Risk Management and Internal Control

A CASE STUDY OF CHINA AVIATION OIL CORPORATION Ltd.

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Abstract

Risk management focuses on adopting a systematic and consistent approach to manage all of the risks confronting an organization.

With the emergence of world as a globe village, companies are diversifying their activities; result in the increase of risks. Besides the business core activities, the increased use of derivative products by both financial and non-financial institutions and recent events or scandals continue to demonstrate the need for enhanced standards and processes of control over risk. This is of greatest interest for multinational companies, insurance organizations, banks, securities houses and non-financial institutions given the extent of their business activities in derivative products.

The objective of this thesis is to identify the role and importance of internal control system in good risk management practice with a particular emphasis on management structure and reporting system and in general with Principles of Corporate Governance and Risk Management. Our focus is on the China Aviation Oil Corporation Ltd., (CAO). We will draw attention to the regulatory environment and recent regulatory and supervisory developments with respect to risk management practice.

To be able to fulfill the purpose of study, qualitative research method was considered, using an inductive approach of a single case study of China Aviation Oil Corporation Ltd., with company related research literature, Committee of Sponsoring Organization of the Treadway Commission and Fortis Bank as source of data.

Based on the analysis, a number of observations were put forward in the conclusion. To begin with the strategy in relation to management structure and reporting system of CAO are employed after the company crisis for better control and reporting system. In addition, the role of information technology is considered in risk management. Meanwhile, the good governance and risk management according to Accounting Standards application in risk management system and corporate governance are included in the discussion. In attempt of entrepreneur risk management in the firm, we also discuss the role of Enterprise Risk Management on the organizational performance with different perspectives.
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1. Introduction

The first chapter in this thesis provides the background and an introduction of the selected area. First some information about risk management and internal control are provided and followed by the problem discussion. Subsequently, it deduces the standpoint down to the research problem and specific research questions. In the end of this chapter, the outline of this thesis is listed.

1.1. Background

Efficiently managing financial risk in multinational companies is critical for the survival and growth in the economical globalization waves. Many large companies in the world that filed for bankruptcy protection were involuntarily liquidated or ceased operations mainly due to poor risk management during the past three decades.

At the same time, China’s rapidly expanding economy and the resulting growth in the purchasing power of Chinese consumers are factors fueling western corporations’ drive to establish solid footholds in this emerging marketplace. These companies believe that, in spite of the uncertainty associated with operating in China, they are compelled to establish operations and relationships in the country, so as not to forfeit market share to their competitors.

As China joins the World Trade Organization, the China’s large firms have to compete with other competitors on the global level playing field. Peter Nolan (2002) insists that over the past two decades, Chinese large enterprises have undertaken extensive evolutionary change (comparable to that of other latecomer countries and areas such as Korea, Taiwan and Singapore) but, at the same time, the world’s leading firms have undergone a revolutionary transformation. Nolan concludes that China’s large firms have not caught up with the world’s leading businesses. It means that China large corporations have to exposure themselves under the huge financial risk and other risks. For example, there are tested about 20% of the Korean companies stock performance are statistically significantly impacted by the exchange rate fluctuations (Lee). China’s companies are encountering with the familiar problems: since China ended a peg of its currency to the US dollar in July 2005, the RMB(the Chinese currency) has appreciated, with an accumulated rate of more than 18 per cent during a period of two-and-a-half years up to the time (Zhang, 2009).

All multi-national companies in the world have to balance the interest of the stakeholders who all want to have a good process to put forward control rather than waiting for the external auditing reports at the end of each year. On the other hand, stakeholders want to get more information, instead of accounting information, to help them making investment and other important decisions.

Base on the requirements of stakeholders as well as to survive in the rapid change business circumstance, Risk management is aimed to provide an efficient system in order to improve performance in companies that operating in international environment, meeting different market conditions and government regulations. It is critical to affect risk management and provide a way for performing and promoting a
broad range of value-added risk management when maintaining a record in the organizations.

It is mentioned above that internal control has been integrated with risk management and as a part of contemporary corporate governance. There are many definitions of internal control, as it affects the stakeholders of an organization in various ways at different levels of aggregation. Under the COSO (The Committee of Sponsoring Organizations of the Treadway Commission) Internal Control-Integrated Framework, internal control is defined as a process, effected by an entity’s board of directors, management and other personnel. This process is designed to provide reasonable assurance regarding the achievement of objectives in effectiveness and efficiency of operations, reliability of financial reporting, and compliance with applicable laws and regulations.

In the meanwhile, the Internal Audit is thought to be the second oldest profession which had its origins back to the 4000 B.C, when record-keeping systems were first instituted by organized businesses and governments in the Near East to allay their concerns about collection of taxes. From the trend of the world, a potential limitation of the Sarbanes-Oxley Act (2002) and the Public Company Accounting Oversight Board’s (PCAOB) auditing standards apply to auditing within the USA. However, foreign registrants are required to comply with the requirements of the Sarbanes-Oxley Act (2002) and the PCAOB’s auditing standards in order to have access to US capital markets beginning in July 2006. Moreover, auditing standards bodies throughout the world, including the International Standards on Auditing (ISA), are currently considering whether and what changes to practice are warranted. Therefore, the Sarbanes-Oxley Act (2002) has had widespread influence throughout the world (Bierstaker and Wright, 2004).

Current research and practice show the prevalence of risk management and internal control as parts of corporate governance in the multinational companies in the world. There were plenty of major corporate and accounting scandals including those affecting Enron, Tyco International, Adelphia, Peregrine Systems and WorldCom before 2002. In the nation’s securities markets, the public confidence has been frustrated by those scandals, since billions of dollars of their investors has been influenced by the collapse of those companies. U.S. Senator Paul Sarbanes (D-MD) and U.S. Representative Michael G. Oxley (R-OH) sponsored a famous act which has been enacted named the Sarbanes–Oxley Act of 2002 (2002). The legislation set new or enhanced standards for all U.S. public company boards, management and public accounting firms, and it gradually becomes the standard and guidance of the major marketing countries.

In the past, however, very few organizations find enterprise risk management implementation easy – it requires a rare combination of organizational consensus, strong executive management and an appreciation for various program sensitivities (Negus, 2010). The purpose of this thesis is also to research and evaluate the apply performance under risk management, to provide the technical basis for applications of this kind of material.
1.2. Scope & Limitations

Risk management is a broad concept. In order to have a better understanding of it, a specific area of study is needed. Therefore, the focus of this research is financial risk management and internal control of China Aviation Corporation Ltd., using one case study. The authors of this study also limit the time period to use the data for analysis and discussion. The authors also specify the geographic area, China. Finally, the study limits risk management to financial aspect and employs internal control as the instrument to manage firm’s risk.

As China is the biggest market for newly emerged and multinational companies. The study limitation with respect to geographic area is done due to the markets history of financial risk management as well as the characters and number of companies operating in the specified area. Secondly, the period will be limited from the beginning of 21st century through the present time (2010) because time period of 10 years stand as a good foundation for the discussing problems and provides us with substantial amounts of data. There are many research aspects which can be chosen, the research has tried to reduce the topics. This study focuses on how the internal control and risk management strategy can be implied in Chinese multinational companies. The aim of the research is to gain a deeper understanding of how China large companies can utilize risk management and internal control for surviving and performance development.

Sequel to this, the authors of this thesis resort to focus on one case study and also not to compare the result of this study with other firms in China to make generalization.

1.3. Purpose

The thesis is intended to study the role and importance of internal control system in good risk management practice with a particular emphasis on management structure and reporting system and in general with Principles of Corporate Governance and Risk Management.

1.4. Research Questions

We designed some research questions in order to better fulfill the purpose for which this research is intended

1) Which measures are in place to ensure control and reporting of activities and risks in effective management structure of China Aviation Oil Corporation Ltd.?

2) How do Chinese multinational companies apply the risk management principles into corporate governance?

3) What are the different aspects for China Aviation Oil Corporation Ltd. to apply enterprise risk management (ERM) framework?
4) How does information technology play role in reporting system to monitor and control risk in China Aviation Oil Corporation Ltd.?

5) How does corporate balance the risk and performance?

1.5. The Outline of the Thesis

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<td>Explains the background of the study, problem statement, scope and limitations, purpose and research questions. Also includes outline of the thesis.</td>
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<td>Chapter 2</td>
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<td>Describes previous studies related to the main topic and motives of internal control and risk management. It also outlines internal accounting control, individual’s judgment, limitation of internal control, the rationales for applying risk management and information technology in risk management.</td>
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<td>This chapter presents the empirical findings. It also displays background information of China Aviation Oil Corporation Ltd., and its financial debacle. The study considers strategic planning analysis, and non quantifiable factors to link with management structure, good governance and risk management and effect on performance.</td>
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2. Literature Review

The purpose of this part is to provide a review of what is known about risk management and internal control. This chapter demonstrates the literature that relate to this research question. First present vital literatures about risk management and internal control of history, so that it the research area could be easy understood the research area. In addition, continue the literature about risk management and internal control in contemporary enterprises present in respect of which practicing status in companies. Finally, the literature about COSO framework has explained about main factors to govern the risk by internal control and other relevant ways.

2.1. The Perspective of Internal Control

2.1.1. Internal Accounting Control

The concept “internal accounting control” was used in Securities Exchange Act of 1934 of USA. It mentioned that: devise and maintain a system of internal accounting controls sufficient to provide reasonable assurances that:

A) Transactions are executed in accordance with management's general or specific authorization;

B) Transactions are recorded as necessary (I) to permit preparation of financial statements in conformity with generally accepted accounting principles or any other criteria applicable to such statements, and (II) to maintain accountability for assets;

C) Access to assets is permitted only in accordance with management's general or specific authorization; and

D) The recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. (Securities Exchange Act of 1934).

