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EDITORIAL

Dear readers!

This issue of the journal is devoted to several issues of corporate governance.

J. Young aims to research the general approach to a risk management process for a typical petroleum, oil and gas company operating in the South African industry and to determine the primary risk types for such a company. The result of this research could serve as an awareness instrument for petroleum, oil and gas industries to support and establish an effective risk management process, while striving to achieve industry and economic objectives. Furthermore, to serve as a working platform for those companies that is still in early stages of developing a practical risk management solution.

Anders Ekholm, Alexander von Nandelstadh explore this question by monitoring investors' trading behavior during the weeks prior to analyst earnings forecast revisions using a unique stock transactions data set from Finland. We do not find evidence of large investors systematically being warned of future earnings forecast revisions. However, our results indicate that the very largest investors show trading behavior partly consistent with being informed about future earnings forecast revisions.

Chu-Yang Chien, Yuh-Jiuan Parng, Chen-Wei Lu test the relationship between the corporate governance mechanism, especially Board of Directors' composition and ownership structure, and the involuntary delisted firms. The study extracts 58 involuntary delisted firms from Taiwan Securities Exchange (TSE) during 1997 to 2007 and matches with 112 similar control firms. The results from probit regression suggest that Board of Directors (BOD) with more number of outside independent directors, larger board size, lower ratio of shares pledged to the total shares, higher seats over control right, and lower control right over right for cash flow may reduce the likelihood of delisting. The study could become monitoring indices for internal examination system, the warning signals for investors, and the reference for the policy makers.

Marion A. Weissenberger-Eibl and Patrick Spieth research the characteristics of ownership and control in family business and point out the role of Family Business Governance in securing an appropriate control of the owning families. The authors give suggestions how to implement the German Governance Code recommendations in family businesses.

Faizah Darus, Dennis Taylor examine whether the introduction of an accounting standard relating to the disclosure of financial instruments affects voluntary corporate disclosure, and the impact of proprietary and political costs on such disclosure decisions. Using the annual reports of 70 Australian listed companies over a period of 6 years giving 420 firm-year observations, this study investigates the comparative impacts of proprietary and political information costs on management's voluntary disclosure decisions relating to financial instruments. The regulatory disclosure environment, the impact of proprietary costs (proxy by a firm's investment growth opportunities) and political costs (proxy by a firm's probability of financial distress, size of a company and negative media attention) relating to the voluntary disclosure of financial instruments were investigated. Results of this study provide evidence that the mandatory disclosure of non-proprietary information relating to financial instruments has resulted in an increase in the voluntary disclosure of related proprietary information.

Valentina Della Corte explores the strategic systems and more precisely the strategic network that develops within a territory (business districts, destinations) or a virtual set and that is even denser and more complex than ordinary networks: local resources can be relevant for the whole aggregate and relations are also physically or virtually particularly closed. Strategic networks and inter-firm collaborations have often been analysed with respect to their main success factors. Less attention has been paid to the more obscure and less satisfying aspects that someway explain why, in some cases, they fail or at least do not take off. Even theoretical frameworks usually adopted as Resource-Based Theory (Rumelt, 1982; Wernerfelt, 1984; Barney, 1991, 2007) Transaction Cost Economics (Williamson, 1975, 1981) and Social Network Theory (Granovetter, 1973, 1982; Lieberskind *et al.*, 1996, Wasserman, Faust, 1999) are used according to a positive approach, aimed at finding and analyzing mainly successful initiatives. The aim of this article is to analyse, in particular, situations of distrust, that can either continue pushing firms not to cooperate or rather evolve towards more trustful situations and therefore with more chances of really developing business networks. A specific model is proposed, to manage distrust and to evolve towards trustful situations.

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CONTENTS

RISK MANAGEMENT FOR A TYPICAL PETROLEUM, OIL AND GAS COMPANY IN SOUTH AFRICA

J. Young*

Abstract

Risk management is becoming an important management discipline for most organisations including petroleum, oil and gas companies. However, before risks can actually be managed, it is imperative to ensure that a risk management framework is embedded. This research aims to research the general approach to a risk management process for a typical petroleum, oil and gas company operating in the South African industry and to determine the primary risk types for such a company. The result of this research could serve as an awareness instrument for petroleum, oil and gas industries to support and establish an effective risk management process, while striving to achieve industry and economic objectives. Furthermore, to serve as a working platform for those companies that is still in early stages of developing a practical risk management solution.

Keywords: Risk identification, Risk evaluation, Risk control, Risk financing, Risk appetite, Risk monitoring

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Introduction

The petroleum, oil and gas industry forms a vital and large part of any country's economy. It provides important support to transport, manufacturing and energy sectors and is a huge supplier of employment. As such, risk exposures to this industry culminate in a risk exposure for the country as a whole. Risks arising from this industry are a real threat to the industry and the country and require the close attention of government and executive management. "The resulting loss of income following an event could pose a greater threat than the actual physical damage" (Hamman 2008:6).

Risk management is applicable to all organisations, although the management approaches might differ. In the wake of recent risk management and corporate governance developments in terms of regulation, many organisations have by now implemented, to some degree, a risk management process. In some companies, these initiatives may only extend to safety and health or financial reporting, while others followed a more holistic approach and covered the total spectrum of a risk management process.

Employees of petroleum, oil and gas companies are widely exposed to dangerous activities. As such, most of these companies are in an advanced stage in managing risks in terms of safety, health and environmental factors. However, to be able to effectively protect the organisation against various risk exposures and threats, it is imperative to understand the total risk exposure and to have a proactive management approach to prevent or minimise the potential effects should these risk events occur. It is, therefore, critical to optimise the benefits that an enterprise-wide risk management approach offers to an organisation.

As enterprise risk management are being pursued by many industries and organisations, it is imperative to do this by means of a structured approach to ensure that the best risk management practices are implemented according to the needs of the organisation.

Petroleum, oil and gas companies face similar challenges to establish a sound risk management approach. As such, this research aims to elaborate on an approach to risk management that could be used as a platform to develop a suitable risk management process for all companies operating in the petroleum, oil and gas industry. This will be achieved by a literature research on a risk management process and typical risks, followed by an analysis of information collated from a leading company in the South African

industry. Information was gathered by means of a questionnaire and interviews with employees of the company. The current status of various risk management methodologies and typical risks faced by the company was determined in order to serve as a platform and guideline for the development of a typical risk management process.

This research covers the following key issues in order to provide clarity on a typical risk management process:

- Components of a typical risk management process and definitions of various risk types which a company operating in the petroleum, oil and gas industry could face.
- Empirical research to identify the status of a typical company within the industry regarding the understanding and application of components of a risk management process as well as to prioritise the primary risk types such a company should be managing.
- Concluding remarks and recommendations on risk management.

Background

Traditionally risk management mostly focused on safety, health and environmental issues relating to people. The modern approach is much broader as companies begin to focus on potential losses and negative influences on business. According to Bardy et al (2008:238), there have been many high profile accidents which have resulted in few, or zero, fatalities and injuries, but huge cost to business. Companies have suffered significant financial losses and entire countries have seen major disruption from single incidents involving relatively small direct asset losses and sometimes no fatalities. For example, the release of dioxin at Seveso, Italy, in July 1976, resulted in no direct fatalities; however, this incident required the evacuation and decontamination of a wide area north of Milan. Although no fatalities suffered, it resulted in the contamination of about ten square miles of land and vegetation and more than 600 people had to be evacuated and about 2000 people had to be treated for dioxin poisoning.

In Australia during 1998 the Esso Longford liquefied petroleum gas processing plant experienced a massive explosion, killing two workers and injuring eight. Although the fatalities and injuries were relatively small, gas supplies to the State of Victoria were severely affected for several months after the incident. Most of the state's gas supply was cut for almost two weeks with serious disruption for a further two months and a total estimated cost to the industry of $1.3 billion.

A further example is the Exxon Valdez oil spill on 24 March 1989 which resulted in no fatalities, but in addition to the direct financial losses to Exxon, fines of around $150 million dollars were imposed along with $900 million civil settlements. In addition, the oil spill also had an effect on the environment which are difficult to put into $-value terms.

Although the benefits of safety, health and environmental risks are well-documented and understood by most players in the petroleum, oil and gas companies, the abovementioned types of incidents caused a more focused and wider approach to risk incidents as one incident could have a ripple effect on various factors such as safety and compliance with legislation, people, finance and, ultimately, the continuation of the company as a going concern. As such, risk management should be extended to assess the risk exposures as well as the financial consequences of risk incidents. To emphasise this statement, Bardy et al (2008:239) state that in today's competitive business environment, key drivers are: improved financial performance; maximised up-time; reduced insurance costs; and reduced risk of interruption to business resulting from risk incidents.

In this regard, typical questions to be answered during a risk management process could be:

- Should an incident occur, what will it cost?
- What is the maximum loss which can be suffered as a result of the incident?
- How can the likelihood of an incident resulting in a loss be minimised?
- What are the financial risk exposures?
- How can a cost-benefit analysis of the operational risks be performed?

These questions form an integral part of proactive risk management and emphasises the importance of embedding an enterprise risk management framework and process. Stevens (2008) states that health and safety professionals need to embrace enterprise risk management to ensure that their input is valued by: using the 'correct" language; is risk-based; business focused; commercially relevant; and integrated with organisational policies and systems.

Enterprise risk management (ERM) includes risks that can influence the enterprise as a whole and could include financial risks, legal risks, operational risks etc. Patrick (2008:30) defines ERM as an activity that creates a risk-based approach to managing an organisation's operations, strategy and controls. An important fact, though, is that each and every risk must be managed in its own right. This concept is also referred to as managing risks in silos. As a result of the specialised nature of risk types, such as credit, market and operational risks, it forces a separate management approach for each of them. The concept of "enterprise-wide" lies with the potential influence of the risk exposure to the organisation. A specific risk type could have an

enterprise-wide influence and as such it is important to manage this risk on an enterprise-wide basis instead of a narrow risk or specific business approach.

It is similarly important for petroleum, oil and gas companies to follow a similar approach to manage their risks on an enterprise-wide basis. However, it is imperative to develop such a framework in a structured manner. A phased approach could be followed when developing a risk management framework, which could include the following steps:

- Develop a risk management process.
- Use the process to identify and evaluate the primary risk types and exposures.
- Develop and implement risk control measures.
- Financing of the risk controls, ensuring that the cost of risks does not exceed the benefits.
- Continuous monitoring of controls and changing circumstances which could result in additional risk exposures that should be managed.

It is, however, crucial to determine, up front, exactly what the organisation wants to achieve with developing and implementing a risk management framework. Should it be just for the sake of having a risk management process, the total initiative would be nullified. The banking sector, for example, refers to the "use test" where it must be proved that the risk management processes and methodologies actually works and assists the organisation to manage its risks up to a point where the benefits of this process and system actually exceed the costs. This in mind, a starting point for any organisation to develop and establish a risk management framework is with a risk management process.

Risk Management Process

The absence of a clearly defined and embedded risk management process has led to many organisations suffering huge losses. The primary reason for this statement is that a risk management process can ensure a proactive approach in identifying risk exposures and implementing preventative controls.

A typical risk management process consists of five components, namely: risk identification, risk evaluation, risk control, risk financing and risk monitoring. This is illustrated by figure 1.

Figure 1. Risk management process

Source: Adapted from Young (2006:33)

Risk identification: This step is regarded as the first step of the risk management process and consists of determining the risk exposures facing the organisation as a whole as well as for individual business processes. According to the Basel Committee on Banking Supervision (2003:8), risk identification is paramount for the subsequent development of a viable risk monitoring and control system. It also refers to the need for an organisation to define and understand the nature of the risk that it faces. However, according to Chapman (2008:109), before the activity of risk identification is activated it is important to analyse the business. The purpose is to gain an understanding of the following:

- The background of the business. For example, in this instance the general business would be related to petroleum, oil and gas products.
- The specific business activity, for example the specific product which could be petrochemicals, oil or gas etc.

The abovementioned information will provide the platform for an analysis of the business processes which can be used to determine the primary activities and the inherent risk exposures. There are various methods available to determine the inherent risks, such as:

- Questionnaires – using structured questionnaires to gather relevant information on risk exposures.
- Workshops – inviting key staff to a workshop to "brainstorm" business processes in order to determine the risk exposures.
- Surveys – evaluating surveys completed by knowledgeable people to collate information on risk exposures.
- Peer reviews – to gain the opinion of peers regarding specific risk-related issues which could be used during a risk identification process.
- Interviews – acquiring information from specialists by means of interviews regarding specific risk exposures.

After collating the necessary information on the risk exposures, the next step is to determine a suitable risk management tool to finalise the risk identification process. Examples of these tools are:

- Risk and control self-assessments, which aim to assess an organisation's risk exposures and activities against existing control measures to determine the residual risk (net risk after taking control measures into account) that should be managed.
- Loss data (incident reporting) aims to identify the risks based on historical data of losses incurred due to a risk event. This data is used to identify control measures in order to prevent similar loss events affecting the organisation.
- Key risk indicators (KRI's) are risks that have been identified and constantly being monitored against benchmarks in order to proactively prevent a risk becoming a major problem to the business. These indicators will alert the organisation to changes that may be indicative of risk concerns.
- Process analysis consists of analysing the key business processes to identify the risks which must be managed in order to ensure that the processes are effective.
- Scenarios aim to construct events which could negatively influence the business. These scenarios are then subject to a risk analysis to identify the possible risks which must be proactively managed.
- Risk modeling makes use of stochastic models which focus on an estimation of the risk of specific processes, using, for example, loss data to determine loss distributions that could assist in identifying expected and unexpected losses.

Risk evaluation: This activity is closely linked to the risk identification component and entails the assessment and measurement of the identified risk exposures. Measurement is the quantification of the risk to determine the types and extent of risk and risk assessments aim to determine the potential frequency and severity of the exposures that have been identified. According to the Committee of Sponsoring Organizations (COSO) (2004:47), in assessing risk, management considers the impact of expected and unexpected potential events. Many events are routine and recurring and they are already addressed in management budgets and programmes. Others are unexpected and may have a significant potential impact on the business and the organisation as a whole. As such, management has the obligation to assess the risk of all potential identified events that are likely to have a significant impact on the organisation. There are a number of methods which could be used to assist in the assessment of risks after the risk identification process, such as:

- Actual loss data which aims to provide information on actual risk events which occurred. The benefit of this information is that a value and/or volume can be determined in order to quantify the actual risk. According to COSO (2004:49), quantitative techniques are dependent on the quality of the supporting data and assumptions and are most relevant for exposures that have a known history and frequency of variability and allow reliable forecasting. Benchmarking, for example, is a useful assessment technique which focuses on specific events and compares results using common metrics to identify control measures or improvements. Some companies use benchmarking to assess the impact and likelihood of potential events across an industry.
- Rating scales form an important part of a risk assessment process, especially when the likelihood and impact of potential risks must be determined (assessed). A risk assessment process captures participants' views on the potential likelihood and impact of future events, using either descriptive or numerical rating scales (see tables 1 and 2).

Table 1. Scale to determine impact of events

Scale	Impact
High	Financial impact on the organisation is likely to exceed a threshold value or have a significant impact on the organisation's viability or strategic objectives.
Medium	Financial impact on the organisation is likely to be between two threshold values or have a moderate impact on the organisation's viability or strategic objectives.
Low	Financial impact on the organisation is likely to be between two threshold values or have a minimal impact on the organisation's viability or strategic objectives.

Source: Young (2006:62)

Table 2. Scale to determine the likelihood of events

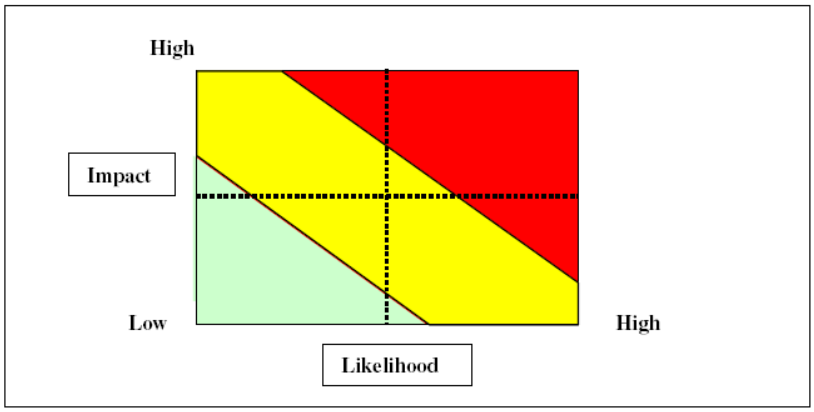
Assessment	Description	Indicators
High	Probable. Likely to occur in a one-year period or more than 50% chance of occurrence.	Potential of it occurring several times within the next 10 years or has occurred within the past two years (Typical occurrences are due to external influences).
Medium	Possible. Likely to occur in a 10-year period or less than 50% chance of occurrence but greater that 2%.	May occur more than once within the next 10 years (These occurrences are typical to external influences, but mostly to occurrences internal in the organisation).
Low	Remote. Not likely to occur in a 10-year period or less than 2% chance of occurrence.	Has not occurred in this country; would be surprising if it occurred.

Source: Young (2006:63)

The abovementioned rating scales are only an example and each organisation should determine its own scales according to what best suites the assessment and the expected result.

- Risk register contains an output of the assessment proceeding process which should include a full description of the risks and the risk categories. Each risk should be assigned to a risk owner and risk manager. It could also include background information on the impact of the risk on the business.
- Risk mapping involves a probability/impact diagram which can be used to plot the expected loss frequency against expected impact for each identified risk (Alexander 2003:133). An example of a risk map is illustrated in figure 2.

Figure 2. Illustration of diagram for risk mapping



Source: Adapted from Young (2006:76)

Risk control: Risk control concerns the application of mitigating techniques to prevent or reduce the probability of loss and it aims to eliminate or minimise the potential effect of the identified risk exposures. Important risk controls can be categorised as follows:

- Policies and procedures. Frost et al (2001:67) state that the point of establishing a policy is to ensure a consistent approach to risk management with regard to employees' behaviour, and to ensure that all risks across an organisation are identified. Effective risk management policies and procedures will orchestrate the risk management process for the organisation and, importantly, identify the roles and responsibilities of various role players involved in the risk management process.
- Internal controls. Internal controls should be determined to ensure the implementation of the policies and procedures. Internal control measures are also required to effectively mitigate the identified risks.
- Roles and responsibilities. The new era of risk management requires the specific appointment of risk managers and risk owners. The risk owner is also the business manager and overall responsible for the effective management of the risks facing the business. The risk manager is there to assist the risk owner with specialist advice during the risk management process. Both these role-players play an important role to ensure an effective risk management process.
- Risk reporting. Risk reporting is probably one of the most important aspects of risk management. Risk reports originate from an effective risk management process and ensure that the correct information is collated and distributed to the decision-makers in a timely manner. An effective risk report will ensure timely decisions to mitigate risks. As such, it is imperative that accurate data is included in risk reports.

Risk financing: This component of the risk management process entails the financial provision for losses that may occur. It therefore, selects the most efficient method of providing (financially) for the elimination or consequences of risks. Thus, risk financing refers to the provision of sufficient funds to manage the risk and to absorb losses as they occur. Funding can be accomplished by, for example, a variety of internal and external financial resources including insurance and risk-based pricing. It is, however, critical that the cost of risk management does not exceed the benefits of the risk management system.

A further important part of the risk financing component of the risk management process is to establish a realistic risk appetite. Risk appetite is defined as the amount of risk to which the organisation is prepared to be exposed to. Risk financing will ensure that the risk appetite of the organisation is realistic in terms of the budget, cost of risk controls, insurance and possible capital allocation.

Risk monitoring: Risk monitoring is a continuous management component of a risk management process which aims is to ensure the effectiveness of the risk management system and techniques which the organisation is using. Therefore, risk monitoring can be regarded as the operational process whereby the organisation can ensure that it operates within its defined risk policies and procedures and that the risk management activities are effective. Examples of typical components which could be used for risk monitoring are the following:

- Key Risk Indicators.
- Incident management.
- Internal audit reports.
- Risk reports.

Primary risk types

The primary risk types for a company operating in the petroleum, oil and gas industry was identified as the following:

- Operational risk – which is defined as the risk of losses due to inadequate or failed internal processes, systems and people and external events (Basel 2003:2).
- Credit risk – the risk that a counterparty to a financial transaction may fail to perform according to the terms and conditions of the contract at a given time (Young 2000:3).
- Market risk – the risk of a decrease in the value of a financial portfolio as a result of adverse movement in market variables such as prices, currency exchange rates and interest rates (Young 2000:3).
- Business risk – the risk that threatens the organisation's survival or its ability to sustain a profitable business activity and the creation of shareholder value due to poor strategic planning and/or external influences incorrectly anticipated by management.
- Legal risk – the risk arising from violations of or non-conformance with laws, rules, regulations, prescribed policies or ethical standards. The risk also arises when laws or rules governing certain products or activities of an organisation's customers may be unclear or untested. Non-compliance exposes the organisation to fines, financial penalties, payment of damages, and the voiding of contracts (Young 2000:4).
- Country risk – risks arising from business ventures with or investments in foreign countries due to, for example, local government policies, political situations, corporate governance and economic climates.
- Environmental risk – the risk of loss of existing customers from the deficiencies in environmental performance, increased operating costs arising from compliance with government legislation or fines imposed by empowered environmental institutions (Chapman: 2008:307)
- Safety/health risk – the risk exposure to employees and the community which can negatively influence their health and safety and/or the implications of not complying with health and safety regulations.
- Financial risk – relates to threats to solvency, profitability and liquidity and may arise from market price movements (Cleary & Malleret 2006:84).

Given the abovementioned literature review, the study was exploratory in nature, attempting to determine a basis to establish the status of risk management of a typical petroleum, oil and gas company in South Africa.

RESEARCH METHODOLOGY

Due to the fact that the identified company opted to remain anonymous, the company's identity will not be revealed, however, the company is one of the major role players in the South African petroleum, oil and gas industry.

The population selected for the research consisted of randomly selected employees at all levels throughout the company. A structured questionnaire was decided on to gather data for the research due to the wide geographical area of the company. In order to ascertain the current approach and status of the risk management process for the company as well as the primary risks facing the company a closed-structured questionnaire was developed. The questionnaire was developed from the literature study and with the assistance of senior employees of the company. As such, specific questions were formulated relating to the literature study on a risk management process and definitions of various risks facing the industry. (See table 3).

Table 3. Risk management questions

#	Component of risk management	Questions
1	General (Yes/No answers)	1. Do you have a formal strategic business plan which could be used as a platform for risk assessments? 2. Are you familiar with the risk management process of the company? 3. Do you have a formal risk management process established to support the business objectives?
2	Risk identification (Scale)	4. What methods do you use to identify risk exposures? 5. What tools do you use to identify risks?
3	Risk evaluation (Scale)	6. How do you measure/assess risks after identifying the risk

		exposures?
4	Risk control (Scale)	7. What risk control measures are in place?
5	Risk financing (Yes/No answers)	8. Do you have a realistic risk appetite for the company? 9. Do you have sufficient insurance for identified risks? 10. Do you budget for the cost of controls?
6	Risk monitoring (Scale)	11. How do you monitor risks?
7	Primary risk types	12. Identify and prioritise the primary risks for the company

Apart from the yes/no questions, the questions were coupled to the following rating scale in order to assist in analysing the response:

- 1 = Not at all
- 2 = Being developed
- 3 = To a degree
- 4 = To a large degree
- 5 = To a full degree
- ? = Unfamiliar concept

Research results

Eighty questionnaires were randomly distributed throughout the company. Thirty-six completed questionnaires were returned on the due date representing 45% of the population.

The response to the questions was analysed in terms of the arithmetic mean in percentages per rating, including the yes/no questions. The analysis of the questionnaire provided the following information:

General information

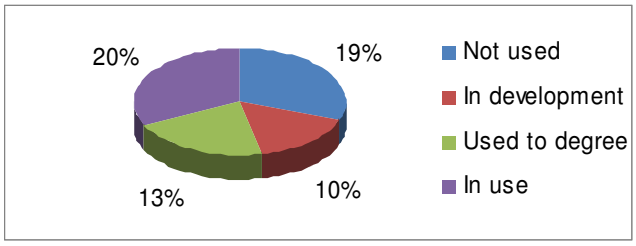
- 50% of the respondents indicated that their business unit have a formal strategic business plan which could be used as a platform for risk assessments, although 25% were unfamiliar with the concept.
- 69% stated that they are familiar with the risk management process of the company.
- 50% indicated that they do have a formal established risk management process to support business objectives.

Risk identification

Methods to identify risk exposures (See figure 3)

On average 27% of the respondents is unfamiliar with the concept.

Figure 3. Risk identification methods

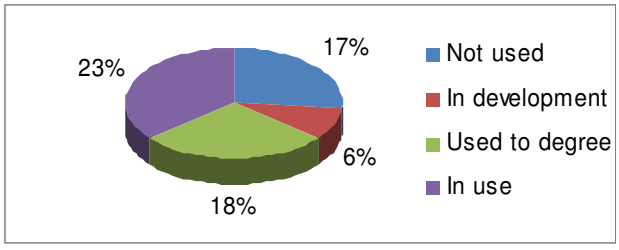


According to the respondents, the methods mostly used to identify risk exposures are peer reviews (13%) and workshops (20%). The methods least used are questionnaires and surveys (19%), while questionnaires are being developed as a method for identifying risk exposures (10%).

Tools to identify risks (See figure 4)

On average 25% of the respondents is unfamiliar with the concept.

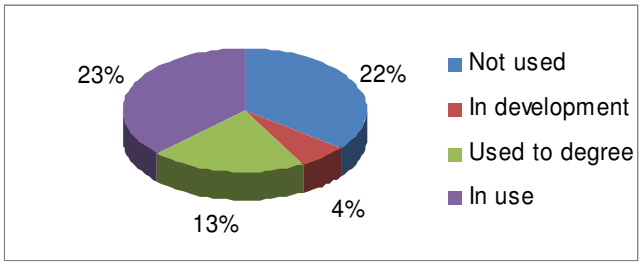
Figure 4. Tools to identify risks



Respondents indicated that risk and control self-assessments (23%) and process analysis (18%) are the most used tools. Scenarios and modeling (17%) are not used, while key risk indicators (6%) are being developed.

Risk evaluation methods (See figure 5)
On average 38% of the respondents is unfamiliar with the concept.

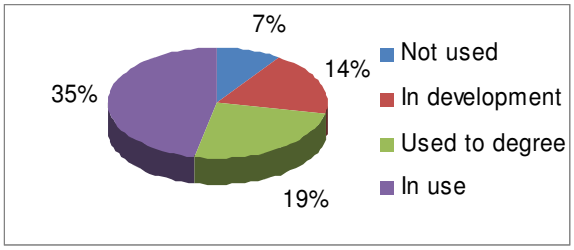
Figure 5. Risk evaluation methods



The respondents indicated that the loss data (23%) and the risk register (13%) are the most used methods during the risk evaluation process, while risk mapping (4%) is being developed and rating scales (22%) are not used.

Risk Control (See figure 6)
On average 24% of the respondents is unfamiliar with the concept.

Figure 6. Risk controls

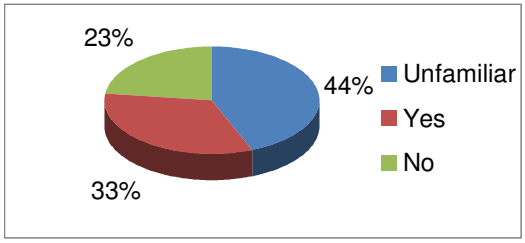


The risk controls mostly used are internal controls (35%) and policies and procedures (19%). The application of dedicated risk officers and risk reporting (21%) are either not used or in a development phase.

Risk Financing

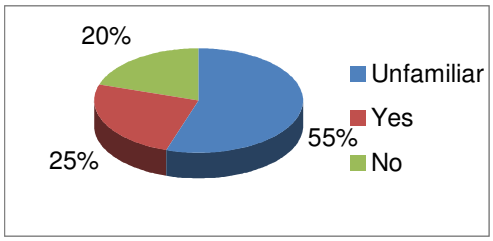
Realistic risk appetite (See figure 7)
44% of the respondents were unfamiliar with the concept of risk appetite. 33% indicated that the company has a realistic risk appetite while 23% indicated otherwise.

Figure 7. Risk appetite



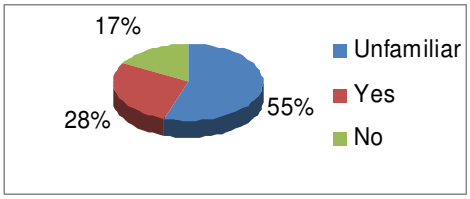
Insurance (See figure 8)
55% of the respondents indicated that they were unfamiliar with the state of insurance as part of the risk financing component. 25% indicated that the company has insurance for identified risks. 20% indicated that there is no insurance for the identified risks.

Figure 8. Insurance



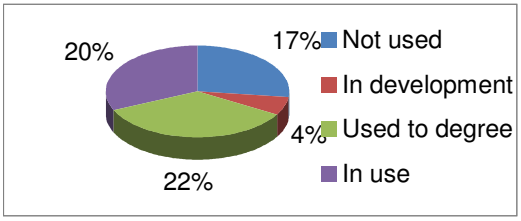
Budget for Cost of Risks (See figure 9)
55% of the respondents indicated that they were unfamiliar with the budget relating to the cost of risks. 28% indicated that the budget includes the cost of risks and 17% indicated the contrary.

Figure 9. Budget for cost of risks



Risk Monitoring (See Figure 10)
On average 36% of the respondents is unfamiliar with the concept.

