of GCO public announcements. Corresponding to this purpose, we apply an event study analysis as a technique that enables a researcher to modify the impact of any particular event on a firm’s stock price (Bodie et al., 2009, pp. 353-356). Principle at the root of the method infers that current stock prices incorporate all information available to the financial market, while incremental information content will cause the change in stock prices. Thus the impact of the announcement event on the value of a company can be measured by occurred abnormal returns (Campbell et al., 1997, pp. 150-152), which are estimated as the difference between the actual and expected (normal) returns. In this respect, the abnormal returns are referred to the unexpected returns that result from the event, and the impact of the event is measured by estimating abnormal returns once the event’s information is known to the market. In order to detect the effect of GCO modification announcements we examine whether there are any abnormal returns around the public announcement date, meaning that new information is delivered to the market participants. In case if the statistically significant abnormal returns occur, we may draw a conclusion that GCO possesses information content.

Then and there we outline the main steps of the event study analysis method for the purpose of estimating the stock market reaction to the GCO announcements (See the Figure 5). The basic idea of the method is to define the statistically significant abnormal returns occurred due to the particular event. So identification of the abnormal returns and subsequent testing of its significance are the major aspects of the event study. Hereafter, the outlined steps are discussed in the more detailed manner in regard of the stated research problem.
Figure 5. Event study procedures outline

Two general approaches outlined in academic literature (Campbell et al., 1997, pp. 150-152, Bodie et al., 2009, pp. 353-356) in order to estimate abnormal returns, namely statistical and economic. The authors emphasize the importance of approaches combination based on the statistical and market participants’ behavior assumptions. Our study brings into focus the statistical approach in regard of the constant-mean and market-adjusted returns models, which are first used in Farma et al (1969) and subsequently discussed in Shevlin (1981) and Brown & Warner (1985). To mention, some authors claim that constant-mean model is deemed to be simplified model, which exercises less precision in estimating the abnormal returns compared to the more sophisticated models (Campbell et al., 1997, p. 155). In addition, multifactor statistical models, which are also applied in practice, potentially provide the benefit of reducing the variation of abnormal returns and, hence, increasing precision of the model. But at the same time constrains of using these models relate to the small marginal explanatory power of additional factors beyond the market factor (Campbell et al., 1997, p. 156). Also there are some limitations on the sample, which is required to be more or less heterogeneous, e.g. the companies should belong to the same industry or market capitalization group. For these matters, we have chosen to apply in addition to the constant-mean model the statistical model adjusted to the market specific features in order to examine financial market reaction to the GCO modifications.
In order to test the estimated abnormal returns and draw conclusions concerning its statistical significance we exercise parametric Student t-tests and non-parametric Mann-Whitney and Wilcoxon test. In order to conduct the robustness test to assure certain level of credibility of the results we have employed both types of the tests since they correspond to the dissimilar assumptions for the sample properties.

4.4.1 Event definition

In the paper we examine the effect of going concern modification announcements in the form of modified and unmodified GCO audit opinions with daily closing prices of the traded companies from the perspective of the preliminary and final reporting dates. Consequently, on the part of the final reporting an event date \((E_1)\) attributes to the date of the public announcement of the final annual financial statements, which include going concern modifications. Meantime for the purpose of the preliminary disclosure, the event date \((E_2)\) appears to be the date of the ASX lodging of the preliminary report, which contains comprehensive financial information except for auditor’s opinion statement. Since audit reports are disclosed in the final and preliminary financial statements obligatory lodged by the companies to ASX on a timely basis, the date of the announcement stated in the ASX historical announcement database is considered to be the event date.

4.4.2 Estimation, event and post-event window periods

Since we have defined the event date, the next step is to choose a surrounding the announcement date period, which will be examined by detecting occurrence of the abnormal returns. For the purpose of the analysis, we split observation period into three windows as stated by Campbell et al (1997, p. 157): estimation, event, and post-event windows. Estimation window applies to the normal returns before the GCO is announced, while post-event window attributes to the abnormal returns as a market reaction to the announcement. It is common practice to estimate the expected or normal returns using daily stock prices based on the historical data and calculated by means of market model parameters, which are appraised of 150 days before the event (Campbell et al., 1997, p. 156). Also the event window is excluded from the period of parameters estimation to keep the event away from influence to the normal returns.

The power of a test is affected by the duration of taken estimated and post-event windows. The longer the period before and after the event date, the more factors might contaminate the findings of the test since many other undetected events might cause an impact on the market reaction within the observed period. Correspondently, the choice of the estimated, event, and post-event windows was based on the best practice of the previous studies. Majority of the empirical papers define observed period within 7 days before and after the event (Al-Thuneibat et al., 2008, p. 92) while some of them use 5 days (Herbohn K. et al., 2007, p. 480), 10 days (Chen, K.C., & Church B.K., 1996, p. 121), 20 days (Firth M.A., 1978, p. 645). Taking into consideration the finding of Shaub M. (2006, p. 1163) regarding financial market overreaction, which is evidenced by immediate negative abnormal returns after the announcement of audit opinion and significant stock price reversal on the tenth post-event day. To avoid market reversal effect, our choice of the test period, and, equal to
7 days of estimated and 7 days of post-event windows around the announcement event date, comprises in a total of the 15 days observation period (see the Figure 6).

According to the Figure 6 the estimated, pre- and post-event windows are defined as follows:

- **[T₀; T₁]** – Estimated window comprised of 150 days prior to the preliminary and final testing period;

- **[T₁; T₂]** – Pre-event window within the preliminary test period comprised of 7 days prior to the preliminary event date ($E₂$);

- **[T₂; T₃]** – Post-event window within the preliminary test period comprised of 7 days after to the preliminary event date ($E₂$);

- **[T₃; T₄]** – Pre-event window within the final test period comprised of 7 days prior to the final event date ($E₁$);

- **[T₄; T₅]** – Post-event window within the final test period comprised of 7 days after to the final event date ($E₁$);

- $E₁$ – Final announcement event date;

- $E₂$ – Preliminary announcement event date.

### 4.4.3 Actual returns

Actual returns are computed based on the daily closing price data adjusted to the changes in the capital. Daily returns are adjusted for dividends. Estimation of the actual returns is expressed by the formula:

$$ R_{it} = \ln(P_{i,t} + D_{i,t}) - \ln(P_{i,t-1}) $$

(1)

where:
$R_{i,t}$ — actual return on security $i$ on day $t$,

$P_{i,t}$ – closing price of security $i$ on day $t$,

$P_{i,t-1}$— closing price of security $i$ on day $t-1$,

$D_{i,t}$ — net dividend for security $i$ paid during ex-dividend day $t$.

In order to improve the properties of the returns for further analysis we apply log returns. The theoretical and empirical reasons determine the choice of logarithm returns instead of the discrete returns data. Theoretically, log returns expose analyst to the more simplified mathematical options in terms of adding and subtracting the returns within the observed sub-periods. Empirically, log returns are more likely to have normal distribution properties, which is crucial assumption for the most statistical methods.

In line with the logic of the testing established hypotheses, we estimate the actual returns both within final and preliminary testing periods.

### 4.4.4 Normal returns

In the research practice regression and non-regression approaches are commonly used in order to determine the normal returns. The model-selection framework of our paper depends on the characteristics of the analyzed data.

Regression-based studies mostly apply linear market-adjusted model (Cable & Holland, 1999, p. 81). The market-adjusted returns model is a one-factor statistical model, which relates the return of any given stock to the market portfolio return (Campbell et al., 1997, p. 155). In order to appraise an impact of the event the market-adjusted returns model is focused on the abnormal returns, which are calculated as a difference between the stock’s actual prior returns and expected returns as estimated by the single (index) market model (Campbell et al., 1997, p. 158, Schaub M., 2006, p. 1166).

In this case the assumptions of normality and identical and independent distribution of the returns should be respected. Other scientists apply non-multiple regression models like index model (Equation 2) and constant-mean model (Equation 3) for the purpose of normal returns evaluation, which are considered to be less sophisticated models.

$$R_{i,t} = R_{m,t} + \varepsilon_{i,t} \quad (2)$$

$$R_{i,t} = \mu_i + \varepsilon_{i,t} \quad (3)$$

where:

$R_{m,t}$ — return on the market portfolio based on the S&P Small Ordinaries index or S&P/ASX Emerging Companies Index on day $t$,

$\mu_i$ — mean actual returns of security $i$ within estimated window prior the event,
\( \epsilon_{i,t} \) — the zero mean disturbance term which has the null expected value and \( \sigma^2 \) variance.

Vast majority of event studies applied regression-based market-adjusted returns model. The model determines linear correlation between the returns on the market portfolio \( R_{m,t} \) and expected (or normal) returns \( R_{i,t} \). The implication of the model defines that the return on a stock is correlated to some extent with the return on the stock market of which it is part. In the long term, riskier shares should earn higher returns if investors are risk averse (Armitage, 1995, p. 26).

\[
(R_{i,t} | X_t) = \alpha_i + \beta_i (R_{m,t}) + \epsilon_{i,t}, \tag{4}
\]

where:

\[
E(\epsilon_{i,t}) = 0 , \tag{5}
\]

\[
Var(\epsilon_{i,t}) = \sigma^2_{i,t} \tag{6}
\]

\( (R_{i,t} | X_t) \) — normal return on security \( i \) on day, which is expected if the event \( X_t \) did not take place,

\( X_t \) — conditional information regarding going concern modification announcement on day \( t \).

\( R_{m,t} \) — return on the market portfolio based on the S&P Small Ordinaries indices or S&P/ASX Emerging Companies Index\(^1\) on day \( t \),

\( \alpha_i, \beta_i \) — the OLS estimates of the market model parameters,

\( \epsilon_{i,t} \) — the zero mean disturbance term which has the null expected value and \( \sigma^2 \) variance.

Another nonregression-based classic model, which is used to estimate the normal returns, is Capital Asset Pricing Model (CAMP). The model takes into consideration the particular security risk as well the market risk. CAMP model is out of the research methods applied in the study since it not well recognized and commonly used in the previous research literature due to lack of precision of the model and theoretical contribution mainly.

For the purpose of calculating the normal (expected) returns we apply both constant-mean and market-adjusted returns models. The last one is based on the market portfolio returns. In order to evaluate the returns on the market portfolio of the sample companies with the

---

\(^1\) Some studies, for instance Citron D.B. et al (2008, p. 23), Herbohn K. et al (2007, p. 480), and Taffler, R. J. et al (2004, p. 268) utilize market indexes based on the size of a market capitalization such as Small Cap Return market Index, or Small ordinaries index. Since our sample companies are predominantly with small capitalization parameters, therefore we examine both S&P/ASX Small Ordinaries Index and S&P/ASX Emerging Companies Index in order to find out better fitted index for the empirical data. Finally we utilize S&P/ASX Emerging Companies Index for the purpose of computing the returns on market portfolio.
market capitalization below 100 million Australian dollars, S&P/ASX Small Ordinaries Index and S&P/ASX Emerging Companies Index are used for the small capitalization companies, which received GCO modification.

Furthermore, by means of linear regression we estimate $\alpha_i$ and $\beta_i$ parameters, where coefficient $\beta_i$ defines the type of correlation between the market portfolio and expected returns (Campbell et al., 1997, pp. 150-152).

For the purpose of computing the normal returns, there is an assumption, which implies that returns on the market portfolio are independently normally distributed, although empirical support for this assumption in the many empirical studies is rather weak.

### 4.4.5 Abnormal returns

Abnormal returns computed using Equation (7) as the difference between actual and normal returns.

$$AR_{i,t} = R_{i,t} - (R_{i,t} | X_t)$$

where:

- $AR_{i,t}$ — abnormal return on security $i$ for day $t$,
- $R_{i,t}$ — actual return on security $i$ on day $t$,
- $(R_{i,t} | X_t)$ — normal return on security $i$ on day, which is expected if the event $X_t$ did not take place.

Since we have applied both constant-mean and market-adjusted models in order to estimate the normal returns, the approach to compute the relevant abnormal returns by means of the mentioned models is further detailed as follows:

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{m,t})$$

$$AR_{i,t} = R_{i,t} - \mu_i$$

From the perspective of the two testing periods, i.e. final and preliminary, the abnormal returns were calculated for each company with GCO during the pre-event and post-event windows over the event announcement dates ($E_1$ and $E_2$).