2.1.2. Internal Control

The McKesson & Robbins scandal of 1938 led to major corporate governance and auditing reforms. Audit committees with "outside" directors, who should be approve the company's shareholders, are required by the SEC. The American Institute of Certified Public Accountants requires that accounts should be reviewed receivable and inventory.

Fifty years ago, people argued whether the state or private ownership should own the resources (Spira and Page, 2003).

By the 1970s, price competition became a new power that weakened audit quality. Since then, auditors are not allowed to do public advertisement for their services so that they would not involve into the competitions between firms' clients according to the AICPA's new regulations. However, the institute was forced to obey those regulations only when the government saw them as anticompetitive and threatened
to bring antitrust lawsuits. (Weil, 2004)


The laws of federal securities require public firms to disclose accurate and complete financial information regularly. The public firms have the initial and the final responsibility because of their financial statements. The Commission's suggestion reduces the incidence of fraudulent financial reporting by addressing the problem on two levels. Top management should:

- **Level 1. Establish the appropriate tone, the overall control environment in which financial reporting occurs**

- **Level 2. Maximize the effectiveness of the functions within the company that are critical to the integrity of financial reporting: the accounting function, the internal audit function, and the audit committee of the board of directors.** (Treadway Jr, 1987)

They also supposed the Recommendation: For the top management of a public company to discharge its obligation to oversee the financial reporting process, it must identify, understand, and assess the factors that may cause the company's financial statements to be fraudulently misstated. (Treadway Jr, 1987)

Auditors should oversight corporate financial reporting in detail which has been enhanced by the Blue Ribbon Committee in February 1999. The report of the practical recommendations improved the Effectiveness of Corporate Auditing Committees. Millstein, the Co-Chair of the Committee, suggested that "process" is the key point to be concentrated. Accounting rules and strictures are not supposed to influence "quality" financial reporting according to Generally Accepted Accounting Principles. In the result, the management exercises. In the result, the way the management exercises and independent auditor reviews the discretion has been modified by the audit committee monitors. Millstein also stated that the audit committee liability may increase due to the Report as well as the definition of "quality" financial reporting and the misconception. (Millstein, 1998)

Jensen says (2005) some factors that hinder efficient exit, and outline the control forces acting on the corporation to eventually overcome the barriers in details, and the changes that mandate exit in today's economy. As he summarized evidence, however, indicating that internal control systems have largely failed in bringing about timely exit and downsizing, leaving only the product market or legal, political, regulatory system to resolve excess capacity.

The modern industrial revolution led to the internal control in the company becoming more important from 1980s. Technical advances improve productivity. New invention products and obsolescence products have been created and eliminated.

The macro policies, technology, organizational innovation, globalization of trade,
revolution in political economy and other factors are interacting with each other in globalization trends.

2.1.3. Limitations of Internal Control

Due to the mechanism of self-adjustment and self-restriction system of the contemporary corporations, internal control plays a significant role in the central nervous system of companies. It guarantees the authentic financial information and the legitimate operational information, and it also makes sure that their assets are safe and completed. Furthermore, it helps improving the operational efficiency and defectiveness. Nevertheless, human factors, resource constraints, system omissions and lack of system flexibility are all the factors that can influence the limitations of the effectiveness of internal controls. The limitations of internal control cannot be ignored.

With Internal control, reasonable objectives of an organization can be highly assured. The costs and benefits of building incremental control procedures constrain the degree of assurance.

With effective internal control, companies will be able to manage reliable financial reporting under the laws and regulations. Nevertheless, the factors that outside the enterprise like technological innovation or competition might influence an organization’s operational and strategic objectives. Consequently, the achievement of operational and strategic objectives can be provided on time basis information or feedback when using effective internal control which may not guarantee their achievement.

2.2. Internal Control for Individuals’ Judgments

Arnold Schneider (2009) examined the effects of auditors’ internal control opinions on individuals’ judgments about investments, and got the results indicated that the type of internal control opinion made no difference for either risk assessments or probability assessments relating to investments. However, this does not necessarily mean that internal control opinions are generally ineffective for assessing investment risks. The author also listed following explanations either individually or collectively account for why internal control opinions had no impact on investment decisions:

• Other considerations such as financial data and historical stock prices may have dominated the internal control opinions;
• Risk tolerances of the respondents among the four internal control groups may have differed so as to negate any differences caused by internal control opinions;
• The company characteristics, which resulted in rather low-investing probabilities, could have made the internal control opinions irrelevant;
• The particular types of internal control weaknesses portrayed were not viewed as serious, whereas other types of weaknesses could possibly produce an impact for the differing internal control opinions;
• Lack of detail on the internal control weaknesses may have contributed to the
lack of an impact on investment decisions;

- Future research should examine the effects of internal control opinions in other settings and conditions to ascertain whether investment decisions are generally affected by internal control opinions (Schneider, 2009).

2.3. Perspective of Risk Management

The risk management as a separate field for research concern for the environment and human health. The fear and awareness which got the attention of general public in early 1960s led to increased legislation to minimize the risks for human health and safety. This led to increase interest from the leaders of industry to analyze risks in their business. Founders of Society for Risk Analysis (SRA), founded in August 1980 were primarily interested in the impact of chemical risk on human health (Thompson, 2005). The development of project risk management emerged in large engineering projects in the energy sector in mid 1970s, included BP’s North Sea projects and pipeline in North America. From mid 1980s until early this century, the project risk management focused on finding the common structures for all the projects and indentifying different approaches, needed for each projects (Ward and Chapman, 2003). The current development in the field of project risk management is focusing on extending the wider scope of uncertainty management (Ward and Chapman, 2003) to incorporate the aspects of individual and cultural influences (Hilson and Murray-Webster, 2007). It focused in the main on large scale companies with different kinds of complexity related to them, such as technology, international collaboration, geography or finance. Not only the largest companies have been influenced by risk management, but also an increasing number of small firms have been affected by it recently. In spite of this, small companies do not feature a great deal of systematic risk management (Simu, 2007).

The political settlements and power relations have been reflected by corporate governance during a particular institutional history, which exist among shareholders, management, labor and creditors (Jackson, 2001). Laura F. Spira and Michael Page argue that the concept of “risk” has become central to corporate governance and has become linked to the idea of internal control. In the process, the meaning of both terms has shifted. In this way, a company is able to manage itself well regarding to changes (Spira and Page, 2003).

Risk definitions, goals and methods vary widely according to whether the risk management method is in the context of which industries, for example, project management, security, engineering, industrial processes, financial portfolios, actuarial assessments, or public health and safety.

2.4. Rationales for Applying Risk Management

Corporations take risk management very seriously-recent surveys find that risk management is ranked by financial executives as one of their most important objectives (Froot, et al., 1993). In the corporations business, risk management is the core problem and how the risk will be managed that is being insured.
Jiatao Li and Stephen Guisinger (Li and Guisinger, 1991) concluded that both in aggregate and by major industry groups, the business failure rate of foreign-controlled firms in the U.S. is significantly lower than the failure rate of domestically owned firms. New U.S. affiliates of foreign companies are found to suffer a higher failure rate than more established affiliates. In addition, they suffer the responsibility of new to a greater extent than new U.S. companies. Modes of entry, forms of foreign ownership and national culture are also found to have effects on the failures of foreign controlled firms in the United States.

Recently publishing a lot of documents and guidance from institutions, literatures and governments represented a radical redefinition of the nature of internal control as a feature of corporate governance in the world, explicitly aligning internal control with risk management.

Risk management is the method to control the results with certainty. Uncertainty represents that something is not able to be relied on, or unknown or indefinite. Risk, however, is only related to the negative results which are not able to be controlled uncertainty that may cause the catastrophe or loss of all kinds of interest such as money, etc.

Business with history of mistakes, damages or individuals with risk prone profile pays higher premium due to high risk because the premium and excess vary with the profile of insurance taker. A lot of concern focuses on calculating and controlling the risk in various ways so that it can set premium at the levels which are necessary to make the money. For example, a company, which is not utilizing insurance, opens the door to lower premiums.

The main purpose of risk management for manager is to avoid contractual, tortuous or statutory liability (Ashby and Diacon, 1996). Ashby & Diacon (1996) found that the drivers for using risk management are primarily negative and the aim is to avoid risk outbreaks. They also found that companies have not set their common risk management objectives. There were no associations between the risk management and firm’s financial characteristics or operating behavior. This is also emphasized by Hillson and Murrey Webster (Composition of the Institutes 2005 Corporate Governance Committee), stated that the influence of individual attitudes and corporate culture is probably more important than the actual risk management tools. The benefit of being able to deliver in time, at right price with desired function can’t be solely attribute to risk management but instead to effective projective management. Risk management is more explicit about handling changes and companies which manage them in the most effective ways are the survivors and winners. Multinational companies that are in a constantly changing environment, risk management should be a key process and an integrated part of corporate governance. In case of public limited companies, shareholders on the stock market are not fond of uncertainty, especially when it can cause losses. Unexpected events in economics forecasts from companies, either positive or negative, signal a lack of control and reasons for maintaining good control in the core business are therefore vital for most of the companies.
Risk management is not only about protecting your business, but also about making it better. Risk management should not be a stand-alone compliance or control activity, but it allows your organization to realize its potential, whether driving top line growth, eliminating costs, enhancing reputation and brand, or making better management of capital assets. To understand organizations’ financial risk, align the risks of strategic, financial, operational, and compliance, activities to eliminate overlaps and gaps, and develop plans to manage, accept, or capitalize on risks. How companies can better use financial information and coordinate risk management and internal control activities to improve performance, balance risk and performance are the contents what we will go into details from next chapter.

2.5. Risk Management Methods in the Enterprises

The format and experience on internal control affects the risk management. James Lloyd Bierstaker and Jay C. Thibodeau via internet researched 73 auditors, who had a mean of 41.4 months of audit experience and a mean of 30.2 months of experience evaluating internal control. They found that different investigating format will affect the performance of auditors. They suggested that the use of a questionnaire to document and evaluate an auditee’s internal control. According to the Sarbanes-Oxley Act, this plays a significant role to identify internal control, which will help auditors performing well in evaluating its weaknesses (2002).