Figure 10. Risk monitoring methods

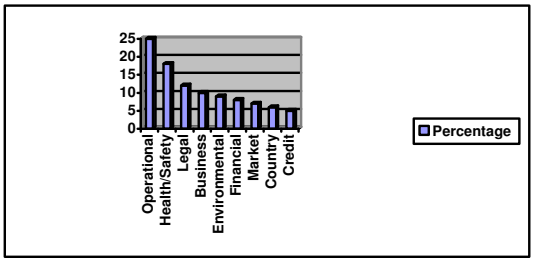


The respondents indicated that audit reports (22%) and monthly risk reports (20%) are the most used risk monitoring methods. The method not used is key risk indicators (17%), while incident management (4%) is being developed.

Primary risks

According to the respondents and based on the given definitions of risk types in the literature study, the following primary risk types were identified and categorised in order of the highest to the lowest priority (See Figure 11):

Figure 11. Primary risk types



Operational risk was identified as the highest priority due to the following factors:

1. Staff turnover
2. System Failures
3. Operating accidents
4. Power outages
5. Fraudulent incidents (Financial losses)

Health and safety risks were categorised as the second highest priority mainly due to the physical nature of the operations. Legal risk was third due to strict regulations imposed by government. Credit risk was rated the risk with the lowest priority at the time of the survey.

Concluding remarks

According to the response, an average of 38% of the respondents was unfamiliar with the various concepts of risk management. As such, it can be concluded that there is a need for risk management training for the company and for the industry as a whole. On the other hand it seems that most of the components of a risk management process are either being used or in a phase of development in order to address the company's needs to implement an effective risk management process.

Risk identification and risk evaluation are two important components of a risk management process. According to the response, the most important methods, namely risk and control self-assessments and incident management are being used respectively. However, it seems that the use of dedicated risk officers for business units is still lacking which requires attention as it forms an important part of ensuring an effective risk management process.

Risk financing, as a component of a risk management process, seems to be an unfamiliar concept to most respondents, which could be addressed by a training programme.

Although the research only involved one company and, therefore cannot be used as a precise reflection of the overall status of risk management for all the companies in the petroleum, oil and gas industry in South Africa, it could serve as a guideline and benchmark for companies operating in this environment. It, furthermore, serves as an indicator that training in risk management is much needed at all management and operating levels. This would ensure that all employees are knowledgeable regarding their role and responsibilities to ensure an effective and successful risk management process for the company.

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DO ANALYSTS LEAK INFORMATION TO PREFERRED CUSTOMERS?

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Abstract

Our research question is whether financial analysts leak proprietary information to their preferred customers by warning them of future earnings forecast revisions. We explore this question by monitoring investors' trading behavior during the weeks prior to analyst earnings forecast revisions using a unique stock transactions data set from Finland. We do not find evidence of large investors systematically being warned of future earnings forecast revisions. However, our results indicate that the very largest investors show trading behavior partly consistent with being informed about future earnings forecast revisions.

Keywords: Financial analyst, information leakage, investor size

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We acknowledge the contribution of Thomson Financial for providing earnings per share forecast data, available through the Institutional Brokers Estimate System. This data has been provided as part of a broad academic program to encourage earnings expectation research.

1. Introduction

Financial analysts play an important role in the economy by both monitoring the governance of companies and disseminating information to the stock market. Financial analysts have however recently been accused for giving biased investment advice, as well as leaking their future earnings forecast revisions to preferred customers[1].

A condition for financial analyst information leakage being consequential is that analysts possess information that has implications for stock prices. Several studies have investigated the market impact of financial analysts' opinions on future stock performance. For instance Barber et al (2001), Barber and Loeffler (1993), Stickel (1995) and Womack (1996) examine stock price reaction to financial analyst stock recommendations, and find that positive (negative) recommendation changes on average are followed by positive (negative) returns. Busse and Green (2002) investigate how Morning Call and Midday Call segments on CNBC TV (which report analysts' views about individual stocks) influence stock prices, and put forward evidence indicating that stock prices respond within seconds of initial mention of the analyst report. In conclusion, the emerging consensus of academic research is that the opinions of the financial analysts impact stock returns[2].

Regardless of whether we view potential analyst information leakage as a phenomenon that compromises the fairness of stock markets or a Grossman and Stiglitz (1980) equilibrium, analyst information leakage has several implications for the functioning of stock markets. Our research question is hence whether financial analysts leak proprietary information to their preferred customers by warning them of future earnings forecast revisions.

We explore this question by monitoring the trading behavior of investors in Finland during the weeks prior to analyst earnings forecast revisions using a unique stock transactions data set in Finland. In summary, we do not find any convincing evidence of large investors systematically being warned of future earnings forecast revisions. On the other hand, our results indicate that the very largest investors show trading behavior partly consistent with being informed about future earnings forecast revisions. The results for these largest investors are however weakened by small sample size and other robustness problems. Our conclusion is hence that analysts do not, at least systematically, leak proprietary information to their preferred customers by warning them of future earnings forecast revisions.

The rest of the paper is organized as follows: section 2 presents the hypotheses and methodology; section 3 describes the data; section 4 presents and discusses the empirical results; section 5 provides a summary.

2. Hypothesis and methodology

In order to be able to monitor different investors' trading behavior prior to earnings forecast revisions,

[1] See for instance Wall Street Journal August 22, 2002; "Merrill Dismisses Stock Analyst For Alleged Warning to Clients".

[2] See for instance Kothari (2001).

we need to 1) identify the earnings forecast revisions, 2) measure investors' trading behavior, and 3) group investors according to their size.

2.1 Identifying earnings forecast revisions

We start by calculating financial analyst *a*'s change in his/her earnings forecast on firm *i*'s earnings during the forecasted period. Formally the earnings forecast revision is calculated as,

$$REV_{ait} = \frac{(E_{ait} - E_{ait-1})}{|E_{ait-1}|}. \qquad (1)$$

Where REV_{ait} is the scaled revision of analyst's *a*'s earnings forecast on firm *i*'s earnings during the forecasted period. E_{ait} is the updated forecast, while E_{ait-1} is the old forecast issued by analyst *a*. Absolute values are used in the denominator to allow for negative values.

One important source of information to investors as well as financial analysts is the firm's financial reports. Financial analysts often update their earnings forecasts due to the information conveyed in a financial report. Investors also make investment decisions based on financial reports[3] and hence we cannot determine if earnings revisions after financial reports impact investors' investment decisions. Therefore, we drop earnings forecast revisions that are reported during a two-week period consecutive to a financial report to diminish the impact of financial reports on investors' investment decisions in our sample.

2.2 Measuring investor trading behavior

Investors' trading behavior for a certain company is gauged by first identifying all investors, who have traded in the company stock during the two calendar weeks preceding an earnings forecast revision, from the Finnish Central Securities Depository central register[4]. The net holdings 15 days before (NH_{t-15}) and one day before (NH_{t-1}) the earnings forecast revision are then calculated for each investor separately by aggregating the initial balance and all transactions up to and including date t-15 and t-1, respectively.

An investor trading behavior proxy $R_{t-15,\ t-1}$ is then calculated for each investor, company and earnings forecast revision:

$R_{t-15,\ t-1} = (NH_{t-1} - NH_{t-15}) / NH_{t-1}$ if $NH_{t-1} - NH_{t-15} > 0$ (2)

$R_{t-15,\ t-1} = (NH_{t-1} - NH_{t-15}) / NH_{t-15}$ if $NH_{t-1} - NH_{t-15} < 0$ (3)

$R_{t-15,\ t-1} = 0$ if $NH_{t-1} - NH_{t-15} = 0$ (4)

The above defined measure $R_{t-15,\ t-1}$ hence expresses the following. If an investor has increased his/her net holding in a stock during the time period t-15 to t-1, the measure expresses the fraction of the final position at time t-1 that has been acquired. On the other hand, if an investor has decreased his/her net holding in a stock during the time period t-15 to t-1, the measure expresses the fraction of the initial position at time t-15 that has been sold out. Finally, if an investor has traded in a stock during the time period t-15 to t-1, but not changed his/her net holding, the measure takes the value 0. Clearly, the above defined investor trading behavior proxy will be a continuous function taking values [-1, 1]. Further, the investor trading behavior proxy is symmetric, which is important in order to not introduce a bias in the variable.

An obvious alternative when measuring investors' trading behavior is to calculate the simple change in NH during the time period t-15 to t-1. The above defined approach is however preferred for one fundamental and two econometric reasons. First, we believe that the investor trading behavior proxy defined in equations (2), (3) and (4) better expresses how investors themselves perceive their actions[5]. Second, if we employ the simple changes methodology an econometric problem occurs when the initial position NH_{t-15} equals 0 (division by zero). Third, the simple changes methodology by default induces a bias in $R_{t-15,\ t-1}$ since the distribution is asymmetric, taking values $[-1, \infty[$ when $NH_{t-15} \neq 0$.

Another alternative when measuring investors' trading behavior is to employ a discrete framework, by for instance assigning the trading behavior proxy variable the value 0 for decreases in holdings and 1

[3] For research on the relation between publicly available financial statement information and stock returns, see e.g. Abarbanell and Bushee (1997), Ball and Brown (1968) and Ou and Penman (1989).

[4] If a company has multiple stock series, the different series are treated as separate companies in the analysis. This approach is taken since treating different stock series as one would yield measurement errors, since the stocks of the different series might be differently valued. Totally disregarding either of the series would naturally also yield potentially severe measurement errors.

[5] This argument is primarily derived from the situation where we have small denominators. For instance, if an investor owns 100 shares and then acquires 1000 more, the percentage change would be 1100 / 100 – 1 = 1000%. The corresponding measure according to equation (1) would on the other hand take the value (1100-100) / 1100 = 91%, which seems somewhat more intuitive.

for increases in holdings. However, by moving into a discrete framework we lose the magnitude of the trading behavior, as only the direction of the trading behavior remains. In summary, the in equations (2), (3) and (4) proposed and in this study employed way of measuring trading behavior enables us to measure both the direction and the magnitude of trading behavior, however avoiding the pitfalls of the simple changes methodology.

2.3 Measuring investor size

In order to measure investor size, we create two alternative investor size variables: one expressing relative size and one expressing absolute size. The relative size variable is generated by dividing the observations for each firm and earnings forecast revision separately into 10 equally large groups according to the net holding in number of shares at date t-15. The absolute size variable is created by dividing the observations into 10 equally large groups according to the net holding in Euros at date t-15. The created size groups are denoted by values from 1 (smallest 10^{th} of initial holding) to 10 (largest 10^{th} of initial holding).

3. Data

We have combined two data sets in the study, 1) the Finnish Central Securities Depository central register data set and 2) the Institutional Brokers Estimate System (I/B/E/S) provided by Thomson Financial.

3.1 The Finnish Securities Depository Central Register data set

The employed transaction data set is, to the best of our knowledge, one of the most comprehensive and complete transaction data sets that have been employed in this field of research up to this date. The Finnish Central Securities Depository central register contains virtually all transactions for the stocks of listed Finnish companies during the time period December 28 1994 to May 30 2000 with daily accuracy. The data set covers approximately 97% of the total market capitalization of the Helsinki Stock Exchange as of the beginning of the sample period, as reported by Grinblatt and Keloharju (2000), and further expands to cover all traded companies from the middle of the investigated period onwards. The Finnish Central Securities Depository central register is the official register of ownership, controlled by the Finnish Financial Supervision Authority, and can hence be viewed as extremely reliable and accurate. Altogether the data set consists of 25,400,767 observations for a total of 1,050,412 different investors, complete with transaction information (notification date, price, volume etc.) and investor characteristics information (investor type, birth year, postal code, sex etc.). A settlement lag of three trading days is conventional on the Helsinki Stock Exchange and the date stamps in the data set include this lag, which is adjusted for in the empirical analysis presented below. Due to this three-day settlement lag, the transactions in the database are stamped between January 2 1995 and June 2 2000, and the initial balance as of December 27 1994 is stamped as January 1 1995.

Investors are categorized into six major groups according to their legal status. These six groups are further divided into several subgroups according to more specific characteristics. All Finnish individuals and institutions are required to register their holdings in their own name, but foreigners can choose to act in the name of a nominee. The holdings of foreigners that choose to act in a nominee name are pooled together into larger pools with the holdings of the nominee. However, the data set contains information that can be utilized to discriminate between transactions executed by foreigners and by the nominee itself. The task of disintegrating the foreigners acting in nominee names further into different subtypes, such as individuals and institutions, is however made impossible by nominee registration. Further, the register does not separate indirect shareholdings through financial institutions, such as mutual funds. Indirect holdings are registered in the names of the financial institutions, and are thus treated as property of the financial institutions in this study. This is well in line with the purpose of this study, as financial institutions by Finnish law must exercise full control over the investment policy of their indirect holdings.

3.2 The I/B/E/S data set

Financial analysts' earnings per share forecasts for Finnish firms are extracted from the I/B/E/S Detail files. Each observation in the data file represents an individual forecast and includes the necessary information needed for firm, brokerage and analyst identification. The I/B/E/S Detail files contain earnings per share forecasts ranging from February 18 1987 to November 15 2001. The query resulted in 23 283 number of earnings per share forecasts provided by 822 analysts at 123 brokerages on 201 Finnish firms. The study is conducted using annual earnings forecasts, issued during the year prior to the date when the actual earnings number is reported. In other words, we have only used FY1[6] forecasts.

To diminish the possible effect of other information released simultaneously as the earnings forecast revisions, we drop those earnings revisions

[6] I/B/E/S labels analyst forecasts for the current year as FY1 forecasts and FY2, FY3 for the consecutive years.

occurring in the two week period following an interim or annual report. The financial statement reporting dates are available through the Helsinki Stock Exchange. The HEX reporting date data set though restricts our sample to the period 1997-1999 and we furthermore limit our study to stocks listed on the more liquid main list[7]. Based on this sample we calculate analysts' earnings forecast revisions. Calculating the earnings forecast revisions for the time period and dropping the observations not recorded in the Datastream file[8], results in 4 028 earnings forecast revisions. We further extract the extreme 100 observations of the total revisions sample, i.e. the event sample contains 50 positive and 50 negative earnings per share analyst revision.

3.3 Descriptive statistics

The total data set of Finnish earnings forecast revisions during 1.1.1997-31.12.1999 consists of 4 028 observations. We have extracted the 50 most positive and negative revisions and presented some descriptive statistics in Table 1, panel A. The median of financial analyst earnings forecast revisions are 2% downwards. This negative median is consistent with the well-documented positive bias in analyst forecasts[9], as analysts tend to adjust downwards their optimistic forecasts throughout the year. Furthermore, we restrict the event sample to only consist of positive (negative) earnings forecast revisions that are followed by a positive (negative) one week cumulative abnormal stock return. The one week cumulative abnormal stock return criteria is used in order to ensure that the measured earnings forecast revisions contain at least some new information that is not already publicly known. If an earnings forecast revision does not affect the share price it is questionable if the revision contained any information not already available to the market. The restriction reduces the event sample to 18 positive earnings forecast revisions and 22 negative revisions. Panel B in Table 1 exhibits some descriptive statistics on the restricted sample. Moreover, panel C displays the characteristics of one week cumulative abnormal returns.

[Table 1]

The data set that contains all investors' trading behavior prior to the most extreme positive (negative) earnings forecast revisions that are followed by a positive (negative) one week cumulative abnormal return, results in 9 151 observations. Descriptive statistics is presented in Table 2. Households constitute the majority of the sample in terms of number of executed transactions, both when considering observations for positive and negative earnings forecast revisions.

[Table 2]

We furthermore extract a sub sample due to selling restrictions present at the Helsinki Stock Exchange. Investors that hold zero number of shares two weeks before an earnings forecast revision can only buy stock if they choose to act during the period, given that they are not able to short-sell the stock. Therefore we exclude investors that have a zero initial investment, and present investor trading behavior prior to positive and negative earnings forecast revisions for the main FCSD categories in Table 3.

[Table 3]

4. Results

This section is divided into two parts. In the former part, we display results from tests using the sample including investors with selling restrictions, i.e. those investors with a zero initial holding. In the latter part we employ the same tests as in the former part but on a reduced sample that excludes those investors who suffer from selling restrictions. Results from both samples are reported as both data sets have their drawbacks[10]. As average trading behavior for the different size groups are calculated by taking the equally weighted average of the investors' trading behavior, the sum of the average trading behavior for the different groups is not necessarily equal to zero[11].

4.1 Results for the sample including investors with selling restrictions

The average trading behavior prior to positive and negative financial analyst earnings forecast revisions

[7] Our preliminary analysis also shows that the earnings forecasts in the I/B/E/S data set are primarily issued for main list firms.

[8] We use Datastream files to extract share price information.

[9] For research on analyst's forecast bias see e.g. Ali et al (1992), Brown (1997), Easterwood and Nutt (1999) Kothari (2001), Lim (2001), O'Brien (1988) and Stickel (1990).

[10] Including investors with selling restrictions forces the smallest groups in the sample to on average purchase shares. Excluding investors suffering from selling restrictions, on the other hand, dramatically reduces the number of smaller investors in the sample.

[11] Hence, the analysis might give an impression of the market not clearing, as the absolute size (in number of shares) of the transactions are not taken into account. However, we do not view this as a problem, as the analysis is focused on the *behavior* of the different investor groups.

are presented in Table 4. The results are based on the sample that includes investors with zero initial holdings. Small investors purchase shares, whereas larger investors reduce their holdings prior to financial analyst earnings forecast revisions. A factor possibly explaining the observed heterogeneous behavior for the different investor groups is that investing in stocks became increasingly popular amongst households in Finland during the time period 1997-1999. The differences between trading behavior prior to positive versus negative revisions are statistically significant for all investor size groups except Group 8. This indicates that investors' trading behavior is on average more positive (negative) in case of a positive (negative) earnings forecast revision.

[Table 4]

Figure 1 exhibits the investors' average trading behavior prior to positive and negative financial analyst earnings forecast revisions. The figure restates that on average the small investors purchase shares prior to financial analyst earnings forecast revisions, whereas larger investors on average sell prior to earnings forecast revisions.

[Figure 1]

In order to assess the economic importance of the different investors to financial analysts we calculate the initial holding also in terms of value. Table 5 exhibits investors' average trading behavior prior to positive and negative financial analyst earnings forecast revisions, grouped by the value of the initial holding. The results do not substantially deviate from the ones presented in Table 4, i.e. smaller investors purchase shares and larger investors sell shares prior to financial analyst earnings forecast revisions. The changes in holdings for the smallest groups are 100%, due to the selling restrictions faced by an investor that possess zero shares initially. Again, the differences between trading behavior prior to positive versus negative revisions are statistically significant for all investor size groups. This indicates that investors' trading behavior is on average more positive (negative) in case of a positive (negative) earnings forecast revision.

[Table 5]

Figure 2 shows the investors', grouped according to the value of the initial holding, average trading behavior prior to positive and negative earnings forecast revisions. The pattern is mainly similar to the one in Figure 1. The smallest investors are on average only purchasing shares prior to the earnings forecast revisions and larger investors are reducing their stock at the same time.

[Figure 2]

As the Finnish market is dominated by a small number of very large institutional investors, for whom sell side analysts compete, one could argue that the investigated groups are too large. In order to examine this line of argument, we look at the largest investors - measured by the value of their initial holdings - and compare their trading behavior prior to positive and negative earnings forecast revisions with the trading behavior of other investors. Table 6 exhibits the results based on the sample including investors with selling restrictions. The group with the largest 1% of initial holdings in terms of value consists of 38 and 53 observations for positive and negative revisions, respectively[12].

The results displayed in Table 6 reveals that the largest investors reduce their holding regardless if the earnings forecast revision is positive or negative, as do the bulk of investors. The difference in trading behavior prior to positive and negative earnings forecast revisions is not significantly different from zero for the group consisting of the largest investors, i.e. we cannot detect any differences in trading behavior prior to positive or negative revisions for this group of investors. All other investors though on average reduce more of their holdings prior to a negative revision than a positive revision. These results clearly do not support the notion of analysts warning large investors of forthcoming earnings forecast revisions, rather the contrary.

[Table 6]

4.2 Results for the sample excluding investors with selling restrictions

We further filter our sample of investors' trading behavior prior to earnings forecast revisions by excluding investors with selling restrictions. An investor that initially holds no shares is forced in our sample to purchase shares, as severe short selling restrictions are present for most shares traded on the Helsinki Stock Exchange. Therefore, we filter the sample to consist only of those investors that had the option either to accumulate or reduce their holdings prior to the earnings forecast revision. The results presented in this section are solely based on the sample excluding investors with selling restrictions.

Table 7 displays investors' trading behavior prior to positive and negative earnings forecast revisions for different investor size groups for data that excludes investors with selling restrictions. Investor

[12] The sample is not driven by a few earnings forecast revisions, as we have 14 unique positive revisions and 20 unique negative revisions.

size groups are created by dividing the observations into 10 equally large groups according to the net holding in number of shares at date t-15 for each firm separately. We find that both larger and smaller investors tend to sell shares, regardless if the earnings forecast revisions are positive or negative[13]. All investors are though reducing their holdings to a larger extent prior to a negative earnings forecast revision than prior to a positive revision.

[Table 7]

Furthermore we group the sample excluding investors with selling restrictions in ten groups by the value of the initial holding. This is made in order to better assess the economic importance of investors to financial analysts. Table 8 exhibits the average investors' trading behavior prior to positive and negative financial analyst earnings forecast revisions grouped by the value of the initial holding. The results do not substantially deviate from the ones presented in Table 7, i.e. both smaller and larger investors sell shares prior to financial analyst earnings forecast revisions. All ten groups show on average negative changes in holdings, which can be explained by the elimination of the investors with selling restrictions from the sample. The same pattern applies as earlier, i.e. the reduction of holdings is on average less prior to a positive earnings forecast revision than to a negative revision.

[Table 8]

We furthermore extract the 1% largest investors from the sample excluding investors with selling restrictions. The number of observations in the 1% largest investors group is rather small, 25 for positive revisions and 42 for negative revisions[14]. The results in Table 9 show that the largest investors on average accumulate their holding prior to financial analysts' positive earnings forecast revisions and reduce their holding prior to negative forecast revisions. Furthermore, the rest of the investors on average reduce their holdings prior to earnings forecast revisions. The difference in investors' trading behavior prior to positive and negative earnings forecast revisions is for large investors close to significant, especially considering the small sample size. Although no conclusive inferences can be drawn from the results, the results could be interpreted as weak support for the notion that financial analysts leak information regarding forthcoming earnings forecast revisions to their largest clients.

[Table 9]

5. Summary

Prior research shows that financial analyst's recommendations have an impact on the value of traded stock. A positive (negative) change in a financial analyst's recommendation is in general followed by positive (negative) returns. As the views of the financial analysts clearly impact the stock market, an investor might profit from having access to financial analyst earnings forecast revisions in advance. Indeed, some indications of analysts warning their clients have been in the air, as recently reported by the financial press.

Using the unique official stock transactions data set from Finland combined with the analyst earnings forecast data set from I/B/E/S, we examine the trading behavior of investors prior to financial analysts' earnings forecast revisions. More specifically, we set out to investigate whether we can find indications of larger, or preferred, investors being warned of analyst forecast revisions in advance.

In summary, we do not find conclusive evidence of large investors systematically being warned of future earnings forecast revisions, as different groups of investors are found to behave fairly homogenously before both positive and negative earnings forecast revisions. However, the results indicate that the very largest investors show trading behavior consistent with being informed of future earnings forecast revisions.

In the light of this study, it hence appears as the recently widely discussed ethical problem of analysts leaking information to some preferred customers, is a fairly uncommon or insignificant problem in the stock market.

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[13] As investors with no initial holdings are excluded from this sample, the markets do not clear in this analysis.

[14] However, we feel that the sample is not entirely driven by a few events, as we have 14 unique positive revisions and 20 unique negative revisions.

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Figure 1. Different investor size groups' (in # of shares) average trading behavior prior to positive and negative earnings forecast revisions

This figure displays average investor trading behavior prior to the disclosure of positive and negative analyst earnings forecast revisions. Events are defined as the events with positive (negative) earnings revisions followed by a positive (negative) t+6 cumulative abnormal return. Investor trading behavior is measured as the number of stocks bought (sold) during the two weeks prior to the event divided by the total terminal (initial) number of stocks held. The investor trading behavior proxy hence expresses how a certain investor changes his/her holding in a certain company during the two weeks prior to the analyst earnings forecast revisions. Investor size groups are created by dividing the observations into 10 equally large groups according to the net holding in number of shares at date t-15 for each firm separately. The investor size identification is done for each firm separately in order to avoid having any investor group excessively dominated by transactions in few firms. Investor size is hence defined as a relative measure among investors that trade in the same stock.

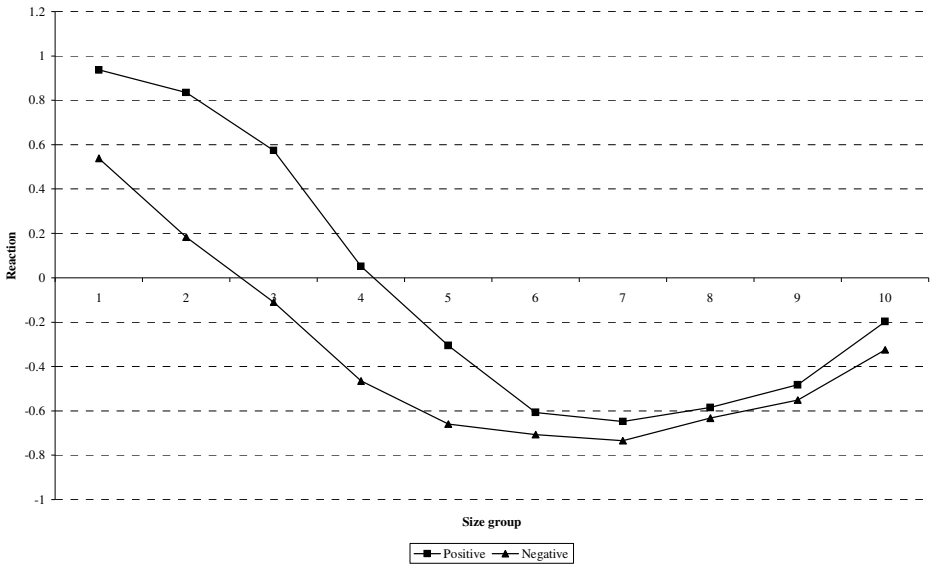

Figure 2. Different investor size groups' (in EUR) average trading behavior prior to positive and negative earnings forecast revisions

This figure displays the average investor trading behavior prior to the disclosure of positive and negative analyst earnings forecast revisions. Events are defined as the events with positive (negative) earnings revisions followed by a positive (negative) t+6 cumulative abnormal return. Investor trading behavior is measured as the number of stocks bought (sold) during the two weeks prior to the event divided by the total terminal (initial) number of stocks held. The investor trading behavior proxy hence expresses how a certain investor changes his/her holding in a certain company during the two weeks prior to the analyst earnings forecast revisions. Investor size groups are created by dividing the observations into 10 equally large groups according to the net holding in terms of value at date t-15 for each firm separately.

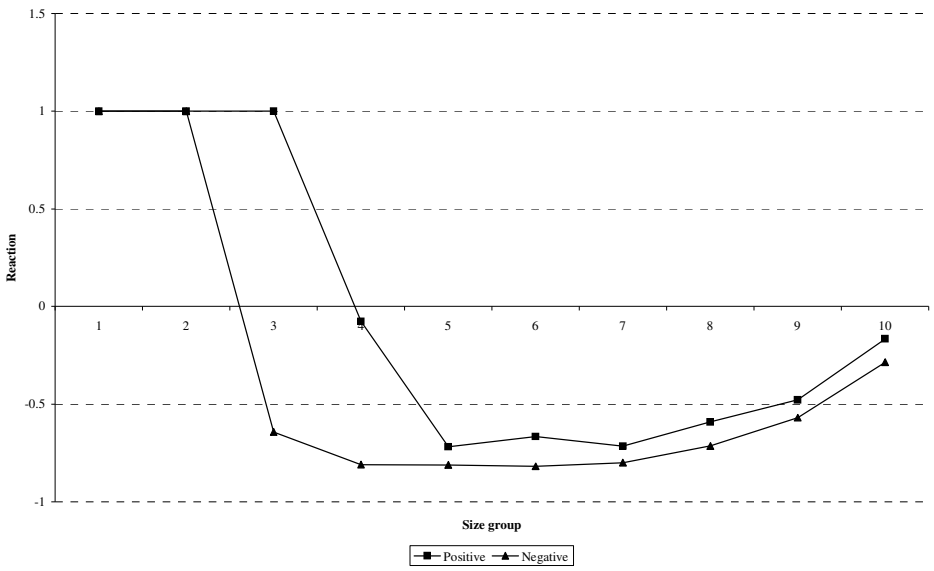

Table 1. Distribution of earnings forecast revisions and cumulative abnormal return

This table displays analyst earnings forecast revisions for firms listed on the Helsinki Stock Exchange during the time period 1.1.1997-31.12.1999. Panel A exhibits the distribution of revisions for the total sample, whereas Panel B displays the distribution of revisions for the sample used in our analysis. Only those positive (negative) earnings forecast revisions are included that are followed by a positive (negative) CAR t+6. Panel C shows the distribution of the CAR t+6 for the restricted sample used in Panel B. SEM stands for Standard Error of Mean.

PANEL A: Total earnings forecast revision sample					
Event type	N	Median	SEM	t-value	p-value
All revisions	4028	-2 %	2 %	-1.07	0.28
PANEL B: Average positive and negative earnings forecast revisions					
Event type	N	Median	SEM	t-value	p-value
Positive revisions	18	250 %	139 %	1.80	0.09
Negative revisions	22	-168 %	120 %	-1.41	0.17
PANEL C: Average CAR for positive and negative earnings forecast revision sample					
Event type	N	Median	SEM	t-value	p-value
Positive revisions	18	5.0 %	0.8 %	6.65	0.00
Negative revisions	22	-3.7 %	0.8 %	-4.71	0.00

Table 2. Investors' trading behavior prior to positive and negative earnings forecast revisions for the main FCSD categories, including investors with selling restrictions

This table displays the number of investor trading behavior observations for the investigated earnings forecast revisions for Finnish firms. The sample is divided into trading behavior prior to positive (negative) earnings forecast revisions with positive (negative) CAR t+6, and further into the six major investor categories defined by the Finnish Central Securities Depository central register. Altogether 18 positive and 22 negative events were investigated during the time period of 1.1.1997-31.12.1999. This table *includes* the smallest investors, i.e. those that initially did not own the stock and due to short selling restrictions are only able to purchase the stock.