### Average abnormal returns

Once the abnormal returns are calculated, the statistical tests are conducted in order to detect if these returns are statistically significant and different from zero. According to Campbell et al. (1997, pp. 150-152), the observations of abnormal returns must be
aggregated for making a conclusion of the event of interest.\(^2\) In addition, the aggregation is conducted across shares and through the time in the event window in order to attribute to a powerful test. For this purpose, firstly we estimate the average abnormal returns aggregated across the days for the sample companies with GCO within the testing period as follows:

\[
\text{AAR}_i = \frac{1}{n} \sum_{t=1}^{n} \text{AR}_{i,t}
\]  

(8)

where:

\(\text{AAR}_i\) – average abnormal return on security \(i\) for the estimated, event, and post-event windows of preliminary and final event dates (\(T_1, T_3\)) and (\(T_3, T_5\)),

\(\text{AR}_{i,t}\) – abnormal return on security \(i\) for day \(t\),

\(n\) – number of the days within testing period.

Secondly, we aggregate abnormal returns across the sample companies for each day of the testing period as follows:

\[
\text{AAR}_t = \frac{1}{N} \sum_{i=1}^{N} \text{AR}_{i,t}
\]  

(9)

where:

\(N\) – number of the sample companies with GCO within each day of the testing period.

**Cumulative abnormal returns**

Hereafter, the overall effect of the GCO announcements within the two testing time periods is examined by estimating the cumulative average abnormal returns (hereafter CAR) separately. The impact is investigated during the test period within the pre-event and post-event periods of 7 days each around the event date.

One of the reasons to measure the cumulative abnormal return is the concern about the leakage of information before the official announcement date. Hypothetically the leakage of information related to the GCO announcements might cause the change in stock prices days and weeks prior the announcement event day. For this purpose, we scrutinize rather short time period within the estimation, event and post-event windows by evaluating CAR. In order to measure the total effect of the GCO on the stock prices during the pre-event and post-event windows around the event date the CAR are of a great use to determine the overall stock effect.

In order to compute cumulative abnormal return we aggregate the average abnormal returns for the event across the pre-event and post-event windows separately:

\(^2\) Many researchers do not report cumulative abnormal returns, but draw inferences concerning market reaction based on the statistic t-test of null hypothesis of abnormal returns value.
\[ \text{CAR}_{\text{PRE}} = \sum_{i=1}^{n} \text{AAR}_{i,t} \quad (10.1) \]
\[ \text{CAR}_{\text{POST}} = \sum_{i=1}^{n} \text{AAR}_{i,t} \quad (10.2) \]

where:

\text{CAR}_{\text{PRE}} – cumulative average abnormal returns for the pre-event window within each testing period \((T_1, T_2)\) and \((T_3, T_4)\).

\text{CAR}_{\text{POST}} – cumulative average abnormal returns for the post-event window within each testing period \((T_2, T_3)\) and \((T_4, T_5)\).

In addition, cumulative effect over all sample companies is estimated by means of \text{CAR} aggregated across the days for each company within the testing period:

\[ \text{CAR}_t = \frac{1}{n} \sum_{i=1}^{n} \text{CAR}_i \]

For the purpose of testing the first hypothesis \((H_1)\) we compare \text{CAR}_{\text{POST}} and \text{CAR}_{\text{PRE}} around the final event date. In case the difference between the cumulative average abnormal returns is statistically significant, we accept \(H_1\). As to the second hypothesis tests \((H_2)\), we measure the difference between in \text{CAR}_{\text{POST}} for preliminary and final event dates. \(H_2\) is accepted if the \text{CAR}_{\text{POST}} for the preliminary announcement significantly differentiate from the \text{CAR}_{\text{POST}} for the final announcement of GCO.

Hereafter, the approaches for testing statistical significance of AAR and \text{CAR} are denoted.

\textit{4.4.6 Significance tests of abnormal returns}

There is wide variety of the approaches used to measure significance of the estimated abnormal returns in research literature. In general the choice of the approach is determined by the statistical properties of the empirical data. The two commonly used statistic test methods are discussed in the paper, namely \textit{parametric t-test} and \textit{non-parametric Mann-Whitney and Wilcoxon test}.

Many event studies measured significance of the abnormal returns by means of a parametric t-test (Al-Thuneibat A. et al., 2008; Jones F. 1996; Louder M., 1992; Schaub M., 2006, etc.), non-parametric tests (Herbohn K. et al., 2007) and both types of the tests (Ball R. et al., 1979; O’Reilly D., 2010). Simplicity of the \textit{t-test} implies to comparison of the sample means by calculating Student’s \(t\) and estimation of the two-tailed probability of the difference between the means. However, despite its simplicity, power, and robustness, the one-sample and independent-samples \(t\)-tests require certain critical assumptions to be met. More specifically, the standard \(t\)-test for mean abnormal returns assumes that abnormal returns are normally distributed and independent in time-series (Khotari, & Warner, 2006, p.16). This assumption is of a great concern in rather small samples of empirical data and short event windows, which is the case in the outlined study.
Therefore, in order to perform robust test of the delivered results we apply additional non-parametric Mann-Whitney and Wilcoxon test, which does not hold any assumptions regarding parameters of a distribution of the abnormal returns. Two popular non-parametric tests of location (or central tendency) – the Mann-Whitney and Wilcoxon tests – and a test of location and shape – the two-sample Kolmogorov-Smirnov test – are performed for the purpose of significance tests.

To overcome the limitation of the small sample size of the ASX listed companies with GCO, both types of significance tests are conducted in order to measure the significance of the abnormal returns. We expect to obtain consistent results from the both t-test and non-parametric tests, though the statistical properties of the empirical data are more suitable for the non-parametric tests.

As to advantages of the event study methodology, we acknowledge an ability to detect the stock price response to the particular event of interest, i.e. GCO announcements. The simplicity and power of the method’s design facilitate identification of the abnormal market performance. Also another positive aspect of the event study method application is availability of the public empirical data, which is inevitable benefit from the perspective of any researcher. Furthermore, we assume that the results grounded on the method are easy to interpret. One of the commonly documented concerns of the event study method is inherent to requirement of the sufficient control for the factors other than event, which is difficult to comply with in practice. Also the event study limitation corresponds to the certain assumptions, which are discussed in more detail hereafter.

### 4.4.7 Event study assumptions

In general, a conclusion drawn from an event study analysis appears to be valid if a researcher truly detected the abnormal returns associated with the event of a particular interest. Correspondently, according to McWilliams and Siegel (1997, p. 629) the event study methodology contributes to the validity of the testing hypotheses only in case the predetermined assumptions are respected. The assumptions of the event study, which attributes to the current paper, are listed below:

1. **The efficient market hypothesis is held.**

   It is a matter of common knowledge that market efficiency implies that stock prices incorporate all relevant information, which is available to a market at a certain moment of time (Fama, 1965, P.34). Any new price-sensitive information content, which is introduced to the market, will be instantaneously incorporated into the stock prices. For this reason, it is assumed possible to measure abnormal behavior of the stock prices after the event has occurred, which subsequently causes the impact on the price adjustments. As a remark, efficient market hypothesis in our research is assumed to be in a semi-strong form, meaning that both past and new public available information is reflected in the stock prices.

Since the present paper examines the abnormal returns in a short-term period, we hold an assumption, that market is efficient and the effect of the GCO announcement event
is quickly incorporated into stock prices. Yet depending on the type of event some researchers of the long-term period studies stand for the idea, claiming that information is revealed to investors slowly over a period of time.

2. The event is not anticipated.

We support the mentioned assumption, expecting that GCO public announcements should deliver new information on the part of auditors to the market participants. In order to assure that the event has not been anticipated by investors based on the preliminary disclosed financial information we examine the difference in the abnormal returns around the final and preliminary reporting dates.

3. There are no confounding effects during the event window.

As to the uncontaminated results of the study, we isolate the effect of the GCO announcements from the effects of the other major price-sensitive events. To avoid the impact of the public announcements other than GCO we set the strict requirements to the sample companies. Also rather short pre- and post-event windows, equal to 7 days each, make possible to gain control over the other contaminating effects within the event window. To mention, significant amount of the studies on the subject of market reaction do not comply with the assumption, which cast a doubt on the validity of presented results.

To conclude, by accomplishing the outlined event study procedures in line with the relevant assumptions we test the developed hypotheses on the subject of detection of the ASX financial market reaction to the public announcements of GCO in a short-term period. Since GCO modification is a signal of impending bankruptcy within the one year time period, our a priori expectations suggest negative investors’ reaction to the corresponding public announcements. In order to detect the stock price effect, caused by the audit opinion disclosure in particular, we examine the difference in the abnormal returns over the preliminary and final reporting dates. To the extent that market will not react to the GCO final announcement, we expect that the major information content on the going concern contingency has been delivered by the preliminary financial report. This circumstance would indicate that GCO announcement was anticipated by the market participants, and the audit report does not add value in terms of going concern issue. The following Chapter 5 provides an empirical evidence of the ASX market reaction based on the practical methods discussed previously.
Chapter 5: Empirical evidence and analysis

5.1 Introduction

The Chapter is focused on the empirical analysis performance according to the procedures outlined previously. At first the main sample companies’ parameters are presented for the descriptive purposes. Then and there the event study method is applied by means of the average and cumulative abnormal returns estimations with further parametric and non-parametric significance testing. As a result of the analysis, the empirical findings are discussed at the end of the Chapter, which enables us to draw a conclusion on the research problem.

5.2 Descriptive statistics of the sample

The major focus of the study is GCO public announcements in the Australian financial market context. For the purpose of the sample selection we examined the final annual financial statements with disclosed audit opinion reports of all the ASX-listed companies for the period of announcements from 1 January 2007 to 31 December 2009. The population of the examined public companies comprised of 1168 firms, which is resulted in the 3209 firm-year observations within 2007-2009 time period. The ASX population includes all the industry sectors represented in the stock market with few exceptions. As mentioned earlier, we exclude the financial sector firms due to the unique capital requirements, financial accounting and reporting framework, and regulatory system within the sector. Furthermore, the mining sector companies are omitted as well since the preliminary financial statements disclosure is not followed through in terms of the ASX requirements. Nevertheless, a wide variety of the industry sectors attributes to the ASX population properties.

Moreover, the breakdown of the companies on the basis of the audit opinion type indicates the dominant portion of the Unmodified type of opinion, which is presented in the Figure 7.
In light of the paper’s research problem we centre on the audit opinions associated with the going concern issues only. Thus we narrow down to the empirical data choice to the GCO issued to the companies within established time period, while non-GCO reports are not considered for the purpose of the further sampling.

In such a manner, our prime GCO sample consist of 214 of Unmodified audit opinions with “Emphasis on matter paragraph” regarding going concern uncertainty and 25 Modified audit opinions, in the total amount of 239 firm-year observations.

In line with the selection criteria, which were introduced previously, we thoroughly examine the properties of the prime sample of the GCO firms to avoid contaminating results of the event study analysis. Gradually we exclude the companies, which do not comply with the sample requirements and finally arrive to the “uncontaminated” sample amounted by 29 firm-year observations. The process of sample selection is summarized in the Table 2.
### TABLE 2
Sample selection process according established sample criteria

<table>
<thead>
<tr>
<th>Sample criterion</th>
<th>Unmodified</th>
<th>Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prime GCO sample</strong></td>
<td>214</td>
<td>25</td>
</tr>
<tr>
<td>1. First-time issued GCO</td>
<td>-49</td>
<td>-12</td>
</tr>
<tr>
<td>2. Preliminary report occurrence</td>
<td>-60</td>
<td>-4</td>
</tr>
<tr>
<td>3. Non-occurrence of other price sensitive announcements within final event window</td>
<td>-44</td>
<td>-5</td>
</tr>
<tr>
<td>4. Consistence of final and preliminary earnings announcements</td>
<td>-18</td>
<td>-1</td>
</tr>
<tr>
<td>5. Non-occurrence of bankruptcy filing prior GCO announcements</td>
<td>-4</td>
<td>0</td>
</tr>
<tr>
<td>6. Non-occurrence of zero or thin trading volume trading</td>
<td>-13</td>
<td>0</td>
</tr>
<tr>
<td><strong>Final GCO sample</strong></td>
<td>26</td>
<td>3</td>
</tr>
</tbody>
</table>

Correspondently, firstly we consider the initial GCO disclosures for all the ASX public companies. Out of the prime sample of GCOs 61 firms with recurring audit opinion modifications were eliminated.