There are two implications of the results for both the audit judgment and literature audit practice. From a practical standpoint, the results of this study indicate that completing a questionnaire may help auditors to identify important control weaknesses. Furthermore, the purpose of using questionnaire may cause to improvements in error detection, fraud detection, and avoidance of audit failure. It is an important set of avenues for future research. These findings are particularly important given recent evidence that audit firms appear to be increasing the use of narratives, relative to questionnaires, to enhance efficiency (Bierstaker and Wright, 2004).

In 2008, French Caldwell studied the core knowledge management (Blackmon and Maylor) principles of business focus, accountability and operational support can be applied to information risk management to create risk intelligence. It finds that information governance and information risk management bring the most business value for risk intelligence strategy. “Developing risk intelligence maximizes the return on value from information risk management investments” (Caldwell, 2008). This paper suggests that the three KM principles of business focus, accountability and operational support help ensure the alignment of the KM architecture to business needs (Caldwell, 2008). These principles can be used in financial information risk management as well. Financial information is the most important information in spite of its lag character. It is a major research to find out the way of converting the millions of financial information records to usable information efficiently and effectively, and the solution to control the high financial crisis points in regular work.
2.6. The "Risk-based Audit" Approach

Early 2003, James Lamphron and his team of Ernst & Young LLP accountants sat down to plan their audit of HealthSouth Corp’s 2002 Financial statements. The executives of the Birmingham, Ala., hospital chain stated that they do not have any significant instances of fraud. The financial data of HealthSouth’s system is reliable with ethical executives and successful management. Therefore, limited tests of the company’s books have been performed by the auditors, while more tests should have been done for their normal client. This leads to a higher risk of accounting fraud. Under the "risk-based audit" approach, the standard practice has been used widely throughout the accounting profession. However, the fact is that the HealthSouth executives hid a large part of giant fraud, with overstated profits by $3 billion. This is the key reason that a blind spot in the firm’s auditing procedures may lead to 15 of former Health South executive fraud charges. Ernst & Young did not notice the fraud until March 2003 when federal agents began to arrest those executives.

In addition, the risk-based approach helps explain the increasing number of accounting scandals, such as WorldCom Inc., and Tyco International Ltd. to Parmalat SPA. An accounting firm might not actually check a company’s numbers even if they state that they audited their financial statement already. Thus, many investors keep been socked by those scandals.

There are two risk-based audit methodologies which are "bottom up" audit and "top down" audit. In 2001, KPMG’s brochure explained the difference between the two methodologies. According to the traditional "bottom up" audit, "the auditor gains assurance by examining all of the component parts of the financial statements, ensuring that the transactions recorded are complete and accurate." Compared with this way, the "top down" risk-based audit may concentrate on "less on the details of individual transaction". Auditors should use their knowledge of the client’s business "to identify risks that could affect the financial statements and to target audit effort in those areas." That is, more numbers that spit out by the client’s computers will be used by the auditors. (Weil, 2004)

2.7. Non-financial Risk Factors

By the 1990s, the failure of operating non-financial risks has been discussed a lot as one of the reasons that influence businesses (Bergin). Angel Egbuji (Egbuji, 1999) studied that businesses are constantly faced with the need to manage change within their organization. According to Egbuji’s study, Change generates choice, which carries risks. A range of issues are to be addressed in risk management of organizational records. Risk management study needs to be considered in general.. Egbuji (1999) also concludes that for risk management of organizational records to be effective, it needs to be incorporated into the decision-making process of the organization making it central to all activities. Risk management of records needs to be proactive instead of reactive.

Management of risks in relation to records which play a key role in the effective and efficient operation of organizations needs to be given priority in this paper. The most
effective way to make risk management central to an organization is to make the process integral to the organization’s decision making process since the decision-making process is central to all organizational activities especially records management. Thus, a clear policy statement from management supporting the risk management activity is essential in order to secure the necessary co-operation from departments, especially when attempting to execute corrective or protective measures for records and information (Egbuji, 1999).
3. **Methodology**

This section of the thesis presents a description of the procedure used in this thesis. The research approach, chosen research method and the reason for choosing a case study are also explained. It also unveils validity and reliability used in the study followed by presentation and analysis of empirical findings.

Research methodology is a way of how research should be undertaken, including the theoretical and philosophical assumptions upon which research is based and the implications of these for the method or methods adopted.

3.1. **Approaches in This Research**

In this thesis, the ‘research approach’ chosen is *induction* because conclusion is drawn from empirical observations using a case study of China Aviation Oil Corporation Ltd., (CAO). This is in line with studies of Gronhaug (2005) which says that ‘through induction conclusion is drawn from empirical observations’. Using a case study of CAO gives the authors of this thesis, an opportunity to analyze the company. The combination of an incorrect option valuation method with a losing option trading strategy and poor risk management procedure led to exponentially growing losses. Also, using an inductive approach gained through qualitative analysis the author of this thesis will diagnose theoretical problem and implement to CAO to control the risk. The authors feel less concerned with the need to generalize the result of their findings with other industries in the same category, instead will gain deeper understanding of the subject of discussion and the research method in order to generate answers to research questions and fulfill research objective.

3.2. **Method Used in This Research**

We adopted qualitative research approach for our study. Whereas quantitative approach places an emphasis on measurement and collection of numerical data, qualitative method allows developing theory from our empirical findings with a focus on meaning expressed through words and descriptive (Bryman and Bell, 2007, p402).

In this regard, authors of this study found that qualitative research method would be more suitable for the study, aiming to give a comprehensive description of internal management control system with an emphasis of management structure, reporting system, information technology entrepreneurship risk management and explore the risk management for organizational performance. We also emphasize on principles of corporate governance and risk management in general.

While forwarding to the specific to specific tasks, the authors would explain the risk management model to elaborate the risk management process.
Organizations facing risk management and internal control challenges have changed their roles and responsibilities, strained resources and shift in the approach to manage risk.

3.2.1. Risk Management Process: Context

The context of risk management builds on the framework where the organization wide risk appetite is formulated and the risk management environment of the organization is defined. The context looks at laws, regulations, economy, market, culture, technology, natural environment, stakeholders’ needs, issues and concerns (Simkins and Fraser, 2010). The main output of context is to determine criteria for the acceptability of the risks. The criteria are used to evaluate the significance of risk by comparisons against the risk with existing controls or the risk with proposed treatments. The second output of the context may be the specification of the other risk management activities, such as communication and consultation and risk assessment.

The content can be organized into three categories (Simkins and Fraser, 2010):

1) The external context
The context outside the organization including stakeholders, regulations, contracts, trends in business drivers, local culture and social norms, employment situations and competition.

2) The internal context
The context inside the organization including capabilities, resources, people and their
skills, information flows, systems and technologies, decision making processes, policies and strategies, internal stakeholders and other constrains and objectives.

3) The risk management context

Any activity in risk management process that requires attention in seeking to find the appropriate level of risk and associated risk treatments, controls, monitoring and reviews.

The context must be practical and within the value added parameters of the organizations. This may include standardization of risk management process tasks with brainstorming for additional items.

3.2.2. Risk Management Process: Risk Assessment

Risk assessment involves risk identification, risk analysis and risk evaluation.

3.2.2.1. Risk identification

Risk associated with any decision should be identified and should place in risk register or register log before they can be treated, even if it is later determined that the risk levels with existing controls are acceptable. But there are some risks which should not be identified like any of the risk management process activities risk. Risk identification categorized in terms of credit risks, operation risk, market risk, technological risks, country risks, human behavior risks, and other risks (Simkins and Fraser, 2010). Risk identification may help stakeholders relate to risk and have potential to improve the effectiveness of control.

3.2.2.2. Risk analysis

Risk analysis is to provide the decision maker with sufficient understanding of risk. Risk analysis organizes into the estimates of likelihood of events, estimates of consequences of events and estimate of the combined effect of likelihood and consequences of events and estimate of combined effect of likelihood and consequences according to the risk criteria.

3.2.2.3. Risk evaluation

Each risk after analysis is evaluated by comparing the residual risk after risk treatment against the risk criteria. Risk associated with controls and implementations are to be considered in risk evaluation and risk analysis.

3.2.3. Risk Management Process: Risk Treatment

Risk treatment includes the identification of control options, selection of control option and implementation of selected control.

3.2.4. Risk Management Process: Monitoring and Review

These are two risk management process activities along with risk communication and
consultation are applied to three line activities of context, assessment, and treatment. These are the continuous improvement of risk management process.

3.2.5. Risk Management Process: Communication and Consultation

As risk is uncertainty about effects on the business activities and objective, there is a strong incentive for communication and consultation. To ensure the accuracy and effectiveness of activities of risk management process, there should be extensive communication among team members and consultations with other experts in the organization.

3.2.6. Risk Management Process: Recording the Risk Management Process

Risk management activities should be recorded and standard policy for any important activities in organization.

Systems for record keeping, protection, storage, retrieval and disposal need to be carefully designed, implemented monitoring and review.

3.3. Research Strategy

Research strategy is a plan of how the research will go about answering the research questions and fulfill study objective. The research strategy of this study is the case study of China Aviation Oil Corporation Ltd (CAO). Using a single case study, the authors of this thesis will make the findings using the chosen company (CAO) as well as providing an opportunity to analyze the phenomenon that few have considered before, representing a useful tool to achieve research questions and research objectives. Therefore chosen a single case study is in line with studies of Yin (2008).

3.4. Source of Data

In this study, the proposed data collection sources are university library database and books/literature, internet, company website, companys’ financial and audit reports and China Aviation Oil Corporation Ltd., related issued research literatures. Hong Kong Stock Exchange (HKEX) and Committee of Sponsoring Organizations of the Treadway Commission (COSO) are also the source for data collection during the study.