Positive revisions

Group	N	% of total
Companies	555	14.4%
Financial institutions	399	10.4%
General government	55	1.4%
Nonprofit organizations	76	2.0%
Households	2736	71.1%
Countries and International Organizations	26	0.7%
All positive	3847	100.0%

Negative revisions

Group	N	% of total
Companies	744	14.0%
Financial institutions	447	8.4%
General government	104	2.0%
Nonprofit organizations	142	2.7%
Households	3814	71.9%
Countries and International Organizations	53	1.0%
All negative	5304	100.0%

Table 3. Investors' trading behavior prior to positive and negative earnings forecast revisions for the main FCSD categories, excluding investors with selling restrictions

This table displays the number of investor trading behavior observations for the investigated earnings forecast revisions for Finnish firms. The sample is divided into trading behavior prior to positive (negative) earnings forecast revisions with positive (negative) CAR t+6, and further into the six major investor categories defined by the Finnish Central Securities Depository central register. Altogether 18 positive and 22 negative events were investigated during the time period of 1.1.1997-31.12.1999. This table *excludes* the smallest investors, i.e. those that initially did not own the stock and due to short selling restrictions are only able to purchase the stock.

Positive revisions

Group	N	% of total
Companies	335	13.2%
Financial institutions	318	12.5%
General government	50	2.0%
Nonprofit organizations	55	2.2%
Households	1766	69.5%
Countries and International Organizations	16	0.6%
All positive	2540	100.0%

Negative revisions

Group	N	% of total
Companies	590	14.1%
Financial institutions	352	8.4%
General government	88	2.1%
Nonprofit organizations	122	2.9%
Households	2996	71.5%
Countries and International Organizations	41	1.0%
All negative	4189	100.0%

Table 4. Investors' trading behavior prior to positive and negative earnings forecast revisions for different size groups measured according to the net holding in number of shares, including investors with selling restrictions

This table displays average investor trading behavior prior to the disclosure of positive (Panel A) and negative (Panel B) analyst earnings forecast revisions. Revision events are defined as the events with the most positive (negative) earnings revisions and further meet the criteria of positive (negative) CAR t+6. Investor trading behavior is measured as the number of stocks bought (sold) during the two weeks prior to the event divided by the total terminal (initial) number of stocks held. The investor trading behavior proxy hence expresses how a certain investor changes his/her holding in a certain company during the two weeks prior to the disclosure of analyst earnings forecast revisions. Investor size groups are created by dividing the observations into 10

equally large groups according to the net holding in number of shares at date t-15 for each firm separately. The investor size identification is done for each firm separately in order to avoid having any investor group excessively dominated by transactions in few firms. Investor size is hence defined as a relative measure among investors that trade in the same stock. This table *includes* the smallest investors, i.e. those that initially did not own the stock and due to short selling restrictions are only able to purchase the stock. SEM stands for Standard Error of Mean.

PANEL: A - Positive revisions and positive CAR t+6

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding	393	94 %	1.7%	53.72	0.00
Group 2	384	84 %	2.8%	30.04	0.00
Group 3	386	57 %	4.1%	13.91	0.00
Group 4	383	5 %	5.0%	1.04	0.30
Group 5	381	-31 %	4.5%	-6.80	0.00
Group 6	389	-61 %	3.4%	-17.85	0.00
Group 7	384	-65 %	2.8%	-23.09	0.00
Group 8	385	-59 %	2.9%	-20.11	0.00
Group 9	385	-48 %	2.8%	-17.13	0.00
Group 10 - Largest 10th of initial holding	377	-20 %	2.3%	-8.66	0.00

PANEL: B - Negative revisions and negative CAR t+6

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding	540	54 %	3.6%	14.89	0.00
Group 2	530	18 %	4.2%	4.32	0.00
Group 3	531	-11 %	4.2%	-2.58	0.01
Group 4	530	-47 %	3.6%	-12.78	0.00
Group 5	526	-66 %	2.9%	-23.08	0.00
Group 6	534	-71 %	2.5%	-28.51	0.00
Group 7	532	-73 %	2.2%	-33.55	0.00
Group 8	529	-63 %	2.2%	-28.72	0.00
Group 9	532	-55 %	2.3%	-23.96	0.00
Group 10 - Largest 10th of initial holding	520	-32 %	2.1%	-15.79	0.00

PANEL: C - Difference in positive and negative revisions

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding		40 %	4.0%	9.92	0.00
Group 2		65 %	5.1%	12.86	0.00
Group 3		68 %	5.9%	11.54	0.00
Group 4		52 %	6.1%	8.41	0.00
Group 5		35 %	5.3%	6.64	0.00
Group 6		10 %	4.2%	2.38	0.02
Group 7		9 %	3.6%	2.43	0.02
Group 8		5 %	3.6%	1.29	0.20
Group 9		7 %	3.6%	1.89	0.06
Group 10 - Largest 10th of initial holding		13 %	3.1%	4.13	0.00

Table 5. Investors' trading behavior prior to positive and negative earnings forecast revisions for different size groups measured according to the net holding in terms of value, including investors with selling restrictions

This table displays average investor trading behavior prior to the disclosure of positive (Panel A) and negative (Panel B) analyst earnings forecast revisions. Revision events are defined as the events with the most positive (negative) earnings revisions and further meet the criteria of positive (negative) CAR t+6. Investor trading behavior is measured as the number of stocks bought (sold) during the two weeks prior to the event divided by the total terminal (initial) number of stocks held. The investor trading behavior proxy hence expresses how a certain investor changes his/her holding in a certain company during the two weeks prior to the disclosure of analyst earnings forecast revisions. Investor size groups are created by dividing the observations into 10 equally large groups according to the net holding in terms of value at date t-15 for each firm separately. This table *includes* the smallest investors, i.e. those that initially did not own the stock and due to short selling restrictions are only able to purchase the stock. SEM stands for Standard Error of Mean.

PANEL: A - Positive revisions and positive CAR t+6

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding	385	100 %	0.0%	n.m.	n.m.
Group 2	385	100 %	0.0%	n.m.	n.m.
Group 3	385	100 %	0.0%	n.m.	n.m.
Group 4	385	-8 %	4.9%	-1.53	0.13
Group 5	385	-72 %	2.9%	-24.56	0.00
Group 6	385	-67 %	3.0%	-22.08	0.00
Group 7	385	-71 %	2.6%	-27.61	0.00
Group 8	384	-59 %	2.8%	-20.98	0.00
Group 9	384	-48 %	2.9%	-16.64	0.00
Group 10 - Largest 10th of initial holding	384	-17 %	2.2%	-7.46	0.00

PANEL: B - Negative revisions and negative CAR t+6

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding	531	100 %	0.0%	n.m.	n.m.
Group 2	531	100 %	0.0%	n.m.	n.m.
Group 3	531	-64 %	3.2%	-20.31	0.00
Group 4	531	-81 %	2.0%	-40.10	0.00
Group 5	530	-81 %	1.9%	-41.90	0.00
Group 6	530	-82 %	1.9%	-44.09	0.00
Group 7	530	-80 %	1.8%	-44.47	0.00
Group 8	530	-71 %	2.0%	-36.49	0.00
Group 9	530	-57 %	2.3%	-25.18	0.00
Group 10 - Largest 10th of initial holding	530	-29 %	2.0%	-14.52	0.00

PANEL: C - Difference in positive and negative revisions

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding		0 %	0.0%	n.m.	n.m.
Group 2		0 %	0.0%	n.m.	n.m.
Group 3		164 %	3.2%	51.91	0.00
Group 4		73 %	5.3%	13.74	0.00
Group 5		9 %	3.5%	2.65	0.01
Group 6		15 %	3.5%	4.30	0.00
Group 7		9 %	3.2%	2.70	0.01
Group 8		12 %	3.4%	3.56	0.00
Group 9		9 %	3.7%	2.49	0.01
Group 10 - Largest 10th of initial holding		12 %	3.0%	4.05	0.00

Table 6. 1% largest investors versus other investors' trading behavior prior to positive and negative earnings forecast revisions, including investors with selling restrictions

This table displays average investor trading behavior prior to the disclosure of positive (Panel A) and negative (Panel B) analyst earnings forecast revisions. Revision events are defined as events with the most positive (negative) earnings revisions and further meet the criteria of positive (negative) CAR t+6. Investor trading behavior is measured as the number of stocks bought (sold) during the two weeks prior to the event divided by the total terminal (initial) number of stocks held. The investor trading behavior proxy hence expresses how a certain investor changes his/her holding in a certain company during the two weeks prior to the disclosure of analyst earnings forecast revisions. Investor size groups are created by extracting the 1% largest investors according to the net holding (EUR) at date t-15. This table *includes* the smallest investors, i.e. those that initially did not own the stock and due to short selling restrictions are only able to purchase the stock. The number of events, i.e. the number of earnings forecast revisions, for the largest 1% is 14 and 20 for positive and negative revisions respectively. SEM stands for Standard Error of Mean.

PANEL: A - Positive revisions

Group	N	Average	SEM	t-value	p-value
Largest 1% of initial holding	38	-3.0 %	2.3%	-1.29	0.21
All other investors	3809	-4.1 %	1.4%	-2.85	0.00

PANEL: B - Negative revisions

Group	N	Average	SEM	t-value	p-value
Largest 1% of initial holding	53	-3.2 %	1.4%	-2.27	0.03
All other investors	5251	-34.8 %	1.1%	-30.57	0.00

PANEL: C - Difference in positive and negative revisions

Group	Average	SEM	t-value	p-value
Largest 1% of initial holding	0.2 %	2.7%	0.09	0.93
All other investors	30.7 %	1.8%	16.77	0.00

Table 7. Investors' trading behavior prior to positive and negative earnings forecast revisions for different size groups measured according to the net holding in number of shares, excluding investors with selling restrictions This table displays average investor trading behavior prior to the disclosure of positive (Panel A) and negative (Panel B) analyst earnings forecast revisions. Revision events are defined as the events with the most positive (negative) earnings revisions and further meet the criteria of positive (negative) CAR t+6. Investor trading behavior is measured as the number of stocks bought (sold) during the two weeks prior to the event divided by the total terminal (initial) number of stocks held. The investor trading behavior proxy hence expresses how a certain investor changes his/her holding in a certain company during the two weeks prior to the disclosure of analyst earnings forecast revisions. Investor size groups are created by dividing the observations into 10 equally large groups according to the net holding in number of shares at date t-15 for each firm separately. The investor size identification is done for each firm separately in order to avoid having any investor group excessively dominated by transactions in few firms. Investor size is hence defined as a relative measure among investors that trade in the same stock. This table *excludes* the smallest investors, i.e. those that initially did not own the stock and due to short selling restrictions are only able to purchase the stock. SEM stands for Standard Error of Mean.

PANEL: A - Positive revisions and positive CAR t+6

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding	261	-72 %	3.7%	-19.43	0.00
Group 2	254	-77 %	3.4%	-22.46	0.00
Group 3	254	-73 %	3.2%	-22.56	0.00
Group 4	252	-67 %	3.7%	-18.28	0.00
Group 5	252	-65 %	3.6%	-17.96	0.00
Group 6	258	-59 %	3.6%	-16.34	0.00
Group 7	254	-59 %	3.4%	-17.51	0.00
Group 8	252	-51 %	3.5%	-14.61	0.00
Group 9	256	-38 %	3.4%	-11.22	0.00
Group 10 - Largest 10th of initial holding	247	-13 %	2.4%	-5.35	0.00

PANEL: B - Negative revisions and negative CAR t+6

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding	426	-83 %	2.4%	-34.40	0.00
Group 2	420	-81 %	2.3%	-34.98	0.00
Group 3	420	-81 %	2.2%	-36.65	0.00
Group 4	416	-81 %	2.1%	-38.52	0.00
Group 5	416	-80 %	2.2%	-36.28	0.00
Group 6	424	-77 %	2.2%	-35.72	0.00
Group 7	418	-70 %	2.3%	-29.76	0.00
Group 8	418	-59 %	2.5%	-23.63	0.00
Group 9	422	-53 %	2.5%	-21.50	0.00
Group 10 - Largest 10th of initial holding	409	-36 %	2.2%	-16.01	0.00

PANEL: C - Difference in positive and negative revisions

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding		11 %	4.4%	2.44	0.01
Group 2		5 %	4.1%	1.13	0.26
Group 3		8 %	3.9%	1.97	0.05
Group 4		14 %	4.2%	3.28	0.00
Group 5		14 %	4.3%	3.36	0.00
Group 6		18 %	4.2%	4.38	0.00
Group 7		11 %	4.1%	2.62	0.01
Group 8		8 %	4.3%	1.90	0.06
Group 9		15 %	4.2%	3.62	0.00
Group 10 - Largest 10th of initial holding		23 %	3.3%	6.88	0.00

Table 8. Investors' trading behavior prior to positive and negative earnings forecast revisions for different size groups measured according to the net holding in terms of value, excluding investors with selling restrictions

This table displays average investor trading behavior prior to the disclosure of positive (Panel A) and negative (Panel B) analyst earnings forecast revisions. Revision events are defined as the events with the most positive (negative) earnings revisions and further meet the criteria of positive (negative) CAR t+6. Investor trading behavior is measured as the number of stocks bought (sold) during the two weeks prior to the event divided by the total terminal (initial) number of stocks held. The investor trading behavior proxy hence expresses how a certain investor changes his/her holding in a certain company during the two weeks prior to the disclosure of analyst earnings forecast revisions. Investor size groups are created by dividing the observations into 10 equally large groups according to the net holding in terms of value at date t-15 for each firm separately. This table *excludes* the smallest investors, i.e. those that initially did not own the stock and due to short selling restrictions are only able to purchase the stock. SEM stands for Standard Error of Mean.

PANEL: A - Positive revisions and positive CAR t+6

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding	254	-78 %	3.5%	-22.49	0.00
Group 2	254	-71 %	3.7%	-19.23	0.00
Group 3	254	-75 %	3.4%	-22.13	0.00
Group 4	254	-62 %	3.9%	-15.95	0.00
Group 5	254	-75 %	3.0%	-24.89	0.00
Group 6	254	-63 %	3.4%	-18.74	0.00
Group 7	254	-57 %	3.5%	-16.07	0.00
Group 8	254	-51 %	3.6%	-13.96	0.00
Group 9	254	-33 %	3.4%	-9.87	0.00
Group 10 - Largest 10th of initial holding	254	-12 %	2.3%	-5.13	0.00

PANEL: B - Negative revisions and negative CAR t+6

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding	419	-82 %	2.5%	-33.09	0.00
Group 2	419	-82 %	2.3%	-36.27	0.00
Group 3	419	-80 %	2.2%	-35.91	0.00
Group 4	419	-81 %	2.2%	-37.66	0.00
Group 5	419	-80 %	2.1%	-37.89	0.00
Group 6	419	-80 %	2.1%	-39.18	0.00
Group 7	419	-74 %	2.1%	-35.64	0.00
Group 8	419	-66 %	2.4%	-27.43	0.00
Group 9	419	-52 %	2.5%	-20.60	0.00
Group 10 - Largest 10th of initial holding	418	-23 %	2.1%	-11.21	0.00

PANEL: C - Difference in positive and negative revisions

Group	N	Average	SEM	t-value	p-value
Group 1 - Smallest 10th of initial holding		5 %	4.3%	1.12	0.26
Group 2		12 %	4.3%	2.66	0.01
Group 3		5 %	4.1%	1.28	0.20
Group 4		20 %	4.4%	4.47	0.00
Group 5		5 %	3.7%	1.28	0.20
Group 6		18 %	3.9%	4.45	0.00
Group 7		18 %	4.1%	4.29	0.00
Group 8		15 %	4.3%	3.50	0.00
Group 9		19 %	4.2%	4.42	0.00
Group 10 - Largest 10th of initial holding		11 %	3.1%	3.63	0.00

Table 9. 1% largest investors versus other investors' trading behavior prior to positive and negative earnings forecast revisions, excluding investors with selling restrictions

This table displays average investor trading behavior prior to the disclosure of positive (Panel A) and negative (Panel B) analyst earnings forecast revisions. Revision events are defined as events with the most positive (negative) earnings revisions and further meet the criteria of positive (negative) CAR t+6. Investor trading behavior is measured as the number of stocks bought (sold) during the two weeks prior to the event divided by the total terminal (initial) number of stocks held. The investor trading behavior proxy hence expresses how a certain investor changes his/her holding in a certain company during the two weeks prior to the disclosure of analyst earnings forecast revisions. Investor size groups are created by extracting the 1% largest investors according to the net holding (EUR) at date t-15. This table *excludes* the smallest investors, i.e. those that initially did not own the stock and due to short selling restrictions are only able to purchase the stock. The number of events, i.e. the number of earnings forecast revisions, for the largest 1% is 14 and 20 for positive and negative revisions, respectively. SEM stands for Standard Error of Mean.

PANEL: A - Positive revisions

Group	N	Average	SEM	t-value	p-value
Largest 1% of initial holding	25	0.7 %	1.1%	0.63	0.53
All other investors	2515	-58.2 %	1.1%	-50.80	0.00

PANEL: B - Negative revisions

Group	N	Average	SEM	t-value	p-value
Largest 1% of initial holding	42	-2.3 %	1.6%	-1.42	0.16
All other investors	4147	-71.0 %	0.8%	-92.92	0.00

PANEL: C - Difference in positive and negative revisions

Group	Average	SEM	t-value	p-value
Largest 1% of initial holding	3.0 %	2.0%	1.53	0.13
All other investors	12.7 %	1.4%	9.26	0.00

CORPORATE BOARD, OWNERSHIP STRUCTURE AND THE INVOLUNTARY DELISTED FIRMS

Chu-Yang Chien*, Yuh-Jiuan Parng**, Chen-Wei Lu*

Abstract

The Financial Supervisory Commission in Taiwan has advocated the importance of corporate governance for several years. The purpose of this study is to act in concern with the policy through the test of the relationship between the corporate governance mechanism, especially Board of Directors' composition and ownership structure, and the involuntary delisted firms. The study extracts 58 involuntary delisted firms from Taiwan Securities Exchange (TSE) during 1997 to 2007 and matches with 112 similar control firms. The results from probit regression suggest that Board of Directors (BOD) with more number of outside independent directors, larger board size, lower ratio of shares pledged to the total shares, higher seats over control right, and lower control right over right for cash flow may reduce the likelihood of delisting. The study could become monitoring indices for internal examination system, the warning signals for investors, and the reference for the policy makers.

Keywords: Corporate governance, involuntary delisted firms, Board of Directors, gray directors, pledged shares

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1. Introduction

In the wake of corporate failures occurred in this decade, many reforms were undertaken to restore the public confidence. In the United States, the scandals of Enron, Tyco, Adelphia, WorldCom and etc. have led to the release of Sarbanes-Oxley Act of 2002, corporate governance rules of NYSE 2003, 2004, AMEX 2003, NASDAQ 2003, and so on. In Taiwan, also because of numerous scandals and frauds, the establishment of Financial Supervisory Commission (FSC), Securities and Futures Institute (SFI), Taiwan Stock Exchange (TSE), Taiwan's computerized over-the-counter market (GreTai Securities Market, GTSM), Corporate Governance Association□CGA□and together with Taiwan amended Company Law and Securities & Exchange Act show the government's esteem to the importance of corporate governance.

Among all the corporate governance topics, the quality of board oversight has drawn significant attention. Prior researches have put lots of focuses on the relationship between board composition or characteristics and corporate fraud (Beasly 1996, Sharma 2004, Uzen 2004, Chen et al. 2006). However, firms being out of market no matter voluntarily or involuntarily have become a more common phenomenon in recent years. Macey et al. (2004) indicates that more than 7,350 firms have become delisted from US stock exchanges and markets since 1995. Among half of all delisting firms were involuntary. In Taiwan, since Asian financial crises in 1997 till 2006, there have been about 123 firms delisted from the market.[15] Delisting occurs for a number of reasons including merger and acquisition, bankruptcy, liquidation, or migration to another exchange (Shuway et al. 1999). This study researches on the involuntary delisted firms in Taiwan. Among all the involuntary delisted firms, prior researches focused on financial crises caused by improper financial strategy, deteriorated financial environment or financial scandals. Nevertheless, besides the finance aspect being discussed (Chen 1999, Shumway 2001, Sueyoshi 2005), fewer studies to date are investigating the causes and effects of the delisted firms. In this study, the characteristics of corporate board and the structure of ownership are inquired as the crucial factors that are associated with the delisted firms in Taiwan.

Charitou et al. (2007) argue and show that the effectiveness of a firm's corporate governance mechanism, as proxied by the structure of board of

[15] At the end of 2006, there were 688 firms listed on the TSE, and 531 listed on the GTSM.

directors and ownership incentives, is associated with its ability to survive in the market. In Taiwan, in order to strengthen the legal base in the field of corporate governance, it amended Company Law and Securities & Exchange Act in 2006 which require the installment of independent directors and independent supervisors. This study provides the insight into the delisted firms out of Taiwan Stock Exchange list from 1997 to 2007. From a corporate governance perspective, it empirically tests the impacts of board composition, ownership structure and its related control variables on the likelihood of delisting. Results from Probit regression analysis show that firms with less independent board of directors, smaller size of the board, higher ratio of shares pledged to the total shares controlled in the hands of the BOD, higher seats over control right in BOD, and lower control right over right for cash flow are generally more likely to become delisting compared to control firms.

The remainder of the study is organizes as follows. Section 2 discusses the background and the hypotheses development. Section 3 interprets the research design. The empirical results are presented in Section 4. More supplement analyses are performed in Section 5. Finally, the conclusion is documented in Section 6.

2. Background and Hypotheses Development

2.1 The Development of Corporate Governance and the Delisted Firms in Taiwan

The notion of corporate governance can be dated back since 1930s, when Berle and Means argued about the separation of corporate control and ownership. Fama (1980) and Fama & Jenson (1983) indicate that there are both external and internal corporate governance mechanisms designed to minimize divergence between the ownership and decision control. Cochran and Wartrick (1988) define the corporate governance as a mechanism focusing on the interrelationships among different actors of the firm: shareholders, boards of directors, senior executives and other corporate stakeholders. Shleifer et al. (1997) propose that through the corporate governance, the suppliers of finance to corporations can assure themselves of getting a return on their investment. In recent decades, the Organization for Economic Co-operation and Development (OECD) especially includes corporate governance into its global issues, and supports that good corporate governance is a key to the integrity of corporations, financial institutions and markets, and central to the health of our economies and their stability. The Asian financial crisis of 1997-98 and the failure of a series of major corporations (Enron, WorldCom, and etc.) in the United States in 2001/2002 reveal the danger of *systemic* corporate governance problem.

In Taiwan, because of the severe Asian financial crises and the perceived lack of effective board oversight that contributed to the poor performance problems, Financial Supervisory Commission (FSC), Taiwan securities regulator, has started advocating the importance of corporate governance to public companies since 1998. Besides, Securities and Futures Institute (SFI), together with Taiwan Stock Exchange (TSE), Taiwan's computerized over-the-counter market (GreTai Securities Market, GTSM), and Corporate Governance Association (CGA), also introduced the system of independent directors, audit committee, etc. to the public firms. Further more, to strengthen the legal base in the field of corporate governance, Taiwan government amended Company Law and Securities & Exchange Act to reform and guide the corporations (SFI ,2006).

Macey et al. (2004) indicates that more than 7,350 firms have become delisted from US stock exchanges and markets since 1995. Dahiya and Klapper (2007) indicate that, between 1994 and 2003, the United States has the highest average annual involuntary delisting rate of 6.78%, followed by 5.65% of the United Kingdom, 4.57% of France, 3.45% of Australia, 3.39% of Canada, 2.85% of Germany, and 1.05% of Japan. Ferris *et al*. (2007) investigate involuntary delisting firms in the Asia-Pacific region from 1980 through 1999. The involuntary delisting rate is 17.4% for Thailand, 10% for Malaysia, 9.7% for Taiwan, 7.8% for Singapore, 7.3% for Indonesia, 5.5% for South Korea, 5.2% for Hong Kong, and 2.4% for Japan. Among half of all delisted firms were involuntary. In Taiwan, since Asian financial crises in 1997, there have been about 123 firms delisted from the market. Shumway (1997), Macey et al. (2004), and Panchapagesan (2004) point out that all the involuntary delisted firms experience highly significant costs after the delisting.

When investigating the causes of delisting, prior studies focus on the appearance of the accounting outcomes. Chen et al. (1999) include one-year return prior to delisting in the logit regression model, and the results suggest that accounting numbers play a crucial factor of delisting. Shumway (2001) examines the abnormal stock return for the failed firms. Altman (2001) uses the accounting variables to predict the corporate distress. Sueyoshi (2005) applies the financial ratios to analyze the problem corporations. However, besides the accounting numbers shown on the financial reports, there must be more powerful and potential influence behind the financial distress. Shumway (1999) evidences that owing to information asymmetry; the unsuspecting stockholders always experience market losses and a substantial decrease in liquidity. Marosi et al. (2007) find that firms with fewer valuable growth

opportunities, greater insider ownership, lower institutional ownership, higher leverage, and lower market momentum are more likely to go dark. Dahiya et al. (2007) present evidence that equity market delisting taken place more frequently in countries with strong shareholder rights. Charitou et al. (2007) suggest that the likelihood of delisting is related to a firm's governance characteristics and the boards are the most important in the face of financial trouble. Thus, the delisting phenomenon is arisen from not only the operational figures but also the from the board features.

2.2 Hypotheses Development

2.2.1 The Characteristics of Board of Directors

Fama and Jensen (1983) theory that role of board of directors plays a very important key in terms of internal control mechanism and management oversight. Among several important characteristics of the board of directors, board composition has received significant attention from academic researchers. Uzen et al. (2004) prove the direct relation between the board composition and the incidence of corporate fraud. O'Sullivan (2000) uses large UK samples to examine the impact of board composition and ownership structure on audit quality, and the findings were positive. Sharma (2004) supports the call for strengthening the composition and structure of board of directors in Australia. Chen et al. (2006) show the board characteristics have an effect on corporate financial fraud in China.

For the board composition, this study focuses on three parts: independent outside directors, board size and duality problem. From the prior researches, the status of independent outside directors is the most frequent issue. Fama and Jensen (1983) show that the outside directors, as representatives of shareholders, have a particularly strong incentive to prevent and detect opportunistic reporting behavior by management. Beasley (1996) confirms that no-fraud firms have boards with significantly high percentages of outside members than fraud firms. The National Association of Corporate Directors considers the professional boardroom as the one being governed by individual board members who posses characteristics including independence, diligence, and expertise (NACD 1996). Carcello et al. (2002) examine the relations between three board characteristics and audit fee (quality) and the results show the significant positive relations between board independence and the audit fees.

In Taiwan, Board of directors and Supervisors are treated by Securities and Future Bureau as important organs designed to hold managers accountable to capital providers for the misuse of firm assets. As the growth in the size of businesses, the separation of ownership from control is demanding in Taiwan (SFI, 2006). In 2002, TSE /GTSE regulate that every public company applying for listing should have at least two independent directors and one independent supervisor. And, at least one independent director must be an accounting or finance expert. And in §14-2 Securities & Exchange Act, it encourages to have at least one-fifth of the Board's directors who should be independent for all public companies. As documented, the study hypothesizes that:

H_{1a} : Outside directors are negatively related to the delisted firms.

Besides the status of outside directors, board size is another factor being considered as board characteristic. Vafeas (2000) finds that board size of 11 is the adequate size to monitor the management effectively. Jensen (1993) considers that board size beyond seven or eight are less likely to function effectively and evidences that small size of board comparatively can provide a better controlling function than large one. Beasly (1996) uses board size in the supplement analysis of board characteristics, and the result was consistent with Jensen's. Yermack (1996) finds that firms might have higher market valuation with a small board of directors. Thus, the hypothesis is:

H_{1b} : Board size is positively related to the delisted firms.

Finally, the dual appointment of CEO and chair of the board may also be a phenomenon in the board composition. The duality might cause different effects. Some researchers consider it an easier way to result in fraudulent decisions or actions, and some other researchers think that occupying the two positions with same person may make process more efficient. Jensen (1993) considers it as a way to reduce underlying agency problems. Sharma (2004) finds the significant association between duality and fraud. However, in both Beasly (1996) and Uzen et al. (2004) researches, no significant relations were shown. Accordingly, this study makes the third hypothesis under the board characteristics:

H_{1c} : Duality is related to the delisting firms.

2.2.2 The Type of Ownership Structure and the Related Controls

In Taiwan, family-related board members are pretty common phenomenon in most small- and medium-sized enterprises. Even in large, public firms, family-control is also a dominant characteristic of the board, and thus, the "family board" has substantial control over decision-making and agendas in Shareholders Meetings (SFI, 2006). Existing literatures have

documented the relationship between founding family ownership and corporate operation. Wang (2006) shows that founding family ownership is associated with higher earnings quality (lower abnormal accruals, greater earnings informativeness, and less persistence of transitory loss components in earnings). Villalonga et al. (2006) find that family ownership creates value only when the founder serves as CEO of the family or as Chairman with a hired CEO. Igor et al. (2005) find no family control associated with performance measured in terms of accounting figures. However, they indicate that board independence from founding family has positive impact on performance. Thus,

H_{2a}: Family board has impact to the delisting firms.

Since the family-controlled is defined as the final controllers who are holding over 50% of the total shares in BOD at the year end are family members, thus the operating culture in this type of ownership structure affects a firm's performance. La Prota et al. (2002) discover that among large-size enterprises in 27 rich countries, about 68.59% the controlling stock holders will involve in the operating strategy. Claessen et al. (2000) show the phenomenon that 57.1% firms in East Asia have controlling shareholders. Yeh et al. (2001) find out that 70% of the firms in Taiwan having controlling stockholders.