Hereafter, the 64 preliminary financial reports were not detected prior to the final GCO, which places limitations of the ability to distinguish the market reaction to the audit opinion announcements apart of the other financial figures concerning the business performance of a company. Even though ASX Company Announcement Platform recognized the mentioned reports as preliminary, the date of the announcement coincided with the date of final annual financial statements announcement. For this reason, we assume that the relevant companies have not disclosed prior financial information.

Further adjustment of the sample grounds on the occurrence of the price-sensitive public announcements other than GCO lodged to the ASX Company Announcement Platform, within the event window. In amount of 49 GCO companies were excluded due to the public announcements on the subject of capital changes, making buy-back, director meetings, change of top-management and auditors, director’s interests, announcements addressed to shareholders and other essential information for the investor’s decision making process.

Moreover, the 19 firm-year observations were counted out since the earnings figures in the preliminary report are not consistent with the financial indicators of the final disclosure. In order to avoid the contaminating effect of investors’ reaction to the unexpected earnings changes, which might be perceived as a good or bad news, we eliminate the corresponding GCOs from the sample.
Among the adjusted sample companies, 4 of them started initiation of the bankruptcy cases prior to the GCO announcements. Thus the auditor reports only confirm the prior announcements of the companies concerning subsequent discontinuing activity, which unables audit report to deliver new information for the market participants. Those companies are excluded from the final sample.

Lastly, the 13 GCO companies were left out as well since zero or thin volume trading was registered in ASX. In the case shares were not traded during the particular pre- and post-event days, the price of the stocks remained at the same level; hence, no capital market reaction can be predetermined in advance.

Taking all the aforesaid into consideration, the resulting final sample consists of 29 public companies announcing GCO in the final financial report for the period limited to 2007-2009 financial year performance. The list of the sample companies is disclosed in the Appendix. Of the total sample, 26 companies have received unmodified GCO with the “Emphasis on the matter paragraph” and the other 3 cases consist of the firms announcing modified audit opinion regarding the going concern uncertainty. The breakdown of the sample based on the types of issued audit opinion is presented in the Table 3.

<table>
<thead>
<tr>
<th>Types of GCO audit opinions issued to the sample companies</th>
<th>Number</th>
<th>Percentage of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualified audit opinion</td>
<td>3</td>
<td>10.34</td>
</tr>
<tr>
<td>Non-qualified audit opinion</td>
<td>26</td>
<td>89.66</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100.00</td>
</tr>
</tbody>
</table>

The major part of the sample GCO, implying to the 8 out of the 29 firm-year observations, was issued by Non-big-four auditor firms. The distribution of the sample GCOs grounded on the type of the auditor is expressed in the Table 4.

<table>
<thead>
<tr>
<th>Distribution of the sample companies based on the type of auditor</th>
<th>Number</th>
<th>Percentage of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big-four auditor</td>
<td>8</td>
<td>27.59</td>
</tr>
<tr>
<td>Non-big-four auditor</td>
<td>21</td>
<td>72.41</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100.00</td>
</tr>
</tbody>
</table>

The receipt of GCO is not evenly spread across the sample period of 2007-2009. There is noticeable increase in the number of first-time GCOs in 2009 as reported in the Table 5.

---

3 Big-four auditor firms are considered to be PricewaterhouseCoopers, Earnst&Yang, KPMG and Deloitte.
TABLE 5
Distribution of the sample companies by years within observed time period

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sample GCO audit reports per year</td>
<td>4</td>
<td>9</td>
<td>16</td>
</tr>
</tbody>
</table>

The final GCO sample consists of the 13 industry sectors including consume discretionary, consumer staples, energy, industrials, information technology, health care, materials, telecommunication services and utilities industries according to the Global Industry Classification Standard applied in the ASX. The breakdown of the final sample by industry is presented in Table 6.

TABLE 6
Industry distribution of the sample companies

<table>
<thead>
<tr>
<th>Industry sector</th>
<th>Number</th>
<th>Percentage of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Goods</td>
<td>3</td>
<td>10.34</td>
</tr>
<tr>
<td>Consumer Durables &amp; Apparel</td>
<td>3</td>
<td>10.34</td>
</tr>
<tr>
<td>Consumer Services</td>
<td>1</td>
<td>3.45</td>
</tr>
<tr>
<td>Energy</td>
<td>1</td>
<td>3.45</td>
</tr>
<tr>
<td>Food Beverage &amp; Tobacco</td>
<td>2</td>
<td>6.90</td>
</tr>
<tr>
<td>Health Care Equipment &amp; Services</td>
<td>2</td>
<td>6.90</td>
</tr>
<tr>
<td>Industrials</td>
<td>1</td>
<td>3.45</td>
</tr>
<tr>
<td>Materials</td>
<td>1</td>
<td>3.45</td>
</tr>
<tr>
<td>Pharmaceuticals, Biotechnology &amp; Life Sciences</td>
<td>4</td>
<td>13.79</td>
</tr>
<tr>
<td>Software and services</td>
<td>7</td>
<td>24.14</td>
</tr>
<tr>
<td>Technology Hardware &amp; Equipment</td>
<td>1</td>
<td>3.45</td>
</tr>
<tr>
<td>Telecommunication Services</td>
<td>2</td>
<td>6.90</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>1</td>
<td>3.45</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Summary descriptive statistic of the final GCO sample is presented in the Table 7 and Table 8. According to the obtained data the mean size of the companies, amounted by 14.15M A$, does not exceed the 100M A$ criteria. Consequently, the S&P/ASX Emerging Companies Index, which is attributable to the micro capitalization public firms, appears to be an appropriate measure of the returns on the market portfolio applied in the market-adjusted mode. The positive working capital figure of 1.36M A$ indicates that the current assets of the sample companies are in excess of the current liabilities, which is affirmative indicator of the sufficient operating liquidity. The mean current ratio of 1.86 supports the acceptable level of liquidity, though each industry possesses specific demands to the acceptable levels operational liquidity. At the same time some statistic properties of the
sample indicate that the companies are experiencing financial distress based on the high leverage (more than estimated acceptable level 2.0), significant mean losses in amount of 4.56M A$ and Altman’s Z-score metric of 0.52, indicating a very high risk of the bankruptcy in a short term perspective.

**TABLE 7**

Descriptive statistics of a sample of 29 non-finance companies with initial GCO audit opinion announcements, which are listed in ASX for the period from 2007 to 2009, (n=29).

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market capitalization (M, A$)</td>
<td>14.153</td>
<td>6.160</td>
<td>0.100</td>
<td>90.630</td>
</tr>
<tr>
<td>Total assets (M, A$)</td>
<td>87.570</td>
<td>4.634</td>
<td>0.049</td>
<td>1790.121</td>
</tr>
<tr>
<td>Working capital (M, A$)</td>
<td>1.359</td>
<td>0.110</td>
<td>-19.647</td>
<td>67.339</td>
</tr>
<tr>
<td>Current ratio</td>
<td>1.857</td>
<td>1.153</td>
<td>0.010</td>
<td>10.270</td>
</tr>
<tr>
<td>Leverage</td>
<td>2.211</td>
<td>0.948</td>
<td>-5.100</td>
<td>17.950</td>
</tr>
<tr>
<td>Profit / Loss (M, A$)</td>
<td>-4.561</td>
<td>-1.819</td>
<td>-64.319</td>
<td>3.204</td>
</tr>
<tr>
<td>Z-score</td>
<td>0.519</td>
<td>0.789</td>
<td>-5.522</td>
<td>3.353</td>
</tr>
</tbody>
</table>

The table is based on the financial performance of the sample companies for the end of the year in which the audit opinion with going concern modification announcement occurred. The descriptive statistic parameters are defined as follows: Working capital is equal to the difference between the current assets and current liabilities; Current ratio is computed as current assets divided by current liabilities; Leverage is given by total liabilities divided by equity; Profit /Loss is profit/loss attributable to the ordinary shareholders; and Atman’s Z-score (1968).

**TABLE 8**

Other properties of the sample companies

<table>
<thead>
<tr>
<th></th>
<th>Number of cases</th>
<th>Percentage of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit (number of positive cases)</td>
<td>6</td>
<td>20.69</td>
</tr>
<tr>
<td>Retained earnings (number of positive cases)</td>
<td>2</td>
<td>6.90</td>
</tr>
<tr>
<td>High probability of bankruptcy (Z-score less than critical value of 1.8)</td>
<td>25</td>
<td>86.21</td>
</tr>
<tr>
<td>Number of delisted ASX companies within a subsequent year of the GCO announcement</td>
<td>4</td>
<td>13.79</td>
</tr>
</tbody>
</table>

In addition, the number of positive cases of Profit attributable to the ordinary shareholders across the sample companies is around 20%. Also the small number of positive cases for Retained earnings figure in amount of 2 indicates certain signs of financial troubled business conditions. The major part of the sample is composed of the companies with a high probability of the bankruptcy in a short-term period according to the Z-score estimation in the number of 25 out 29 companies.

Overall, we conclude that the strict requirements of the sample selection process significantly decreased the number of the GCO companies used for the purpose of the
further analysis. We acknowledge that the process of sample selection might be a potential source of bias insofar as it excluded the major part of the GCO, which resulted in a relatively small sample size. Nevertheless, we are of the opinion that implemented elimination is a necessary procedure in order to avoid contaminating effect of the findings, reported in the previous studies. Moreover, the size of the sample, amounted to 29 GCO firm-year observations, is suitable for the employed non-parametric test techniques in order to question the robustness of parametric test results.

5.3 Applied event study analysis

In the subsection we present the application of the event study analysis method in order to test the market reaction to the GCO public announcements for the selected sample companies. Following the previously outlined steps we compute the average abnormal returns and cumulative abnormal returns occurring between the day -7 and day +7 around the GCO public announcements. Then the significance tests are carried out by means of the parametric and non-parametric tests.

Following the logic of the method, the abnormal returns are computed as a difference between actual and estimated normal returns within the same testing period around the announcement date.

5.3.1 Actual returns

Based on the price information retrieved from the ASX database the actual log returns are estimated for both preliminary and final testing periods.

5.3.2 Normal returns

For the purpose of estimating of the normal returns for the pre-event and post-event windows we apply the two models, namely Constant-mean and Market-adjusted models. In our case the market-adjusted model implies the use of the OLS regression for the actual returns and returns on the market portfolio based on the ASX Index data within the estimated window comprised of 150 days prior to the announcements. The results of the OLS regression based on the commonly used S&P/ASX Small Ordinaries Index are not suitable for the returns data since the regression was statistically insignificant with 95% confidence level in the 26 cases out of 29 (see the Table 9). Also the low R-square parameter of applied linear regression, which is approximately close to zero, stands for a negligible explanatory power of the market return variable. The idea behind it is that the returns of the companies included in the Small Ordinaries Index are not correlated to the actual returns, performed by the sample companies. Thus there is no statistically significant relationship between the sample firms’ and market’s returns calculated with the S&P/ASX Small Ordinaries Index. Therefore, we do not consider the application of α and β estimates, based on the mentioned Index in order to define the normal returns performance.
TABLE 9
The Market-adjusted model estimated by OLS regression based on the S&P/ASX Small Ordinaries Index