Authors collected estimated income from CAO’s option strategy presented by Energy and Environment Market desk, Fortis Bank for better understanding of the case.

3.5. Reliability and Validity

We will select different risk management and internal control risk factors literatures in order to get well informed views about the research area. We would like to intend to find out the significance of firm in the selection process of risk management process, the security they have had towards the risks and what they believed could reduce the uncertainties and risk in managerial, operational and other aspects. An analysis of result would provide answers that could reveal the uncertainty or risk is
high in which situation, whether existing criteria were relevant to deal with the risk and also if there are any risk management process that are being applied in practice that was not yet present in existing literature.

For reliability of data, the authors collected estimated income from CAO’s option strategy presented by Fortis Bank to see how the combination of an incorrect option valuation method with a losing option trading strategy can lead to exponentially growing losses. The authors will also study the reporting system of the COA from the lower level to up level of management and then implement the structure which the cause of loss due to poor management reporting or structure system.
4. Empirical Finding and Analysis

This chapter presents the empirical findings. It also displays background information of China Aviation Oil Corporation Ltd., and its financial debacle. The study considers strategic management control infrastructure, and non-quantifiable risk factors link to good governance, application of ERM framework, information technology application as well as organizational performance.

4.1. Case Study

4.1.1. The Introduction of China Aviation Oil

Approved by the Chinese government authorities, the subsidiary of China Aviation Oil, China Aviation Oil (Singapore) Corporation Ltd (CAO) obtained the authorization to process the oil hedging business since 2003. In China, CAO supplies the majority part of jet fuel for some the most important airports there. Its main businesses are Jet fuel supply and trading, trading of other oil products and investments in oil-related assets. These main businesses are made by the strategic investor, China National Aviation Fuel Group Corporation.

At the beginning, the purchase responsibility of CAO was optimized by trading swaps and futures. After that, the back-to-back option trading started, which represented their clients. During this period, the president Chen Jiulin of CAO expanded the financial derivatives trading scope, who signed the contracts for the oil derivatives options trading with Japan’s Mitsui Bank, Societe Generale Bank, Britain's Barclays Bank, DBS Bank, Singapore McGauley out the Futures Exchange. Furthermore, speculative trading in fuel options started without relevant authoritative documents in the next year. In fact, the parent company of CAO is strictly forbidden to do such an oil option speculative trading like what Jiulin Chen did. Some of legislation in China clearly states that curb trading is not allowed as well. Chen was bearish the oil price and bought put options on 38 U.S. dollars a barrel. Ironically, the fuel oil prices soared and far exceeds to the expected price which CAO set position held by oil derivatives in October 2004. Under the contract, CAO needed pay the margin deposit to counterparties (the banks and financial institutions) if the oil price went up. Surprisingly, CAO had to pay huge amount to the banks for the margin deposit if the price went up 1 more dollars per barrel, which resulted in the cash flow crisis of CAO. (PricewaterhouseCoopers, 2005b; The Professional Risk Managers’ International Association, 2009) By the end of June 2004, CAO's option portfolio had even higher negative market to market (MTM) or paper losses than it had in early 2004. Market to Market involves assigning a value to a position held in a financial instrument based on the current market price of that instrument, or on a fair valuation based on the current market prices of similar instruments. CAO saw paper losses of $30 Million. (Matulich and Currie, 2008)

Nevertheless, the CAO did not report the above speculated option trading transactions to its parent company until it could not afford the huge amount of the deposit which led to such a cash flow dilemma. Obviously, the parent company did not realize that the whole trading at all until they received the emergency report from the CAO. Even in this situation, the CAO still kept holding part of the truth to
the parent company, and had been falsifying the accounts in order to conceal the problem. In June 2004, the CAO already faced a potential loss in the amount of $35.8 million on its option transactions, while the company continued to purchase other “short” funds without showing any transactions on its financial accounts. Meanwhile, the local government also did not realize that the illegal transactions. Accordingly, all these factors led to the final company scandal of the CAO which might not be a serious mistake at the beginning of their wrong management. (PricewaterhouseCoopers, 2005b)

4.1.2. The Reasons of the CAO’s Huge Loss

The investigation report of PricewaterhouseCoopers' auditors illustrated that the following factors, individually or together, lead to the losses of the option speculative trading (PricewaterhouseCoopers, 2005a; b):

• The speculative option trading started without encapsulating properly in risk management policies and senior management oversight and supervision.

• The option contracts were not evaluated on a best practice basis. Some of option contracts even had complex features such as optional term extensions. In particular, they did not consider their time value. The company stuck to its valuation approach, despite the confirmation received from the counterparties actually had significantly different prices.

• Regarding fair value accounting, the errors in the valuation of the open position led to erroneous financial statement.

• Current options were sold to generate sufficient cash and funds in order to settle losses on the existing position

• The board of director, especially the audit committee, did not fully implement the respective duties on company’s risk management and speculative derivatives trading control.

• Company management intended to violate the risk management regulations.

4.2. Risk Management Structure of China Aviation Oil

The risk management of China Aviation Oil has been rebuilt after the business debacle and the accounting scandal.

4.2.1. Three-Tier Management Control Infrastructure

CAO made three tier management levels for better control and enhancement of risk management (China Aviation Oil (Singapore) Corporation Ltd., 2010b). The management control infrastructure includes

1. The Risk Management Committee (RMC) at Board level

• Review and approve CAO’s new business and establish appropriate risk limits.

• Identify acceptable levels of market, credit and operational risks, acceptable for
2. The Company Risk Meeting (CRM) at management level
   • Discuss and makes decisions on various risk management matters resulting from
day-to-day operations based on scope of RMC’s delegations.
   • establish appropriate risk limits for new business activities
   • Oversee CAO’s risk management activities.
   • Ensure that all decisions of RMC and policies are implemented and adhered to.
3. The Risk Management Department at operational level
   • Provides on the ground vigilance and responsiveness to ensure CAO’s risk
management policies and procedures being adhered to.
   • Ensure all deals are recorded and monitored daily.
   • Ensures that risk reports are sent to the management, trading Department and
Finance Department on daily basis and to RMC on monthly basis.

The Risk Management Department reports directly to CRM and RMC, which ensure
that CRM plays and important and independent role in CAO’s day to day risk
management. Any limit breach will be reported to management and CRM within 24
hours with follow up actions to address the breach. CAO established work processes
to analyses the issues arising from processes and take appropriate measures and
actions to address these issues.

In CAO structure, there are two main aspects of risk, the Governance Structure and
Figure 2 Three-Tier Management Control Infrastructure (China Aviation Oil (Singapore) Corporation
Ltd., 2010b)
the Internal Organization, exist in the organizational design and operation.

At the level of Governance Structure, ineffective governance, lack of scientific decision-making process, virtuous operational mechanism and the administrative capacity could lead to business failure and hard to achieve business strategy.

First, the general meeting of shareholders can be conformed through standards and effectively, and shareholders can exercise their right. Second, firm and the majority shareholder are independent in the asset, financial and personnel and the principle of equality, public and voluntary will be observed between affiliated Business transaction and majority shareholder. Third, the information of controlling majority shareholder is disclosed in accordance with the provisions of timely and complete. Fourth is the minority shareholder’s right to be protected by the necessary measures who is able to participate the general meeting of shareholders, to exercise the corresponding right and to obtain the same information in the same conditions with the majority shareholders. Fifth, the board is independent with the management and majority shareholder, board of directors and audit committees have the appropriate number of independent directors exist and can play an effective role. Sixth, the directors for their rights and responsibilities have enough and clear understanding, and have sufficient knowledge, experience and time to perform their duties. Seventh, the Board is able to guarantee enterprises to establish and implement effective internal controls, approving corporate strategy and important decision-making and regular inspections, evaluate its implementation, well define the enterprises acceptable risk tolerance, and urge management to monitor and evaluate the effectiveness of internal control. Eighth is the composition of the board of supervisors to ensure their independence, the ability of supervisors to match with the related areas. Ninth, the audit committee runs efficiently. The board and managers’ action of the damage to business will be corrected by the audit committee; they should perform their responsibilities correctly. Tenth is that the necessary monitoring and controls exist to manage the power of managers.

The main risk from the Internal Organization is that: unscientific internal mechanism design, irrational allocation of responsibilities lead to duplication, overlapping functions or missing, evading responsibility, and low operating efficiency.

First, the internal organization is set up as centralization or decentralization in terms of the nature of business. Second, companies have instructions and regulations about internal organization, responsibility and authority of the various functional departments, organizations process operation and so on. Third, the internal organization makes adjustments swiftly according to environmental changes to support the implementation of strategies. Fourth, internal organization can provide sufficient information for staff, and the designed organization structure is good at the transfer of information between different firm levels and different business. Fifth is that the staff in key position who have sufficient competence to carry out the powers and responsibilities. In the meanwhile, the positions are in the rotation system. Sixth is that corporate directors, supervisors, senior management and the right of all staff in the system which provides a clear official record. Seventh, the business has appropriate description and explanation of different positions to avoid incompatible
duties and un-separated situations. Eighth, the business carried out to set up and perform auditing and supervision, or authority for the ultra virus acts of whether the absence of correct and timely treatment.

4.2.2. Training and Developing an Effective Risk Management Team

According Colquitt et al., (2008) cited in Fraser et al., (2010) training of the risk manager have a participation in integrated risk management activities. CAO maximized the organization's human resources through effective work allocation for each member of the risk management team based on their knowledge, skills and abilities, by using two approaches in recruitment:

1) Recruiting talents from the external market
2) Building up capabilities within the organization via training programs.

CAO engages reputable trainers in the industry to customize risk management training programs and invite specialists from BP to conduct training sessions for contract management and auditing. CAO also share best practices with the risk management department of CAO’s parent company, China National Aviation Fuel Group Corporation (“CNAF”).