There are pros and cons for the family-controlled business. The good side is its having a strong leadership and cohesive management team formed by the family members. And the contrary side is its tendency to grant the right of governance over the company for the benefit of their own interests and to abuse minority shareholders. Barontini et al. (2006) indicate that although family-controlled corporations exhibit larger separation between control and cash-flow rights, their results do not support the hypothesis that family control hampers firm performance. Lin (2002) indicates that the more the controlling shareholders' control rights deviated from cash flow right, the worse the central agency problem is between controlling shareholders and minority shareholders, and the extent expropriation is particularly serious among family-controlled firms. Through the pyramid stock structure or cross- held way, the control right in the hand of controlling shareholder will always exceed his right for cash flow, and then cause the problem between the controlling stockholders and minority stockholders (Chang, 2007). Then,

H_{2b}: The difference between right of seating and right of voting increases the likelihood of delisting.

H_{2c}: The difference between right of voting and right for cash flow increases the likelihood of delisting.

Beside the stock rights, Kao et al. (2004) find out an intensively correlation with the high ratio of shares pledged to the total shares controlled in the hands of the board of directors and supervisors. Chang, (2007) proves that when the board of directors and supervisors become controlling stockholders with a high ratio of pledged shares, there is unavoidable link between these persons' personal financial status with the stock price. Chang's study also shows that till 2005, there are 48.77% of the TSE traded firms, the board of directors and supervisors pledged their stocks. This phenomenon may easily lead to manipulate the earnings and sacrifice the small shareholders. As a result,

H_{2d}: The ration of shares pledged to the total shares controlled in the hands of the board of directors increases the likelihood of delisting.

3. Research Design

3.1 Sample Selection

The samples of the delisted firms are the ones used to trade publicly in Taiwan Security Exchange (TSE)[16] during period 1997- 2007.[17] The main source is extracted from Taiwan Economic Journal (TEJ) database. The sample selection of the delisted firms is first based on the database of TEJ-Delisting, Monitored Stock, and Query Full Deal Stock, and then confirmed with the list of suspend listing firms in TSE.

During the selecting, we screen out the firms being consolidated with the other publicly traded firms, and the ones not of any financial troubles. In order to confirm the qualified status of the delisted firms, we adopt news search from two well known databases, China Times News Search and Knowledge Base Joint News Retrieval along with official website of Public Information Observatory. There are 123 delisted firms in the original pool, after excluding the financial institutes, the firms merged by other firms or groups and the firms without complete data, the result leads to 58 delisted firms. Owing to the limited sample size, each of the delisted firm is matched with one or two firms that are in the same industry, similar size, time period and healthy financial status, and the matching firm size is 112.

[16] http://www.tse.com.tw/ch/listed/suspend_listing.php

[17] Since 'Corporate Governance' module in TEJ database started the searching point in 1996, and the variables adopted information one year prior to the delisting year, the delisting samples in this study cover the period from 1997 to date.

Table 1. Identification of 58 Delisted Firms

Number of Delisting Firms from TSE in period 1997-2007	123
Less: Finance Institutes	(34)
Firms merged by other firms or groups	(16)
Convert to OTC	(2)
Missing data	(13)
Total number of delisted firms included in study	58

Table 2 presents the general information of the selected samples. In Panel A, it shows the delisting year, and the time dispersion. The largest occurrence of delisting is in 2005 (12 delistings or 20.69% of the total), and the lowest occurrence is in 1997 and 2000 (1 delisting or 1.72%). Starting from 2003, the trend becomes more obvious.

Table 2. Information of the 58 firms becoming delisted from TSE

Panel A. Delisted Year		
Year	Sample	Percentage (%)
1997	1	1.72
1998	2	3.45
2000	1	1.72
2001	5	8.62
2002	3	5.17
2003	8	13.79
2004	8	13.79
2005	12	20.69
2006	9	15.52
2007	9	15.52
Total	58	100

Table 2, Panel B shows the industry dispersion of the delisted firms. From the industry dispersion, the delisting incurred mostly in Electronics (22 delisting or 37.93%), Foods and Buildings and Constructions are the next (8 delisting or 13.79%), and Plastics, Electrical and Cable, Glass and Ceramics, Paper and Pulp are the least (only 1 delisting or 1.72%). The concentration of the industry Electronics may imply that Electronics is still the most risky industry.

Table 2. Information of the 58 firms becoming delisted from TSE (Cont.)

Panel B. Industry Dispersion			
Industry Code[a]	Industry Description	Sample	Percentage (%)
1200	Foods	8	13.79
1300	Plastics	1	1.72
1400	Textiles	7	12.07
1500	Electric Machinery	2	3.45
1600	Electrical and Cab	1	1.72
1800	Glass and Ceramics	1	1.72
1900	Paper and Pulp	1	1.72
2000	Iron and Steel	4	6.90
2200	Automobile	1	1.72
2300	Electronics	22	37.93
2500	Building and Cons.	8	13.79
9900	Others	2	3.45
Total		58	100

[a] TEJ adopts four-digit to distinguish the firms. The first digit indicates the industry code, and the second and third represent more specific details.

According to provision 50 and 50-1 of the Operating Rules of Taiwan Stock Exchange Corporation, there are various reasons leading firms to suspend the trading the securities, or such firms may apply to terminate the listing. In order to further investigate the delisting reasons, we search the information from China Times News Search, Knowledge Base Joint News Retrieval and the official website of Public Information Observatory. From the documented general reasons in Table 3, delinquent in TSE filings and rejected by Taiwan Clearing House (TCN) are the most frequent occurrence (26.1%), negative share value is the next (21.7%), and reorganization not permitted by the court is the least (1.4%).

Table 3. The Delisting Reasons

Reasons	Samples	Percentage (%)
Delinquent in TSE filings	18	26.1
Negative share value	15	21.7
Reorganization not permitted by the court	1	1.4
Rejected by the TCN Clearing House (TCN)	18	26.1
Severe Financial Fraud	6	8.7
Severe Financial Distress	11	16.0
Total	69[a]	100.0

[a] Involuntary delisting often results from violating more than one suspended reason; some firms may incur more than one reason.

To create a comparison group, it requires the creation of a control sample of non-delisting firms which are identified as being similar to the delisting firms in national stock exchange, time period, firm size, and industry four criteria[18]. The criteria are described as follows:

1. Stock Exchange: Both groups' securities are exchanged in TSE.
2. Time Period: One year prior to the delisting year.
3. Firm Size: Firms are considered similar in firm size if the total assets value is within ± 40 percent of the total assets for the delisted firms in the 3 years prior to the delisting year.
4. Industry: Firms are identified with the same four-digit code in TEJ-Industry Level (3) (The most specific group). If there is no firm matching to the above criteria 2 and 3, the procedure will go on searching to TEJ-Industry Level (2). If still can not match the pair, then the procedure will go further to TEJ-Industry Level (1).

The criteria for selecting the matching samples should be all fulfilled. Accordingly, the non-delisting firms were matched the most with the closest level 3, then level 2, and finally level 1. Since the limited sample size of 58, the matched sample may be one or two. The matching result is shown in Table 4.

[18] The way to create a matched firm control sample is also adopted by Beasly (1996), Carcello et al. (2002), Uzun et al. (2004), Sharma (2004), Chen et al. (2006), Charitou et al. (2007).

Table 4. Non-delisted firms

The dispersions Non-delisting firms in TEJ Industry Levels		
TEJ INDUSTRY LEVEL	Samples	Percentage (%)
TEJ-Industry Level (3)	70	62.50
TEJ-Industry Level (2)	23	20.54
TEJ-Industry Level (1)	19	16.96
Total	112	100

The matching procedure starts from TEJ-Industry Level (3), the most specific and closest level, if the criteria do not meet, go to TEJ-Industry Level (2), then TEJ-Industry Level (1).

3.2 Methodology

The research design of this study involves univariate and probit cross-sectional regression analysis. Consistent with Beasly (1996), Carcello et al. (2003), Sharma (2004), and Chariotu et al. (2007), the dependent variable D_i (Delisting) is measured dichotomously. The estimation is based on a choice-based sample, in which there are about one third (58 firms) of the firms experienced delisting from TSE and two third (112 firms) of firms did not, and the total sample is 170 firms. To study the link between the likelihood of delisting and corporate governance, given that we have matched-pairs samples of delisted and control firms, a single-equation approach model is estimated as follows:

$$D_i(delisting) = \alpha_1 OUT_i + \alpha_2 SIZE_i + \alpha_3 DUAL_i + \alpha_4 FAMILY_i + \alpha_5 SEATCON_i + \alpha_6 CONCASH_i + \alpha_{7i} PLE + \alpha_8 TA_i + \alpha_9 MTB_i + \alpha_{10} LEV_i + \alpha_{11} STKRET_i + \alpha_{12} ROA_i$$

where

i	= Firm 1 to 170;
D (Delisting)	= 1 for a firm that is delisting, and 0 otherwise;
OUT	= Proportion of outside board members who are independent directors;
SIZE	= The size of directors on the board;
DUAL	= 1 if the chair of the board is also the CEO, and 0 otherwise;
FAMILY	= 1 if the final controller (a Family) at the end of year hold shares in the BOD exceed 50% of the total shares in BOD, 0 otherwise;
SEATCON	= The ratio of the right of seating over the right of control;
CONCASH	= The ratio of the right of control over the right for cash flow;
PLE	= The ratio of shares pledged in the board of directors;
TA	= The natural logarithm of total assets;
MTB	= The ratio of market value of equity to book value of equity;
LEV	= The ratio of total liabilities to total assets;
STKRET	= Annual stock return;
ROA	= Operating income to total assets.

The independent variables are measured of the year prior to the delisting. In addition to the seven test variables, we control the financial variables, TA, MTB, LEV, RETURN, and ROA (these variables are referred from Charitou, 2007). Total assets control for differences in firm size; market to book ratio controls for growth opportunities; leverage ratio controls for financial risk; and return on assets controls for differences in operating performance.

4. Empirical Results

To test the relation between the board of directors' composition, the ownership structure and the likelihood of delisting from TSE, we use both univariate comparisons and a multivariate probit regression.

4.1 Univariate Results

For the univariate test we compare the test and control variables across the delisting firms and non-delisting firms to see if there are significant differences. The results of univariate are presented in Table 5. For each variable, the mean (median) is presented in the top (bottom) row, and with the parametric *t*-test and the non-parametric Wilcoxon rank-sum test respectively. Most of the variables appear to be significant univariate difference across the samples. For the board of directors' composition, OUT and SIZE have the strongest significant difference ($p < 0.01$). Comply with the prior literatures**,** delisted firms have fewer proportion of independent outside directors (t = -2.823, Wilcoxon z = -2.331).

However, for the board size (t = -3.08, Wilcoxon z = -3.767), opposite to prior researches, the delisted firms are with smaller board size. Regarding the duality effect, consistent with Beasly 1996, Sharma 2004, and Chen 2006, DUAL, the chair of the board is also the CEO, does not have significant difference. The above three results reveal that only H_{1a} (proportion of outside board members) is supported.

Next, about the ownership structure, the deviation of the rights SEATCON and CONCASH, and the stocks pledged ratio PLE show the strongest difference ($p < 0.01$), and the family owned status FAMILY has a minor but acceptable difference ($p < 0.10$). The significant result of the family owned status (FAMILY) (t = 1.925, Wilcoxon z = -1.846) supports H_{2a}, the ratio of right of seating over right of control (SEATCON) (t = 4.455, Wilcoxon z = 4.261) supports H_{2b}, the ratio of the right of control and right for cash flow (CONCASH) (t = -2.088, Wilcoxon z = -2.858) supports H_{2c}. and the higher ratio of shares pledged to the total shares controlled in the hands of the board of directors and supervisors (PLE) (t = 3.266, Wilcoxon z = 1.880) indicates that this scenario may easily tangle the controlling shareholders' personal finance with the firm's stock performance, and the result supports H_{2d}. These consequences show the intentions and ways of ownership structure in most of the delisting firms to manipulate the operating.

Finally, focusing on the control variables, only leverage, stock return, and return to asset are with the strongest significance, delisted firms are with greater financial leverage(LEV) (t = 8.786, Wilcoxon z = 8.390), lower annual stock return (STKRETURN) (t = -5.970, Wilcoxon z = -6.483) and lower profitability (ROA) (t = -4.941, Wilcoxon z = -7.016). The firm's size and market to book ratio do not show significant difference.

Table 6 presents Pearson (Spearman) correlations between the variables used in the probit regressions. Delisting is significantly, negatively correlated with outside BOD, board size, ratio of the right of the control over the right for cash flow, annual stock return and return on assets. Family owned, more ratios of shares pledged in BOD, higher ratio of seats over control rights, and frequent leverage may cause more likelihood of delisting.

4.2 Multivariate Tests

The results in Table 5 primarily have descriptive value. Accordingly, we proceed with multivariate tests linking the overall likelihood of delisting with the independent variables in Table 7. The results of the probit regressions are shown in Table 7. The first column lists the variables. The second, third and fourth columns show predicted signs, the coefficients and Z-statistics of the probit model. The board size has a negative sign and is statistically significant (Z = -2.21, $p < 0.05$), and this result supports the correlation with the delisting. The ratio of shares pledged to the total shares controlled in the hands of the board of directors is significant positive (Z =2.18, $p < 0.05$), which reveals that the higher the pledged ratio, the more probability of delisting. Notably, OUT, DUAL, FAMILY, SEATCON, and CONCASH and are not significant. Results on the control variables are mostly consistent with univariate results, suggesting delisted firms are with smaller size, fewer growth opportunities, lower leverage, and poorer operating performance.

5. Supplement Analysis

Independent board of directors is an important main policy advocated by the Financial Supervisory Commission. Thus, in order to confirm the significance of outside directors, we replace OUT as the ratio of independent and gray directors on the board.[19] The results of the probit regressions are shown in Table 8. Board independence becomes statistically significant (Z =2.59). Also, we find evidence that firms with smaller boards (Z = -2.13) and higher the seats over the control (t=2.48) are more likely to be delisted. Results on the control variables are largely consistent with Table 7. Thus, the paper's main conclusion that most characteristics of the board composition and ownership structure may lead to delisting fate after controlling some financial status.

[19]Gray directors, who have a fiduciary relation to the firm, include citizen stockholders, institution stockholders, business, financial or legal relationship, or the representatives of the firm.

Table 5. Univariate test for 58 delisted and 112 matched control firms

Sample size	Delisted	Control	Difference	t-Statistics	Wilcoxon
Independent Variables					
OUT	3.70	8.85	-5.15	-2.823***	
	0	0	0		-2.331**
SIZE	7.95	9.59	-1.64	-3.080***	
	7	9	-2		-3.767***
DUAL	.33	.24	.09	1.165	
	0	0	0		-1.200
FAMILY	.74	.60	.14	1.925*	
	1	1	0		-1.846*
SEATCON	57.50	37.70	19.80	4.455***	
	64.2	37.18	27.02		4.261***
CONCASH	3.67	6.97	-3.30	-2.088**	
	0.10	1.21	-1.11		-2.853***
PLE	27.59	13.42	14.17	3.266***	
	7.83	0.36	7.47		1.880*
Control Variables					
TA (in $ million)	9308	11543	-2235	-.579	
	3205	5154	-1949		-2.102**
MTB	161.91	128.48	33.43	0.584	
	53.94	98.11	-44.17		-3.657***
LEV	91.64	45.28	46.36	8.786***	
	89.87	43.76	46.11		-8.390***
RETURN	-43.95	9.43	-53.38	-5.970***	
	-52.21	-0.04	-52.17		-6.483***
ROA	-10.46	2.61	-13.07	-4.941***	
	-3.61	1.92	-5.53		-7.016***

The mean (median) of each variable is presented in the top (bottom). Each delisted firm is matched to one or two control firms that are also traded on TSE. The t-test and Wilcoxon rank-sum test were used to test for the significance of the result. Significant (two-tailed) is denoted by ***, **, * for $p < 0.01$, $p < 0.05$, $P < 0.10$, respectively.

Table 6. Pearson (Spearman) correlations below (above) the diagonal among dependent variable, control variable, and the likelihood of an involuntary delisting

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1.Delisting Dummy	1.00	-0.18**	-0.29***	0.09	0.15*	0.33***	-0.22***	0.14*	-0.16**	-0.28***	0.65***	-0.50***	-0.54***
2. OUT	-0.19**	1.00	0.37***	0.02	-0.11	-0.54***	0.23***	-0.23***	0.23***	0.37***	-0.26***	0.23***	0.30***
3. SIZE	-0.23***	0.16**	1.00	-0.24***	-0.08	-0.41***	0.31***	-0.19**	0.30***	0.37***	-0.25***	0.19**	0.19**
4. DUAL	0.09	0.02	-0.21***	1.00	0.16**	0.07	-0.16**	0.12	-0.09	-0.13*	-0.00	-0.11	-0.09
5. PLE	0.24***	-0.08	-0.01	0.11	1.00	0.10	-0.13	0.14*	-0.06	-0.20***	0.14*	-0.20***	-0.07
6. SEATCON	0.34***	-0.51***	-0.23***	0.08	0.06	1.00	-0.26***	0.41***	0.01	-0.48***	0.36***	-0.27***	-0.34***
7. CONCASH	-0.14**	0.23***	0.13	-0.20***	-0.05	-0.28***	1.00	-0.14*	0.22***	0.18**	-0.21***	-0.22***	0.26***
8. FAMILY	0.14*	-0.21***	-0.08	0.12	0.17**	0.38***	-0.06	1.00	-0.16**	-0.30***	010	-0.15**	-0.08
9. TA	-0.14*	0.23***	0.26***	-0.10	-0.11	0.03	0.29***	-0.15*	1.00	0.10	-0.11	0.13*	0.18**
10 MTB	0.06	0.22***	0.11	-0.13*	-0.01	-0.22***	0.08	-0.21***	-0.02	1.00	-0.35***	0.46***	0.44***
11. LEV	0.64***	-0.25***	-0.17**	-0.01	0.19**	0.35***	-0.13*	0.15*	-0.16**	-0.03	1.00	-0.46***	-0.63***
12. RETURN	-0.42***	0.25***	0.14*	-0.04	-0.20***	-0.27***	0.18**	-0.22***	0.18**	0.19**	-0.38***	1.00	0.53***
13. ROA	-0.44***	0.21***	0.06	-0.08	0.01	-0.18**	0.14*	-0.05	0.19**	0.09	-0.51***	0.41***	1.00

This table shows Pearson and Spearman pair wise correlations among corporate governance variables, control variables and the likelihood of an involuntary delisting. Significance (two-tailed) is denoted by ***, **, * for $p < 0.01$, $p < 0.05$, $P < 0.10$, respectively.

Table 7. Probit regression on 58 delisted and 112 matched control firms

	Predicted sign	Coefficient	Z-Statistic
Independent Variables			
OUT	-	-0.021	1.46
SIZE	+	-0.139	-2.21**
DUAL	?	0.349	1.04
FAMILY	+	0.029	0.08
SEATCON	+	0.011	1.50
CONCASH	+	0.006	0.36
PLE	+	0.012	2.18**
Control variables			
TA	-	-0.012	-0.08
MTB	+	0.004	2.94***
LEV	+	0.031	3.99***
RETURN	-	-0.010	-2.71***
ROA	-	-0.038	-1.71*
Pseudo R^2		0.556	
Chi-square		121.34***	

This table reports the results of a probit regression. The Z-value was used to test for the significance of the variables. Significant (two-tailed) is denoted by ***, **, * for $p < 0.01$, $p < 0.05$, $P < 0.10$, respectively.

Table 8. Supplement Analysis

	Coefficient	Z-Statistic
Independent Variables		
Gray	0.027	2.59***
SIZE	-0.137	-2.13**
DUAL	0.464	1.35
PLE	0.008	1.38
SEATCON	0.032	2.48**
CONCASH	0.024	1.34
Control variables		
FAMILY	0.282	0.57
TA	-0.079	-0.51
MTB	0.003	2.11**
LEV	0.033	4.01***
RETURN	-0.009	-2.53**
ROA	-0.032	-1.40
Pseudo R^2	0.567	
Chi-square	123.74***	

This table reports the results of a probit regression. The Z-value was used to test for the significance of the variables. The only difference between Table 7 and Table 8 is the first independent variable, OUT is replaced by Gray. Significant (two-tailed) is denoted by ***, **, * for $p < 0.01$, $p < 0.05$, $P < 0.10$, respectively.

6. Conclusions

The Financial Supervisory Commission in Taiwan has advocated the importance of corporate governance for several years. It further amended Company Law and Securities & Exchange Act to show the esteem to this issue. The purpose of this study is to act in concern with the policy through the examination of corporate governance mechanism in delisted firms. The study is designed to confirm that board of directors' characteristics and ownership structures are primary determinants of the firms' survival ability in the market.

The univariate empirical results suggest that firms with more number of outside independent directors, larger size of board of directors, fewer family control right, fewer rights for seats over control, more rights for control over cash flow and fewer ratio of shares pledged to the total shares controlled in the hands of the board of directors are generally less likely to become delisted. The duality is a pretty common phenomenon in most firms and does not have significant effect on delisting. In multivariate

empirical test, only board size and the ratio of stocks pledged are significant. For the independent board of directors, it is not significant in the multivariate test, however, after adding gray component in the variable, the outside directors also become significant. The results more support the importance of the independent roles in the board of directors when monitoring the corporate.

Delisting may sacrifice not only the firm's fate but also huge investors' costs. Examining the characteristics of the board of directors and the structures of ownership may avoid the manipulation of the earnings. The results of this study could become monitoring indices for internal examination system, the warning signals for investors, and the reference for the policy makers.

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OWNERSHIP STRUCTURE AND CORPORATE GOVERNANCE CODE: THE CASE OF FAMILY BUSINESS ENTERPRISES IN GERMANY

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Abstract

Ownership of corporations in Germany is today highly concentrated in the hands of families and other companies. Theses 'insider' systems often result in core conflict tends to be between controlling shareholders and sometimes between strong stakeholders and weak minority shareholders. The aim of this paper is to research the characteristics of ownership and control in family business and point out the role of Family Business Governance in securing an appropriate control of the owning families. The authors give suggestions how to implement the German Governance Code recommendations in family businesses.

Keywords: Ownership Structure, German Corporate Governance Code, Family Business Enterprises

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1. Introduction

Ownership of corporations in Germany is today highly concentrated in the hands of families and other companies (Franks, Mayer and Wagner, 2005; Franks and Mayer, 2001). We define family business enterprises and followed Klein et al. (2003) through the following indicators: complete or significant participation of one or more family members in capital, managerial and control functions as well as the common intent to pass the business along to the next generation within the family.

Theses 'insider' systems often result in core conflict tends to be between controlling shareholders and sometimes between strong stakeholders and weak minority shareholders. A main benefit of concentrated ownership is that it permits a more effective monitoring of management. However, the costs associated with concentrated ownership involve low liquidity and reduced risk diversification, whereas dispersed ownership is associated with higher liquidity and more efficient resource allocation. A liquid market for equity allows the link between the preferences of successful capitalists for consumption and saving to be separated from the productive process. However, in the context of a liquid stock market, dispersed ownership may not encourage the long-term relationships required for long-term business investments that increase the productive capacity of the economy.

Assuring an appropriate ownership structure and control is a great issue in family business enterprises (Weissenberger-Eibl, 2004). Family Governance represents a first approach to handle potential disadvantages of family businesses. Due to the often existing ownership concentration in German family business enterprises a particular set of problems arise. The Governance Code for family business is one of codes of conduct which is adjusted to family business needs and which gives the answer to this question. In the fourth paragraph "Ensuring an adequate control of the company management" the code includes recommendations about responsibility, structure of the controlling body, duties of the controlling body as well as rights and duties of the members of the controlling body.

Aronoff/Ward (1996) point out "a business that is well-governed is free to work toward the highest and best objectives of business" (Aronoff and Ward, 1996). It also applies to family businesses which play a very important role in the German economy (Walter, 1998). Good Governance supports a smooth leadership and control and hence the achievement of a company's objectives. The corporate governance in family business differs considerably from those without family background (Winkeljohann and Kellersmann, 2006).

The assumption of this paper is as follows: Family Business Governance can be implemented in small and middle-sized companies as a tool of handling ownership structure and control. The aim of this paper is to research the characteristics of ownership and control in family business and point out the role of Family Business Governance in securing an appropriate control of the owning families.

This work is structured in six sections. The next section gives information on the dominance of business enterprises in German as the area of analysis. The third section presents a conceptual background of

ownership structure and corporate governance codes. In the following, we derive the need of an family business governance code in order to handle ownership structure and appropriate control mechanism in family run enterprises. The fifth section contains implications from the German Code of Good Governance for Family Business Enterprises with special focus on ensuring an adequate control of the company management. The last section presents concluding remarks.

2. Dominance of Family Business Enterprises in Germany

The research field of family business enterprises in Germany is characterized mainly by two issues: regulation of the business succession and a statistical and formal analysis of German middle-sized enterprises. According to Guldan (2004) there is no standardized definition of a family business enterprise. The notion "family business enterprise" derives from colloquial language and does not refer to any concrete legal form (Albach 2002, Eidemueller-Jucknat 1998). Discussing on family businesses there are significant differences between themselves which are very often inconsiderate called "family businesses" (James 2006). The notion of family business should be distinguished from the notion of parent company, which means nothing more than a company which has been set up by a single person (Fasselt 1992, Iliou 2004, von Moos 2003, Muehlebach 2004).

There are many diverse definitions of family businesses. But all the definitions posses usually core elements pertaining to the type of economic development which is considerably influenced both by financial and human resources of family members. Furthermore, apart from the formal and legal impact of family members on the managing behaviour, the financial impact should also be taken into account. It usually depends on the power position of the particular members of a family. Moreover, this type of influence is determined by company-specific circumstances and can deviate significantly from the formally defined legal rights (Weissenberger-Eibl, 2003).

Freund (2000) proposed two basic poles to define a family business and has located the existing approaches within these dimensions. Thus, he defines a family business only by means of the ownership majority. On the other hand, a more detailed approach to the subject should include the following criteria: ownership up to 100% divided among fewer members of a family company, legal form of a private company, managing a company exclusive by the family and a clear objective of continuity of company management by a family member in the next generations.

A similar approach is suggested by Klein et al. (2003), whose way of defining a family business uses an ownership criterion as well. Nevertheless, by precise examination, the legal form is not a determinative factor. On the other hand, other indicators like having an advisory board are emphasized. This article will define a family business according to the presented considerations and follows Klein et al. (2003) through the following indicators: complete or significant participation of one or more family members in capital, managerial and control functions as well as the common intent to pass the business along to the next generation within the family. Specific strategic peculiarities of successful family businesses have not been sufficiently identified so far.

Ownership of corporations in Germany is today highly concentrated in the hands of families and other companies. Franks, Mayer and Wagner (2005) provide the first longitudinal study of ownership and control of German corporations by assembling data on the ownership and financing of firms from samples spanning almost a century from 1860 to 1950. There were a large number of firms listed on German stock markets and firms raised large amounts of equity finance. This runs counter to the conventional view of Germany as a bank oriented financial system. Firms raised little finance from banks and surprisingly large amounts from stock markets.

Issuance of equity caused the ownership of founding families and insider directors to be rapidly diluted. Even by the start of the 20th century, founding family ownership was modest and ownership by members of firms' supervisory boards, which was large at the beginning of the century, declined rapidly thereafter. New equity was frequently purchased by other companies in blocks rather than by dispersed shareholders. Furthermore, where equity was widely held by individual investors it was generally held on their behalf by custodian banks. Banks were able to cast a large number of votes at shareholder meetings, not only in respect of their own shareholdings which were in general modest, but as proxies for other shareholders. This is the case, even if one assumes that all bank proxies were voted on behalf of dispersed shareholders.

Franks, Mayer and Wagner (2005) document the creation of the 'insider system' of ownership that Franks and Mayer (1995) and (2001) describe in modernday corporate Germany. This is characterised by inter-corporate holdings in the form of pyramids and complex webs of shareholdings, extensive bank proxy voting and family ownership.

3. Ownership Structure and Corporate Governance Codes

3.1 Ownership Structure

The majority of previous studies, such as Monsen et al. (1968) and Booudreaux (1973), differentiate between ownercontrolled (OC) firms and management-controlled (MC) firms in terms of different criteria of ownership percentage (Short, 1994). Owner-controlled firms are those where a

dominant shareholding interest exists, while management-controlled firms include those in which ownership is so widely distributed that no one individual or group has an interest that is large enough to allow them to exert a dominant influence. In the previous studies, varying cut-off points are used to distinguish between OC and MC firms.

Little consensus with regard to the ownership level at which there is effective control of the firm has been reached (Short, 1994). This arbitrary nature of measuring ownership structure impairs the reliability of their findings. Another concern associated with these studies is the failure to examine the identification of shareholders. Specifically, McEachern (1975) argues that OC firms should be further categorised into two groups in order to distinguish between outside owners who are not actively involved in management and owners who are also managers. He further argues that by treating no difference between these two groups, the previous studies assume that controlling shareholders who are also managers have similar incentives to those shareholders who are external to the firm. The problem associated with this view is that the owner managers may behave the same way as any other professional managers.

There are observed differences in the ownership and control of companies across countries (La Porta et al., 1999; Barca and Becht, 2001). The most striking of these relate to comparisons of concentration of ownership in different countries. Ownership concentration in the UK and USA is significantly less than in Continental Europe and the Far East. For example, in France and Germany, in more than 80% of the largest 170 listed companies, there is a single shareholder owning more than 25% of shares, and in more than 50% of these companies, there is a single majority shareholder. In the UK, by contrast, in only 16% of the largest 170 listed companies is there a single shareholder owning more than 25% of shares, and in only 6% is there a single majority shareholder.