<table>
<thead>
<tr>
<th>Company</th>
<th>$\mu$</th>
<th>$\alpha$</th>
<th>$\alpha$ sign.</th>
<th>$\beta$</th>
<th>$\beta$ sign.</th>
<th>$R^2$</th>
<th>$\sigma^2$</th>
<th>$F$-stat.</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAT</td>
<td>-0.0006</td>
<td>-0.001</td>
<td>(0.881)</td>
<td>0.140</td>
<td>(0.744)</td>
<td>0.001</td>
<td>0.0780</td>
<td>0.107</td>
<td>0.744</td>
</tr>
<tr>
<td>AIE</td>
<td>-0.0007</td>
<td>-0.003</td>
<td>(0.629)</td>
<td>1.049</td>
<td>(0.010)</td>
<td>0.043</td>
<td>0.0744</td>
<td>6.726</td>
<td>0.010***</td>
</tr>
<tr>
<td>APB</td>
<td>0.0010</td>
<td>0.000</td>
<td>(0.936)</td>
<td>0.240</td>
<td>(0.527)</td>
<td>0.003</td>
<td>0.0687</td>
<td>0.402</td>
<td>0.527</td>
</tr>
<tr>
<td>CKK</td>
<td>0.0016</td>
<td>0.002</td>
<td>(0.723)</td>
<td>-0.367</td>
<td>(0.430)</td>
<td>0.004</td>
<td>0.0845</td>
<td>0.626</td>
<td>0.430</td>
</tr>
<tr>
<td>COS</td>
<td>0.0022</td>
<td>0.002</td>
<td>(0.770)</td>
<td>0.205</td>
<td>(0.608)</td>
<td>0.002</td>
<td>0.0727</td>
<td>0.264</td>
<td>0.608</td>
</tr>
<tr>
<td>EFT</td>
<td>0.0003</td>
<td>0.000</td>
<td>(0.960)</td>
<td>0.009</td>
<td>(0.987)</td>
<td>0.000</td>
<td>0.0854</td>
<td>0.000</td>
<td>0.987</td>
</tr>
<tr>
<td>EIM</td>
<td>0.0006</td>
<td>-0.001</td>
<td>(0.879)</td>
<td>1.050</td>
<td>(0.258)</td>
<td>0.009</td>
<td>0.0790</td>
<td>1.289</td>
<td>0.258</td>
</tr>
<tr>
<td>GCN</td>
<td>0.0037</td>
<td>0.002</td>
<td>(0.770)</td>
<td>0.531</td>
<td>(0.348)</td>
<td>0.006</td>
<td>0.1027</td>
<td>0.886</td>
<td>0.348</td>
</tr>
<tr>
<td>GTP</td>
<td>-0.0115</td>
<td>-0.011</td>
<td>(0.087)</td>
<td>0.216</td>
<td>(0.456)</td>
<td>0.004</td>
<td>0.0735</td>
<td>0.558</td>
<td>0.456</td>
</tr>
<tr>
<td>HCT</td>
<td>-0.0024</td>
<td>-0.003</td>
<td>(0.726)</td>
<td>-0.388</td>
<td>(0.518)</td>
<td>0.003</td>
<td>0.0959</td>
<td>0.420</td>
<td>0.518</td>
</tr>
<tr>
<td>IAT</td>
<td>-0.0046</td>
<td>-0.004</td>
<td>(0.703)</td>
<td>0.666</td>
<td>(0.271)</td>
<td>0.008</td>
<td>0.1142</td>
<td>1.221</td>
<td>0.271</td>
</tr>
<tr>
<td>LRG</td>
<td>-0.0086</td>
<td>-0.009</td>
<td>(0.114)</td>
<td>-0.328</td>
<td>(0.497)</td>
<td>0.003</td>
<td>0.0655</td>
<td>0.465</td>
<td>0.497</td>
</tr>
<tr>
<td>MCL</td>
<td>0.0000</td>
<td>0.000</td>
<td>(0.997)</td>
<td>0.032</td>
<td>(0.956)</td>
<td>0.000</td>
<td>0.0929</td>
<td>0.003</td>
<td>0.956</td>
</tr>
<tr>
<td>MGZ</td>
<td>0.0030</td>
<td>0.002</td>
<td>(0.711)</td>
<td>0.413</td>
<td>(0.261)</td>
<td>0.009</td>
<td>0.0667</td>
<td>1.271</td>
<td>0.261</td>
</tr>
<tr>
<td>MNW</td>
<td>-0.0002</td>
<td>0.000</td>
<td>(0.976)</td>
<td>-0.146</td>
<td>(0.710)</td>
<td>0.001</td>
<td>0.0717</td>
<td>0.138</td>
<td>0.710</td>
</tr>
<tr>
<td>MWR</td>
<td>-0.0034</td>
<td>-0.003</td>
<td>(0.597)</td>
<td>0.826</td>
<td>(0.047)</td>
<td>0.026</td>
<td>0.0676</td>
<td>4.010</td>
<td>0.047**</td>
</tr>
<tr>
<td>NLG</td>
<td>0.0067</td>
<td>0.008</td>
<td>(0.408)</td>
<td>-0.498</td>
<td>(0.430)</td>
<td>0.004</td>
<td>0.1148</td>
<td>0.625</td>
<td>0.430</td>
</tr>
<tr>
<td>OLE</td>
<td>-0.0019</td>
<td>-0.002</td>
<td>(0.869)</td>
<td>-1.715</td>
<td>(0.038)</td>
<td>0.029</td>
<td>0.1118</td>
<td>4.361</td>
<td>0.038**</td>
</tr>
<tr>
<td>PIE</td>
<td>0.0006</td>
<td>0.001</td>
<td>(0.905)</td>
<td>-0.270</td>
<td>(0.701)</td>
<td>0.001</td>
<td>0.1276</td>
<td>0.148</td>
<td>0.701</td>
</tr>
<tr>
<td>PNO</td>
<td>0.0034</td>
<td>0.000</td>
<td>(0.994)</td>
<td>1.867</td>
<td>(0.113)</td>
<td>0.017</td>
<td>0.2186</td>
<td>2.542</td>
<td>0.113</td>
</tr>
<tr>
<td>PTO</td>
<td>-0.0022</td>
<td>-0.003</td>
<td>(0.854)</td>
<td>0.152</td>
<td>(0.872)</td>
<td>0.000</td>
<td>0.1707</td>
<td>0.026</td>
<td>0.872</td>
</tr>
<tr>
<td>QTM</td>
<td>0.0024</td>
<td>0.003</td>
<td>(0.662)</td>
<td>0.797</td>
<td>(0.132)</td>
<td>0.015</td>
<td>0.0843</td>
<td>2.293</td>
<td>0.132</td>
</tr>
<tr>
<td>RTL</td>
<td>-0.0099</td>
<td>-0.010</td>
<td>(0.330)</td>
<td>-0.050</td>
<td>(0.947)</td>
<td>0.000</td>
<td>0.1238</td>
<td>0.004</td>
<td>0.947</td>
</tr>
<tr>
<td>RZR</td>
<td>-0.0054</td>
<td>-0.005</td>
<td>(0.265)</td>
<td>0.084</td>
<td>(0.819)</td>
<td>0.000</td>
<td>0.0586</td>
<td>0.052</td>
<td>0.819</td>
</tr>
<tr>
<td>SNR</td>
<td>0.0012</td>
<td>0.002</td>
<td>(0.803)</td>
<td>-0.425</td>
<td>(0.456)</td>
<td>0.004</td>
<td>0.1036</td>
<td>0.558</td>
<td>0.456</td>
</tr>
<tr>
<td>SOM</td>
<td>0.0009</td>
<td>0.000</td>
<td>(0.961)</td>
<td>0.312</td>
<td>(0.370)</td>
<td>0.005</td>
<td>0.0639</td>
<td>0.809</td>
<td>0.370</td>
</tr>
<tr>
<td>TAN</td>
<td>-0.0010</td>
<td>-0.001</td>
<td>(0.835)</td>
<td>0.316</td>
<td>(0.065)</td>
<td>0.023</td>
<td>0.0347</td>
<td>3.459</td>
<td>0.065*</td>
</tr>
<tr>
<td>TEO</td>
<td>0.0019</td>
<td>0.000</td>
<td>(0.987)</td>
<td>0.842</td>
<td>(0.088)</td>
<td>0.020</td>
<td>0.0893</td>
<td>2.947</td>
<td>0.088*</td>
</tr>
<tr>
<td>VHL</td>
<td>0.0053</td>
<td>0.003</td>
<td>(0.633)</td>
<td>0.802</td>
<td>(0.082)</td>
<td>0.021</td>
<td>0.0816</td>
<td>3.074</td>
<td>0.082*</td>
</tr>
</tbody>
</table>

Notes: p-values are presented in parentheses.
*** Significant at the 99% level,
**  Significant at the 95% level,
*   Significant at the 90% level.

Correspondently, we have decided to execute the OLS regression based on another S&P/ASX Emerging Companies Index, which seems more suitable for the micro capitalization companies presented in the sample. Indeed, the results of the regression based on the S&P/ASX Emerging Companies Index are significantly improved compared to the previous Index data (see the Table 10).
**TABLE 10**
The Market-adjusted model estimated by OLS regression based on the S&P/ASX Emerging Companies Index