4.2.3. Inculcating a Strong Risk Management Culture

Culture is crucial to the success of enterprise risk management in optimizing stakeholder value. If culture is ignored then all relevant risks may not be identified and assessed, decision makers may not be aware of some risks and may ignored certain important risk (Simkins and Fraser, 2010).

CAO motto is “Effective Control, Timely Support and Balanced Growth”. CAO inculcates a strong corporate risk management culture from Board to management team and further cascading to all employees.

To achieve effective control, CAO identified key indicators for managing market, credit operational as well as non quantifiable risks (political and legal) and set appropriate risk level for each indicator. Credit and legal reviews for potential trading counter parties are completed ahead of time to support the trading activities. Employees are encouraged to suggest idea to improve and optimize the work processes through an incentive program. Further employees are also regularly tested on their understanding of daily work processes and company policies.

To support “Balanced Growth”, Risk Management Department conducts stress test and risk assessment for new trading activities. Risk Management Department gives ample warning when utilization is close to limit and ensures that appropriate stop loss actions are taken related to existing activities. For new investment projects, risk assessment are conducted to consider factors such as alignment with CAO’s strategy, capital adequacy and risks reward analysis. (China Aviation Oil (Singapore) Corporation Ltd., 2010b)
4.2.4. Non Quantify Factors

Besides internal factors, the non quantifiable risk factors are also important to consider while taking the decision regarding risk. The non-quantify and external factors include political, social, legal, informatics, environmental, technical, and economical. All these factors affect the financial information and risk management.

Exogenous event is one of the characteristics of risk management in the context of corporate risk, which has potential to affect financial outcome from different business strategies. For example, climate, interest rates, commodities, counterparty, currencies, liquidity, inflation, energy, which represents different element separately on the above figure, and when embedded in core business.

CAO build management training program to cope up with such factors, and engages reputable trainer in industry to customize risk management risk programs and invites specialists from BP to conduct training sessions for contract management and auditing. CAO also share best practices with risk management department of CAO’s parent company.

In 2007, Southwest Airline company, jet fuel costs comprised 28 percent of operating expenses (2007). Spot price of jet fuel approximately tripled between the end of 2002 and 2007, which was partially reflected by an increase in Southwest’s average per gallon fuel cost from $0.72 during 2003 to $1.70 during 2007 (2010). In other words, Southwest’s average fuel cost increased by 2.36 times rather than the 3 times implied by the increase in spot jet fuel prices. Southwest Airlines has managed to partially mitigate the effects of rising jet fuel prices by entering into hedging transactions that benefit from higher crude oil and refined products prices. (Colquitt, et al., 2008)

4.3. Good Governance and Risk Management

Different standards codify the sound principles and common wisdom that underpin all risk management frameworks, be it the management of foreign exchange risk in a corporate, or the management of operational risks in the corporate actions department of a global custodian. Whatever the precise subject, few guiding principles arise again and again and they are an important part of what we want to discuss below.

Many companies have had to confront some of the issues below head on, forced by the introduction of IAS 39 and FAS 133, (two accounting standards put recognition on balance sheet of derivatives at the fair market value forward as the basic principle).
4.3.1. The Strategic Objectives and Risk Tolerance

The company objectives to achieve in managing certain risks are the decisions that are ultimately the responsibility of the board of directors, because these decisions can have a significant impact on the shareholder value of the company. Not only should the board decide whether this activity fits within the overall strategy of the company from a conceptual perspective and the scale for this activity should also be decided (time horizon).

High level objective setting and risk tolerance will often come after the fact like transaction taken place to hedge risks in a small volume. It is highly important that those embryonic activities are picked up early and formalized properly, or abandoned altogether if deemed inappropriate within the context of the company’s objectives. This requires people, up to high level including the board who are sufficiently knowledgeable to identify such activity, analyze it in the context of the company’s other activities, and prepare the ground for formal decision.

4.3.2. Translate Policies

Fixed objectives are not obviously sufficient. They must be wicker into the fabric of the company’s daily operations. This includes the definition of limit systems, lists of allowed instruments and counterparties, and identification of accredited traders who can commit the company, etc. This must be duly formalized in operating procedures that translate the policy to the daily operational level.

Apart, internal control related aspects of putting in place the relevant infrastructure, there is also logistical side of matters which includes ensuring that all people involved are adequately trained and adhere to high ethical standards, making the necessary systems available, both from a front office (transaction) perspective and from a back office (control, reporting and accounting) perspective.

While performing tasks by senior management, it must strike to delicate balance between creating the adequate system of internal controls, without hindering the development of business. Another challenge is the homogeneity of the implementation of the procedures over the different locations in which a multinational is active.

4.3.3. Enforcement of Policies and Procedures

An independent department must be present in order to

- Follow up on the open position (completeness of capture and valuation)
- Assess compliance of positions and strategies with the policies and procedures
- Follow up on other risks related to the activity (e.g., credit risk).

Enforcement has a great worth in policies and procedures. Assessing positions and risks in compliance with the policies and procedures starts from an accurate
measurement of the positions and their inherent risks. Such measurement and
evaluation reside best in an independent department.

It is the responsibility of senior management and board to make sure that the
balance is well kept in small organizations because maintaining segregation of duties
in smaller organizations comes at high cost. In multinationals companies, it is also a
permanent challenge to maintain a complete and accurate overview at the central
level of activities in financial instruments.

In early phases of IAS 39 impact studies and implementation exercises, where IAS 39
has been put to good use to enforce more transparency and consistency in complex
organizations.

There are different challenges related to valuation and it is important to know that
different types of financial instruments require different degrees of technical
sophistication. IAS 39 and the requirements to assess the effectiveness of hedges,
has led many corporations to develop those skills, altogether more complex type of
instruments. The company often must use account under IAS 39/FAS 133 when all
markets are equally well developed and decisions on the time horizon for which
forward prices are available and used in the valuation has significant impact on the
value of commodity contract.

4.3.4. **Frequent and Detailed Disclosures**

Information technology revolution led investors and regulators to demand ever more
frequent and detailed disclosures on a corporation’s financial position. Stakeholders
probably not always fully grasp the cost associated with these demands for the
corporate is not a relevant excuse not to strive for best practice. The regulatory
requirements and peer group benchmark are constantly changing. Corporate must
ensure that it is not lagging behind in these areas.

Information that regulators and investors are looking for is believed to be of
importance for the management of the company, and the costs associated with it,
should not be considered to be for external reporting purposes only. The information
should be used for management of the company and credibility of external
information is tightly linked to the way it is used internally, in the Management
Information Systems.

4.3.5. **Weaknesses in Own Model**

The assumptions underlying both the strategy and the valuation and risk
measurement models should be challenged and overviewed on a regular basis.

Using a more or less sophisticated financial model for risk analysis or valuation
entails in itself the risk of complacency. However complicated, models are always
based on some simplifying assumptions, needed to make the problem
mathematically tractable. It is important complement in risk management and
modeling activity to look for the weaknesses in the own model deliberately. Even
though people might more easily believe the impossible, and have tendency to
dismiss the improbable. Looking for weakness in own model is precisely for those improbable but disruptive events that stress testing should prepare the company. The company should decide if and how it will prepare itself for improbable events in function of the risk appetite of its stakeholders and the costs involved.

4.3.6. Analysis on the Risk Profile of Product

An analysis should be conducted on risk profile of the product, the appropriateness, and capacity to handle the instrument operationally, including the accounting treatments.

Management only learns about a new type of strategy when the first losses hit the income statement. Before the use of any new type of instrument, the company should formally assess whether the product suits the purpose of its risk management objectives. Company should also consider whether the company is operationally ready to start trading or using the instrument.

4.4. The Application of ERM Framework in Case Study

4.4.1. Concentrate on the higher and most important aspects of potential risk

The financial risk management of firms must focus on the acceptable level of risk for give product or business activity. Management of financial risks due to core business is linked with Corporate Treasurers. Out of these some risks have been identified and managed for years but some only emerged recently. The risks have become more noticeable due to recent subprime crisis and its consequences on market liquidity, the surge in commodities and energy prices over the past few years.

It is significant to change Business internal control to its risk management which is supposed to be the greatest change of the Enterprise Risk Management Framework (RMF Framework). In fact, almost all companies have their own huge management system and regulations including the CAO. Those regulations include almost everything in detail, such as external investments, travel expenses, reimbursement and so on. Risks linked to the organization’s core business (R&D, market share, innovation, sometimes raw materials or energy,...) are accepted without debate. They are even called opportunities since they justify the organization’s basic existence (The Risk Management Group, 2008). Hence, the enterprises' board of director and their senior managers normally regard the implementation of these regulations as all the contents of internal control. Actually, the business management resources are limited, and their control is a kind of expense. It is really not worthwhile to concentrate on any negligible and insignificant control, which might waste many management resources and even ignore the significant potential risks, although it seems to be well controlled with a long list of regulations. Thus, ERM framework suggest the board of directors and senior managers to pay more attention to significant potential crisis rather than negligible parts, which can be regarded as a revolution if they use risk management as the most important factor of internal control. CAO has been listed as one of the 2003 most transparent companies by the Singapore Bond Supervision Department, who states that the company is well
management in their detail internal control. However, the following result just illustrates their problem on risk management. Therefore, ERM framework suggests that, instead of detail control, risk management is worthwhile to be concentrated on.

In addition, it is very important to note that even any proposed model does not replace the team of risk management. The proposed model can be as a decision aid to help the overall decision-making process and identifies the areas of concern. Internal auditors through it can rapidly identify the risky business areas, allocate their time efficiently and focus could more concentrate on the troubled and important areas. Thus, using auditing aid model increases the audit department’s efficiency and productivity.