Concentration of ownership is appreciably higher on the Continent of Europe than in the UK. High levels of ownership concentration have also been reported for the Far East and South America, and ownership is as dispersed in the USA as in the UK. Not only does the level of ownership differ appreciably between the UK and USA and most of the rest of the world, but so too does the nature of that ownership. In the UK and USA, institutions, such as pension funds, life insurance firms and mutual funds, and individual investors are the main holders of corporate equity. Ownership is dispersed in the sense that no one institution or individual holds a large stake in a single company. This is described as an 'outsider system' (see Franks and Mayer, 1995).

On the Continent and in the Far East, families (or family holding companies) and other firms are the main holders of share blocks. Inter-corporate holdings of large blocks of shares are commonplace, frequently in the form of pyramids of shareholdings, cross-shareholdings, or complex webs. As noted above, in most countries, bank holdings of shares are modest and holdings by the government vary appreciably across countries. This is described as an 'insider system' (Mayer, 2008). In the insider systems where ownership is concentrated, owners have incentives to be actively involved in the management of firms. In Albert Hirschman's terms, they are more likely to exercise 'voice' rather than 'exit' which characterizes outsider systems where ownership is dispersed. There is little or no separation between ownership and control, and agency problems should be largely absent (Mayer, 2008).

3.2 Corporate Governance Codes

By the beginning of the twentieth century Germany had enacted a corporate code that provided more extensive corporate governance than existed in virtually any other country at the time. This may have been critical to the rapid development of the German stock market at the end of the 19th and the beginning of the 20th century. Furthermore, the Exchange Act of 1896 reinforced the control of the banks over German securities markets.

Codes of good governance can be considered a set of best practices regarding the board of directors and other governance mechanisms. Such codes have been designed to address deficiencies in the corporate governance system, by recommending a set of norms aimed at improving transparency and accountability among top managers and directors (Fernandez-Rodriguez, Gomez-Anson and Cuervo-Garcia, 2004).

Aguilera and Cuervo-Cazurra (2004) found that codes of good governance were issued mainly by the stock market or by managers' associations. Directors' associations, investors' associations, and the government did not play a large role in developing national governance practices. This evidence runs against the popular claim that institutional investors are the primary triggers of good governance, although these investors may have pressured stock-exchange commissions and private associations to improve governance practices at country level.

In most legal systems, codes of good governance have no specific legal basis, and are not legally binding (Wymeersch, 2006). Enforcement is generally left to the effectiveness of internal corporate bodies (i.e., the board of directors) and of external market forces. Only in a few countries (e.g., Germany and the Netherlands in Europe), the law attaches explicit legal consequences to the code or even to its provisions (Wymeersch, 2005).

Even if compliance with code recommendations is traditionally voluntary and based on the "comply or explain" rule, empirical evidence shows that publicly traded companies tend to respond to the main code recommendations (Conyon and Mallin, 1997; Gregory and Simmelkjaer, 2002). Furthermore, a previous study (Fernandez-Rodriguez et al., 2004) suggests that the market reacts positively to

announcements of compliance with the code. In brief, codes of best practices exert major influence on the corporate governance of listed companies, or at least formally (v. Werder, Talaulicar and Kolat, 2005).

The content of codes has been strongly influenced by corporate governance studies and practices. Codes touch fundamental governance issues such as fairness to all shareholders, clear accountability by directors and managers, transparency in financial and non-financial reporting, the composition and structure of boards, the responsibility for stakeholders' interests, and for complying with the law (Gregory and Simmelkjaer, 2002; Coombes and Chiu-Yin Wong, 2004).

The core of codes of good governance lies in the recommendations on the board of directors. Following the dominant agency theory (Alchian and Demsetz, 1972; Jensen and Meckling, 1976; Fama and Jensen, 1983), governance codes encourage the board of directors to play an active and independent role in controlling the behavior of top management. In particular, scholars and practitioners (Lorsch and MacIver, 1989; Demb and Neubauer, 1992; Charan, 1998; Conger, Lawler III and Finegold, 2001) recommend: the quest for an increasing number of non-executive and independent directors; the splitting of Chairman and CEO roles; the creation of board committees (nomination, remuneration and the audit committee), made up of non-executive independent directors; and the development of an evaluation procedure for the board.

4. Need for Family Business Governance Codes

There are numerous attempts of defining corporate governance in literature (Carney 2005, Iliou 2004, Kirchdörfer and Kögel 2000). For example, Carney (2005) defines corporate governance as a collectivity that embodies incentives, authority patterns, and norms of accountability that generate specific organizational propensities to strive for transparency and a well-balanced relation between managing and control. The corporate governance should regulate the co-operation of the top committees and set rules for a good governance in a company. The standard definition of corporate governance among economists and legal scholars refers to problems arising from the separation of ownership and control, namely the agency relationship between a principal (investors in publicly traded firms, voters for utilities) and an agent (managers for corporations, politicians for state-controlled firms). A divergence of interest between managers and shareholders (or between politicians and voters) may cause managers (politicians) to take actions that are costly to shareholders (voters). One of the most striking differences between countries' corporate governance systems relates to the cross-country difference between firm ownership and control. This difference is not simply an accident of history, but the result of major differences among the legal and regulatory environments of countries.

Ownership of corporations in Germany is today highly concentrated in the hands of families and other companies. Theses 'insider' systems often result in core conflict tends to be between controlling shareholders and sometimes between strong stakeholders and weak minority shareholders. A main benefit of concentrated ownership is that it permits a more effective monitoring of management. However, the costs associated with concentrated ownership involve low liquidity and reduced risk diversification, whereas dispersed ownership is associated with higher liquidity and more efficient resource allocation. A liquid market for equity allows the link between the preferences of successful capitalists for consumption and saving to be separated from the productive process. However, in the context of a liquid stock market, dispersed ownership may not encourage the long-term relationships required for long-term business investments that increase the productive capacity of the economy.

Kirchdoerfer and Koegel (2000) argue that family members participating in a business regard the family connections and its principles as a primary element of their engagement. Consequently, family businesses are, in the sense of communities of values, much more affected by tradition and significantly more constant in pursuing the proposed philosophies than other organizations. Muehlebach (2004) identified potential advantages and disadvantages of a family business. Potential advantages are long term perspective, strong corporate culture, product quality, market knowledge as well as flexibility and fast decisions. The potential benefits are confronted with the potential disadvantages of a family business, like, such as nepotism (favouritism), transfer of family conflicts into the business' deals and strategic rigor. In order to avoid the disadvantages of a family business, an outside view is strongly needed. For most of us, the tendency toward optimism is unavoidable. It is unlikely that companies can remove the organizational pressures that promote optimism (Lavallo and Kahneman 2003). Simply understanding the sources of overoptimism can help managers challenge assumptions, bring in alternative perspectives and take a balanced view for ensuring an appropriate control.

Due to the often existing ownership concentration in German family business enterprises a particular set of problems arise. As a consequence of this structure and the problem of the free-rider, shareholders have few incentives to monitor managerial actions and delegate in the market for corporate control (Franks and Mayer, 1997). In fact, high ownership concentration has been proved to encourage manager monitoring and to improve firm performance (Demsetz and Lehn, 1985; Bergström and Rydqvist, 1990). Where investors are best protected against managerial discretional decisions, ownership concentration may not have any significant influence

on the firm's value because shareholders do not need concentrated ownership structures in order to have their rights protected.

The German Corporate Governance Code was introduced to the public in February 2002 for the first time. It has promoted the discussion about approved standards of responsible executive and managerial structures in a company. Family businesses can not take over the recommendations of the German Corporate Governance offhand, because they evidently differ from stock companies referring to the tight connection between management and ownership. This implies beneficial effects, but also risk. Most of the German companies are not in possession of a changing public. It regards first of all middle-class companies which are permanent under control of one entrepreneur or a family business.

The absence of a significant relation could even arise as the result of two countervailing effects: a disciplinary role of ownership concentration (in a similar vein as leverage works) which increases firms' performance, and a negative impact due to the problems between large and small shareholders (although less important than in civil law countries). On the contrary, when the conflict between large and small shareholders is more outstanding, ownership concentration favours a potential risk of expropriation.

Among the 50 biggest non-public organizations, there are 26 in German possession. Companies such as Aldi, Otto, Haniel and Bertelsmann are managed by entrepreneur families. Behind the brands like BMW, SAP, Metro, Altana and Henkel are hidden founders and families who form management concepts and values in these companies. Whereas in public organizations good governance is about to protect an anonymous investing public against incompetence and arbitrariness of their trustees in executive and supervisory board, Good Governance in family business is interpreted differently. More important is the question, how to assure a responsible and long term performance of the company owners (Carney 2005). The German Governance Code for family business is one possible answer to this question (Banze 2006). Moss (2003) gives five cornerstones of German Corporate Governance in family business: cohesion among family partners, transparency and equal treatment of family partners, separation of family and company, business before family and clear assignment of responsibilities.

The wider the decision-making ability of majority shareholders is, the higher the risk of expropriation becomes (Johnson et al., 2000; Gutiérrez and Tribó, 2004). Nonetheless, the possibility of expropriation may present a non-linear effect, since beyond a certain level of ownership, large shareholders bear the costs of their actions to a greater degree and thus the private benefits they may hope to extract will be smaller (Bennedsen and Wolfenzon, 2000; Thomsen and Pedersen, 2001; Claessens et al., 2000). Thus the risk of expropriation is the result of a dual relation between the firm's value and the level of ownership of the controlling shareholders: a decreasing relationship at lower levels of ownership and a positive one for higher levels of the largest shareholder's ownership.

The academic debate about the Family Business Governance started quite recently. There is very little research that examines challenges and mechanism of a Family Business Governance based on theoretical models and empirical studies (Iliou 2004, Kirchdoerfer and Koegel 2000). Particularly, there are no clear recommendations how to perform under the Family Business Governance in small and middle-sized companies – especially in family business enterprises. A thorough concretization of a "Good Governance" in a family business is definitely necessary, as according to James family businesses dispose of various tools and possibilities to exert influence (James 2006).

5. Implications from the German Code of Good Governance for Family Business Enterprises

5.1 Roll-Out of New Corporate Governance Practices

The decision to issue a code of good governance can be assimilated to the adoption of new practices in an existing corporate governance system (Aguilera and Cuervo-Cazurra, 2004). Codes of good governance are, in fact, best practice recommendations regarding the characteristics of the board of directors and other governance mechanisms. They provide a voluntary means for innovation and improvement of governance practices. A diffused practice can be defined as an innovation within a social system, although the innovation does not necessarily entail an "improvement," but rather a change in the current state (Strang and Macy, 2001). Many scholars explain the adoption of new practices and their homogeneity within a social system by referring to two main theoretical approaches: efficiency theory, and institutional theory (DiMaggio and Powell, 1983; Tolbert and Zucker, 1983; Westphal, Gulati and Shortell, 1997; Strang and Soule, 1998; Strang and Macy, 2001). Reasons of efficiency and legitimation both compete with and complement each other (Scott, 2001). The two approaches are not necessarily incompatible because organizations may adopt practices for different reasons (Tolbert and Zucker, 1983). There is evidence suggesting that both efficiency and legitimation reasons may lead to the adoption of new practices (Tolbert and Zucker, 1983; Aguilera and Cuervo-Cazurra, 2004).

The first theoretical approach views organizations as rational actors, albeit in a complex environment, and points to the gains in efficiency or effectiveness that may follow innovation or the adoption of a practice (Thompson, 1967; Blau and Schoenherr, 1971). Some examples of adoption motivated by technical or rational needs are the adoption of the

multidivisional form (Chandler, 1962), the creation of professional programs by failing liberal arts schools (Kraatz and Zajac, 1996), or the introduction of conventions into the broadcasting field (Leblebici, Salancik, Copay and King, 1991).

Conversely, the second theoretical approach views organizations as captives of the institutional environment in which they exist, and suggests that practices are adopted because of their growing taken-for-grantedness improving qualities, which make adoption socially expected (Meyer and Rowan, 1977; Tolbert and Zucker, 1983). Tolbert and Zucker (1983), in their study on civil service reform in US municipalities, illustrated that early adopters were driven to change by technical-competitive reasons, and late adopters were driven to conform to what had become best practice. They argued that the early adopters of civil service reforms provided the legitimacy for innovation, and other organizations were then under pressure to adopt the reforms for fear of losing legitimacy. Tolbert and Zucker (1983) defined institutionalization as "the process through which components of formal structure become widely accepted, as both appropriate and necessary, and serve to legitimate organizations." If practices become institutionalized, their adoption brings legitimation to the adopting organizations or social systems, even if sometimes these practices fulfill symbolic rather than task-related requirements.

The process of homogenization is called isomorphism, and defined as a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions (Hawley, 1968). There are two types of isomorphism: competitive and institutional (DiMaggio and Powell, 1983). Competitive isomorphism assumes a system rationality that emphasizes market competition, niche change, and fitness measures. A common view is that this type of isomorphism is relevant for fields in which free and open competition exists, and may apply to early adoption of innovation. However, this does not present an entirely adequate picture of the modern world of organizations. To do so, it must be supplemented by an institutional view of isomorphism, according to which organizations compete not just for resources and customers, but for political power and institutional legitimacy, and for social as well as economic fitness (DiMaggio and Powell, 1983).

The large majority of contributions on the diffusion of new practices focused on the mechanisms facilitating or inhibiting the transmission process. These studies imply a binary approach of adoption/non-adoption for the most part, and treat the practices themselves as relatively unchanging and uniform. However, innovation diffusion is a dynamic process, and diffusing practices may be modified or "reinvented" by adopters (Tornatzky, Eveland, Boylan, Hetzner, Johnson, Roitman and Schneider, 1983; Rogers, 1995). Reinvention is likely to be the rule, not the exception, and researchers call for further study on the factors explaining changes in practice content (Cool, Dierickx and Szulanski, 1997; Campbell, 2005).

Finally, institutional theorists highlight organizations that may resist conforming to external pressures because of inertial effects and firm history (Tolbert and Zucker, 1983). North (1990) affirms that institutions are shaped by historical factors limiting the range of options available to decision-makers. Matthews (1986) argues that inertia plays an important role in institutional persistence. Old institutionalists (Selznick, 1949) highlight the role of politics in shaping formal structures, and focus their analysis on group conflict because of diverging interests. New institutionalists devote less attention on "how incumbents maintain their dominant positions" (DiMaggio and Powell, 1991: 30). However, DiMaggio and Powell acknowledge that "actors in key institutions realize considerable gains from the maintenance of those institutions," and that "the acquisition and maintenance of power within organizational fields requires that dominant organizations continually enact strategies of control" (DiMaggio and Powell, 1991).

5.2 German Governance Code for Family Business Enterprises

Landau and Chisholm (1995) state that the most pernicious constraint ever laid on organizations is the doctrine of efficiency. They describe it as a precept that appears sop self-evident and so much a matter of common-sense as to be beyond doubt. While efficiency has achieved the status of an axiom of right, as a praexiological rule, it might be dangerous for family businesses. It may even guarantee errors that are clearly avoidable.

Whereas in public organizations a Good Governance is about to protect an anonymous investing public against incompetence and arbitrariness of their trustees in executive and supervisory board, is Good Governance in a family business interpreted differently. More important arising from the ownership concentration in family business enterprises is the question, how to assure a responsible and long term performance of the company owners.

The Governance Code for family business is one of codes of conduct which is adjusted to family business needs and which gives the answer to this question. The appointment of the Governance Code for Family Business Commission by "Intes" and "Welt am Sonntag" aims at providing family businesses and their co-partners with a reliable framework for evaluation and improvement of their company constitution: "The objective of the Governance Code for Family Business is to set up a code of conduct focused predominantly on the particular needs of a family business" (German Governance Code for Family Businesses,

commencement clause). The Governance Code for Family Businesses from September 2004 suggests ideas and recommendations in eight areas. These are commitment to a responsible entrepreneurship, transparency of company structures, ensuring a qualified management and its succession, ensuring an adequate control of the company management, involvement of other company members, financial statement, profit distribution, steps to preserve the family possession and family governance as an essential supplement to the corporate governance in family businesses.

In the fourth paragraph "Ensuring an adequate control of the company management" the code includes recommendations about responsibility, structure of the controlling body, duties of the controlling body as well as rights and duties of the members of the controlling body. The owners are responsible for making use of control mechanisms. If the family business has several partners, then it should set up a volunteer controlling body (a so-called advisory board, governing board, supervisory board, management committee, etc.). This even applies to those companies which are not required to do so by law (German Governance Code for Family Business Enterprises, paragraph 4.1).

In order to improve objectivity and quality, the codes recommends that expertise from outside the family sould be included in the controlling body. As the will or capability of the family decreases with regard to qualified perception of the controlling function, it becomes increasingly important to implement external members in the controlling committee. Furthermore, the code recommends that members of the controlling body should not acquire their positions due to delegation rights held by a single owner or group of owners. At least a majority of the members should be selected unanimously by all owners (German Governance Code for Family Business Enterprises, paragraph 4.2.6).

Rights and duties of the controlling body are regulated in detail. Paragraph 4.3 shows the most important duties of the controlling body:

- Appointing managing directors and relieving them of office,
- Entering, ending and creating the contents of the company's employment contracts including all compensation issues,
- Making decisions pertaining to the rules of procedure, allocation of duties and appointing a chairperson or a management spokesperson,
- Preparation of or passing a resolution pertaining to dismissal.

According to the code, the committee, as a body representative of the owner, can be involved in significant management decisions. Passing the strategy and all planning derived from this strategy, as well as management measures of essential significance should require previous approval by the controlling body. For this purpose, the controlling body should specify a list of those management measures requiring approval without removing the basic preparation between management and the controlling body.

"The members of the controlling body should be obliged to further the prosperity of the company as a whole, or that of all owners as the case may be. They should not represent particular interests and they should not be bound by instructions from individual owners or owner groups." (German Governance Code for Family Business Enterprises, paragraph 4.4.3).

Companies with a great number of individual and scattered shareholders require Family Governance concepts in order to keep the shareholders together and to make them stick to the company's values, strategy and objectives. However, in comparison to the Commission of the German Corporate Governance Code, the Governance Code for Family Businesses does not set any obligatory regulations. Its framework and content stays vague. Even if this could be interpreted as a weakness of the present code though unavoidable due to the complexity and variety of issues in the context of ownership structure.

This is obvious when looking at paragraph 4.4.4 in particular. "The members of the controlling body should be held responsible for errors in carrying out their duties at least in cases of criminal intent and gross negligence. Limitation of liability according to amount or using insurance to cover the risk of liability should be allowed as long as an appropriate deductible is agreed upon." (German Governance Code for Family Business Enterprises, paragraph 4.4.4). A more concretised approach is desirable in order fulfil the control function of the committee and dealing with the special extent of ownership structure in German family business enterprises.

Family Governance represents a first approach to handle potential disadvantages of family businesses. Besides the recommendations how to prove the strategic orientation of family businesses on the regular basis, a Family Governance can provide a set of principles how to avoid interactions between family conflicts and family business. What is more, a Family Business Governance can help to promote the establishment of a controlling body which, in consequence, can lead to a long term and sustainable existence of a family business.

6. Concluding Remarks

Ownership of corporations in Germany is today highly concentrated in the hands of families and other companies. We defined family business enterprises and followed Klein et al. (2003) through the following indicators: complete or significant participation of one or more family members in capital, managerial and control functions as well as the common intent to pass the business along to the next generation within the family. Theses 'insider' systems often result in core conflict tends to be between controlling shareholders and sometimes between strong stakeholders and weak minority shareholders. A main benefit of concentrated ownership is that it permits a more effective

monitoring of management. However, the costs associated with concentrated ownership involve low liquidity and reduced risk diversification, whereas dispersed ownership is associated with higher liquidity and more efficient resource allocation. A liquid market for equity allows the link between the preferences of successful capitalists for consumption and saving to be separated from the productive process. However, in the context of a liquid stock market, dispersed ownership may not encourage the long-term relationships required for long-term business investments that increase the productive capacity of the economy.

Family Governance represents a first approach to handle potential disadvantages of family businesses. Due to the often existing ownership concentration in German family business enterprises a particular set of problems arise. The Governance Code for family business is one of codes of conduct which is adjusted to family business needs and which gives the answer to this question. In the fourth paragraph "Ensuring an adequate control of the company management" the code includes recommendations about responsibility, structure of the controlling body, duties of the controlling body as well as rights and duties of the members of the controlling body.

It is strongly recommended that family businesses, due to the growing importance of ownership structure and control, apply the concept of a Family Business Governance as a tool of an advantageous implementation of good practices. In this way, a company can ensure its continuity and survival.

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INFLUENCES OF PROPRIETARY AND POLITICAL COSTS ON VOLUNTARY DISCLOSURE RELATING TO FINANCIAL INSTRUMENTS BEFORE AND AFTER MANDATORY REQUIREMENTS

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Abstract

The study examines whether the introduction of an accounting standard relating to the disclosure of financial instruments affects voluntary corporate disclosure, and the impact of proprietary and political costs on such disclosure decisions. Using the annual reports of 70 Australian listed companies over a period of 6 years giving 420 firm-year observations, this study investigates the comparative impacts of proprietary and political information costs on management's voluntary disclosure decisions relating to financial instruments. The regulatory disclosure environment, the impact of proprietary costs (proxy by a firm's investment growth opportunities) and political costs (proxy by a firm's probability of financial distress, size of a company and negative media attention) relating to the voluntary disclosure of financial instruments were investigated. Results of this study provide evidence that the mandatory disclosure of non-proprietary information relating to financial instruments has resulted in an increase in the voluntary disclosure of related proprietary information. For the effects of proprietary and political costs, findings from the study suggest that a firm's growth opportunities are significant in limiting voluntary disclosure of proprietary information in the period prior to regulation. Consistent with political cost hypothesis, legitimacy theory and media agenda-setting theory, the size of a company and high negative media attention are significantly positively related to voluntary corporate disclosure. However, financial distress has no effect on the voluntary disclosure of financial instruments-related information.

Keywords: Financial Instruments, voluntary disclosure, regulatory disclosure environment, proprietary cost, political cost

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1. Introduction

Various factors influence management's decision to voluntarily disclose information in their external financial reports. This study investigates whether a change in the regulatory disclosure environment relating to financial instruments and the impact of proprietary and political costs affect such disclosure decisions. Management may be willing to disclose non-proprietary information but they may be reluctant to disclose proprietary information, as the disclosure of such information will result in the company incurring proprietary costs. However, failure by such companies to voluntarily disclose information due to its proprietary nature may result in these companies incurring political costs. This study draws on signalling theory, legitimacy theory and media agenda setting theory to underpin explanations of the influence of proprietary and political costs on management's decision to voluntarily disclose information when there is a change in the regulatory environment. The aspect of the regulatory environment, which is of concern in this study is whether the introduction of mandatory disclosure requirements relating to financial instruments disclosure inhibits or enhances management's incentives to voluntary disclose additional information. To test the impact of proprietary costs, this study will use firms' investment growth opportunities to proxy for proprietary costs. To test the impact of political costs, a major global incident relating to a corporate failure, arising from the use of derivative financial instruments that received negative media coverage was studied, as this incident is likely to threaten the perceived legitimacy of other corporations and, in turn, increase the political costs that could result for these corporations. This study seeks to examine how these corporations respond to the perceived threat to their legitimacy resulting from such an incident, and whether the voluntary corporate disclosure decisions of managers are affected by the incident especially for companies that are politically visible and for companies that have a higher probability of facing financial distress.

2. Motivation for the Study

In the area of corporate financial reporting it is important to understand what motivates managers to voluntarily disclose corporate information to external stakeholders. Such an understanding will have important policy implications regarding the formulation and subsequent refinement of accounting standards. There has been relatively little empirical evidence to support the proprietary cost perspective. This research attempts to extend the proprietary cost perspective of voluntary disclosure by considering the effect of political costs on voluntary disclosure of financial instruments.

3. Literature Review and Generation of Hypotheses

3.1 Regulatory Environment and Voluntary Disclosure

The existing literature on the voluntary disclosing strategy of firms indicates that voluntary disclosures are influenced by the changes in mandatory disclosure requirements (Aggarwal & Simkins, 2004; Berkman et al., 1997; Chalmers, 2001; Chalmers & Godfrey, 2004; Chow et al., 1996; Dye, 1985, 1986; Gonedes, 1980; Nagarajan & Sridhar, 1996; Taylor & Redpath, 2000; Verrecchia, 1982). It is argued by Dye (1985), Gonedes (1980), Nagarajan & Sridhar (1996) and Verrecchia (1982) that as the mandatory reporting requirements become more detailed, voluntary disclosures may decline. However, according to Dye (1986) and Taylor & Redpath (2000), the mandatory disclosure of non-proprietary information would provide incentives for the voluntary disclosure of correlated proprietary information as the increase in the mandatory disclosure of non-proprietary information would reduce the benefits of withholding correlated proprietary information.

The issuance of an accounting standard on financial instruments disclosure imposed mandatory disclosure requirements on financial instruments, making such information non-proprietary. Drawing on Dye's (1986) model, it is expected that this will result in an increase in the voluntary disclosure of related proprietary information relating to financial instruments.

H1: An increase in the mandatory disclosure of non-proprietary information relevant to financial instruments increases the voluntary disclosure of related proprietary information.

Chalmers (2001) provides evidence that the quantity of voluntary derivatives disclosure made by firms progressively increases over the period leading to the introduction of the mandatory disclosure requirements, and that there is a significant increase in voluntary disclosure in the year when the mandatory disclosure requirements became effective. Chalmers & Godfrey (2004) and Taylor & Darus (2006) confirm these findings. The second hypothesis is to test the voluntary disclosure of financial-instruments related information in the period before the introduction of the standard, in order to investigate whether the likelihood of a proposed standard becoming mandatory has any effect on the voluntary disclosure of proprietary information related to non-mandatory disclosure items.

H2: The likelihood of a proposed standard relating to financial instruments becoming mandatory increases the voluntary disclosure of proprietary information related to non-mandatory disclosure items.

3.2 Signalling Theory, Proprietary Costs and Voluntary Disclosure

The standard on financial instruments disclosure set minimum disclosure requirements in terms of types of information that need to be disclosed about financial statements, while allowing considerable discretion in the amount of detail to be given about particular financial instruments. Where accounting standards allow such flexibility in details of disclosure, high quality firms might be expected to use the opportunity to provide 'fine' information signals to reveal their type of quality. The decision to withhold or release additional information to signal the firm's type of quality however may be influenced by the extent of proprietary costs that would be incurred as a result of the disclosure. Proprietary information is defined as 'information whose disclosure potentially reduces the present value of cash flows of the firm endowed with the information' (Dye, 1986). The disclosure of proprietary information will reveal proprietary information which will not only benefit user groups such as shareholders but also competitors who can act on the information disclosed to the competitive disadvantage of the disclosing firms (Darrough & Stoughton, 1990; Feltham & Xie, 1992; Harris, 1998; Hayes & Lundholm, 1996; Kelly, 1994; Newman & Sansing, 1993; Verrecchia, 1983; Wagenhofer, 1990). Wagenhofer (1990) argues that the disclosing firm with private information will incur proprietary costs either in the form of lost profits because of the strategic action taken by an opponent or in the form of political costs imposed by regulators, trade unions or adverse media reports.

3.3 Hypothesis about Proprietary Cost Using Investment Growth Opportunities

The independent variable, investment growth opportunities are of a nature that contains high proprietary information. Investment growth opportunities are use to proxy for proprietary costs. Companies with investment growth opportunities have the characteristics of having proprietary information and indicate the presence of proprietary

costs, which will influence firms' voluntary disclosure policy.

The evidence from prior studies of the hypothesised inverse relationship between firms' investment growth opportunities and the dependent variable is conflicting (i.e. Bamber & Cheon, 1998 and Harris, 1998 find an inverse relationship, but Taylor & Redpath, 2000, find a positive relationship).

H3: The higher the investment growth opportunities, the lower will be the voluntary disclosure of proprietary information relevant to financial instruments.

3.4 Legitimacy Theory, Media Agenda Setting Theory, Political Cost and Voluntary Disclosure

In this study, the strategic approach to legitimacy theory is adopted in explaining managers' decisions to voluntarily disclose information in their annual reports in order to avoid incurring political costs. The strategic approach assumes that managers have a high level of managerial control over their organization's legitimation process, and that legitimation is purposive, calculated, and frequently oppositional (Suchman, 1995). Thus, the voluntary corporate disclosure of financial instruments-related information by management in their annual reports is viewed as a strategy adopted by management in order to remain legitimate and to reduce the impact of political costs.

'Political costs are wealth re-distributions away from the entity to the government and other sectors of the economy' (Whittred & Zimmer 1990, p. 32-33). The extent to which an entity fails to report accounting numbers and related disclosures can affect whether it is criticized or supported by members of the public (e.g. consumers, employees, environmental groups) and whether such public scrutiny results in impositions of regulations or taxes by governments aimed at the entity (Lemon & Cahan, 1997). Holthausen & Leftwich (1983) argue that a firm's political visibility is affected by its reported accounting numbers as accounting numbers are used by parties such as consumers or politicians as a basis for them to criticize or support these firms. Empirical evidence on the political cost hypothesis confirms that a firm's political visibility influences its voluntary disclosure practices (Aggarwal & Simkins, 2004; Belkaoui & Karpik, 1989; Deegan & Caroll, 1993; Deegan & Hallam, 1991; Hutchings & Taylor, 2000; Lemon & Cahan, 1997; Lim & McKinnon, 1993; Patten & Trompeter, 2003; Taylor & Redpath, 2000). Another component of legitimacy relates to the extent to which corporate practices receive media attention. A case in point was the rapid pace of growth in the use of financial instruments by companies in the late 1990s, especially in the use of derivative instruments, coupled with corporate failures because of the misuse of derivatives. The extensive media coverage given to corporate failures that had involved speculative hedging activities changed public perceptions. Under the media agenda setting theory, the extensive media coverage of an incident has the ability to influence or shape community perceptions about a particular issue. The constant emphasizing of the issue by the media has an effect of leading the audience to think more about an issue, thereby making the issue more salient (Gross & Aday, 2003). In addition, the influence of the media on community perceptions is greater if the issues highlighted by the media are unfavourable or negative issues (Dearing & Rogers, 1996; Hutchings & Taylor, 2000; Deegan et al., 2002; Deegan et al., 2000; O'Donovan, 1999; Brown & Deegan, 1998).