<table>
<thead>
<tr>
<th>Company</th>
<th>$\mu$</th>
<th>$\alpha$</th>
<th>$\alpha$ sign.</th>
<th>$\beta$</th>
<th>$\beta$ sign.</th>
<th>$R^2$</th>
<th>$\sigma^2$</th>
<th>$F$-stat.</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAT</td>
<td>-0.0006</td>
<td>-0.001</td>
<td>(0.913)</td>
<td>0.024</td>
<td>(0.961)</td>
<td>0.000</td>
<td>0.0780</td>
<td>0.002</td>
<td>0.961</td>
</tr>
<tr>
<td>AIE</td>
<td>-0.0007</td>
<td>0.001</td>
<td>(0.246)</td>
<td>0.220</td>
<td>(0.016)</td>
<td>0.039</td>
<td>0.0148</td>
<td>5.972</td>
<td>0.016**</td>
</tr>
<tr>
<td>APB</td>
<td>0.0010</td>
<td>-0.001</td>
<td>(0.875)</td>
<td>0.513</td>
<td>(0.226)</td>
<td>0.010</td>
<td>0.0685</td>
<td>1.481</td>
<td>0.226</td>
</tr>
<tr>
<td>CKK</td>
<td>0.0016</td>
<td>0.001</td>
<td>(0.870)</td>
<td>0.122</td>
<td>(0.815)</td>
<td>0.000</td>
<td>0.0847</td>
<td>0.055</td>
<td>0.815</td>
</tr>
<tr>
<td>COS</td>
<td>0.0022</td>
<td>0.002</td>
<td>(0.183)</td>
<td>0.183</td>
<td>(0.046)</td>
<td>0.027</td>
<td>0.0148</td>
<td>4.051</td>
<td>0.046**</td>
</tr>
<tr>
<td>EFT</td>
<td>0.0003</td>
<td>0.000</td>
<td>(0.988)</td>
<td>-0.622</td>
<td>(0.263)</td>
<td>0.008</td>
<td>0.0851</td>
<td>1.265</td>
<td>0.263</td>
</tr>
<tr>
<td>EIM</td>
<td>0.0006</td>
<td>0.001</td>
<td>(0.019)</td>
<td>0.071</td>
<td>(0.432)</td>
<td>0.004</td>
<td>0.0070</td>
<td>0.620</td>
<td>0.432</td>
</tr>
<tr>
<td>GCN</td>
<td>0.0037</td>
<td>0.003</td>
<td>(0.754)</td>
<td>0.274</td>
<td>(0.667)</td>
<td>0.001</td>
<td>0.1029</td>
<td>0.186</td>
<td>0.667</td>
</tr>
<tr>
<td>GTP</td>
<td>-0.0115</td>
<td>-0.004</td>
<td>(0.462)</td>
<td>1.321</td>
<td>(0.000)</td>
<td>0.122</td>
<td>0.0690</td>
<td>20.597</td>
<td>0.000***</td>
</tr>
<tr>
<td>HCT</td>
<td>-0.0024</td>
<td>-0.003</td>
<td>(0.722)</td>
<td>-0.486</td>
<td>(0.437)</td>
<td>0.004</td>
<td>0.0958</td>
<td>0.607</td>
<td>0.437</td>
</tr>
<tr>
<td>IAT</td>
<td>-0.0046</td>
<td>0.000</td>
<td>(0.969)</td>
<td>1.812</td>
<td>(0.001)</td>
<td>0.072</td>
<td>0.1105</td>
<td>11.545</td>
<td>0.001***</td>
</tr>
<tr>
<td>LRG</td>
<td>-0.0086</td>
<td>-0.009</td>
<td>(0.098)</td>
<td>0.421</td>
<td>(0.332)</td>
<td>0.006</td>
<td>0.0654</td>
<td>0.949</td>
<td>0.332</td>
</tr>
<tr>
<td>MCL</td>
<td>0.0000</td>
<td>0.002</td>
<td>(0.832)</td>
<td>1.508</td>
<td>(0.018)</td>
<td>0.037</td>
<td>0.0912</td>
<td>5.676</td>
<td>0.018**</td>
</tr>
<tr>
<td>MGZ</td>
<td>0.0030</td>
<td>0.001</td>
<td>(0.858)</td>
<td>0.549</td>
<td>(0.183)</td>
<td>0.012</td>
<td>0.0666</td>
<td>1.788</td>
<td>0.183</td>
</tr>
<tr>
<td>MNW</td>
<td>-0.0002</td>
<td>-0.002</td>
<td>(0.780)</td>
<td>0.441</td>
<td>(0.316)</td>
<td>0.007</td>
<td>0.0715</td>
<td>1.013</td>
<td>0.316</td>
</tr>
<tr>
<td>MWR</td>
<td>-0.0034</td>
<td>-0.002</td>
<td>(0.650)</td>
<td>1.343</td>
<td>(0.002)</td>
<td>0.061</td>
<td>0.0664</td>
<td>9.692</td>
<td>0.002**</td>
</tr>
<tr>
<td>NLG</td>
<td>0.0067</td>
<td>0.004</td>
<td>(0.674)</td>
<td>0.764</td>
<td>(0.278)</td>
<td>0.008</td>
<td>0.1146</td>
<td>1.185</td>
<td>0.278</td>
</tr>
<tr>
<td>OLE</td>
<td>-0.0019</td>
<td>-0.002</td>
<td>(0.829)</td>
<td>0.133</td>
<td>(0.859)</td>
<td>0.000</td>
<td>0.1134</td>
<td>0.032</td>
<td>0.859</td>
</tr>
<tr>
<td>PIE</td>
<td>0.0006</td>
<td>0.000</td>
<td>(1.000)</td>
<td>0.174</td>
<td>(0.825)</td>
<td>0.000</td>
<td>0.1277</td>
<td>0.049</td>
<td>0.825</td>
</tr>
<tr>
<td>PNO</td>
<td>0.0034</td>
<td>0.000</td>
<td>(1.000)</td>
<td>1.134</td>
<td>(0.395)</td>
<td>0.005</td>
<td>0.2199</td>
<td>0.727</td>
<td>0.395</td>
</tr>
<tr>
<td>PTO</td>
<td>-0.0022</td>
<td>-0.002</td>
<td>(0.910)</td>
<td>1.141</td>
<td>(0.275)</td>
<td>0.008</td>
<td>0.1700</td>
<td>1.200</td>
<td>0.275</td>
</tr>
<tr>
<td>QTM</td>
<td>0.0024</td>
<td>0.003</td>
<td>(0.638)</td>
<td>0.829</td>
<td>(0.159)</td>
<td>0.013</td>
<td>0.0844</td>
<td>2.003</td>
<td>0.159</td>
</tr>
<tr>
<td>RTL</td>
<td>-0.0099</td>
<td>-0.010</td>
<td>(0.329)</td>
<td>-0.093</td>
<td>(0.908)</td>
<td>0.000</td>
<td>0.1238</td>
<td>0.013</td>
<td>0.908*</td>
</tr>
<tr>
<td>RZR</td>
<td>-0.0054</td>
<td>-0.005</td>
<td>(0.281)</td>
<td>0.219</td>
<td>(0.590)</td>
<td>0.002</td>
<td>0.0586</td>
<td>0.291</td>
<td>0.590</td>
</tr>
<tr>
<td>SNR</td>
<td>0.0012</td>
<td>-0.003</td>
<td>(0.720)</td>
<td>1.226</td>
<td>(0.052)</td>
<td>0.025</td>
<td>0.1024</td>
<td>3.822</td>
<td>0.052**</td>
</tr>
<tr>
<td>SOM</td>
<td>0.0009</td>
<td>0.001</td>
<td>(0.924)</td>
<td>0.130</td>
<td>(0.740)</td>
<td>0.001</td>
<td>0.0641</td>
<td>0.111</td>
<td>0.740</td>
</tr>
<tr>
<td>TAN</td>
<td>-0.0010</td>
<td>-0.001</td>
<td>(0.838)</td>
<td>0.269</td>
<td>(0.080)</td>
<td>0.021</td>
<td>0.0347</td>
<td>3.108</td>
<td>0.080*</td>
</tr>
<tr>
<td>TEO</td>
<td>0.0019</td>
<td>-0.001</td>
<td>(0.942)</td>
<td>0.661</td>
<td>(0.234)</td>
<td>0.010</td>
<td>0.0897</td>
<td>1.429</td>
<td>0.234</td>
</tr>
<tr>
<td>VHL</td>
<td>0.0053</td>
<td>0.006</td>
<td>(0.402)</td>
<td>-0.200</td>
<td>(0.700)</td>
<td>0.001</td>
<td>0.0825</td>
<td>0.149</td>
<td>0.700</td>
</tr>
</tbody>
</table>

*Notes: p-values are presented in parentheses.
*** Significant at the 99% level,
** Significant at the 95% level,
* Significant at the 90% level.

Although the number of statistically significant cases have increased, the correlation coefficient remains rather low. One possible explanation might be the insufficient variation in the dependent variable, i.e. actual firm’s returns, within rather short time period of 150 days. In addition, the S&P/ASX Emerging Companies Index is comprised of the companies from all the industry sectors, while the companies from the financial and mining sectors are
excluded from the sample, which might affect the power of the Index-based returns on the market portfolio to explain dependent variable, i.e. actual returns. Another speculation might be that variation of the returns originates mainly from the company’s specific shocks. Nevertheless, we apply the significant $\alpha$ and $\beta$ estimates for the relevant companies computed on the better fitted S&P/ASX Emerging Companies Index, while the rest of the normal returns are estimated using constant mean Index-adjusted return model.

As to the assumptions of normality, the market returns based on the S&P/ASX Emerging Companies Index were tested by means of the one-sample Kolmogorov-Smirnov test. It can be concluded from the test that the market returns of the sample companies come from the normal distribution due to rejection of the null hypothesis with non-significant $p$-values at the level of 95% of confidence. At the same time, the test of the normal distribution properties inherent to the actual returns and normal (expected) returns does not provide any evidence of the sample normal distribution. Since classical OLS regression models require variables and, hence the error term, to be stationary over the time, the application of the market-adjusted model for the normal returns might be of a certain concern. Observed normal (expected) returns are not likely to be normal distributed due to the excess kurtosis. Dillen H. and Stoltz B. (1996, p. 5) entitle this phenomenon as a leptokurticity of returns, meaning that “the empirical distribution of returns has fat tails and high degree of peakedness as compared to the normal distribution”. As a commonplace practice, the normal distribution of the actual and normal returns is implicitly assumed.

### 5.3.3 Abnormal returns

The findings regarding the average abnormal returns (AAR) within the final testing period delivered by Constant-mean and Market adjusted models are disclosed in the Table 11. Student’s t-test is applied in order to measure the significance of the derived AAR. The returns are aggregated across the sample companies around each day of the event window, i.e. 15 observation days around the GCO public announcement. It can be drawn from the Table 11, that the both models indicate the similar results. More specifically, within the event window the AAR take positive and negative values, which betokens no evidence of any distinct market reaction to the event. At the same time most all the values of the AAR are not statistically significant since the $p$-values are greater than 0.01, 0.05 and 0.1, which indicates that the null hypothesis regarding the zero mean AAR cannot be rejected at the corresponding confidence levels. Therefore, the estimated AAR fluctuate randomly around the expected value of zero. At the same time the both Constant-mean and Market adjusted models provide an evidence of the statistically significant adverse AAR at the 6th day after the GCO announcement at 95% confidence level. Consistent with our expectations, the financial market reacts negatively to the GCO disclosure with a delay of 6 days after the announcement event. To note, there is no drastic statistically significant market effect on the announcement day and the day after, meaning that the prices do not incorporate the price-sensitive information immediately.
### TABLE 11
T-test results of the average abnormal returns (AAR) for the whole sample companies within the each day of the final testing period

<table>
<thead>
<tr>
<th>Day</th>
<th>( n )</th>
<th><strong>Constant-mean model</strong></th>
<th></th>
<th><strong>Market-adjusted model</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AAR</td>
<td>Stand. Dev.</td>
<td>Stand. Error</td>
<td>t-value</td>
</tr>
<tr>
<td>-7</td>
<td>29</td>
<td>-0.0210</td>
<td>0.0755</td>
<td>0.0140</td>
<td>-1.499</td>
</tr>
<tr>
<td>-6</td>
<td>29</td>
<td>-0.0002</td>
<td>0.0463</td>
<td>0.0086</td>
<td>-0.019</td>
</tr>
<tr>
<td>-5</td>
<td>29</td>
<td>0.0023</td>
<td>0.0621</td>
<td>0.0115</td>
<td>0.202</td>
</tr>
<tr>
<td>-4</td>
<td>29</td>
<td>-0.0226</td>
<td>0.1238</td>
<td>0.0230</td>
<td>-0.981</td>
</tr>
<tr>
<td>-3</td>
<td>29</td>
<td>-0.0032</td>
<td>0.0742</td>
<td>0.0138</td>
<td>-0.233</td>
</tr>
<tr>
<td>-2</td>
<td>29</td>
<td>-0.0037</td>
<td>0.0923</td>
<td>0.0171</td>
<td>-0.217</td>
</tr>
<tr>
<td>-1</td>
<td>29</td>
<td>-0.0059</td>
<td>0.0727</td>
<td>0.0135</td>
<td>-0.435</td>
</tr>
<tr>
<td>0</td>
<td>29</td>
<td>0.0387</td>
<td>0.1498</td>
<td>0.0278</td>
<td>1.391</td>
</tr>
<tr>
<td>1</td>
<td>29</td>
<td>-0.0132</td>
<td>0.0666</td>
<td>0.0124</td>
<td>-1.072</td>
</tr>
<tr>
<td>2</td>
<td>29</td>
<td>0.0066</td>
<td>0.1479</td>
<td>0.0275</td>
<td>0.240</td>
</tr>
<tr>
<td>3</td>
<td>29</td>
<td>-0.0051</td>
<td>0.0896</td>
<td>0.0166</td>
<td>-0.307</td>
</tr>
<tr>
<td>4</td>
<td>29</td>
<td>0.0011</td>
<td>0.0978</td>
<td>0.0182</td>
<td>0.062</td>
</tr>
<tr>
<td>5</td>
<td>29</td>
<td>0.0023</td>
<td>0.0507</td>
<td>0.0094</td>
<td>0.239</td>
</tr>
<tr>
<td>6</td>
<td>29</td>
<td>-0.0418</td>
<td>0.1060</td>
<td>0.0197</td>
<td>-2.122</td>
</tr>
<tr>
<td>7</td>
<td>29</td>
<td>-0.0030</td>
<td>0.0915</td>
<td>0.0170</td>
<td>-0.179</td>
</tr>
</tbody>
</table>

**Notes:**
*** Significant at the 99% level,
** Significant at the 95% level,
* Significant at the 90% level.

The AAR returns obtained by means of the both models are depicted in the Figure 8. It can be seen that the pattern of the market reaction to the GCO announcement event is not clear, since the AAR returns are fluctuating around the zero expected value in the pre-event and post-event windows. However, there is a weak upward trend of the AAR in the pre-event period, while in the post-event period there is downward trend with the drastic decrease of AAR at the 6th day after the GCO announcement.
Figure 8. Average abnormal returns (AAR) within the event window days during the final testing period

The Table 12 provides the further evidence on the AAR aggregated across the sample companies for each day within the final testing period. Although the AAR show negative stock price reaction, the returns are insignificant at the acceptable confidence levels.

**TABLE 12**

T-test results of the average abnormal returns (AAR) aggregated across the days of the final testing period for the sample companies

<table>
<thead>
<tr>
<th></th>
<th>Constant-mean model</th>
<th>Market-adjusted model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean</td>
</tr>
<tr>
<td>AAR</td>
<td>15</td>
<td>-0.0046</td>
</tr>
</tbody>
</table>

Hereafter, we follow the methodology of the event study analysis and aggregate AAR to be able to define the overall impact of the GCO public announcements on the financial market within event windows. For this reason, the cumulative abnormal returns (CAR) are computed and tested with t-test. The Table 13 presents the results of t-test for the CAR during the final testing period.
As it appears from the Table 13, the t-values of the CAR within the final testing period belong the interval of critical values from -1.96 to 1.96, thus we accept the null hypothesis and conclude that the CAR for each pre-event, event and post-event day are not statistically significant from zero. The test supports the previously drawn conclusion regarding the absence of GCO public announcement effect on the stock prices and returns based on the AAR estimates.