### 4.4.2. Implementation of ERM Framework

It is true that every company has their own internal control system. Otherwise, the company is not able to be normal operated. Actually, the CAO itself has a whole internal control system. In order to seek a perfect system, they invited Ernst & Young, one of the big four accounting firm, to improve their risk management system. The handbook stated that they have to report to the board of directors and establish loss-avoid plans soon when facing a $5 million loss. If the company strictly complied with its regulations, this case would not happen. Obviously, when Jiulin Chen tried to deal with the options, he did not follow the handbook and nobody stand out to prevent him doing so. Eventually, the situation got worse and worse. In this case, it is not enough to only have those regulations, but the actual implementation. This has been clearly illustrates in the ERM framework emphasizes the significance of implementation. The company should have a separate supervision department to assure the system been correctly and efficiently operated. In addition, it is vital to build well controlled procedures so that the whole organization’s risk management procedures are under supervision with amending deviation when necessary. As a modern business organization, all of its activities should be divided as authorization, approval, and implementation, record and monitoring with a mutual restraint. From the case of CAO, if Jiulin Chen, as a manager, has mandated right, he is not suggested to execute the activity. According to the principle of control activity, even if he also has the implementation right, he cannot inspect and supervise the same business activities. Nevertheless, there is no resistance or obstacles during the whole illegal activity of Jiulin Chen who controlled the whole procedures of the petroleum derivatives speculation activity. Generally, in a standardized foreign company, in addition to report its financial statements to company managers, they should also be reported to the board of directors as well as a separate internal auditing committee in order to ensure the implementation of internal controls. Consequently, we understand that implementation of ERM framework is much more important than the planning internal control framework.

### 4.4.3. The Effect New Elements of ERM Framework

Compared with traditional elements of internal control, the new ERM framework has four changes on its elements, which are meaningful to re-understand the CAO event.
4.4.3.1. Using Internal Environment Instead of Operation Environment

The traditional internal control regards its first element as controlling the environment, while the new ERM framework changed to the internal environment. The new element emphasized that the internal environment includes the atmosphere of an organization. It forms the recognition of an organization and the foundation of its potential risk. Internal environment includes risk management philosophy, risk appetite, employee ethics and corporate business environment. The internal environment of the CAO had serious problems. The reason on the aspect of technology for the loss of Jiulin Chen is simple, while its internal environment plays an important role on the failure. During the CAO's option transactions, they did not realize the risk but over-trust their own judgement, that is, oil price must fall down after the peak. After the initial loss, Jiulin Chen still thought that he can make it if he has another fund to re-invest. Due to his past contribution, the company did not make the right decision to stop his activity when he got a serious loss on the option transactions. Instead, the company sold some stocks to raise fund, and finance further speculations, which eventually leads to the astronomically high losses. Therefore, a new company culture, which adapts to China's new corporate culture, should be set up. Otherwise, the similar case with the CAO will happen again. This is the inspiration of the new ERM.

4.4.3.2. Innovation of Goal Setting

The traditional internal control does not include the second element. However, it demonstrates in the COSO report of many big companies’ Fraud cases that the failure of internal control is mainly because of their initial goals and objectives. Meanwhile, they do not make the right decision for each different event, especially the high risk activities. This is one of the reasons that lead to their failure of internal control. Generally speaking, a company should have its objectives before it realize that these might influence the potential events. ERM enables management to set appropriate goals and objectives. Meanwhile, the chosen objectives are able to support, connect corporate mission, and consistent with its risk appetite. This element applies when the management set their objectives to consider risk strategy. The CAO has made two strategic transformations since 1997, after two-year losses and two-year recovery operation. The first transition is that they changed from a shipping company to a trading company that concentrates on oil purchases. The second transition, it became a multinational company to invest in the oil industry, make international oil trading and import. In 2001, the CAO successfully landed in Singapore capital market under the parent company's support. However, its president Jiulin Chen did not satisfy with the pure oil trading. Under his promotion, the CAO began to get involved in the oil options. After the initial success, CAO management changed its corporate strategic objectives to speculative option trading without reporting to the board of directors. The randomness of this objective change eventually led to the company's failure. Actually, the initial objectives were clearly identified at the beginning of the CAO's oversea business, that is, to obtain a stable global oil price. Nevertheless, these objectives had been changed by Jiulin Chen without authorization to earn huge profits through speculative trading. Hence, random changes of objectives eventually led to its failure. Consequently, the goal
setting plays a significant role in risk prevention.

4.4.3.3. Innovation of Activity Identification

Furthermore, an organization has to identify its internal and external events that may influence the achievement of its objectives. The identification enables management strategy and goals to keep the same without deviation. The CAO 2002 annual reports showed that its speculative trading made a profit. In the second half of 2003, China Aviation Oil landed to the oil options market, and also gains a profit at the year end. This is the problem of opportunities and risks in event identification. When we began to enjoy the profits of the activities, we should clearly understand the huge potential risks of these activities at the same time. In the end, the huge loss was also due to the failure of CAO's oil option trading, which relates to how an organization correctly distinguishes between the opportunities and risks. If Jiulin Chen can identify the situation, and clearly realize the potential risk, the CAO might have a totally different history. Therefore, it is significant to use the skills of activity identification to distinguish opportunities and risks. This is another important element of the new report.

4.5. Information Technology Application in Risk Management

In all of multinational companies, the network and information system themselves will continually be updated and expanded, some components changed with changing of company departments, at the same time the software applications will be replaced or updated with newer versions. Furthermore, it is possible happened that personnel and security policies changes over time. All these changes will bring new risks and risks mitigated previously may again become an issue. Therefore, the risk management process is stressful ongoing and evolving. We are emphasizing the good practice in multinational companies which need for a continuing risk assessment and evaluation and the factors that will result in a successful risk management process.

4.5.1. A Good Security Practice in Multinational Companies

We are not intent to repeat the application of information technology in risk management because of that there are many other thesis focus on this aspects. The one thing which is important is, however, how to apply the information technology into the existing organization structure and to facilitate the risk information to be conducted and integrated IT systems, not because it is required by law or regulation, but because it is a good practice and supports the organization's business objectives or mission. In order to that, the risk assessment process should be usually repeated at least every year for director of board or audit committees. The concept Information and Communication is the component of ERM which has become more important in the few three decades along with the development of computer technologies and information technologies. The ERM model requires that the information can be identified, captured and communicated and personnel to do the jobs effectively. The information flow should streamline up to the senior management as well as down to the operation of the front office, and the information should express clearly convey the intent of the deliverer. At the same
time, it is an open system to exchange information with outside circumstance instead of a self-enclosed information system. In CAO case, the financial department according to the senior management requirements to made the financial report with fake information to confuse all the stakeholders, it was not detected efficiently until CAO’s cash flow broken, the truth of information had been covered up more than eight month and there was at least one time external auditing work during this period.

The functions of Information systems are to identify, capture, process, and distribute relevant information to support the achievement of financial reporting objectives. In smaller companies, fewer levels, not many numbers of personnel, good visibility and availability of the owner are the factors that lead to effective internal communication from top management to employees. How the multinational companies design and implement a more effective information system bypass the multi-hierarchical management levels and make the information more transparent and rapid is a one of the permanent topics in risk management and internal control. As an extra factor, internal control deficiencies identified by auditors than on evaluation must be considered significant deficiencies or material weaknesses should be communicated in writing to management and those charged with governance (American Institute of Certified Public Accountants, 2009). However, classifying and protecting data are extremely important to the business in the first place in multinational companies. Therefore, what kinds of information are critical to its business processes must be identified in each line of business. What do firms do will be evident in communicating ownership and integrating the security requirements into each business process as long as data sets are established that provide more meaning to business operations. Internal control systems need to be monitored though the critical information or rearranged data sets, which is a process that assesses the quality of the system’s performance over time. This is accomplished via ongoing monitoring activities, separate evaluations, or a combination of the two. Internal communication should exist through daily meetings and day-to-day activities in which the owner and other managers participate. It is hard to find the effective structure of communication between CAO and the parent company. The senior management had the authorization to start financial derivatives business without effective internal control from higher level. The parent company even did not know any information about where the money flow moved to and there had no any evidence that CAO’s cash flow had been set up the warning mark in order to control it effectively. We have discussed the first situation on the former research of Good Governance and Risk Management.

Another possibility is that they had established relevant regulation to prevent fraudulent financial information, whereas the internal control system did not support the operational and financial information flows freely. There were many reasons leads to the result. For example, data classification directly affects how organizations to allocate and maximize resources to ensure continuity of business operations to asset management, risk assessment and the strategic use of security controls within the IT infrastructure of any organization (Etges and McNeil, 2006). In CAO case, senior executives or audit committees must be appointed with ownership over business information and report to the board and the parent company directly.
4.5.2. Information Technology and risk management

A successful risk management process in multinational companies needs:

(1) The commitment from senior management. The top management must ensure that accurate written records are kept and they realize that is their responsibility.

(2) The effective support and participation of the IT team. For example, the cash flow fluctuation had been monitored under 24-hours surveillance via an instant information system by the IT department where the personnel comes from both CAO and its parent company, the short of funds should be detected at the first five million had to be settlement. The loss would be controlled to a limited extent even the contracts of options had been deliberately hided.

(3) The ability of the risk assessment team, which have the expertise to apply the risk assessment way to manage the system, identify mission risks as well as provide cost-effective requirements that meet the needs of the companies. In general, the consequence of a business impact analysis specify the most critical business processes for the company which based on business operations, revenue streams or the ability to deliver a service (Etges and McNeil, 2006).

(4) To know and cooperate with members of the users. In practice, the information owners and other stakeholders illustrate and record the requirements for business and security.

COSO also developed the *Enterprise Risk Management Framework* in order to senior executives’ and board of directors need for effective and efficient ways to better control the enterprises and to ensure that organizational strategies related to operations, financial statement, and compliance are achieved. This framework is the most widely used risk management and internal control framework around the world, which has been adopted by many countries and business.