3.5 Hypotheses about Political Cost Using the Probability of Firms Facing Financial Distress, Size of Company and Negative Media Attention

The impact of political costs on management's voluntary disclosure decision is tested in a set of hypotheses by using the probability of firms facing financial distress, size of company, and negative media attention to measure the effects of political costs on the voluntary disclosure of information. Political costs of non-disclosure can arise when firms are coming closer to breaching debt covenants. Management that voluntarily provides greater financial disclosure to debt holders when the company approaches financial distress is more likely to avoid political costs of imposition of greater monitoring devices or even replacement with new management. Prior empirical evidence relating to the influence of financing conditions of firms on the extent of voluntary disclosure is mixed (Ahmad et al., 2003; Ahmed & Nicholls, 1994; Chalmers & Godfrey, 2004; Chow & Wong-Boren, 1987; Cormier & Magnan, 2003; Malone et al., 1993; Mitchell et al., 1995; Myers, 1977; Taylor & Redpath, 2000).

In this study, companies with a higher probability of facing financial distress are expected to voluntarily disclose more information to reduce the effects of political and monitoring costs, and to avoid debt covenants from becoming binding.

H4: The higher the probability that a company is in financial distress, the greater will be its voluntary disclosure of information relevant to financial instruments.

Prior empirical evidence also confirms the positive association between size and political costs (Aggarwal & Simkins, 2004; Belkaoui & Karpik, 1989; Cormier & Magnan, 2003; Cullen & Christopher, 2002; Deegan & Hallam, 1991; Hutchings & Taylor, 2000; Skinner, 1993; Taylor & Redpath, 2000; Wong, 1988). Since the degree of political costs is associated with the size of the company, therefore the size of the company will influence management's decision to voluntarily disclose information in order to avoid incurring

political costs. Larger companies will have a greater need to mitigate political costs than smaller companies.

H5: The larger a company's size, the greater will be its voluntary disclosure of information relevant to financial instruments.

With advancement in information technology, the media is able to exert its influence on public issues not only locally but also globally (Deegan et al., 2000). Therefore, the effect of media attention is global. A major corporate disaster will become known throughout the world, and may lead society within another country to react to the incident by demanding greater disclosure. In this study, the effect of negative media attention on the voluntary disclosure of financial instruments-related information is investigated amongst companies in Australia, even though the incident that resulted in the negative media attention did not take place in Australia. This was done through the investigation of a high profile incident involving the collapse of Barings Bank in 1995. This incident was chosen because of its prominence, wide negative media coverage, and the date of the occurrence of the event. The event took place a few years prior to the year in which the standard on financial instrument disclosure became mandatory in 1998.

The wide negative media coverage following the incident is expected to pose a threat to the legitimacy of other corporations using financial instruments. The management of companies using derivatives can be expected to react to the adverse media coverage by using corporate disclosures as a strategy to alleviate the potentially adverse effects caused by the negative media coverage. Since prior studies are in agreement that the print media is the most effective means of changing the public's perception (Bogart, 1984; Mc Combs, 1981; McCombs & Shaw, 1994; Mutz & Soss, 1997; Stempel & Hargrove, 1996), this study will investigate the effect of negative print media coverage on the voluntary disclosure of information relating to financial instruments.

H6a: The extent of change in unfavourable print media attention about corporate use of financial instruments (during the period from the collapse of Barings Bank and the adoption of AASB 1033) is positively related to the change in company voluntary disclosure of information relevant to financial instruments.

However, the anticipated introduction of the mandatory disclosure requirements is expected to have a moderating effect on the relationship between negative media attention and the voluntary disclosure of information relevant to financial instruments. It is expected that as the anticipated mandatory disclosure increases (probably driven by media attention), the positive relationship between negative media attention and the voluntary disclosure of financial instrument-related information will decline.

H6b: When anticipated introduction of mandatory disclosure requirements increases, the positive relationship between print media attention and the voluntary disclosure of information relevant to financial instruments will be reduced.

4. Methodology

4.1 Sample of Companies

To test the hypotheses, publicly available company data was collected. A sample size of 70 companies over a six-year period from 1 January 1995 to 31 December 2000 resulting in 420 firm year observations were sourced from *Connect 4*, a corporate financial database in Australia. The six-year window period enables an examination of the trends in the disclosure practices on financial instruments of public listed companies in Australia from an unregulated environment (1995 – 1997) to a regulated environment (1998 – 2000). A stratified sampling method was used in which a balance of companies was randomly chosen across selected industries. The sample firms were drawn from four industries: *Energy, Materials, Industrials*, *and Consumer Staples*. These four industries were selected as companies in these industries are regarded as being more likely to use financial instruments, especially derivative instruments, to finance their operations and to transact their businesses. Consistent with other studies on financial derivatives, (Aggarwal & Simkins, 2004; Berkman et al., 2002; Chalmers & Godfrey, 2004; Nguyen & Faff, 2002) firms belonging to the *Banking and Finance* industry were excluded from the sample due to the specific nature of their business. This is because firms in the *Banking and Finance* industry trade and hold financial derivatives, both as hedges and as traders and dealers.

4.2 Empirical Schema

The relationships developed in the seven hypotheses can be depicted in an empirical schema as given in Figure 1. The dependent variable (VDISC) is an unweighted index that measures the extent of voluntary disclosure relating to financial instruments. Basically, the data for this study is collected through content analysis of companies' annual reports. The number of lines relating to financial instruments disclosure was chosen as the unit of measurement. The number of lines was chosen, as the disclosures relating to financial instruments can comprise both textual and tabulated information.

Figure 1. Empirical Schema of Factors Affecting the Voluntary Corporate Disclosure of Information Concerning Financial Instruments

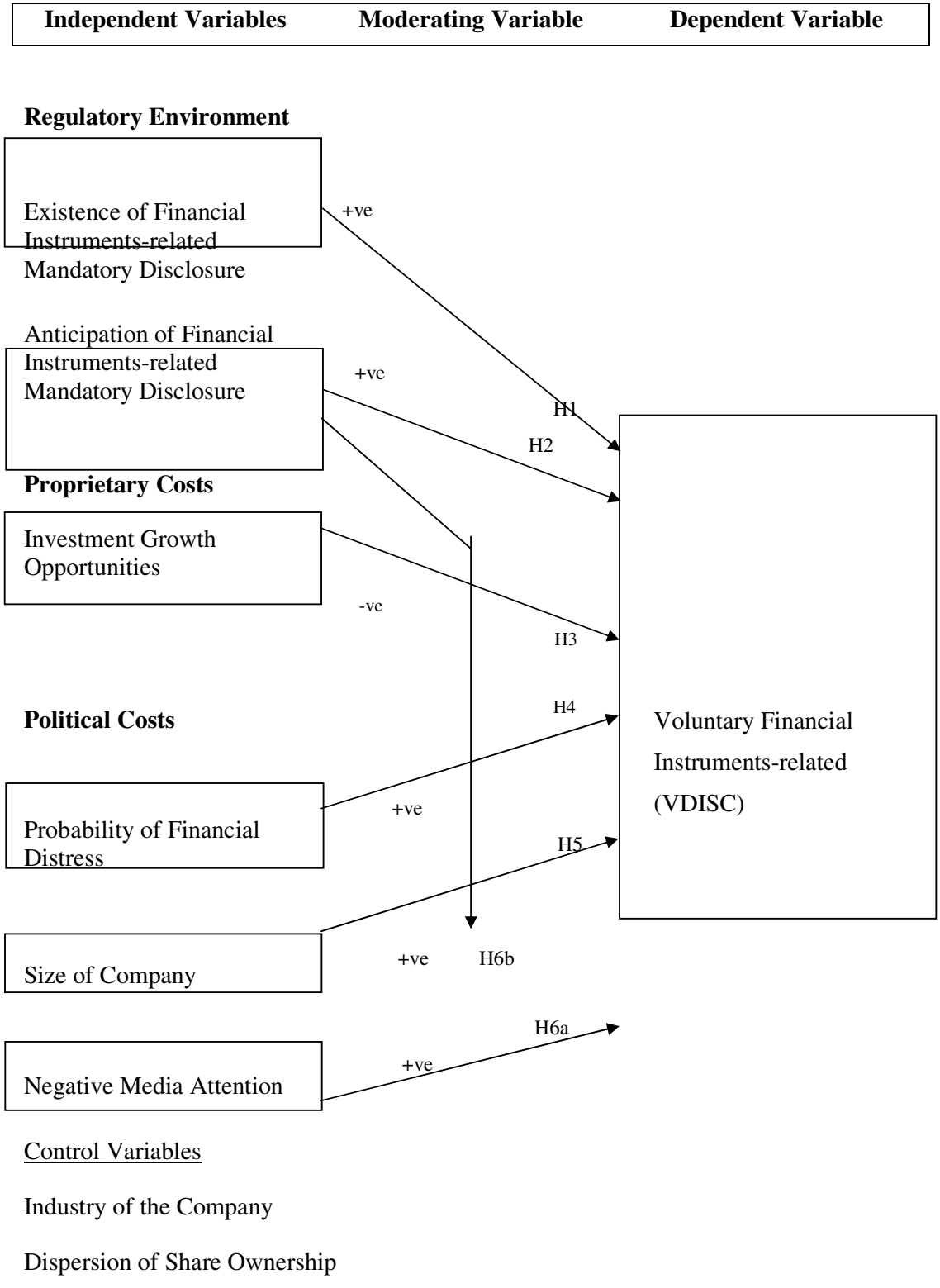

Table 1. Summary of the Variables, their Measurements and Sources

Variables	**Measures**
Dependent variable • $VDISC_i$ (voluntary disclosure index for company i)	$\sum_{c=1-5} [\sum_{v=1-n} (l_{vci}/X_{vci})*T_{vc}]$ $c_{=1-5}$ = number of voluntary disclosure category l_{vci} = number of lines of disclosure per voluntary items (v) in an information category (c) for company i X_{vci} = applicable voluntary items (v) in an information category (c) for company i T_{vc} = total possible voluntary items (v) in an information category (c)
Independent variables **Mandatory Disclosure** • $MDISC_i$ (mandatory disclosure index for company i)	$\sum_{m=1-7} (l_{mi}/X_{mi})*T_m$ $m_{=1-7}$ = number of mandatory disclosure items l_{mi} = number of lines of disclosure per mandatory items (m) for company i X_{mi} = applicable mandatory items (m) for company i T_m = total possible mandatory items (m)

Proprietary Costs	
GROWTH	
• MKT/ VA	[(Total assets – Total common equity) + Shares outstanding x Share closing price] /Total Assets (Hutchinson & Gul, 2003)
• MKT/VE	(Shares outstanding x Share closing price)/Total common equity (Hutchinson & Gul, 2003)
• PPE/MV	Gross property, plant and equipment/ (Market value of the firm + Non-current liabilities) (Hutchinson & Gul, 2003)
Variables	**Measures**
Political Costs	
DISTRESS	
• IR_{it}	X_{it}/X_{igt} where IR_{it} = industry relative for ratio i in period t X_i = ratio i, g = industry g, t = year t and X_{igt} = industy g's median for ratio i in period t
• Z-score	$Z = (a_0 + a_1 X_1 + a_2 X_2 + a_3 X_3 + a_4 X_4 + a_5 X_5)$(Izan, 1984)
X_1 (Profitability measure)	EBIT/Total assets
X_2 (Interest coverage)	EBIT/interest expense
X_3 (Liquidity ratio)	Current assets/Current liabilities
X_4 (Leverage measure)	Long term + Short term debts/Common shareholders equity
X_5 (Relationship between market value of common equity compared with total liabilities)	Market value of common equity/Total liabilities
SIZE	Natural log of market capitalization (Chalmers & Godfrey, 2000; Bozzolan et al., 2003; Mohebbi et al., 2005)
MEDIA	Number of relevant articles in the Australian print media during the year (Deegan et al., 2002)
OWNERSHIP STRUCTURE	Number of shares held by the top 20 shareholders as a proportion of the total number of shares issued (Chalmers & Godfrey, 2004)
INDUSTRY	Nominal data classified by each industry group

Therefore, to standardize the measurement basis for both types of disclosure the number of lines relating to such information was counted to measure the extent of disclosure relating to financial instruments. The total number of lines of mandatory and voluntary disclosures made by a firm is then translated into an index by dividing this score by the total applicable items. In addition to the identified independent variables, this study also includes industry of the company and dispersion of share ownership as control variables. Various databases such as Connect 4, Thomson One, Bloomberg and LexisNexis were used to source data for the study. A summary of the variables, their measurement and sources are listed in Table 1.

5. Analysis and Results

5.1 Descriptive Statistics

Table 2 presents the description of the aggregate disclosure of mandatory and voluntary items relating to financial instruments for 1995–2000. Of the five voluntary disclosure categories investigated, the voluntary disclosure index for Management Discussion and Analysis has the lowest overall mean (only 0.56 lines). The extent of voluntary disclosure is found to be greater for general information about strategies and policies relating to financial instruments and lesser for specific information about quantifiable historical trends and key indicators. Likewise, projections or forecasts relating to broader corporate financial information are found to be a substantially higher category of voluntary disclosure than management discussion and analysis of prospective market changes and their specific financial impacts relating to financial instruments. General information receives higher voluntary disclosure than specific information.

Table 2. Description of Aggregate Disclosure of Mandatory and Voluntary Items Relating to Financial Instruments for 1995 – 2000

	Frequencies Distribution (number of lines disclosed)							
		Percentiles						
Disclosure Items	N	25	50	75	Overall Mean	Min	Max	Std Dev
Mandatory Disclosure Index (MDISC)	420	23.33	76.00	127.50	87.54	0	426	80.558
Voluntary Disclosure Items								
Voluntary Disclosure Index for Risk Management	420	4.00	9.00	17.00	12.64	0	86	13.13
Voluntary Disclosure Index for Historical Information	420	0.00	1.17	4.67	3.90	0	91	7.675
Voluntary Disclosure Index for Key Information	420	2.00	5.00	9.00	7.59	0	76	9.38
Voluntary Disclosure Index for Projected Information	420	3.00	7.00	15.00	11.10	0	97	13.60
Voluntary Disclosure Index for Mgt Discussion and Analysis	420	0.00	0.00	0.00	0.56	0	10	1.540
Voluntary Disclosure Index (VDISC)	420	15.17	28.08	47.79	35.78	0	219	29.99

A comparison of means by year for the mandatory and voluntary disclosure items is presented in Table 3. A one-way ANOVA is carried out to analyse the variance between the groups over the 6-year period and an F-ratio is calculated. Table 3 indicates that for the Mandatory Disclosure Items, there is a significant increase in the mean for MDISC over the 6-year period. The large F-ratio of 44.837 for MDISC indicates that there is variability between the years. As expected, the greatest jump in mandatory disclosure items occurred between 1997 and 1998, the years before and after AASB 1033 became effective. Interestingly, the extent of MDISC continued to increase during the post-regulatory period of 1998-2000, although the requirements in AASB 1033 did not change. For the Voluntary Disclosure Items, there is a significant increase in VDISC (F-value of 4.816). The voluntary disclosure index for Risk Management shows a significant increase in the means over the 6 years. Interestingly, there is no significant decrease in

any items of voluntary disclosure over the 6-year period despite the fact that mandatory items of disclosure came into force in this period. The introduction of a disclosure standard, AASB 1033, has not diminished the extent of voluntary disclosure of related information.

Table 3. Disclosure Items: Comparison of Means by Year

Disclosure Items	1995	1996	1997	1998	1999	2000	F-value	Sig
	Number of lines of disclosure							
Mandatory Disclosure Items								
MDISC	30.06	31.99	61.99	122.56	136.80	141.85	44.837	0.000**
Voluntary Disclosure Items								
Voluntary Disclosure Index for Risk Management	5.32	9.85	12.86	15.78	16.14	15.87	8.294	0.000**
Voluntary Disclosure Index for Historical Information	2.75	2.80	3.35	5.12	4.94	4.43	1.358	0.239
Voluntary Disclosure Index for Key Information	5.18	5.36	5.36	6.53	7.18	6.94	0.874	0.498
Voluntary Disclosure Index for Projected Information	10.04	9.74	9.20	9.94	13.86	13.81	1.746	0.123
Voluntary Disclosure Index for Management Discussion and Analysis	0.66	0.80	0.44	0.44	0.61	0.40	0.724	0.606
VDISC	25.27	29.94	32.60	39.38	44.44	43.08	4.816	0.000**

** Significant at the 0.01 level

As investment opportunities can take alternative forms, similar to Gaver & Gaver (1993) and Hutchinson & Gul (2003) factor analysis was used to reduce the variety of observable variables to a single factor. Table 4 presents the results of the common factor analysis. GROWTH is positively and significantly correlated with MKT/VA and MKT/VE and negatively correlated to PPE/MV, indicating that GROWTH captures the underlying construct of the three proxies.

Table 4. Common Factor Analysis of the Three Price-based Proxies for Investment Growth Opportunities

	MKT/VA	MKT/VE	PPE/MV
Panel A: Estimated communality of the three price-based proxies for investment growth opportunities	0.596	0.072	0.621
Panel B: Eigenvalues	0.772	0.269	0.788
Panel C: Correlations between common factor (GROWTH) and the three price-poxies for investment growth opportunities	0.772**	0.269**	-0.788**
Panel D: Descriptive statistics of the common factor – (GROWTH)			
Mean	1.5611		
Maximum	141.94		
Minimum	-87.30		

** Correlation is significant at the 0.01 level (2-tailed)

Table 5 presents the means for the growth factor (GROWTH) for the period of study. Table 5 indicates that there is a significant difference between the means for the 6-year period for the growth component PPE/MV and GROWTH. The GROWTH variable, however, shows no particular trend pattern of change. There is no significant difference in the means for the other components of growth. Thus, the mean

conditions of proprietariness of information disclosure for all firms in the sample, namely investment growth opportunities, have not trended in any identifiable direction over the 6-year period.

Table 5. Growth Components: Comparison of Means by Year

Growth and Hedging Components	N	Means						F-value	Sig
		1995	1996	1997	1998	1999	2000		
MKT/VA	404	2.0294	2.3075	1.8402	1.4744	1.5297	1.4830	1.812	0.109
MKT/VE	404	0.9193	2.9089	2.8534	4.0879	0.7392	1.3202	1.411	0.219
PPE//MV	404	0.5861	0.5874	0.6325	0.8350	0.8824	1.0908	3.880	0.002**
GROWTH	403	0.1734	0.2997	0.1332	-0.0871	-0.1801	-0.3283	3.987	0.002**

** Significant at the 0.01 level

The independent variable, probability of financial distress, reflects a firm's condition of political cost of non-disclosure. The probability of the sample firms facing financial distress for the period of study is presented in Table 6. The Z-score indicates that for 1995, 12 of the sample companies have more than 50% probability of being classified as failed, while 54 have less than 50% probability of being classified as failed. The highest number of companies that have more than 50% probability of being classified as failed is in 1997, where 17 of the companies have more than 50% probability of being classified as failed while 49 have less than 50% probability of being classified as failed. Thus, there are a sufficient proportion of firms in each year of the sample that face more than 50% probability of financial distress, enabling this variable to be tested as a political cost-based determinant of the extent of disclosure of financial instrument-related information.

Table 6. Probability of Financial Distress: Comparison of Number of Companies by Year

Probability of Financial Distress	Number of Companies													
	1995		1996		1997		1998		1999		2000		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Predict Continuation (Z >0)	54	17	56	17.7	49	15.5	52	16.4	53	16.7	53	16.7	317	100
Predict Failure (Z<=0)	12	15	9	11.3	17	21.3	13	16.3	15	18.8	14	17.5	80	100

A second condition affecting the political cost of non-disclosure is media attention. Table 7 presents the number of newspaper articles covering the collapse of Barings Bank for the period of study from 3 different sources, World News, Asia Pacific Sources and from Australian newspapers. There was an extensive coverage of the incident in the media in 1995, the year of the incident, and in 1996. These 2 years of 1995 and 1996 embody a much greater political cost on a firm's decision not to disclose, than the subsequent years due to media attention.

Table 7. Media Attention: Comparison of Number of Media Articles by Year

Sources	Number of media articles					
	1995	1996	1997	1998	1999	2000
World news	540	66	22	21	29	8
Asia Pacific	195	25	6	9	11	0
Australia	85	11	1	1	1	0

5.2 Multivariate Analysis

Panel data analysis (fixed effect model) is used to analyse the data in this study as the data set contains both cross-sectional and a time series dimension. The Hausman (1978) test was performed to confirm the use of the fixed effect model. The following econometric model was used in this study to analyse the effect of regulation, proprietary and political costs on the disclosure of financial instruments related information. Letting $_i$ denote the cross-sectional unit and $_t$ time period, the econometric model is specified as follows:

$$VDISC_{it} = \beta_0 + \delta_0 y19982000 + \beta_1 MDISC_{it} + \delta_1 y19982000.MDISC_{it} + \beta_2 GROWTH_{it} + \delta_2 y19982000.GROWTH_{it} + \beta_3 SIZE_{it} + \delta_3 y19982000.SIZE_{it} + \beta_4 DISTRESS_{it} + \delta_4 y19982000.DISTRESS_{it} + \beta_5 MEDIA_t + \beta_6 (MEDIA_t \text{ X } MDISC_{it}) + \beta_7 OWNER_{it} + \delta_7 19982000.OWNER_{it} + \beta_8 INDUST_i + \delta_8 19982000.INDUST_i + a_i + e_{it}$$

where:

$VDISC_{it}$ is the unweighted voluntary disclosure index relating to financial instruments of firms.

$MDISC_{it}$ is the mandatory disclosure index relating to mandatory disclosure of information.
$GROWTH_{it}$ is the firms' investment growth opportunities.
$SIZE_{it}$ is the size of firms
$DISTRESS_{it}$ is the probability of the firms facing financial distress
$MEDIA_t$ is the negative media attention relating to financial instruments
($MEDIA_t$ X $MDISC_{it}$) measures the moderating effect of mandatory disclosure items on negative media attention
$OWNER_{it}$ is the percentage of shares held by the top 20 shareholders.
$INDUST_i$ is the industry of the sample firms.
a_i represents the unobserved time-invariant effect and
e_{it} is the idiosyncratic error or time-varying error.

Since the study is investigating the effects of proprietary and political costs on voluntary disclosure of financial instruments-related information in the context of both the regulated and unregulated environment, a dummy variable was used to separate the 6-year period into pre- and post-regulation years. As the mandatory disclosure requirements for financial instruments became effective in 1998, the 3 years prior to 1998 (i.e. the years 1995, 1996 and 1997) were chosen as the base period. Thus, the variable y19982000 in the regression equation is a dummy variable equal to 1 if the observations are for the years 1998, 1999 and 2000, and zero if they are for the years 1995, 1996 and 1997. The period dummy variable is also interacted with the independent variables to enable the identification of whether the effects of the independent variables on the dependent variable have changed from the unregulated to the regulated environment. Before undertaking the multiple regression analysis, a test for the presence of multicollinearity amongst the independent variables was performed and found to be well within the satisfactory range.

Table 8 presents the results of the regression analysis. The results indicate that the F-statistic for the model is 20.76723 and the p-value is significant, and with an adjusted R-squared of 0.802521 the overall model has strong explanatory power. The Durbin-Watson statistic of 1.515151 indicates that there is no strong evidence of first-order serial correlation in the regression results. Initial regression results indicated that industry effects for Energy, Materials and Consumer Staples were not significant and were thus omitted from the final regression results.

For mandatory disclosure, the coefficients for the pre-regulation period (MDISC) and the change (MDISCy19982000) are significant, therefore, MDISC is also significant for the post-regulation period. GROWTH is significant in the pre-regulation period but the change (GROWTHy19982000) is not in the predicted direction and not significant. Likewise, DISTRESS is not significant in the base period and the change is not in the predicted direction and also not significant. SIZE has the predicted sign and is significant in the base period but the change from the pre- to the post-regulation period is not significant. MEDIA and the moderating effect of the anticipated introduction of mandatory disclosure on media (MEDIA x MDISC) are significant. As for OWNER, only the change is significant. Therefore, to determine whether the coefficients generated from the regression analysis are significant for the post-period a Wald coefficient restrictions test was performed for the variables SIZE and OWNER. Results from Table 9 indicate that for variables SIZE and OWNER their p-values are significant. Therefore, for SIZE and OWNER, the coefficients are jointly statistically significant for the post-regulation period.

Table 8. Fixed Effects Model: Effects of Regulation, Proprietary and Political Costs on Management's Voluntary Disclosure

Dependent Variable: VDISC
Method: Panel Least Squares
Sample: 1995 2000
Cross-sections included: 69
Total panel (unbalanced) observations: 395
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob. (2-tailed)	Prob. (1-tailed)
C	8.520198	14.56526	0.584967	0.5590	-
MDISC	0.043220	0.018827	2.295588	0.0224	0.0112
MDISCy19982000	0.090263	0.013985	6.454376	0.0000	0.0000
GROWTH	-6.143267	1.588941	-3.866264	0.0001	0.0000
GROWTHy19982000	5.496783	1.830465	3.002943	0.0029	0.9986

DISTRESS	0.000189	0.001756	0.107488	0.9145	0.4573
DISTRESSy19982000	-0.012322	0.004135	-2.979957	0.0031	0.9985
SIZE	5.042320	1.306465	3.859513	0.0001	0.0000
SIZEy19982000	0.695261	0.543433	1.279388	0.2017	0.1009
MEDIA	0.024700	0.008963	2.755826	0.0062	0.0031
(MEDIA X MDISC)	-0.002506	0.000341	-7.353283	0.0000	0.0000
OWNER	-0.123132	0.112573	-1.093800	0.2749	-
OWNERy19982000	-0.127751	0.057577	-2.218803	0.0272	-
INDUSTEy19982000	16.57963	3.649626	4.542829	0.0000	-

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.843119	Mean dependent var	34.18003
Adjusted R-squared	0.802521	S.D. dependent var	29.61724
S.E. of regression	13.16150	Akaike info criterion	8.174976
Sum squared resid	54219.44	Schwarz criterion	9.000972
Log likelihood	-1532.558	F-statistic	20.76723
Durbin-Watson stat	1.515151	Prob(F-statistic)	0.000000

Table 9. Results of Wald Coefficient Restrictions Test

Wald Test: Test of coefficients
SIZE + SIZEy19982000 = 0

Test Statistic	Value	df	Probability
F-statistic	19.38359	(1, 313)	0.0000
Chi-square	19.38359	1	0.0000

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(8) + C(9)	5.737581	1.303202

Restrictions are linear in coefficients.

The anticipation of having to disclose information relating to financial instruments and the actual disclosure of mandatory items has resulted in companies increasing their voluntary disclosure of information relating to financial instruments. In the pre-regulation period certain types of firms are willing to disclose information to signal their higher quality type. However, firms with more proprietary information (growth firms) are not willing to disclose more information in the pre-regulation period to signal their higher quality type for fear of incurring proprietary costs. In fact, growth companies voluntarily disclose less information relating to financial instruments in the pre-regulation period. The influence of size of companies on voluntary disclosure is seen to be unaffected by regulation. Big companies are willing to disclose more information both in the pre- and post-regulation period, even though the increase in disclosure from the pre- to the post-regulation is not significant. Financial distress has no influence on the voluntary disclosure of information relating to financial instruments. Such companies are expected to voluntarily disclose more information in order to inform the bondholders of their financial situations and to avoid bond covenants from becoming binding. However, this was not evident in the analysis.

Wald Test: Test of coefficients
OWNER + OWNERy19982000 = 0

Test Statistic	Value	df	Probability
F-statistic	13.13583	(1, 313)	0.0003
Chi-square	13.13583	1	0.0003

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(12) + C(13)	-0.250883	0.069222

Restrictions are linear in coefficients.

High negative media reporting following the collapse of Barings Bank in 1995 and 1996 has had a positive impact in increasing the voluntary disclosure of information relating to financial instruments in the pre-regulation period. However, the impending introduction of the mandatory disclosure requirements in 1998 has a moderating effect on the relative relationship between MEDIA and the voluntary disclosure of information relating to financial instruments. When MEDIA is high, the voluntary disclosure of information relating to financial instruments is high. However, as the impact of MDISC becomes stronger due to the anticipated introduction of AASB 1033 in 1998, the effect of MEDIA on voluntary disclosure is reduced.

The results also indicate that GROWTH, SIZE and INDUSTEy19982000 have higher coefficients compared to the other independent variables. This indicates that for the effect of proprietary costs, the investment growth opportunities of firms have a big influence on the voluntary disclosure decisions in the pre-regulation period, while for the effect of political costs, size of companies is the dominant factor. The change in the mandatory disclosure requirements and the effect of proprietary and political costs is also significant for companies in the Energy Industry.

6. Conclusion and Limitations

The results of the multiple regression indicate that for the effects of proprietary costs, investment growth opportunities have a significant influence on the voluntary disclosure of financial instruments-related information in the pre-regulation period. For the effects of political costs, company size has the highest overall impact on the voluntary disclosure of information relating to financial instruments. Taken in combination, these variables provide evidence of a trade-off decision between proprietary costs and political costs in management's corporate voluntary disclosure decision. For the control variables, the change in voluntary disclosure from the pre- to the post-regulation period is significant for companies in the Energy Industry, and the ownership structure is statistically significant in the regulated disclosure environment.

Overall, the general picture that emerges from the regression model is that management does, in fact, weigh up both proprietary and political costs and make a trade-off decision between them. In deciding the extent of voluntary disclosure of past, present and future information about major operating contracts, movements in the company's trading markets and risk management strategies associated with financial instruments, management is clearly influenced by the key surrogate variables for proprietary costs (i.e. GROWTH) and political costs (i.e. SIZE and MEDIA). The trade-off phenomenon is seen in the fact that the former has a strong negative influence on disclosure, and that the latter has a strong positive influence. Integrated with this trade-off decision is the moderating influence on voluntary disclosure of anticipated and actual change in the regulatory environment for disclosure.