CAR obtained by means of the Constant-mean and Market-adjusted models are depicted in the Figure 9. There is no clear pattern of the adverse stock price reaction since the CAR fluctuate upwards and downwards within the event window. However, the chart of CAR after the event date tends to have downstream direction, which attributes to the negative market reaction although the magnitude of the CAR is not statistically significant.

<table>
<thead>
<tr>
<th>Day</th>
<th>n</th>
<th>Constant-mean model</th>
<th>Market-adjusted model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CAR</td>
<td>t-value</td>
</tr>
<tr>
<td>-7</td>
<td>29</td>
<td>-0.0210</td>
<td>-0.077</td>
</tr>
<tr>
<td>-6</td>
<td>29</td>
<td>-0.0212</td>
<td>-0.099</td>
</tr>
<tr>
<td>-5</td>
<td>29</td>
<td>-0.0189</td>
<td>-0.076</td>
</tr>
<tr>
<td>-4</td>
<td>29</td>
<td>-0.0414</td>
<td>-0.118</td>
</tr>
<tr>
<td>-3</td>
<td>29</td>
<td>-0.0446</td>
<td>-0.164</td>
</tr>
<tr>
<td>-2</td>
<td>29</td>
<td>-0.0484</td>
<td>-0.159</td>
</tr>
<tr>
<td>-1</td>
<td>29</td>
<td>-0.0542</td>
<td>-0.201</td>
</tr>
<tr>
<td>0</td>
<td>29</td>
<td>-0.0155</td>
<td>-0.040</td>
</tr>
<tr>
<td>1</td>
<td>29</td>
<td>-0.0288</td>
<td>-0.112</td>
</tr>
<tr>
<td>2</td>
<td>29</td>
<td>-0.0222</td>
<td>-0.058</td>
</tr>
<tr>
<td>3</td>
<td>29</td>
<td>-0.0273</td>
<td>-0.091</td>
</tr>
<tr>
<td>4</td>
<td>29</td>
<td>-0.0262</td>
<td>-0.084</td>
</tr>
<tr>
<td>5</td>
<td>29</td>
<td>-0.0239</td>
<td>-0.106</td>
</tr>
<tr>
<td>6</td>
<td>29</td>
<td>-0.0657</td>
<td>-0.202</td>
</tr>
<tr>
<td>7</td>
<td>29</td>
<td>-0.0688</td>
<td>-0.227</td>
</tr>
</tbody>
</table>

TABLE 13
T-test results of the cumulative abnormal returns (CAR) across the event window for the all sample companies within the final testing period
In addition, we aggregate the AAR and CAR across the days for the sample companies within the final testing period. According to the results of the t-test, which are shown in the Table 14, the mean AAR and CAR are below the zero and statistically insignificant. Although the Constant-mean model assumes the AAR and CAR to be significant at the 90% confidence level, while the Market-adjusted model does not imply the same results.

### TABLE 14
T-test results for the AAR and CAR aggregated across the sample companies within the final testing period

<table>
<thead>
<tr>
<th></th>
<th>Constant-mean model</th>
<th>Market-adjusted model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>AAR</td>
<td>29</td>
<td>-0.0046</td>
</tr>
<tr>
<td>CAR</td>
<td>29</td>
<td>-0.0688</td>
</tr>
</tbody>
</table>

Note: *Significant at the 90% level.

In order to compare the abnormal returns, which occurred after the GCO announcement, with the ones before the event and detect any significant difference between them we apply...
two-independent samples t-test (see the Table 15). Under the null hypothesis of the t-test we test if there is any statistically significant difference between the means of the pre-event and post-event AAR (CAR) samples within the final testing period.

**TABLE 15**
Independent sample t-test results for the AAR and CAR for the pre-event and post-event windows within the final testing period

<table>
<thead>
<tr>
<th>FIN period</th>
<th>Pre-event window (-7;0)</th>
<th>Post-event window (0; +7)</th>
<th>Levene's Test for Equality of Variances</th>
<th>T-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>n=7</td>
<td>n=7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant-mean</td>
<td>-0.0078 0.0100 0.0038</td>
<td>-0.0076 0.0164 0.0062</td>
<td>0.562 0.468</td>
<td>-0.0002 -0.024 0.981</td>
</tr>
<tr>
<td>Market-adjusted</td>
<td>-0.009 0.0102 0.0038</td>
<td>-0.0042 0.0175 0.0066</td>
<td>0.916 0.357</td>
<td>-0.0049 -0.638 0.535</td>
</tr>
<tr>
<td>CAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant-mean</td>
<td>-0.0357 0.0149 0.0056</td>
<td>-0.0220 0.0204 0.0077</td>
<td>1.028 0.331</td>
<td>-0.0137 -1.431 0.178</td>
</tr>
<tr>
<td>Market-adjusted</td>
<td>-0.0446 0.0144 0.0062</td>
<td>-0.0363 0.0144 0.0054</td>
<td>1.053 0.325</td>
<td>-0.0083 -1.003 0.336</td>
</tr>
</tbody>
</table>

As a result of the t-test analysis, there is no statistically significant mean difference between the pre-event and post-event AAR (CAR) within the final testing period. Both models are concerned with the distinctive financial market reaction to the GCO public announcements.

To control the robustness of the t-test results, we exercise the non-parametric test. Since we are concerned about the normal distribution properties of the normal returns within the short event window, we apply the Mann-Whitney and Wilcoxon non-parametric test, which has no requirements regarding the normality of sample distribution (see the Table 16). For this reason, the mean difference of the two samples of variables might be inappropriate measure of the stock market reaction in terms of non-normality of the normal returns distribution. Under the null hypothesis of the Mann-Whitney and Wilcoxon non-parametric test the two independent samples come from the same population and the median difference is not significantly different from zero. Also another advantage of the employed non-parametric test attributes to the small sample size of 29 GCO companies, which fits the test technique.
TABLE 16
Mann-Whitney and Wilcoxon test results AAR and CAR within the pre-event and post-event windows for the final announcement event

<table>
<thead>
<tr>
<th>FIN period</th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z-value</th>
<th>Sig. (2-tailed)</th>
<th>Null hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR Constant-mean</td>
<td>19,500</td>
<td>47,500</td>
<td>-0.640</td>
<td>0.552</td>
<td>Accept</td>
</tr>
<tr>
<td>AAR Market-adjusted</td>
<td>15,000</td>
<td>43,000</td>
<td>-1.214</td>
<td>0.225</td>
<td>Accept</td>
</tr>
<tr>
<td>CAR Constant-mean</td>
<td>12,000</td>
<td>40,000</td>
<td>-1.597</td>
<td>0.110</td>
<td>Accept</td>
</tr>
<tr>
<td>CAR Market-adjusted</td>
<td>5,500</td>
<td>33,500</td>
<td>-2.430</td>
<td>0.015**</td>
<td>Reject</td>
</tr>
</tbody>
</table>

Note: ** Significant at the 95% level.

It can be inferred from the Mann–Whitney and Wilcoxon test that the difference in the pre-event and post-event AAR is confirmed to be statistically close to zero, which is in line with the t-test implications disclosed previously. At the same time, the difference in the pre-event and post-event market-adjusted CAR is statistically different from zero, which contradicts to the previous t-test. Nevertheless, we assume that there is no distinct negative market reaction to the GCO announcements since the CAR are statistically insignificant based on the t-value results.

Based on the tests of the abnormal returns inherent to final GCO public announcements, the alternative research hypothesis (H1b), implying that there is no adverse financial market reaction to the initial going concern audit opinion public announcements in a short term period, is accepted. However there is an evidence of the statistically significant adverse abnormal returns at the 6th day after the public disclosure of the audit opinion stating the going concern uncertainty.

Since we were unable to confirm any major stock market reaction to the public final announcements of the annual financial statements, which include the going concern audit opinion modification, the second research hypothesis (H2b) is tested. We aim to examine whether the preliminary financial report announcement of a company with subsequent GCO has a greater impact on the financial market reaction than the final financial report announcement.

For this purposes the normal and abnormal returns were estimated for the preliminary testing period of 15 days around the preliminary report announcement based on the same methodology, which is applied for the final testing period abnormal returns. Subsequently, we test the mean difference between the post-event AAR (CAR) for the preliminary and final announcement events by means of the parametric t-test. The results of the testing are presented in the Table 17.
TABLE 17
Independent sample t-test results for the final and preliminary announcement AAR and CAR during the post-event window

<table>
<thead>
<tr>
<th>Model</th>
<th>Preliminary announcement</th>
<th>Final announcement</th>
<th>Levene’s Test for Equality of Variances</th>
<th>T-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=7</td>
<td>n=7</td>
<td>F-stat.</td>
<td>Sig.</td>
</tr>
<tr>
<td>AAR Constant-mean</td>
<td>-0.0015 0.0174 0.0066</td>
<td>-0.0076 0.0164 0.0062</td>
<td>0.116 0.739</td>
<td></td>
</tr>
<tr>
<td>AAR Market-adjusted</td>
<td>-0.0017 0.0174 0.0066</td>
<td>-0.0042 0.0175 0.0066</td>
<td>0.099 0.927</td>
<td></td>
</tr>
<tr>
<td>CAR Constant-mean</td>
<td>-0.0292 0.0172 0.0065</td>
<td>-0.0220 0.0204 0.0077</td>
<td>0.344 0.568</td>
<td></td>
</tr>
<tr>
<td>CAR Market-adjusted</td>
<td>-0.0306 0.0160 0.0061</td>
<td>-0.0122 0.0144 0.0054</td>
<td>0.219 0.648</td>
<td></td>
</tr>
</tbody>
</table>

Note: ** Significant at the 95% level.

It appears from the Table 17, that the mean difference in the post-event AAR for the preliminary and final announcements are not statistically significant from each other. At the same time the Market-model implies the statistically significant mean difference in CARs for the both testing periods, which indicates that the financial market had more adverse abnormal returns for the preliminary report announcement than for the final GCO announcement. Also the mean CAR for the preliminary announcements is a negative value equal to -0.0306, while the mean CAR for the final report is less adverse figure of -0.0184, meaning that the difference in the stock market reaction to the preliminary and final report is significant at 95% confidence level and more adverse stock price effect is detected for the preliminary financial report disclosure. For descriptive purposes, we draw the post-event CAR chart for the final and preliminary announcement events, which is depicted in the Figure 10. We note the significant adverse stock reaction during the first four days after the announcement event, obtained by the Market-adjusted model. The constant-mean CAR move downwards gradually with the significant drop on the 6th day after the announcement. So the Figure 10 provides evidence that the preliminary report has a greater negative impact on the stock price within the first days after the public announcement.
Hereafter, we examine the same AAR (CAR) with non-parametric Mann-Whitney and Wilcoxon test as well, which is presented in the Table 18, in order to confirm the conclusions inherent to the t-test. Consistent with the t-test results, the non-parametric test provides an evidence of the substantial post-event CAR for the final and preliminary testing periods since the null hypothesis is rejected at the 95% confidence level.

**TABLE 18**
Mann-Whitney and Wilcoxon test results for the AAR and CAR after the post-event window of the preliminary and final announcement events

<table>
<thead>
<tr>
<th></th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z-value</th>
<th>Sig. (2-tailed)</th>
<th>Null hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR Constant-mean</td>
<td>21,000</td>
<td>49,000</td>
<td>-0.447</td>
<td>0.655</td>
<td>Accept</td>
</tr>
<tr>
<td>AAR Market-adjusted</td>
<td>22,000</td>
<td>50,000</td>
<td>-0.319</td>
<td>0.749</td>
<td>Accept</td>
</tr>
<tr>
<td>CAR Constant-mean</td>
<td>18,000</td>
<td>46,000</td>
<td>-0.831</td>
<td>0.406</td>
<td>Accept</td>
</tr>
<tr>
<td>CAR Market-adjusted</td>
<td>8,000</td>
<td>36,000</td>
<td>-2.108</td>
<td>0.038**</td>
<td>Reject</td>
</tr>
</tbody>
</table>

*Note:* ** Significant at the 95% level.
Furthermore, we are determined to find out if there is any significant market effect to the preliminary report announcements since the mean difference for post-event CAR is significant. We applied the same test procedures for the preliminary testing period as for the final period. The results of the parametric t-test and non-parametric test are presented below in the Table 19 and Table 20.