4.6. Risk Management and Organization Performance

The corporate performance and risk may be addressed from a number of different though not mutually exclusive perspectives. Different stakeholders may seek different balances between long and short term performance, profitability and liquidity and level of risk inherent in business itself. A basic tenet of performance for most of these stakeholders concerns both profit performance and the risks associated with achieving this performance. More long term perspective rather than the short-termism often implied by the financial performance measures but accepts that financial performance measures remain the predominant measure of corporate performance. Risk itself is a function of the internal control and the strategy developed. A well devised strategy could simultaneously reduce risks and increase returns. There is a relationship between the performance of the organization and risk which measured the degree of variability of the returns over a period of time. This risk can be systematic and unsystematic risk. Systematic risk cannot be avoided by the organization irrespective of the strategies that might be evolved. Unsystematic risks relates to company specific and are generally within the control of the business.
itself in terms of the strategies it formulates and their effective implementation. The former relates to the risks experienced by all organizations as a function of the environment within which firms operate (e.g. macro-economic conditions, political situation and competitive structure within the industry). Risks where the risks are generated from particular activity, environmental related, industry related, organizational strategy, problem specific, decision maker related are all these formulation provides the basis and indicate that these variables not only influence risk (systematic and unsystematic), also potential performance of organization.

4.6.1. Enterprise Risk Management and Firm Performance

Implementation of an enterprise risk management system in organization improves firm performance (Beasley, et. al., 1999). There are no empirical evidence that does exist suggests that the appropriate ERM system may vary across firms. In other words, the relationship between ERM and firm performance is most likely contingent upon several firms’ related factors. The relation between ERM and firm performance is contingent upon the appropriate match between a firm’s ERM and the following five factors:

- Environmental uncertainty
- Industry competition
- Firm complexity
- Firm size
- Monitoring by the firm’s board of directors

4.6.2. Environmental Uncertainty

The importance of considering environmental uncertainty (EU) confronting an organization when designing management control systems (ERM system) is well established in the accounting literature (Gordon and Miller, 1976; Gordon and Narayanan, 1984; Chenhall, 2003). Environmental uncertainty creates difficulties in management control systems as well implementation of control system. ERM system identifies and manages future unpredictable events that may adversely affect an entity and environmental uncertainty increases obstacles to cost effective ERM activities may also increase. The need for incorporating broad scope information into ERM control system increases as the environmental uncertainty increases (Gordon and Narayanan, 1984; and Chenhall and Morris, 1986; Mia and Chenhall, 1994). Thus, the proper match between a firms’ ERM and the environmental uncertainty impact the relation between a firms’ ERM system and its’ overall performance.

4.6.3. Industry Competition

Industry competition is critical when considering the relation between a firms’ performance and its ERM system. Khandwalla (1972), stresses the sophistication of a firms’ control system is highly correlated with the intensity of competition. Proper
match between industry competition and a firms’ ERM system have an effect on the relation between a firms’ ERM system and performance.

4.6.4. Firm Size

The relation between firms’ size and organizational structure has been a primary consideration in the organization theory literature (Lawrence and Lorsch, 1967). Accounting research found that the firms’ size is an important factor when considering the design and use of management control system. Shields (1995), finds that the large firms may have greater access to the resources needed to implement more complex systems. Further, firms’ size is to be positively related to the adoption of ERM (Hoyt et al., 2006). Beasley et al., (COMPOSITION OF THE INSTITUTE’S 2005 CORPORATE GOVERNANCE COMMITTEE) stress that the organizational size is positively related with the stage of ERM implementation and organizational growth poses increased communication and control problems (Merchant, 1984). Furthermore, as the firms’ size increases, the difficulty in implementing information and communication activities, as well as control activities also increase. Thus, the cost effectiveness of ERM system varies with variations in firms’ size. Thus, the proper match between firms’ size and ERM system affects the relation between a firm’s ERM and its performance.

4.6.5. Firm Complexity

Firm complexity refers to the numbers of line of businesses and geographical locations associated with a firm. Highly diversified and decentralized firm requires more administrative control than the less diversified and decentralized counterpart (Merchant, 1981). Hoyt et al (2006) find that complexity is positively related to the use of ERM. Greater the firm complexity, less integration of information and more difficulties in management control within the organization. Doyle et al (COMPOSITION OF THE INSTITUTE’S 2005 CORPORATE GOVERNANCE COMMITTEE) stress that material weakness in internal control is more likely for the firm that is more complex. Thus, the proper match between a firms’ complexity and its ERM system is another key concern in assessing relation between a firms’ ERM and its performance.

4.6.6. Board Monitoring

Board of directors plays an important role in firms’ ERM strategy and implementation of ERM system. Independent directors in the board are positively related to the stage of ERM deployment (Beasley et al., 2005). New York Stock Exchange (NYSE) Corporate Governance Rules include explicit requirements for registrant audit committees to assume specific responsibilities with respect to “risk assessment and risk management,” including risks beyond the financial reporting (NYSE, 2003). Thus, firms’ board of directors’ monitoring activities and its ERM strategy affects the relation between firms’ ERM and its performance.

From performance perspective, there is a cost associated with ERM system and the costs of improving the effectiveness of system needs to be weighed against the
incremental benefits. ERM focuses on risk and return tradeoff and excess market return is one way to measure firm performance because the market returns are risk adjusted (Kolodny et al., 1989; Gordon and Smith, 1992). Thus, the excess market return reflects that the higher performing firms will either have higher return for given level of risk or lower risk level for given return level.
5. Discussion & Conclusion

This chapter illustrates the principles of Risk Management and Governance in the area of recording financial information in any business activities. Results suggest that an understanding of corporate governance structure and its relation to risk management and internal control may aid directorate and firms looking to increase performance, establish effective structure of internal control and decrease the risk.

5.1. Conclusion

The Company eventually lost its financial ability to catch its margin call in a rising financial market in January 2004 when it faced the potential losses on its options portfolio. This position should be closed in order to avoid the negative market to market value on its options portfolio which was led by the incorrect accounting and financial treatment in financial disclosure. In fact, CAO’s each restructuring has a multiple increase in risk due to its strategy that any new trades had been affected by the previous options with same recording. With the negative market to market value of options portfolio, the company finally lost all of their liquidity to cope with the exponentially mounting margin calls. At November 29th, 2004, the termination in CAO’s shares trading is because of the cumulated losses of $550 million. This difficult situation was due to the increasing risk of its restructurings. The poor management structure, reporting system, inefficient valuation model, inadequate corporate governance, and ineffective internal control lead to a huge Derivatives accident. Although a prudent and elaborated risk management system is not a guarantee of excellent results, well defined rules of the game assure an organization’s accountability at least, which will generates more reliable returns eventually.

The proper management reporting system, ERM framework, suitable information technology system and implementation of good governance principles helped the company to deal with and control the all internal critical risks as well as most of external risks. The company new strategies for ERM, environmental uncertainty, industry competition, board monitoring and firms’ complexity to deal the risks boost up risk exposure and performance of company.

The risk management function bears some of the responsibility to develop an appropriate risk aware culture within organization. This goes beyond defining and monitoring the elements of culture, determining new initiatives and directions intended to promote the desired characteristics of the culture. It has to do with the risk management area’s own behaviors.

Those within risk management department, particularly in technical and financial industries, will be strong technicians. Training has been largely technical, and the rewarded behaviors have been largely technically orientated. However, communication and even marketing skills are also important attributes rational and input to business decisions.
Strategies are formulated according to the ERM framework and Principles of corporate governance for the management infrastructure to control and report risks. Information technology plays an essential role for the communication of rules, reporting and cooperation between the different departments and subsidiaries, different management levels and stakeholders. Periodic and continuous monitoring and improvement in management infrastructure and reporting system result in better risk control and increase company performance.

The results indicate that the risk management strategy gets the most business value from corporate governance and risk management. Developing proper risk management infrastructure would appreciate the return on value from information financial risk investments for the stakeholders.

5.2. Significance

China market is a potential market with more than 1.3 billion people which is enormous. All the outstanding companies want to invest the new firms in China with minimum risk. Therefore, they need effective strategies to achieve the particular aims.

This case study has provided valuable insights into the practice of risk management implementation in multinational firms. In addition, in order to apply the theory to similar organizational processes and structures in future ventures, case study is necessary to be analyzed. Consequently, it is important to make sure that risk management processes are comparable and standardized.
5.3. Further Research

In the conclusion of this paper, the authors think that the management of risk needs to be a continuous process, lasting the lifetime of any organizational initiative, be it a major activity or project, from its initiation, through its development and evolution, to its completion or termination (Egbuji, 1999). It is suggested that one of the functions of risk management is to avoid the enterprise to be terminated by various contingent factors.

Egbuji (1999) argues that the success of risk management is dependent upon the stage at which it is introduced. Much of the ethics behind risk management is the identification of risks before they materialize, followed by the implementation of mitigation strategies and contingency plans so that if and when they do materialize their potential impact is reduced. If risk analysis and management techniques are not put into use until late in an activity, then their effectiveness in ensuring successful outcomes is greatly diminished. The potential for actual disaster is equally increased. How do we make and implement to mitigate strategies and contingency plans to reduce the potential impact of risk, it is a topic to worth research constantly.
Appendices

Appendix 1: Profile of China Aviation Oil (Singapore) Corporation Ltd.

China Aviation Oil (Singapore) Corporation Ltd ("CAO") is the largest purchaser of jet fuel in the Asia Pacific region and the key supplier of imported jet fuel to the civil aviation industry of the People’s Republic of China ("PRC"). CAO supplies to the three key international airports in the PRC, i.e. Beijing Capital International Airport, Shanghai Pudong International Airport and Guangzhou Baiyun International Airport, and accounts for more than 90% of PRC’s jet fuel imports. CAO also engages in international trading of jet fuel and other oil products. CAO owns investments in strategic oil-related businesses, which include Shanghai Pudong International Airport Aviation Fuel Supply Company Ltd and China National Aviation Fuel TSN-PEK Pipeline Transportation Corporation Ltd.