There are limitations surrounding the nature and scope of the theories selected in this study. Aspects of signalling theory, proprietary cost perspective, legitimacy theory, media agenda setting theory and political costs theory which are relied upon in this study, are not devoid of criticisms or conflicting arguments.

In addition, the extraction of data relating to the voluntary corporate disclosure of financial instruments-related information in this study was done exclusively through companies' annual reports. This is because a firm's published financial report is one of the sources from which competitors can make inferences about the firm's proprietary information. However, if there are voluntary disclosures made by companies relating to financial instruments in other forms, such disclosures are not included in this study.

This study generates many possibilities for further research. A micro-level analysis of existing data collected for this study could be further undertaken to identify early adopters of mandatory disclosure as opposed to late adopters. These groups could be compared on the basis of their subsequent level of voluntary disclosure. Also, future research could study what type of standard is effective in encouraging voluntary disclosure amongst managers. In this study, a standard with broad guidelines giving managers considerable reporting discretion was investigated. A comparison of the findings from this study can be made with a disclosure standard that is detailed but rigid to provide empirical evidence as to which type of standard is more effective in promoting voluntary corporate disclosure.

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"THE LIGHT SIDE AND THE DARK SIDE OF INTER-FIRM COLLABORATION: HOW TO GOVERN DISTRUST IN BUSINESS NETWORKS"*

Valentina Della Corte**

Abstract

In front of globalization, hypercompetition and turbulence (D'Aveni, 1994, 1995), it's more and more frequent to see inter-firms relationships increase exponentially: alliances, partnerships, social groups, clans. Networks are becoming a prevailing organizational form in the21st century (Cravens, Piercy, 1994). The unit of analysis, in this article, is the strategic systems and more precisely the strategic network that develops within a territory (business districts, destinations) or a virtual set and that is even denser and more complex than ordinary networks: local resources can be relevant for the whole aggregate and relations are also physically or virtually particularly closed. Strategic networks and inter-firm collaborations have often been analysed with respect to their main success factors. Less attention has been paid to the more obscure and less satisfying aspects that someway explain why, in some cases, they fail or at least do not take off. Even theoretical frameworks usually adopted as Resource-Based Theory (Rumelt, 1982; Wernerfelt, 1984; Barney, 1991, 2007) Transaction Cost Economics (Williamson, 1975, 1981) and Social Network Theory (Granovetter, 1973, 1982; Lieberskind *et al*., 1996, Wasserman, Faust, 1999) are used according to a positive approach, aimed at finding and analyzing mainly successful initiatives. The aim of this article is to analyse, in particular, situations of distrust, that can either continue pushing firms not to cooperate or rather evolve towards more trustful situations and therefore with more chances of really developing business networks. A specific model is proposed, to manage distrust and to evolve towards trustful situations. The process, however, requires a specific intervention of a network governance actor, that can stimulate it. This actor must have distinctive capabilities and competences to manage the process. The proposed model is developed with the help of Game Theory (Fudemberg, Tyrole, 1991; Gibbons, 1992; Myerson, 2002, 2006) and can be applied empirically to verify what prevents actors from cooperating and how the governance actor can lead the process towards trust situations. Game theory is also used to study the possible level of co-opetition (Brandenbruger, Nalebuff, 1996), that is the collaboration that can be put forward among competitors. Firms involved in these processes vary their own approaches both in terms of realizing the opportunities brought about by collaboration and of assuming a positive vs opportunistic behaviour. But the latter often prevails….The results offered by the model will also have some managerial implications since they should be able to give useful hints to decision makers on how to govern distrust. The model will be tested empirically on a sample of firms operating in tourism sector in Southern Italy, involved in local networks. In tourism industry, cooperation between players operating in the same destination is something needed to compete against global destinations. It will be then applied to other industries characterized by small and medium enterprises that have invested in the same area/district, with a high potential for collaboration.

Keywords: strategic networks, trust/distrust, governance

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1. Introduction: preliminary research and unit of analysis

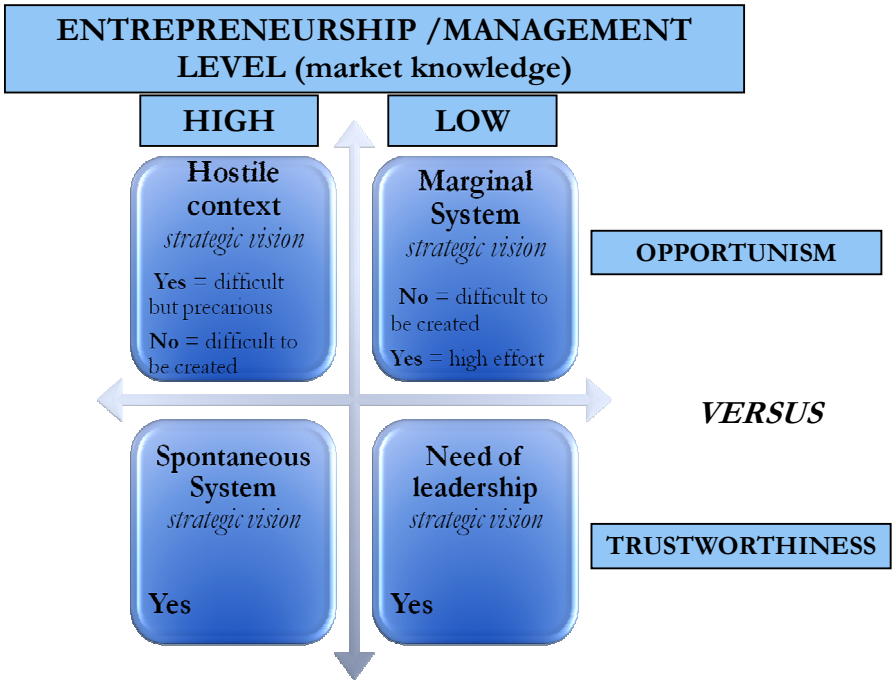
This article comes out of several previous researches on strategic networks in different industries, among which tourism sector. During these researches, in order to verify the degree of inter-firm collaboration, strategic systems (Della Corte, 2000; Franch, 2002; Tamma 2002, Pencarelli 2003, Della Corte, Sciarelli, 2006, Della Corte, 2009) emerged as a possible configuration that goes even beyond strategic networks. Systems are more complex and intense than strategic networks, are usually characterized by local or virtual proximity and by strong relationships. Some contributions (Franch, Martini, Tamma, 2007) point out that, in order to have a system, a strong collaboration is needed, characterized by at least two of the following variables: product, project, territory.

The first refers to some sort of complex offers, co-designed by the firms of the industry belonging to the network; the project refers to the presence of initiatives aimed at favouring local development (both through a bottom-up or a top-down process); the territory refers to a specific area within which firms cooperate in order to verify whether there is an effective joint use of local resources. Findings (Della Corte, Migliaccio, Sciarelli, 2007) suggest that in these specific networks' management two main factors are needed: a) active entrepreneurs, in order to make the system more robust and structured, and b) an efficacious governance system, either based on shared values or characterized by the presence of leading actors, with a configuration and a role linked to the stage of development of local area. This governance can develop through:

1) a bottom-up process, in situations where there are active firms, with clear entrepreneurial and managerial capabilities, that spontaneously constitute aggregate configurations that lead territorial or systemic strategies. There may also be a party that tends to dominate (Lorenzoni, Baden Fuller, 1995) and this can be due to pragmatic and/or psychological situations (it's the main producer in the setting, the promoter of collaboration): it's important, however, that this dominance is recognized and agreed. In such situations of spontaneous processes, public organizations generally play a supportive role for private organizations' proposals and projects;
2) a top-down process, when there is not a good entrepreneurial "humus" at a local level and a pivotal actor is extremely important to develop strategies, create consensus and shared values and implement co-joint programs with an adequate coordination. In these situations, either public organizations or ad hoc entities (with both private and public entities) prevail.

The implications that come out of the analysis are shown in Exhibit 1.

Exhibit 1. Systemic logic and governance forms



Source: Della Corte, 2009

In this article, the attention is mainly concentrated on contexts where a spontaneous process does not take place in order to check the main reasons and to evaluate how to move from more difficult situations (i.e. hostile contexts) to more manageable ones. The main literature on strategic alliances and networks is examined, in order to specify the concept of local strategic system. Thereafter the problem of initial distrust and partners' selection is examined, in order to study the role of network governance actor in this process. The proposed model has been set using RBT for its qualitative aspects and Game Theory to explain the process.

2. Main literature on inter-firm collaboration

Cravens, Piercy and Shipp (1996) affirm that a network paradigm appeared first in the European International Marketing and Purchasing (IMP)

research group studies of interaction in business relationships during the mid-70s and was only later acknowledged by US scholars in the 90s, following the need for SMEs to cooperate to strengthen their defence against global players.

Several other scholars have highlighted the link between the rising intensity of competition in global markets and managerial decisions of cooperation with other firms (Sciarelli, 1996). This strategy allows firms to reach a higher degree of effectiveness through resources and competences specialization while reinforcing the overall competitiveness through the network (Hannan and Freeman, 1984). The theoretical prescriptions have been confirmed by OECD's findings (2007) that reveal positive trends in almost any form of cooperation. Many studies tend to analyze inter-firm collaboration in terms of strategic alliances and networks as synonyms and, in particular, consider both dyadic and plural relationships as similar processes. The attention on strategic systems requires an analysis of strategic alliances and networks, with specific reference to strategic and long-term relationships.

2.1. Strategic Alliances' main models

As known, strategic alliances are inter-firm relationships, usually built with a specific, definite purpose or more generally to increase firm's performance (Barney, 1996; Sciarelli M., 1996; Gulati, 1999 and ss, Della Corte, Sciarelli, 2006). They can be either symmetric (with partners' common interests), asymmetric (with differentiated roles and power), or mixed (Barney, 2002). Besides, they can develop horizontally (in the same market, with geographically expansion), vertically (i.e. in case of relationships between suppliers and clients), and/or at a territorial/aggregated level, with a set of relationships, both horizontal, vertical and even among different sectors (Della Corte, 2009).

Different studies have analysed the concept of alliances' governance. An interesting contribution is that of Alliance Architecture Model (exhibit 2), that can be used to understand how strategic alliances can be governed, controlled and managed.

Observing the relationship between the structure of leadership (single entity or coalition) and the number of alliance roles (one or several), four models of alliances come out: franchise, portfolio, cooperative and constellation-based. Each of them has a different set of implications for governance.

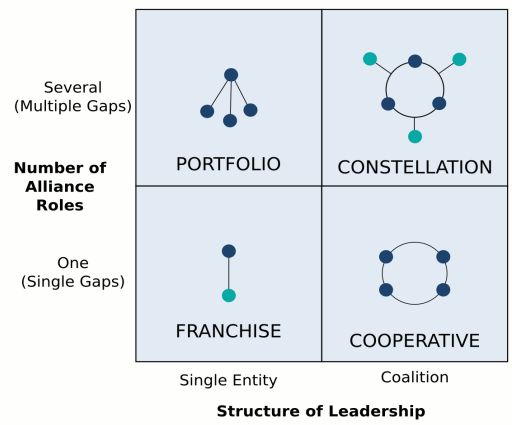
Franchise Model is used to fill a functional gap and to facilitate business growth, because it's characterized by a single alliance role that can be refined and quickly replicated to create a very quick scale effect, thereby producing an alliance growth corridor for the alliance initiator.

Portfolio Model is used by firms that aim at adding value maximisation, controlling every needed competence to reach a sustainable competitive advantage. This alliance model is built around relationships created by a focal firms, that can achieve meaningful strategic actions to build innovative capabilities, while keeping under control the network of relationships.

With the Cooperative Model, the attention focuses more on a cooperative role: in the center there is the alliance itself, rather than one partner. Even customer relationships are often entitled to the alliance itself rather than to each partner. In this model, partners are considered as equal at the point of intersection (the specific product or service provided to the marketplace) even when their relative size differ; all firms work together towards the same goal.

Finally, in the Constellation Model, firms develop breakout strategies which leapfrog the competition and put industry competitors on the defensive. The model stems from the need to compete on a global scale through standardization and players' substantial capital.

Exhibit 2. Alliance Architecture Model



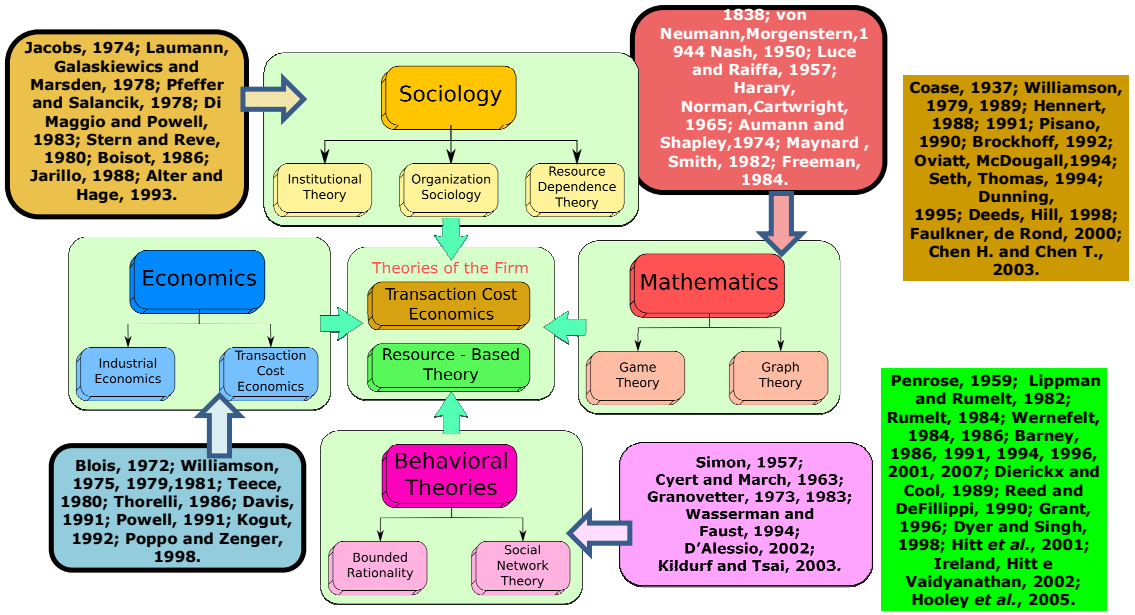
Source: Harbison, et al., 2000

This analysis conducts from strategic alliances to networks and systems, that represent more complex entities, made of numerous actors, even territorially or virtually connected in case of strategic systems.

2.2. Theoretical interpretation of Networks

The literature on networks has developed in different areas of study, that can be gathered in two main blocks: the first one is in social sciences, including contributions in strategic management, organization, economy and sociology; all these approaches have inevitably had an impact on the theories of the firm, as a basis for explaining enterprises' choice of competing through systems and networks (Ohmae, 1989; Contractor and Lorange, 2002). Another important set of contributions regards in particular quantitative approaches and more precisely mathematical perspective (Exhibit 3).

Exhibit 3. Theoretical frameworks' in the studies of networks



Source: Della Corte, Micera, Tani, 2008

Quantitative studies have been carried out within mathematics and in particular Graph Theory and Game Theory. The former is based on the abstraction of diagrams made of points and lines that can be considered respectively as nodes or actors and as ties and relationships. On the other hand, game theory is a branch of applied mathematics to other disciplines, such as social sciences. With specific reference to strategic management, it's based on the assumptions that firms' strategic decisions are often intertwined. If in a first phase it referred to classical competition situations where a firm's success is at the expense of another (zero sum games); later on it has been used to analyze and interpret different types of inter-firm relationships[20], with several developments.

As regards social sciences, in Sociology three main approaches have dealt with networks: the Institutional Theory, the Organization Sociology and the Resource dependence Theory.

Within Institutional Theory, network is mainly studied as a certain set of relations (ties) that connect some nodes or actors (people, firms or events). The purpose is to draw these nodes and ties, in order to analyze the structure of the network. Some scholars (Di Maggio and Powell, 1983) underline how environment influences organizations to legitimate and conform to prevailing social norms. Networks and their structures are identified and measured through *connectedness*[21] (Laumann, Galaskiewics and

[20] Today, "game theory is a sort of umbrella or 'unified field' theory for the rational side of social science, where 'social' is interpreted broadly, to include human as well as non-human players (computers, animals, plants)", (Aumann 1987).

21 Wasserman and Faust (1994: 132) define 4 types of connectedness between two nodes: *weak connectedness*, when the nodes are joined by a semipath; *unilateral*

Marsden, 1978) and *structural equivalence*[22] (White, Boorman and Brieger, 1976): these two concepts allow firms to position themselves in their own environment, avoiding isolation and safeguarding their survival (Baum and Oliver, 1991).

Organizational Sociology follows the seminal works by Granovetter (1983, 1985, 1992), identifying the legitimation of the organization in the environment, according to its *embeddedness*. In this stream of research there are two kinds of embeddedness: *cultural embeddedness* (Granovetter, 1983) and *social embeddedness* (Boisot, 1986). Institutionalized social norms and the values internalized by economic actors are likely to influence the emergence of inter-firm networks (Boisot, 1986, de Rond, 2003).

Resource dependence Theory is based on a framework which prescribes the firm to start flows of resources with environment, in order to foster its survival (Pfeffer and Salancik, 1978). The evolution of a network is explained (Stern and Reve, 1980) by the interaction between this flows. Moreover, this approach investigates the *breadth of relationships* as a predictor of the complexity of the network (Alter and Hage, 1993) and distinguishes *horizontal interdependence,* based on resource-pooling and complementarity, from *vertical interdependence*, based on resource-transferring from one firm to another (Pfeffer and Salancik, 1978). While this theory is a good explanation of the factors that can induce a firm to collaborate, originating ties with selected partners (Pfeffer and Salancik, 1978; Jarillo, 1988), it someway neglects the difficulty firms face in selecting their partners (Gulati, 2007). Besides, it takes for granted that information is free and accessible for all partners.

Industrial Economics research on horizontal and vertical integrations has studied network organizations as a way to face incomplete or mixed forms of *quasi-integration* (Blois, 1972); networks were considered as one of the market failures configurations, as a sort of second best choice, and they could be explained by optimization of production costs, i.e. economies of scale, scope, specialization and experience (Teece, 1980). This approach initiated an understanding of network as an optimal hybrid form between markets and hierarchies (Williamson, 1981), seen as a separate logic distinct from the Market-Hierarchy dyad (Thorelli, 1986; Powell, 1991): it's Transaction Cost Economics (TCE) theory, developed by Williamson (1979) who carried on the seminal work by Coase (1937). According to these scholars, a network organization is a way for reducing transaction costs accounting for the risk of partner's opportunistic behaviour (Williamson, 1975; Kogut, 1992). It is explained as function of asset specificity, context uncertainty, frequency of transactions (Williamson 1981) and agents' opportunistic behaviours (Davis, 1991). In order to get maximum benefits from this organization, the network structure has to:

- acknowledge property rights (Poppo and Zenger, 1998);
- create incentives mechanism for cooperation (Zajac and Olse, 1993; Dyer, 1997);
- limit the unbalance in transaction specific investments (Williamson, 1979).

Within Economics, studies in Industrial Organization start from the industry structure and see inter-firm collaboration as strictly bound to the industry's overall competition (Richardson, 1972; Teece, 1980; Porter, 1981).

On the other hand, another important stream of research has examined the theme of inter-firm collaboration, starting from the firm as unit of analysis and examining its relationship with external environment: this has been labelled as *Resource-Based Theory* (Penrose, 1959; Wernefelt, 1984; Barney, 1996, 2002, 2006). According to RBT, the strategy of the firm must be based on the resources it has access to (Arikan, Barney, Della Corte, Sciarelli, 2008); Barney (1991) defines resources as a bundle assets, capabilities and organizational processes, firm attributes, information and knowledge. A strategy can sustain a competitive advantage only if it is based on resources that are Valuable, Rare, Inimitable and fully exploited by the Organization (VRIO framework).

A resource is difficult to imitate when there are mechanisms to protect it (Dierickx & Cool, 1989; Hooley et al., 2005; Lippman & Rumelt, 1982; Reed & DeFillippi, 1990) such as: (a) causal ambiguity (difficulty in identifying how the advantage was created), (b) complexity (arising from the interplay of multiple resources), including social complexity, (c) casualty intended as tacitness (intangible skills and knowledge resulting from learning and doing), (d) path dependency (the need to pass through critical time dependent stages to create the advantage), (e) legal barriers (such as property rights and patents).

An alliance is based on valuable resources when the resources' coordination creates new value that the firm could otherwise not reach. Similarly, a strategic alliance is rare when there are only sparse competitors that have a similar relationship considering the frequency of the interplay and the benefits obtained from it too. The main organizational objective of an alliance is that to assure partners benefits' maximising and the minimising of probabilities of deceptive behaviours. Organizational skills required in alliances management are almost unique. Often it is necessary some time because firms can develop attitudes and

connectedness, when only one of the nodes is connected to the other; *strong connectedness,* if both nodes are linked to each other; *recursive connectedness*, when there's a strong connectedness and both paths are made of the same node chain.

22 Two actors are *structurally equivalent* if they have identical ties to and from all other actors in the network (Wasserman and Faust, 1994: 356).

reach a complete use of their alliances' potential. An alliance can lead firms towards unique resources and competences, specific assets and processes efficiently, without necessarily adopting a fusion or purchase strategy. Firms can therefore use external resources in order to reinforce internal resources in different ways (Hamel, Prahalad 1994):

- concentrating on a limited number of resources and using partnership/supply relations as a further source of competitive advantage;
- creating a system of distinctive resources, that can be rare and difficult to imitate;
- reducing investment's turnover, in order to develop and maintain strategic resources, widening the scope of the firm well outside its internal boundaries.

Applying RBT analytical framework (*VRIO*) to inter-firm collaboration strategies, sustainable competitive advantage can derive from a rare whole of shared resources. The system of complementary and shared resources can itself become an imitation barrier (Freer *et al*, 2002) only if involved partners succeed in managing the collaboration over eventual frictions (Das e Teng, 2000). From this point of view, inter-firm collaboration either in the form of strategic agreement or of strategic alliance or network or system can create itself a barrier to entry, *social complexity* (Barney, 1991), that is the whole of relationships and connected resources among partners, in order to get a sustainable competitive advantage, even if the degree of complexity, in terms of relation, increases.

RBT suggests to involve in a strategic collaboration when there is:

- resources complementarity (Hitt, Bierman, Shimizu e Kochar, 2001);
- interdependence of each firms' competitive advantages (Ireland, Hitt e Vaidyanathan, 2002);
- management support in developing synergies both at a strategic and at an operation level.

In this direction, some specific streams of research have been originated within Resource-based theory (Barney, 2002):

- Knowledge-based view (Grant, 1996);
- Relational view (Dyer and Singh, 1998).

The first one is focused on the firm as a repository of knowledge, mainly concentrating on the cognitive aspect of inter-firm relations (Langlois 1992; Dosi 1992; Kogut, Zander, 1992; Foss, 1993, 1996; Nonaka 1994, Teece, 1998), and deals with organizational learning (Cohen and Levinthal, 1990; Levinthal and March, 1993; Zahra and George, 2002). In this approach, strategic alliances are an important part of the learning process for firms; in fact, they generate a process in which it's possible to discover new opportunities in a flexible setting of multiple partnerships (Foss, 1993; Leonard-Burton 1995; Grant and Baden-Fuller, 2002). Two main approaches regard the learning process connected with inter-firm collaboration: the *exploration/exploitation* model (March, 1991) and that based on *absorptive capacity* (Cohen e Levinthal, 1990). According to the former, firms try to manage knowledge balancing between the acquisition of new knowledge (*exploration phase*) with the profitable use of that which already exists within firms (*exploitation* - Boisot, 1998). The *exploration* phase is necessary to sustain firms' competitiveness in highly competitive markets (Wiig, 1997) but it requires riskier costs. In this optic, external relations can help reducing risks and developing usable knowledge, through the successive *exploitment* phase.

The *absorptive capacity model*, on the other hand, sees inter-firm relations as a source of knowledge endowed of its own *generativity* (Donald, 1991), useful to develop new resources (*competence building*) or rather to better exploit those already controlled by the firm (Post, 1997).

Since *generativity* derives from relations, as the number of alliances the firm can manage increases, there are new opportunities of reaching and generating new knowledge (Weitzman, 1996; Moran, Ghoshal, 1999).

Another important approach is the so called *Relational View* (Gulati, 1998; Dyer e Singh, 1998; Kale e Singh, 1999, 2007; Kale, Dyer e Singh, 2002), that underlines the social content of the relationship between the firm and its environment. This approach, whose main supporters are Dyer and Singh (1998), gives an explanation of the existence of inter-firm networks and of how the network itself can manage strategic resources and competences, able to generate an overall sustainable competitive advantage, shared by participating companies even if at different levels, according to their own resources and capabilities. Such a network can therefore produce its own rent - an above normal profit jointly generated in an exchange relationship that cannot be generated by each firm individually. Even more, a certain relation can only be built in the light of the overall set of relations the firm has put forward over time (Koka e Prescott, 2002). This recalls another important contribution to network theory, which is *social network*.

Relational-cognitive studies have enriched resource-based theory: collaborating in order to get a stronger market power, to have access to others' resources and competences or to foreign countries or to other sectors, as well as sharing learning economies (Sciarelli M., 1996) are some of the prevailing reasons for inter-firm collaboration, also at a territorial/aggregated level. This can also take place between networks characterized by the presence of competitive firms (the so called "coopetitiveness"), where typical aspects of collaboration and competition coexist (Nalebuff, Brandeburger, 1996; Dagnino e Padula, 2002): some firms can cooperate in some markets and compete in others (Lado, Boyd, Hanlon, 1997); some interact on the basis of common interests that do not completely diverge ("*partially*

overlapped"); some others, operating in the same businesses and in the same markets, both compete and collaborate (Della Corte, Sciarelli, 2009).

When these processes regard more firms and involve more value chains or systems, we are in front of *complex network coopetition.*

This is typical of local or virtual networks, where relations' management and governance acquire a primary importance in the overall process of value generation and reachable competitive advantage. A right governance can be the key to get efficient results and to enlarge the set of strategic options for the whole network. When networks fail, therefore, this can be ascribed to several reasons. And yet literature has always been more easily concentrated on the reasons for success. The aim of this article is exactly that of developing a theoretical model, in order to verify what can be the main reasons for network's failure or lacked development, and to check what's the role of governance choices in this process.

2.3. Networks, systems and their governance

There are several definitions of networks in literature, some of them are listed in exhibit 4; examining their overlaps, four main characteristics of the network concept have been singled out:

- there is a network only if there are more than two actors;
- relationships between nodes are long lasting;
- governance choices can vary and influence the path of the network;
- performance of the nodes of the network depends also on the effectiveness of network actions.

These characteristics can be compared to those of the concept of strategic alliances in order to better understand the relationship between this two similar concepts.

Strategic alliances are long term voluntary arrangements between two or more firms to coordinate (Contractor and Lorange, 2002; Park, Mezias and Song, 2004; Barney, 2007) independent organizations for developing, manufacturing or marketing a given set of products or services in order to reach a better positioning in the marketplace (Kogut, 1988; Gulati, 2007).

An enterprise can enter a strategic alliance to procure assets, competencies, or capabilities not readily available in competitive factor markets, particularly specialized expertise and intangible assets, such as reputation (Dyer and Singh, 1998; Park, Mezias, Song, 2004). Moreover, strategic alliances are not spot transactions as their long run perspectives requires constant flows and a continuous process of alignment control between partners (Khanna, Gulati, Nohria, 1998).

Exhibit 4. Some Definitions of Strategic Network

Author	Year	Definition
Hertz, Mattsson	2006	Strategic action in one particular part of a network affects and reconfigures larger parts of the international network. When two competitors start to cooperate, a chain of actions is triggered and spreads throughout the network in a ''domino effect''.
Wiley, Sons	2006	Integration arises when a firm sources inputs externally from independent suppliers as well as internally within the boundaries of the firm, or disposes of its outputs through independent outlets in addition to company-owned distribution channels.
Potgieter, April, Cooke	2005	Social networks are complex systems that are characterised by high numbers of interconnected component entities, and a high degree of interaction between these entities. The interrelationships in such a network are dynamic and evolve over time. A social network is a complex adaptive system, in which people are agents interacting with each other.
Braga	2004	... a group of different organisations, with convergent (similar or interconnected) goals, which share an identity and develop a singular definition of trust and power and pursue repeated exchange relations, subjected to the existence of a critical mass.
Hicklin	2004	A central organization and its relationships with multiple external ''nodes'' that have some responsibility or stakeholder status in the central organization.
Scott-Kennel, Enderwick	2004	Collaborative forms of organisational structure, such as networks and alliances, involve the simultaneous management of both internal (intra-firm) andexter nal (inter-firm) activities and resources
Rumyantseva and Tretyak	2003	A mode of regulating interdependence between firms which is different from aggregation of these units within a single firm and from coordination through market signals (prices, strategic moves, etc.).
Borgatti and Foster	2003	Organizational forms characterized by repetitive exchanges among semi-autonomous organizations that rely on trust and embedded social relationships to protect transactions and reduce their costs

Varamaki and Vesalaimen	2003	Certain co-operative groups which may consist of firms with a vertical or horizontal relationships and whose member firms have a common interest and together seek some means to achieve an higher level of performance by using multilateral group design
Jenssen and Koening	2002	patterns of lasting social relationships between people
Achrol and Kotler	1999	... a network organization is an interdependent coalition of task- or skill-specialized economic entities (independent firms or autonomous organizational units) that operates without hierarchical control but is embedded, by dense lateral connections, mutuality, and reciprocity, in a shared value system that defines "membership" roles and responsibilities.
Gulati	1998, 2007	Strategic alliances and networks are voluntary arrangements between firms involving exchange, sharing, or codevelopment of products, technologies, or services.
Podolny and Page	1998	Any collection of actors ($N \geq 2$) which pursue repeated, enduring exchange relations with one another and, at the same time, lack a legitimate organizational authority to arbitrate and resolve disputes that may arise during the exchange.
Grandori and Soda	1995	A mode of regulating interdependence between firms which is different from the aggregation of these units within a single firm and from coordination trough market signals (prices, strategic moves, tacit collusions, etc.) and which is based on a cooperative game with partner-specific communication.
Anderson, Hakansson and Johanson	1994	A set of two or more connected business relationships, in which each exchange relation is between business firms that are conceptualized as collective actors.
Nohria and Eccles	1992	Generally, an inter-firm network is a mode of regulating interdependence between firms which is different from aggregation of these units within a single firm and from coordination through market signals (prices, strategic moves, etc.).
Powell	1990	...an arrangement [which] is neither a market transaction not a hierarchical governance structure, but a separate, different mode of exchange, one with its own logic... ...[There is a network when] we find companies involved in an intricate latticework of collaborative ventures with other firms, most of whom are ostensibly competitors.
Jarillo	1988	A long-term, purposeful arrangements among distinct but related for-profit organizations that allow those firms in them to gain or sustain competitive advantage vis-a-vis their competitors outside the network.
Thorelli	1986	As consisting of 'nodes' or positions (occupied by firms, households, strategic business units inside a diversified concern, trade associations and other types of organizations) and links manifested by interaction between the positions.