**TABLE 19**
Independent sample t-test results for the preliminary announcement AAR and CAR within pre-event and post-event windows

<table>
<thead>
<tr>
<th>PRE period</th>
<th>Pre-event window (-7;0)</th>
<th>Post-event window (0; +7)</th>
<th>Levene's Test for Equality of Variances</th>
<th>T-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>n=7</td>
<td>n=7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant-mean</td>
<td>0.0031 0.1615 0.0061</td>
<td>-0.0015 0.1737 0.0066</td>
<td>0.023 0.882</td>
<td>0.0046 0.513 0.882</td>
</tr>
<tr>
<td>Market-adjusted</td>
<td>0.0035 0.0148 0.0056</td>
<td>-0.0017 0.0174 0.0066</td>
<td>0.014 0.909</td>
<td>0.0052 0.598 0.562</td>
</tr>
<tr>
<td>CAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant-mean</td>
<td>0.0009 0.0178 0.0067</td>
<td>-0.0069 0.0172 0.0065</td>
<td>0.030 0.866</td>
<td>0.0078 0.833 0.421</td>
</tr>
<tr>
<td>Market-adjusted</td>
<td>0.0032 0.0193 0.0073</td>
<td>-0.0306 0.0160 0.0061</td>
<td>0.236 0.636</td>
<td>0.0338 3.568 0.004*</td>
</tr>
</tbody>
</table>

*Note:* * Significant at the 99% level.

**TABLE 20**
Mann-Whitney and Wilcoxon test results AAR and CAR within the pre-event and post-event windows for the preliminary announcement event

<table>
<thead>
<tr>
<th></th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z-value</th>
<th>Sig. (2-tailed)</th>
<th>Null hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAR Constant-mean</td>
<td>21,000</td>
<td>49,000</td>
<td>-0.447</td>
<td>0.655</td>
<td>Accept</td>
</tr>
<tr>
<td>AAR Market-adjusted</td>
<td>19,000</td>
<td>47,000</td>
<td>-0.703</td>
<td>0.482</td>
<td>Accept</td>
</tr>
<tr>
<td>CAR Constant-mean</td>
<td>12,000</td>
<td>40,000</td>
<td>-1.597</td>
<td>0.110</td>
<td>Accept</td>
</tr>
<tr>
<td>CAR Market-adjusted</td>
<td>4,000</td>
<td>32,000</td>
<td>-2.619*</td>
<td>0.009*</td>
<td>Reject</td>
</tr>
</tbody>
</table>

*Note:* * Significant at the 99% level.
According the tests, there is statistically significant market reaction to the preliminary financial report public announcements at the 99% confidence level. This fact support the idea that preliminary report of the company with going concern uncertainty triggers more adverse market reaction than the final annual report announcements with the audit opinion modifications on the subject of going concern.

In such a manner we can conclude that the second research alternative hypothesis ($H_{2b}$) is rejected, meaning that the preliminary financial report announcement of a company with going concern uncertainty has a greater impact on the financial market reaction than the subsequent final financial report announcement with GCO.

### 5.4 Findings

The results for the entire sample for the 29 ASX listed companies with GCO announcements are based on the event study analysis method, which involves the procedures of the abnormal returns estimation and testing for its significance. The findings drawn from the analysis correspond to the hypothesis developed formerly.

Contrary to our hypothesis, the average abnormal returns and cumulative abnormal returns within the event window surrounding the public disclosure of GCO are generally statistically insignificant. Although there is an evidence of the weak adverse performance of the abnormal returns occurred on the 6th day after the final announcement date, which indicates the deferred market response to the event. On average, the investors lost 4.18% (3.19%)\(^4\) on the 6th day of trading after the final annual report was published. We document that the CAR around the announcement day are negative but statistically insignificant. Negligible results achieved by means of the both Constant-mean and Market-adjusted models. To mention, there is no adverse stock prices reaction on the GCO announcement date as well as within the next following days. Consequently, the first research hypothesis ($H_{1a}$) is rejected, implying that there is no adverse financial market reaction to the initial going concern audit opinion public announcements in a short term period captured in the ASX within observed testing period.

Consistent with our expectations, in terms of negligible market response to the final disclosure of the annual reports the information content of the preliminary financial reports triggers more adverse stock price behavior compared to the final announcement event. More specifically, the mean CAR for the preliminary announcements equal to -0.0306, while the mean CAR for the final report is less negative amount of -0.0184, implying that the difference in the stock market response to the preliminary and final report is significant at 95% confidence level and more adverse stock price effect is detected for the preliminary financial report disclosure. For the purpose of robustness tests, the both parametric and non-parametric significance tests of the pre- and post-announcement CAR confirmed negative market response to the preliminary disclosure. Hence, the second research hypothesis ($H_{2a}$) is accepted, which states that the preliminary financial report

---

\(^4\) The AAR results are estimated by means of Constant-mean model, while estimate of Market-adjusted model is presented in parenthesis according to the Table 11.
announcement of a company with going concern uncertainty has a greater impact on the financial market reaction than the final financial report announcement.

In order to discuss the results of carried out analysis we raise the question as why there is no financial market reaction detected around the final GCO public announcement date, whereas the preliminary content of the financial report entails the adverse market response to the announcement.

One possible explanation implies that the investors mainly rely on the financial figures and director’s declarations, which are included in the preliminary financial statements, concerning the ability of the companies to continue as a going concern. Thus the preliminary report is a sufficient source of the relevant information in order to determine the expectations of the market on the subject of the financially distressed company’s viability. For this matter, the audit report serves a confirmation purpose of the going-concern uncertainties presence and remains unable to add new unexpected information to the market users.

Another argument regarding the ASX rigorous continuous disclosure regime is supported by Herbonn et al (2007), who arrived at the same conclusion of no evidence of a short-term market reaction to the public announcements of the first-time going concern modifications in Australian context. Accordingly, the Australian stock market is “well informed” since the established continuous disclosure regime requires immediate filing of the price-sensitive information on the part of ASX listed companies. Correspondently, the investors’ expectations might be predetermined due to the continuous price-sensitive disclosure environment.

Further discussion on the subject may attribute to our sample companies features. The insignificant market reaction might be determined by the structure of the GCO sample with the prevailing number of Unmodified GCO (amounted in 26 out of total 29) compared to Modified GCO (amounted in 3 out of total 29). As mentioned earlier, we speculate that Unmodified audit opinion “Emphasis on matter paragraph” conveys more expected information for the reason that the management of the financial distressed company is meant to provide appropriate disclosure of the information relevant to going concern contingency and the auditor is required to highlight the disclosed concerns only. On the other hand, the Modified type of GCO is assumed to provide less expected information since it attributes to an inadequate disclosure of the going concern issues in financial reports. Therefore, Modified audit opinion may have the more adverse impact on the market reaction since the information content is less expected. Following this logic, the sample with predominant number of Unmodified audit opinions may induce the underestimated market reaction to the GCO announcements. Since we aimed to improve the quality of the sample by eliminating contaminating effects, we acknowledge the its’ final structure is an issue of limitation. For the future research purposes we suggest to increase the observation year-period in order to create the sample with a proper Modified/Unmodified GCO structure. The market reaction to the different types of GCO could be also investigated separately.
Since we arrive at the conclusion of no short-term market response to such a negative event as a going concern audit opinion public disclosure, we question the value of the GCO information content for the purpose of the ASX market participants. In line with our empirical findings in terms of the Australian financial environment within the recent time period, we speculate that information content of the audit opinion with going concern notes is of a great concern since the investors do not perceive it as a newsworthy signal of impending bankruptcy. However, we acknowledge that derived evidence of limited information content of GCO audit opinion is taken in a short-term perspective, whereas the long term market reaction may indicate the opposite results, which is also a valid issue for further investigation.
Chapter 6: Conclusions

6.1 General conclusions

In our research we have examined the short-term financial market reaction to the going concern audit opinion public announcements within the recent financially fragile time period of 2007-2009 in the Australian context. In the paper we raise the question if there is any effect of the going concern audit opinions on the stock price behavior in a short term period. Correspondently, the primary purpose of the study was to examine the ASX market response to the GCO, whereas the sub-purposes of the paper attributed to the explanation of the detected reaction to the going concern audit modifications, testing the difference in reactions to the final and preliminary going concern announcements and, finally, investigation of the value of an audit opinion perceived by the stock market participants.

Following the main purpose of the study we based the empirical findings on the considerable body of the theoretical knowledge regarding the subject. By means of the event study method we have tested the estimated abnormal returns, which occurred within the final and preliminary testing periods around the GCO announcement events, and applied the parametric and non-parametric tests in order to define the significance of the observed abnormal returns. For this purpose the two sets of the hypotheses were tested, which are discussed hereafter.

Contrary to our expectations, we document that there is no adverse financial market reaction to the initial going concern audit opinion public announcements in a short term period captured in the ASX within the 2007-2009 testing period. However we provide a weak evidence of the statistically significant decrease of the abnormal returns on the 6th day after the final GCO announcement, which indicates the deferred market response to the event.

Consistent with our hypothesis, in the context of the insignificant final GCO market effect to the preliminary financial report announcement of a company with going concern uncertainty has a greater impact on the financial market reaction than the final financial report announcement. This fact provides an empirical evidence of the higher value of information content of the preliminary financial report compared to the final annual financial statements.

In line with our empirical findings within the ASX context, we speculate that information content of the audit opinions with going concern notes is of a great concern since investors do not perceive it as a newsworthy signal of impending bankruptcy.

To explain the inferences drawn from the empirical analysis we suggest the following reasons for the negligible stock market response effect. One possible explanation implies that the investors mainly rely on the financial figures and director’s declarations of the preliminary reports, while the final GCO is unable to deliver any new information content and expected by the market participants. Another argument corresponds to the country-specific Australian stock market continuous price-sensitive information disclosure regime,
which provides the investors with sufficient announcement information and predetermines
the expectations of the going concern in a timely manner. Also the explanation might be
grounded on the idea that the financial markets are not absolutely efficient, thus it takes
longer time to detect the stock market reaction since the prices are unable to incorporate the
new information immediately in a short-term period. For this reason, we assume it to be a
valid issue for the further investigations of the capital market effect from the long-term
perspective.

6.2 Contribution to existing knowledge

Our research differs from the previous studies on the market effect of audit opinions in the
following issues.

Firstly, the recent time period in financial distressed environment from 2007 to 2009 was
not investigated in the study literature. Thus we provide evidence on the capital market
response to GCO within the established time frame in terms of increased number of the
companies with going concern uncertainties and severe insolvency problems.

Secondly, the study is carried out in the Australian market environment with a high level of
disclosure requirements to the public companies listed in the ASX, while significant body
of the relevant research was conducted in the UK and USA capital markets.

Moreover, the investors’ reaction is examined by means of the event study analysis, while
most of the studies, which were carried out in Australian stock market, have applied such
methods as an experiment, multivariate logistic regression analysis, etc. Furthermore,
methodology of the current research on the investors’ reaction combines parametric and
non-parametric testing of the significance of the stock market reaction, while most of the
studies draw conclusions based on the one type of the tests without evidence of the
robustness of the results.

The major improvement of the previous studies we assume to be the composition of the
sample companies reducing extraneous variables’ effect. The selection of the sample is
unique since strict requirements were addressed to the sample companies in order to gain
control of the factors other than GCO announcements. Contaminating effects of the stock
reaction to other price sensitive information announcements were eliminated for the
purpose of investigating the stock market reaction to the GCO announcements only.

In addition, the preliminary and final public announcements of the financial statements
were considered for the purpose of better control of the factors, which trigger the stock
reaction. This amendment enabled us to confirm that the financial market responded to the
preliminary disclosure in a higher degree, which, in turn, has predetermined the negligible
reaction to the final announcement.

To emphasize the author’s innovative thinking, the study is determined by the main aspects:
firstly, the severe control over the factors other than GCO, which trigger contaminating
effects on the stock price reaction; and secondly, the inference of the market response to the
final GCO announcements based in comparison with the reaction to the preliminary financial report announcements.

Overall, the paper contributes to the outlined field of study by providing empirical evidence on investor’s reaction to the GCO public announcements in Australian Stock Exchange during the 2007-2009, the period of increased number of financial distressed companies in terms of the recent financial crisis. Also since the most of the studies have been conducted in the US and UK capital markets we explore the problem in the alternative market environment and apply differential statistical methods aiming to investigate the value of the GCO perceived by the participants of the market within the chosen time period and financial environment.