The largest single shareholder of CAO is China National Aviation Fuel Group Corporation ("CNAF"), which holds about 51% of the total issued shares of CAO. A large State-owned enterprise in the PRC, CNAF is the largest aviation transportation logistics service provider in the PRC, providing aviation fuel distribution, storage and refueling services at most of the PRC airports. BP Investments Asia Limited, a subsidiary of BP, is a strategic investor of CAO which holds 20% of the total issued shares of CAO. (China Aviation Oil (Singapore) Corporation Ltd., 2010a)
Appendix 2: About China Aviation Oil

China Aviation Oil (Singapore) Corporation Ltd (CAO) is the Singapore subsidiary of China Aviation Oil. It was first incorporated in 1993 and mainly deals in jet fuel (kerosene) procurement for the airports in the People’s Republic of China and international oil trading. The firm commands a near 100% market share of the procurement of imported jet fuel for China’s civil aviation industry.

The company caught public attention in 2005 when it was embroiled with a trading scandal, involving its chief executive Chen Jiulin with losses running up to $550m and the subsequent collapse of the company. This made it one of the biggest business scandals in Asia since the Nick Leeson case with the $1.2 billion loss that sent Barings Bank into bankruptcy in 1995.

Subsequently, Chen Jiulin was arrested with the charge of insider trading, and was sentenced to 51 months imprisonment. China National Aviation Fuel Group Corporation (“CNAF” parent company) has since came up with plans to revive the company.

Initially, only swaps and futures were traded to help optimize CAO’s procurement capabilities. Later, on behalf of client airline companies, back-to-back option trading was started. Speculative trading in fuel options started a year after that.

Background

At first, the CAO primarily used derivatives as a hedging instrument to hedge its risk inherent in its primary business of physical oil procurement and trading. However, as stated in the PwC report, at the end of March 2003, CAO entered into speculative option trades where it sought to profit from favorable market movements. Strategically, CAO took the view that the market price for oil would continue its trend upwards. For its trades in options, it purchased calls and sold puts, thereby effectively creating a geared long position. As oil prices increased, the calls that were purchased were exercised and profits were made. The puts that were sold were not exercised and the company profited from the premiums that had been collected when these options were sold. This strategy was extremely successful until Q3 2003.

In Q4 2003, CAO adopted a bearish view of the trend in oil prices and as a result changed its trading strategy, according to the PwC report. Chen Jiulin signed contracts with multiple banks and made a speculative bid on oil for $38 per barrel with the assumption that the oil price would not rise above that price. It now sold calls and bought puts with the result that it was in a short position at the end of 2003.

However, the company’s strategy started to unravel when oil prices did not decrease from the end of 2003. In October 2004, the situation came to a head when international oil prices grossly surpassed the $38 price, leaving CAO facing significant margin calls on its open (short) derivative positions.
According to a CAO press release dated the 30 November 2004, “it was unable to meet some of the margin calls arising from its speculative derivative trades, resulting in the company’s being forced to close the positions with some of its counter parties”. In the same press release, CAO announced that the accumulated losses from these closed positions amounted to approximately US$390 million. In addition, the company had unrealized losses of about US$160 million, bringing the total derivative losses to $550 million. However Chen Jiulin and other senior executives manipulated the company’s financial statements to conceal the losses.

China Aviation Oil reports under accounting standards prevailing in Singapore, which is one of 100 countries worldwide that have effectively adopted IFRS. Prior to 2003, companies reported under Singapore Statements of Accounting Standards (SAS). As part of SAS, the country’s regulator proposed SAS 33: Financial Instruments: Recognition and Measurement. This was due to be effective for financial statements covering periods on or after 1 July 2001. However, this was subsequently delayed to 2004. Then, as of 1 January 2003, all Singapore companies moved to Singapore Financial Reporting Standards (FRS), which are effectively equivalent to IFRS.

As in Europe, Singapore companies were required to adopt FRS 39 (the IAS 39 equivalent) only as of 1 January 2005. However, as of its initial public offering in 2001, China Aviation Oil, in the notes to its accounts, stated that “Financial instruments undertaken for trading purposes are marked to market and the gain or loss arising is recognized in the profit and loss account”.

PwC states that “for the accounting periods under review, the FRS did not specifically prescribe a method of recognizing and measuring derivatives. However, given its adoption of FRS and in the absence of specific guidance on derivatives, the company ought to have adopted an accounting treatment and valuation method for derivatives that accorded with industry standards” in its report on the CAO’s accounting.

PwC concludes that CAO adopted an incorrect valuation methodology for its options. It regarded the intrinsic value (i.e. difference between the strike price and the forward price of the underlying commodity) as the fair value of its options. However, the fair value of options should comprise both intrinsic value and time value, which takes into account the length of the time to maturity of the option, the volatility in the spot price of the underlying commodity, interest rates and other factors.

The majority of option valuation models include time value in their formulae which most commentators consider to be more appropriate valuations than the intrinsic value method adopted by CAO.

PwC observes that if the time value had been taken into account, the company’s financial statements would have reported a more realistic picture of the situation and it shows this by recalculating the results of CAO’s option portfolio on what PwC considered a more representative fair value basis. They go on to conclude that the “company’s reported earnings in 2004 were therefore grossly inaccurate”
TABLE1: China Aviation Oil – reported versus adjusted earnings (2004, $m)

<table>
<thead>
<tr>
<th></th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>First 9 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported PBT</td>
<td>19.0</td>
<td>19.3</td>
<td>11.3</td>
<td>49.6</td>
</tr>
<tr>
<td>Adjusted PBT</td>
<td>-6.4</td>
<td>-58.0</td>
<td>-314.6</td>
<td>-379.0</td>
</tr>
</tbody>
</table>

Source: Price Water house Coopers Report, 3 June 2005

Due to the continuous rise of the oil price during 2004, even a fair value approach based purely on intrinsic value should have shown significant losses at China Aviation Oil in 2004. However, according to PwC’s report, to avoid recording and reporting losses, the company adopted a much larger risk exposure by selling long-term options with extremely high risk profiles to raise the premiums to cover the cost of closing out the loss-making option contracts. So in effect, CAO covered up the losses that were realized when closing out the loss making near dated options.

Timeline of events

• March 3002 – CAO enters into speculative option trades on oil prices with a bullish view

• Q4 2003 – CAO changed its strategy and started trading speculative option trades taking a bearish view.

• October 2004 - international oil prices rose steeply, leaving CAO facing significant margin calls on its open (short) derivative positions.

• 30 November 2004 – in a press release CAO states it was unable to meet some of the margin calls arising from its speculative derivative trades, resulting in the company’s being forced to close the positions with some of its counter parties. The accumulated losses from these closed positions amounted to approximately US$390 million. In addition, the company had unrealized losses of about US$160 million, bringing the total derivative losses to $550 million.

• March 2006 - Chen Jiulin was arrested with the charge of insider trading, and was sentenced to 51 months imprisonment.

How the collapse happened?

There were no properly defined risk management policies in place when the speculative option trading started and there was a lack of oversight by the senior management.
As discussed above the option contracts, some of which had complex features such as optional term extensions, were not valued according to best practice. As PwC states the time value was not taken into account. CAO continued with its valuation approach (using only intrinsic value), even though the confirmations of counterparties contained significantly different prices. This led to erroneous financial statements.

In addition to the above, there were several rollovers of loss generating positions, whereby options on larger volumes were being sold to generate sufficient funds to settle the existing position losses.

**Was option valuation to blame?**

Some may argue that CAO was acting correctly by valuing derivatives at intrinsic value, although that still fell short of the full fair value approach as now required under IFRS and US GAAP. The China Aviation Oil situation view, provides support for the new approach to derivatives accounting both under IFRS and US GAAP.

Historically, derivatives were generally not shown on balance sheets and gains and losses were only accounted for in earnings upon settlement of the derivatives. Consequently investors do therefore not have sufficient insight into the current position or risk exposure of the company.

It seems that the fair value measurement is but a snapshot at a random moment in time. Therefore the changes introduced by the “IFRS 7 Financial Instruments Disclosures” that requires disclosure of the significance of financial instruments for a company’s financial position and performance are moving in the right direction.

CAO should have analyzed the implications of different oil prices on the company’s results and equity. This sensitivity analysis as required under IFRS 7 should provide investors and analysts with insight into the dynamics of value changes and the sensitivity of fair value to underlying drivers (interest rates, exchange rates, equity prices, commodity prices etc.).

**Lessons to be learnt**

There were many issues and problems exposed with the CAO scandal, for example, corporate governance, market monitoring and surveillance, compliance and regulation, inadequate knowledge in risk management, wrong perception of the risks, and miscalculation of the depth of pocket.

There are many lessons to be learned from this case:

- The strategic objectives and risk management policy of the company must be determined at the highest level in the organization

- Senior management must be responsible for the policies to be incorporated into daily operations and to dedicate the necessary resources to achieve this
• A risk management department must be set up to:

  □ Ensure the open position is followed up.

  □ Ensure compliance of the positions and strategies with the policies and procedures.

  □ Determine other risks related to the activity, e.g. credit risk.

• Internal and external reporting (financial statements) must follow best practice with frequent and detailed disclosures.

• There should be regular stress testing on strategy and risk measurement models.

• Prior to trading in new products, a formal analysis must be conducted and documented on the risk profile of the product, the appropriateness of its use, the ability to handle the new product operationally, including the accounting treatment.

**Conclusions**

Derivatives disasters, such as the one of China Aviation Oil, have nothing to do with the inherent risky character of derivative instruments. In CAO’s case the losses from the speculative oil derivative trading were due in part to the company’s desire not to disclose losses in 2004, as well as improper risk management procedures and the failure of the board to fulfill their duties. (The Professional Risk Managers' International Association, 2009)
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