Source: Our elaboration.

Strategic alliances are usually designed as dyadic relationships (Duysters, De Man and Wildeman, 1999) between actors which depend on each other for reaching a competitive advantage through these long lasting relationships or even involve more actors. But they are usually set for a specific purpose. Networks always regard more than two actors, with a complex set of different relations at different levels. In any case, trust and shared values are important success factors: even when firms use contracts for alliances' governance modes, trust is needed to overcome the paradox of incomplete contracting (Tirole, 1999; Barney, 2007).

Using a broader perspective, let us consider all actors' positions and relationships in the whole systems in which they are embedded. Hakansson and Ford name this situation of reciprocal influence the second network paradox (2002: 136). Moreover, network implies more actors and a more complicated set of relationships. If these relations are also characterized by physical or virtual proximity and involve local resources as possible sources of competitive advantage for the whole firms' aggregate, then the network can be defined as a "system". This can even be described as a "system of value co-creation within constellations o integrated resources" (Spohrer, 2007), up to consider the "application of competences (including knowledge and skills) by one entity for the benefit of another" (Vargo, Lusch, 2006; Vargo, Maglio, Akaka, 2008: 2).

Networks and more precisely strategic systems (based on networking relationships) are widespread in several industries, like tourism, for several reasons (Scott. Baggio, Cooper, 2008). First of all, it's a quite

fragmented industry (Palmer and Beijeau, 1995; Wang, Fesenmaier, 2007), made of firms of different size, with a prevalence of small and medium enterprises in Europe. Collective action (Ouchi, 1986, Dollinger, 1990) is therefore a quite natural response to compete with global firms and acquire a higher competitiveness on the market. Another important aspect is that tourism firms are not just selling their own services but also local attractive factors, i.e. local resources. These can be of different nature (historical and cultural rather than man-made or natural) but are somehow community owned and strictly bound to the territory where they are located. Therefore, different stakeholders' interests can concentrate on the issue, since they are also located where resources are. This is a typical feature of the sector, which differentiates tourism from other businesses, where groups of firms can decide where to set, even when they start a business district.

In tourism industry, for example, networking does not only regard the relationship between different firms operating in tourism chain but also the relationships between tourism destinations. Therefore, with regard to strategic systems, some important observations can be pointed out:

1) networks can develop through the strategic alliances' logic and can therefore develop either horizontally or vertically or at a local/aggregated level (in case of tourism industry, at a destination level) and they can have alliances among factors that can be of different nature: symmetric, asymmetric or mixed. However, in case of networks that are able to give way to real inter-firm systems, they are based on the assumption that not belonging to them can be a serious disadvantage for the single firm. This pushes firms to collaborate, even when they are traditional competitors. In this direction, a coopetition logic prevails. It is based on the assumption that firms that compete can also decide to collaborate, either on other markets or even on the same markets where they compete. This interpretation sets the concept of *cooperation advantage* together with that of *competitive advantage*. The *coopetition advantage* comes out of a net of strategic interdependences between firms with overlapping interests (Contractor e Lorange, 1988) and it has been initially developed as a way to explain vertical interdependence rents (Håkansson & Ostberg, 1976);
2) such a complex system, based on coopetition, requires coordination and more precisely forms of governance able to strategize for the whole system, as well as to coordinate and manage the network. Network governance can become itself a source of competitive advantage and vary significantly according to the structure and the dynamics of the network itself. Far from being just a "mode of organizing transactions" (Williamson, Ouchi, 1981), or an expression of the institutional framework by which contracts are initiated and managed, the main characteristics of networks, especially when the develop in a systemic optic, is that of managing a lot of social relationships (Pavlovich, 2008) among partners and with other networks. These can be social more than contractual, based on a self-organized rather than guided process, and characterized by resource-exchanges, generation of new and common resources, definition of the rules of the game, safeguarding meanwhile actors' independence (Rhodes, 1997). Networks' and systems' governance can in fact even be conceived as the coordination of different economic and strategic activities, put forward by different actors. According to some scholars (Jones, 1997), some facts that mainly influence network's governance are: demand uncertainty and unstable supply (that is hypercompetitiveness), a key role of human skills in the whole value creation process[23] and competencies connected with blended skills and knowledge. Other scholars (Della Corte, Migliaccio, Sciarelli, 2007), through a case studies' analysis conducted in Italy in tourism industry, pointed out some important factors, among which: a common strategic vision and shared values and interests, a widespread entrepreneurship in the area, the efficacy and efficiency of local tourism organization, the relationships among actors and between the systems and other territories, the presence of a governance or at least a coordination actor. As said, according to the different contexts there can be more spontaneous, bottom-up processes, that develop according to a clan logic (Olsdon, 1983; Barney, Ouchi, 1986) or top-down ones, with some pivotal actor guiding the process. This can be either public or private or public and private and even an ad hoc organization created with the specific aim of leading the network.

However, the literature on strategic alliances and networks has almost concentrated on networks' structures, density, constraints and hierarchies, or on the main reasons for their success, trying to analyze the main links between the roots of this success (both in terms of process and of resources) and their relative

[23] Customer him/herself is considered to be a co-producer of value, with his/her knowledge and background that influences the value in use he/she can get from any product/service acquired (this is the so called service-dominant logic. See Vargo, Lusch, 2004, 2006, 2008, Gummeson, 2008; Della Corte, Savastano, Storlazzi, 2009).

performance. Little attention has been paid, instead, to the dark side of these inter-firm connections. It is therefore interesting to understand the main reasons for inter-firm collaboration failure, the role of the lack of trust, reaching a new vision of distrust as a possible matter to manage and overcome, and the impact of governance choices on this process.

3. The theoretical model

Some important research questions come out with reference to networks' failures:

1) what are the main relational problems in strategic networks' failure?
2) is the trust/distrust relationship linear as extremes of a continuum or are there more complex connections?
3) what are possible managerial decisions and actions in order to govern distrust and make the system work.

In order to answer these research questions, it's important to take into account that at the basis of inter-firm collaboration there is often a failure in the counterpart's trustworthiness and in the lack of trust between partners. It could be argued that TCE had already conceptualized these problems in the concepts of moral hazard, adverse selection and hold-up. Even literature within RBT (Barney, 2002, 2006b) takes into account typical TCE problems in strategic alliances' cheating. But these features mainly refer to situations in which parties specifically have to exchange resources and competences. In case of strategic networks, there may not be tight operational interactions: they are usually created more for purely strategic purposes, that is to get higher competitiveness on the market and to develop initiatives not manageable by individual firms. Besides, the relationships among involved actors can be more direct with some and less with others, according to their own specific strategies, resources and competences. Therefore, provided that there can be the risks evidenced by TCE logic, the analysis here concentrates on strategic networks and systems (such as business districts, rather than tourists destinations), *where parties have to decide whether to cooperate within the system or not.*

On this regard, it is necessary to define some key concepts to understand the process that conducts to inter-firm collaboration's success or failure.

Trust can be conceived as the positive belief that a person will act in both parties' interest in different situations. Some authors define it as "confident positive expectations regarding another's conduct" (Lewicki et al, 1998, : 439), where for conduct they intend the whole of words, actions and decisions and ads confident positive expectations a belief of the other's positive intentions and a willingness to act on the basis of that conduct). According to Rousseaum, Sitkin, Burt and Camerer (1998, : 395) trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another". Some authors (Mc Alisster, 1995, : 25) point out two different kinds of trust: the cognition-based trust, that refers to a positive idea of the counterpart in cognitive terms, with reference to the other's competences and reliability; the "affected-based trust", almost due to affective bonds.

Untrust refers to situations where even if there is a basic trust on the counterpart, there is not enough trust on the counterpart to behave trustfully in a specific situation.

Mistrust is misplaced trust (Marsh, Dibben, 2005, : 10), in the sense that it has been misplaced but not betrayed; in other words, there wasn't an intentional behaviour of the counterpart not to behave trustfully.

Distrust: According to some authors (Barney, Hansen, 1994), the concept of trust has to be confronted with the opportunism issue, in the sense that when there is distrust it is very costly for partners to evaluate the quality of resources and assets the other takes to the exchange (adverse selection – Akerlof, 1970), and/or the quality of the resources and assets brought to the relation (moral hazard – Homstrom, 1979); besides, they often have to make specific investments, subject to hold up vulnerabilities (Klein, Crawfors, Alchian, 1978)[24]. In this direction, Sabel (1993) underlines that there is trust when parties share a mutual confidence that the other will not exploit any adverse selection, moral hazard and hold up vulnerabilities in the exchange (Barney, Hansen, 1994, : 176). Therefore a partner is trustworthy when it is worthy of trust from the counterpart and trustworthiness is an individual attribute. This view brings to a scheme where opportunism and distrust are the opposite of trust. This opinion differs a lot from Barney and Hansen's for a simple reason: opportunism is made of behaviours and facts while trust depends on the party's trustworthiness which is something in part exogenous to the exchange structure, as they themselves emphasize. Trust expresses the values, believes and principles a party has and brings to the relationship. These values reflect a firm's history, its culture, the personal values of the people in charge of it (Barney, 1986; Arthur, 1989; Dierickx and Cool, 1989).

According to this view, distrust is considered to be a very difficult concept, that refers to a lack of trust on the counterpart, leaving out of consideration specific situations. In other words, it's bound to the belief that a person's values and motives lead them to behave in an unacceptable manner (1993, : 373). The process is by far more difficult when there is a higher number of actors.

The idea in this article, however, is that distrust is not the negation of trust but a negative trust.

In spite of the fact that most of literature (Luhmann, Marsh, Dibben (2005), Carole Smith,

[24] Bigley and Pearce (1998) propose a systematic analysis of the literature on trust and distrust concepts.

2005) considers the concepts of trust and distrust, even if not as opposite, at least as two separate concepts, distrust does not have to be conceived as the opposite of trust until the main reasons for trusting, distrusting as well as trustworthy/untrustworthy attitudes are adopted. The idea of separate concepts stands in the sense that low trust does not necessarily coincide with high distrust: when expectations of beneficial actions from others are absent it seems to be a question of lack of hope; on the other hand, situations where expectations of unlikely actions are absent are due to the absence of reasonable "fear" (Lewicki, Mc Allister, Bies, 1998).

Lewicki et al (1998, : 439) define distrust as a confident negative expectation regarding the other's conduct, while trust is a confident positive expectation but they both represent an attempt to simplify the social context, enabling individuals to move their environment according to their expectations.

Trust and distrust paradoxically can coexist: they can be the basis (Lewicki et al, 1998) for "hot groups" (Leavitt, Lipman, Blumen, 1995) and "good fights" (Eisendhart, Kawajy, Bourgeous, 1997); ambivalence has to be managed. Game theory contribution to the concept of coopetition helps in this direction. According to Granovetter (1985) the weaker relations are the more different values and preferences can be and therefore the higher is the probability of distrust in the relation. On the other hand, as interpersonal relationships are closer and become more complex, the level of ambivalence between the two concepts increases.

In general, inter-firm collaboration's success depends on partners' expectations that are on their turn bound to the perceived risk of both uncertainty and opportunism.

Inter-organizational failure can be measured in terms of: formal agreements/alliances closure; dissatisfaction with partners' behaviour (trustworthiness) and/or overall network behaviour (with regard to coordination and communication processes); process that prevents or limits the potential overall value that can be created through collaboration.

In this case, *the attention is mainly concentrated on the role of network governance organization in the process of distrust's management*[25].

This process develops in two main phases: the selection phase and the management one.

In the selection phase, the idea is that there are some "external factors", that regard partners' features and individual paths and that can someway influence their reciprocal level of distrust. They in fact can influence partners' behaviours but depend on the their own backgrounds and experiences, apart from the network. Several studies have dealt with the issue of how much trust and distrust between partners imprints the development of inter-firm relationships (Vlaar, Van den Bosch, Volberda, 2007) in later stages of collaboration. Starting from the idea that potential partners in strategic networks do not necessarily trust each other, the objective is on the contrary to check what determines initial distrust and if the governing organization can facilitate the process of converting the vicious circle into a virtuous one. From previous research data and owing to previous studies on this matter (Kogut, Shan, Walker, 1992; Gulati, 1995b; Powell, Koput, Smith, Doerr, 1996), the perceived risk and, on the other hand, the attitude towards the counterpart/s may depend on the following variables:

1) partners' leaders personal attitudes and moral approaches;
2) partners' history and reliability;
3) parties' experience in inter-firm collaboration;
4) partner's awareness of the need of network or other parties' resources and competences.

These aspects conduct to proposition 1:

Focal firms' leaders personal attitudes and moral approaches, their own history and reliability, as well as their own experience in inter-firm collaboration can help reduce initial distrust in interorganizational relationships. This recalls two important topics (Granovetter, 1992): the exogenous aspects that lead an actor to collaborate within the networks and that depend on its own experiences and learning processes even in inter-firm collaboration, as well as the need for other resources and competences of the network or of some actors within the network. These endogenous aspects can refer either to the single firm's social capital, depending on an actor's social relationships in which it is embedded or, at a network level, to the social organization that favours coordination and mutual benefit (Putnam, 1993: 35-6; Gulati, 2007: 33).

Only the fourth aspect can refer to a situation where the firm can even have opportunistic behaviours and just be interested in trying to appropriate external resources and competences. This means that in the set of potential actors that have to decide whether to initiate a network or better a system, there may be some potential partners with cheating ideas and behaviours.

On the other hand, there may be a trustworthy behaviour, that depends on the awareness of the opportunities and benefits the firm can get from entering the network. These variables, therefore, depend on the level of partners' entrepreneurship attitude (or myopia, according to the situations), in terms of insight and heuristics (Wright, Hoskisson, Busenitz, Dial, 2000), as well as on their managerial capabilities of starting and governing relationships.

Several studies (Brouthers, Wilkinson, 1995; Medcof, 1997) underline that in long term coalitions with more than two parties there must be a sort of strategic fit, according to which each single partner accrue overall strategic value, justifying the associated costs. There may also be a totally new

[25] This approach results close to Zaheer et al (1998) assumptions, with regard to trust.

strategy for some of the partners, which requires them a change that, however, increases their value as well. What can happen is that a new partner that wishes to join the system may reveal disruptive for some extant partner, whose contribution to the coalition was essential before the new entrance. Governance actor should convince partners that in the long run there is a higher value for all parties, with a solid network strategy.

Another relevant factor regards partners' capabilities' complementarity and relevance for the system. From this point of view, collaboration can also be a way to compensate partners' weaknesses, contributing to reinforce them. Compatibility, especially in operations, with reference to networks, seems less important, in the sense that incompatibility of course prevents from collaboration but even if parties are not so operationally compatible in the starting phase, this problem can be overcome over time, through a learning process[26]. On the other hand, the lack of initial commitment can be detrimental for future development. These considerations explain why there can be initial reticence towards collaboration.

The point is to verify whether network governance can help passing from distrustful to trustful situations. If up to now literature on this topic has regarded possible and more appropriate forms of alliances or networks' control, here the issue is not that of controlling actors with opportunistic behaviours. These have to decide whether to cooperate or not, by valuing this opportunity they have. The process succeeds only if the best actors are involved and behave trustfully. So the governance organization has to select the right partners or to be so charismatic to make it clear that opportunistic behaviour can't find place in that network and that there opportunities and benefits.

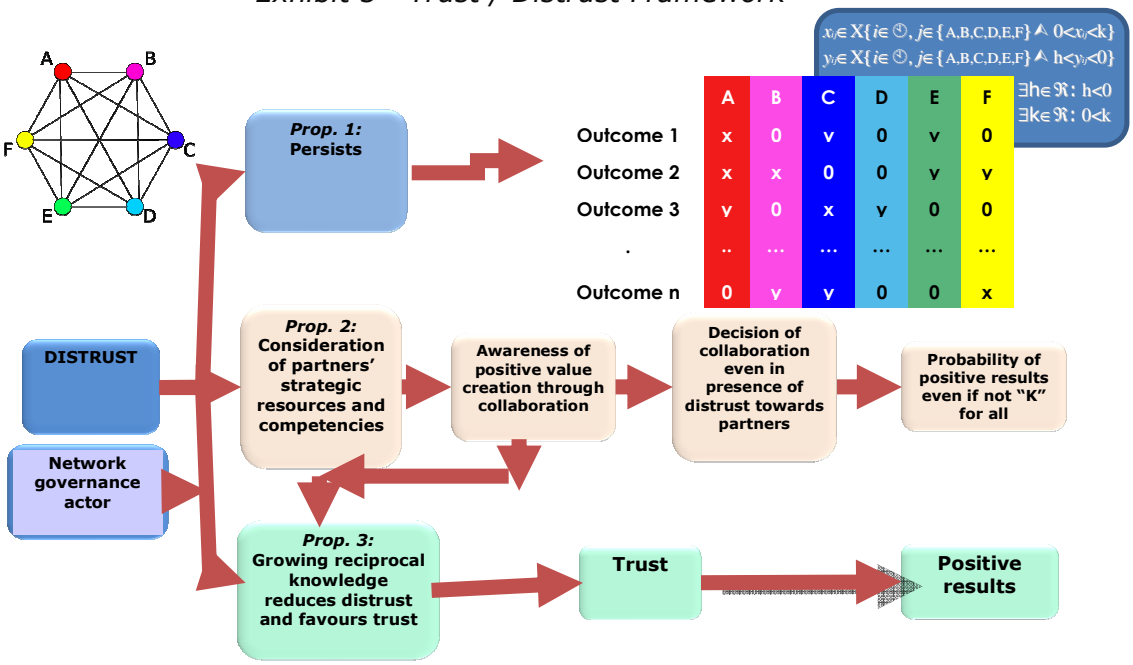
This can be favoured by resources ad competences and knowledge-based trust and the whole process can be explained with the help of game theory.

As shown in figure 4, distrust implies negative confidence on the possibility of obtaining a net positive value through collaboration with partners. In this case, according to the factors previously shown, it can persist, conducting to a situation where almost all partners lose, or at least don't win or where maybe just a very few of them win something but more for chance that for their own ability. This situation can also take place when one party, not accompanied by shared authoritativeness, tries to have a dominant position in the coalition, without having the necessary resources and competencies to govern the process. In other words, this pattern can seldom give hope to more intense collaboration.

Therefore, *proposition 1 regards the situation where actors don't trust each other and prefer not to cooperate, continuing getting their own individual value: v(i).* Each of them will therefore get its own value and the whole of non-cooperating firms will generate a total value equal to the simple sum of their own individual values. Some may lose, other may gain but not more than what they can obtain by cooperation.

[26] To some extreme, compatibility can push firms to relax and in strategic networks and systems, as seen, coopetion is a vital factor. When it's accompanied by trust, it can happen that too much trust finishes to prevent innovation (Zahra, Yavuz, Ucbasaran, 2006).

Exhibit 5 - Trust / Distrust Framework



Another important aspect to take into account is the role network's governance can play in this process, that leads to proposition number 2:

Network's governance actor can influence the process of distrust's overcoming, increasing the awareness of the necessity of counterparts' strategic resources/competences and even favouring knowledge transfer processes, reciprocal relations as well as

These aspects are in part "structural", because close proximity can reduce moral hazard approaches and increase awareness of respective resources and competences. This refers to situations when, at least for some time, distrust and trust can coexist: even if there is initial distrust, the process starts with the awareness of other parties' resources and competences' complementarity. When this process is scarse on the firms' side, network governance actor's role is just that of favouring this process, even between competitors, activating the previously described coopetition mechanisms. So in this case parties can start the network just because they now other parties' capabilities are complementary to gain sustainable competitive advantage. Also a more relational process can develop, since it refers to the information available and knowledge transfer and to any other social element that can increase the likelihood of trustworthy behaviours. Some authors define knowledge based-trust as that connected with mutual awareness and deterrence-based trust as that which results from firms' reputation, creating a sort of self-enforcing safeguard (Gulati, 2007: 101; Bradach, Eccles, 1989; Powell, 1990). This deterrence trust not only refers to each firm's reputation but mainly to the authoritativeness of the network governance actor itself. The trust so generated should allow to reduce risks and connected coordination costs, giving way to more informal information flows and resources' exchange. In this optic, a good governance system not only favours resources and competences (including knowledge) exchange but also the development of specific network competences, connected with coordination and strategic development, that create value for the system and for each party, even if with different intensity.

The basic assumption is that in these situations the network governance actor has a precise view of the total value of the net, namely $v(\mathrm{N})$, that is of course major than the single values' sum owing to the synergies obtainable by parties and the new resources and competences created at the network level.

In order to study this process, it's possible to proceed with the help of the Theory of Cooperative Games, according to which the optimal result obtainable through the network is a reallocation $x=(x_1,...,x_n)$ of $v(\mathrm{N})$, called *core allocations*, whose components x_i are major or equal to the single value of the actor i in hypothesis of non collaboration and no distrust situations are possible, as it will be explained in the next subsection.

Any other aggregation form among some of the partners of the network will never be able to generate a higher value for the single parties. And yet there can be attempts, moved by distrustful, moral hazard and adverse selection-moved behaviours. The task of the governance actor is that of making single actors understand that they will never be able to gain more than through the system.

Another important aspect is to verify if, starting from a distrustful situation, reciprocal knowledge can take to more trustworthy behaviours and, therefore, generate trust. This brings to proposition 3:

The governance actor can favour the level of reciprocal knowledge of the strategic resources and competences each of them possesses, controls or can manage. In other words, the increase in reciprocal knowledge can reduce distrust and favour trust; in such situations there is a lower level of distrust, compared with the previous one.

If firms agree to be in the network, since the value $v(\mathrm{N})$ of the network is greater than the sum of the single firms, in order to apply a rule to share $v(\mathrm{N})$ according to the expectation of firms, the governance actor can use the Shapley value (Shapley, 1953), where the situation in which firms agree to trust with a part of the network: details are in the next subsection.

The model is of course based on the fundamental assumption that network governance organization has a cognition of the coalition value that can be created as well as of the contribution to that value by any single actor. In such situations, network governance actor has a strategic vision and an organizational view that are wider than the horizon of each single firm participating to the coalition, is well informed and can estimate each actor's contribution to the overall value.

The two underlined propositions can also overlap, because the first step of the process indicated in figure 4 and referred to proposition 2 can lead to proposition three. In these cases, it is necessary to make a double level analysis, through core allocations and Shapley value as well.

3.1 Some recalls on cooperative games (by V. Scalzo)

The Theory of Cooperative Games gives some reason to encourage agents to have a trust behaviour in the sense that if all agents subscribe a common agreement, which is characterized by a certain value, there is the possibility to share this value in an "efficient" way. The concept of efficiency to which we are interested refers to the possibility that there is no party of agents who look profitable to work out of a cooperation policy which involves the whole society (network).

First of all, assume that $\mathrm{N}=\{1,...,n\}$ is the set of agents (N represents the society) which supply services (facilities) and let $v(i)$ be the profit (that we also call *worth*) that agent $i\in\mathrm{N}$ is able to get alone, without any cooperation policy with other ones. We suppose that agreements among agents are possible. When an agreement is reached by a party, we say that a coalition S is formed, where S is the subset of N of all agents who have subscribed the agreement; we denote by $v(S)$ the worth of the coalition S: for instance, the sum of the profits that such agents are able to obtain under cooperation among themselves. We suppose that any coalition knows its own worth.

Let us assume that the best result for every one is when all the agents subscribe a common agreement, that is when the great coalition N is formed (that is the case of a *network* in which cooperation is profitable for all firms involved and they all know its worth). So, the best situation has the worth $v(\mathrm{N})$ to be shared among agents. Obviously, we are interested in sharing $x=(x_1,...,x_n)$ of the value $v(\mathrm{N})$ such that: $x_i\geq v(i)$ for any $i\in\mathrm{N}$. So, in the following, we assume such a property to be satisfied by every redistribution of $v(\mathrm{N})$.

An "efficient" sharing of the aggregate gain $v(\mathrm{N})$ is through reallocations $x=(x_1,...,x_n)$ such that:

$$\sum_{i=1}^{n}x_i=v(\mathrm{N}) \quad \text{and} \quad \sum_{i\in S}x_i\geq v(S) \quad \text{for all } S\subseteq\mathrm{N} \ (*)$$

where any S is non-empty. Such reallocations x are said *core allocations* and the set of core allocations is called *core* of the TU-game v, denoted by $C(\mathrm{N},v)$: see Gillies (1953) and Bondareva (1963).

We look at the core allocations - which are profiles of gains for the agents - as an "efficient" sharing of $v(\mathrm{N})$ since, if $x\in C(\mathrm{N},v)$ and a coalition S is formed, the aggregate gain $v(S)$ that such a coalition is able to get working alone, without cooperation with the other agents, is not greater than the sum of the gains that each agent of S obtains form x, when all agents cooperate. Hence, if a core allocation is reached, no trust S smaller than the whole society N could give gains greater than those which come from the core allocation. So, a trust against a core allocation is not profitable.

Another approach for an "efficient" sharing of $v(\mathrm{N})$ is the Shapley value $\Phi[v]$ (Shapley, 1953).

The value $\Phi[v]$ is given, for example, by the following formula, where s denotes the number of members of the coalition S and $i\in\mathrm{N}$:

$$\Phi[v]_i=\sum_{i\in S\subset\mathrm{N}}\frac{(s-1)!(n-s)!}{n!}[v(S)-v(S-\{i\})]$$

Let us emphasize that the share of $v(\mathrm{N})$ obtained by agent i is calculated from the marginal contributions that i gives to any coalition in which he/she can get in: $v(S)-v(S-\{i\})$ is the gain that i can require if the coalition S is formed. So, $\Phi[v]_i$

is the expected gain of i with respect to all possible coalitions (agreements). In this way, the efficiency means that any agent i accepts $\Phi[v]_i$ as its own share of the aggregate gain $v(\mathrm{N})$ just because it coincides with its expectation.

We remark that the core of a TU-game may be the empty set, while the Shapley value can be calculated in any case. Moreover, if the core is non-empty, the Shapley value may be not a core allocation: this means that the Shapley value may be not robust against trust smaller than the whole society. However, if v is *convex*, the Shapley value is also a core allocation (see, for example, Branzei, Dimitrov and Tijs, 2005).

4. Final considerations: implications for theory and future research and managerial implications

Payoffs' patterns affect both the creation and the prosecution of cooperation and depend on the net positive value expected as collaboration outcome, on the stability of cooperation, on the continuing relationship and on the eventual shifts in preferences that can come out, as well as on the prospects of future interactions: when the relationship is connected to one single objective and therefore develops through an alliance more than a network scheme, distrust can more probably persist. The point is that in strategic networks there are multiple players, with different attitudes and of different nature (private, public). In such cases, the attitude of each single partner is not the same as in a two parties game (this may reduce or increase distrust) and there can also be a double level of analysis: among individual firms and between private firms and public actors (for example, in a certain local area). Especially in contexts like business districts (included tourism districts) the trust/distrust issue has to be examined among private actors as well as between private actors and public actors.

When there is however awareness of counterparts' resources and competences, as well as of the overall advantage that can derive from the collaboration to the network and its members, this can lead to the decision of collaboration even if in presence of distrust. Even more: the awareness of distrust and its institutionalization (even in strategy and organizational decisions) can sometimes be essential for building trust.

The proposed model just tries to explain and analyze the governance of collaboration processes. A further development can regard a deep analysis of resources and competences of the network governance organization. However, in spite of the literature developed even within RBT logic, *trust itself cannot be conceived as a resource* because it is a situation, a setting, determined by each single party's characteristics, by their reciprocal knowledge and by network governance actor's competences.

In order to keep coalitions alive and innovative, coopetition has to be intended from different perspectives: there can be low competition and low collaboration (rather marginal aggregations), low competition and high collaboration (especially in supplier-client trustful relationships), high competition and low collaboration (that can be rather hostile in front of inter-firm collaboration perspectives) or high competition and high collaboration (that can be may be even the most productive situation). It's important to check the ability of the network governance actor to manage and leverage diversity, reducing overall risk and favouring a dynamic process that can lead to trust development. Governance choices for the network can help the process, leading *coopetition* and becoming themselves sources of competitive advantage. Therefore, trust and distrust can not be the opposite of a continuum because they both reduce risk in inter-firm relationships.

The model is based on the assumption that network governance actor has the information and competences to manage the process. When it is tested empirically, this actor has to be analyzed in detail as a source of the system's competitiveness. More precisely, it's important to check whether its resources and competences are valuable, rare, difficult or costly to imitate and used in organizational terms.

This approach can be useful for decision makers in managing complex systems of firms, since competition is changing its boundaries and even its actors: in face of globalization the "glocalism" (think global, act local) path seems to be the only possible way to compete not only for small and medium enterprises but also for larger organizations, that anyway have to develop business networks.

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