6.3 Quality criteria

In order to evaluate the significance of the research we are concerned with the quality criteria. Since the study is based on the quantitative research strategy, the primary quality criteria attribute to the issues of research reliability and validity (Bryman & Bell, 2007, p.169).

6.3.1 Reliability

Reliability is a fundamental criterion for the trustworthy research. In general it refers to the consistency of applied measures of a concept (Bryman & Bell, 2007, p.162). In order to assure that the same findings will be obtained if the other researchers examine the same object within the relevant time period we contemplate the internal and external reliability requirements.

Since we observed the Australian market reaction based on the same sample companies over the two periods of time, i.e. preliminary and final reporting testing periods, we state that the measure of abnormal returns possesses such properties as stability over a time, internal reliability and inter-observer consistency. Thus we assume it to be a consistent measure of the capital market reaction concept.

For the purpose of external reliability, i.e. the degree to which a study can be replicated, we consistently provide the detailed description of the applied event study procedures as well as collected empirical data. Also the sample of ASX listed companies is disclosed in the Appendix 2. During the research we utilized the public data from the reliable primary and secondary sources of the ASX and other professional organizations, which facilitate the easier access to the empirical data for the further investigation.

Moreover, to improve the external reliability aspect of the study we carried out the triangulation techniques for the data collection as well as significance testing procedures. In order to conduct the crosschecking of the stock price and index data we inferred to the two different sources, i.e. the primary ASX database and the secondary Thomson Reuters Datastream database, which contain identical price information. For the robustness purpose we examined the significance of the estimated abnormal returns by means of the two
statistical techniques, i.e. parametric and non-parametric significance tests, which in general provide the same inferences.

Also the issue of internal reliability was considered since the both of authors come from different major disciplines, i.e. Accounting and Finance. Nevertheless, the common understanding of the research concepts was achieved while conducting the research. Therefore, we conclude that the limitations of the external and internal reliability of the study are reduced to minimum and do not derogate the quality of the research.

6.3.2 Validity

Validity is another crucial issue of a high quality investigation, which concerns with the measures of the concepts (Bryman & Bell, 2007, p.164). In our case the concept of the stock market reaction is measured with the abnormal returns occurred around the GCO announcement event as a major indicator. We assume that the applied indicator is appropriate measure in a short-term period since it is coherent to the immediate stock price behavior and investors’ evaluation of the companies’ value. In addition, the measure of abnormal returns is commonly used among the authors of the previous event studies. For this reason the employed indicator of the stock market response to the GCO event seems to be appropriate measure because it is attributable to the idea of the concept and is in general use of the researchers in the relevant field.

More specifically, in regard of internal validity we assume that our observations, which are based on the abnormal returns behavior, correspond to the developed theory on the subject of the financial market reaction. To mention, our findings of negligible stock market response to the GCO public announcements within in a short-term perspective are consistent with conclusions of the previous studies on this subject in the Australian context (Ball et al., 1979; Herbohn et al., 2007; Ogneva, 2007).

Moreover, external validity of the study implies to possibility to generalize the findings inherent to the whole population of the ASX listed companies beyond the studied sample firms. For this purpose we aimed to select the sample, which was as representative as possible including diverse industry sectors, types of audit opinions and types of auditors, etc. The main concern of the sample size attributes to the intention to eliminate the contaminating effect of other extraneous variables in terms of the market reaction to GCO. We acknowledge that better generalization properties would be achieved with a bigger sample size, thus for the purpose of further development we recommend to extend the period of observation. Nevertheless, we intend to generalize our findings beyond the limited time period of 2007-2009 years observation within the Australian financial context since all the listed companies were scrutinized on the subject of going concern uncertainty within established time frame and context.

From the discussion above, the authors of the paper followed the certain degree of reliability and validity criteria in order to determine the quality of the research. However, we acknowledge some limitations of the study, which constrain the ability to obtain more attractive findings on the subject.
6.4 Suggestion for further research

While conducting the study we have discovered the relevant issues, which might be of a great interest for the further investigations. Firstly, we suggest providing an evidence of stock market reaction to the different types of the going concern modifications, i.e. Unmodified and Modified. As mentioned earlier, a heterogeneous stock market response might occur since the types of audit opinions incorporate different level of expectations on the part of investors. The analysis from this perspective requires considerable amount of the companies with the both types of modifications, which is quite troublesome in practice due to the relatively infrequent issuance of Modified going concern audit opinions.

Furthermore, it might be rewarding to apply another method in order to examine the information content of the GCO as perceived by financial market participants. The experimental study or interview method would enable a researcher to detect and, more importantly, explain the non-occurrence of adverse market response to the GCO announcements in the particular Australian context.

Also the study requires further improvements on the ways to control contaminating effects of the stock price drivers, which is concern of the most previous papers on the subject. We have made attempt to overcome the problem with setting up strict selection process for the sample, which has resulted in the quiet small sample composition. Thus we hereby invoke to the further amendments of the control options in order to clearly distinguish the event study effect of a particular interest.

Finally, it would be interesting to replicate the study in other cultural backgrounds and financial environments. For instance, dissimilar findings might be inherent to the developing financial markets of Russia due to the country-specific high volatility features of the markets and limited formation of the stock markets’ disclosure regime. Correspondently, we are of the opinion that it would be rewarding to investigate the research problem in other financial environments and contexts.
References

Legislative framework


Books


**Articles**


Tuttle, B., & Vandervelde, S.D., (2009). Does the going concern audit opinion have a stabilizing effect on the overall stock market? University of South Carolina.

**Internet sources**


IASB (International Accounting Standards Board). Standards and Interpretations. IASB web site <www.iasb.org/IFRSs/IFRS.htm> [Retrieved 2010-04-01].


Appendix Data

**APPENDIX 1.** The content of a preliminary financial report according to the ASX Listed Rules 3.1 “Continuous disclosure” (Appendix E4). *The source: ASX Listed Rules, ASX website, 2009.*

1. Details of the reporting period and the previous corresponding period.

2. Key information in relation to the following:

   2.1 The amount and percentage change up or down from the previous corresponding period of revenue from ordinary activities.

   2.2 The amount and percentage change up or down from the previous corresponding period of profit (loss) from ordinary activities after tax attributable to members.

   2.3 The amount and percentage change up or down from the previous corresponding period of net profit (loss) for the period attributable to members.

   2.4 The amount per security and franked amount per security of final and interim dividends or a statement that it is not proposed to pay dividends.

   2.5 The record date for determining entitlements to the dividends (if any).

   2.6 A brief explanation of any of the figures in 2.1 to 2.4 necessary to enable the figures to be understood.

3. A statement of financial performance together with notes to the statement.

4. A statement of financial position together with notes to the statement.

5. A statement of cash flows together with notes to the statement.

6. Details of individual and total dividends or distributions and dividend or distribution payments. The details must include the date on which each dividend or distribution is payable and (if known) the amount per security of foreign sourced dividend or distribution.

7. Details of any dividend or distribution reinvestment plans in operation and the last date for the receipt of an election notice for participation in any dividend or distribution reinvestment plan.

8. A statement of retained earnings showing movements.

9. Net tangible assets per security with the comparative figure for the previous corresponding period.

10. Details of entities over which control has been gained or lost during the period, including the following.
10.1 Name of the entity.
10.2 The date of the gain or loss of control.
10.3 Where material to an understanding of the report – the contribution of such entities to the reporting entity’s profit from ordinary activities during the period and the profit or loss of such entities during the whole of the previous corresponding period.

11. Details of associates and joint venture entities including the following:

11.1 Name of the associate or joint venture entity.
11.2 Details of the reporting entity’s percentage holding in each of these entities.
11.3 Where material to an understanding of the report - aggregate share of profits (losses) of these entities, details of contributions to net profit for each of these entities, and with comparative figures for each of these disclosures for the previous corresponding period.

12. Any other significant information needed by an investor to make an informed assessment of the entity’s financial performance and financial position.

13. For foreign entities, which set of accounting standards is used in compiling the report (e.g. International Accounting Standards).

14. A commentary on the results for the period. The commentary must be sufficient for the user to be able to compare the information presented with equivalent information for previous periods. The commentary must include any significant information needed by an investor to make an informed assessment of the entity’s activities and results, which would include but not be limited to discussion of the following.

14.1 The earnings per security and the nature of any dilution aspects.
14.2 Returns to shareholders including distributions and buy backs.
14.3 Significant features of operating performance.
14.4 The results of segments that are significant to an understanding of the business as a whole.
14.5 A discussion of trends in performance.
14.6 Any other factors which have affected the results in the period or which are likely to affect results in the future, including those where the effect could not be quantified.

15. A statement as to whether the report is based on accounts which have been audited or subject to review, are in the process of being audited or reviewed, or have not yet been audited or reviewed.
16. If the accounts have not yet been audited or subject to review and are likely to be subject to dispute or qualification, a description of the likely dispute or qualification.

17. If the accounts have been audited or subject to review and are subject to dispute or qualification, a description of the dispute or qualification.
**APPENDIX 2.** The list of the sample non-finance companies with initial GCO audit opinion announcements listed in ASX for the period from 2007 to 2009.

<table>
<thead>
<tr>
<th>CODE</th>
<th>COMPANY NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAT</td>
<td>AUTRON CORPORATION LIMITED</td>
</tr>
<tr>
<td>AIE</td>
<td>AUTODOM LIMITED</td>
</tr>
<tr>
<td>APB</td>
<td>ARAFURA PEARLS HOLDINGS LIMITED</td>
</tr>
<tr>
<td>CKK</td>
<td>CORETRACK LIMITED</td>
</tr>
<tr>
<td>COS</td>
<td>COOL OR COSY LIMITED</td>
</tr>
<tr>
<td>EFT</td>
<td>EFTEL LIMITED</td>
</tr>
<tr>
<td>EIM</td>
<td>EL CORPORATION LIMITED</td>
</tr>
<tr>
<td>GCN</td>
<td>GOCONNECT LIMITED</td>
</tr>
<tr>
<td>GTP</td>
<td>GREAT SOUTHERN LIMITED</td>
</tr>
<tr>
<td>HCT</td>
<td>HOLISTA COLLTECH LIMITED</td>
</tr>
<tr>
<td>IAT</td>
<td>IATIA LIMITED</td>
</tr>
<tr>
<td>LRG</td>
<td>LONGREACH GROUP LIMITED</td>
</tr>
<tr>
<td>MCL</td>
<td>M2M CORPORATION LIMITED</td>
</tr>
<tr>
<td>MGZ</td>
<td>MEDIGARD LIMITED</td>
</tr>
<tr>
<td>MNW</td>
<td>MINT WIRELESS LIMITED</td>
</tr>
<tr>
<td>MWR</td>
<td>MGM WIRELESS LIMITED</td>
</tr>
<tr>
<td>NLG</td>
<td>NATIONAL LEISURE &amp; GAMING LIMITED</td>
</tr>
<tr>
<td>OLE</td>
<td>OLEA AUSTRALIS LIMITED</td>
</tr>
<tr>
<td>PIE</td>
<td>PIENETWORKS LIMITED</td>
</tr>
<tr>
<td>PNO</td>
<td>PHARMANET GROUP LIMITED</td>
</tr>
<tr>
<td>PTO</td>
<td>PHOTO-ME AUSTRALIA LIMITED</td>
</tr>
<tr>
<td>QTM</td>
<td>QUANTUM ENERGY LIMITED</td>
</tr>
<tr>
<td>RTL</td>
<td>RTL CORPORATION LIMITED</td>
</tr>
<tr>
<td>RZR</td>
<td>RAZOR RISK TECHNOLOGIES LIMITED</td>
</tr>
<tr>
<td>SNR</td>
<td>SYNERGY PLUS LIMITED</td>
</tr>
<tr>
<td>SOM</td>
<td>SOMNOMED LIMITED</td>
</tr>
<tr>
<td>TAN</td>
<td>TANDOU LIMITED</td>
</tr>
<tr>
<td>TEO</td>
<td>TELESSO TECHNOLOGIES LIMITED</td>
</tr>
<tr>
<td>VHL</td>
<td>VIRAX HOLDINGS LIMITED</td>
</tr>
</tbody>
</table>