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**The role of accounting in
governing corporate risks: Three
essays**

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Coordinatore del Dottorato
ch. prof.ssa Anna Comacchio

Supervisore
ch. prof.ssa Chiara Saccon

Co- Supervisore
ch. prof. Alessandro Lai

Dottorando
Silvia Panfilo
Matricola 956162

TABLE OF CONTENTS

THESIS ABSTRACT	p. 4
Acknowledgements	4
1. INTRODUCTION	p. 5
2. PAPER 1: ACCOUNTING, SOCI(ET)AL RISKS AND PUBLIC REASON: GOVERNMENTAL RISK DISCOURSES ABOUT THE ILVA STEEL PLANT OF TARANTO (ITALY)	p. 12
1. Introduction	13
2. Accounting, Risks, and Public Reason: Prior Research	15
3 Theoretical framework	17
4. Methodology	19
5. Findings	22
5.1. The Italian Magistrature’s intervention and the experts’ appraisals	22
5.2. The emergence of the social and societal risks in the experts’ appraisals	24
5.3. The Italian Government’s decision on ILVA’s activities	26
5.4. The construction of risk discourse by the Italian Government	27
6. Discussion and Conclusions	29
References	34
3. PAPER 2: THE INFORMATION CONTENT OF PROXY DISCLOSURES CONCERNING THE BOARD’S ROLE IN ENTERPRISE RISK OVERSIGHT	p. 45
1. Introduction	46
2. Institutional Background	48
2.1. Board’s Role in Risk Oversight	49
2.2. Standard and Poor’s Evaluation of Management and Governance	50
3. Theoretical Background	52
4. Methodology	55
5. Results	60
6. Discussion and Conclusions	64

References	67
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4. PAPER 3: (IN)CONSISTENCY BETWEEN PRIVATE AND PUBLIC DISCLOSURE ON ENTERPRISE RISK MANAGEMENT AND ITS DETERMINANTS

p. 78

1. Introduction	79
2. Theoretical Background and Hypotheses Development	81
<i>2.1. Determinants Hypothesized to Affect Inconsistency on ERM Disclosure</i>	82
3. Research Design	85
3.1. Sample Selection and Data: The Italian Institutional Context	85
3.2. Three-stage Approach	88
3.3. Research Model for Testing Hypotheses	89
4. Results and Analysis	91
4.1. Nature and Extent of ERM Disclosure Variation (RQ1)	91
4.2. Determinants of Inconsistency between Private Source of Information and Public Disclosure on ERM (RQ2)	94
<i>4.2.a. Descriptive Statistics and Correlation Analysis</i>	94
<i>4.2.b. Inconsistency between Private and Public Disclosure: Determinants</i>	95
<i>4.2.c. Sensitivity Analysis</i>	97
5. Discussion and Conclusions	98
References	102

5. CONCLUSIONS

p. 116

THESIS ABSTRACT

Today we live in a world of great uncertainty and complexity dictated by geo-political issues (e.g. the so-called Brexit), cyber threats and terrorism, increasing regulatory expectations, calls for alternative energy sources, combined to a disruptive technological innovation never seen before. In addition, companies since the 2008 financial and economic crisis had to take into account risks emerging from wealth production by organizations and institutions which come to dominate public concern and policies. Worldwide a number of corporate governance-focused entities have issued calls for effective risk management processes within organizations including the introduction of specific corporate governance bodies and risk-related disclosure.

Accounting literature dealing about risk and its government generally focuses on corporate governance monitoring mechanisms which are often supported to act as driving elements of risk-related aspects. Nevertheless, different kinds of relations and their directions between risk, accounting, and governance dimensions have not been taken into consideration yet. This thesis aims at providing a broader view of the risk dimension than that considered by the traditional approach predominantly employed in accounting studies.

The thesis therefore contributes to the recent debate about risk government being enriched by different theoretical backgrounds, methodological approaches and the focus on different settings. As the world is rapidly becoming a complex and uncertain environment, more studies should be undertaken about risk government, thus contributing to the advancement of knowledge in accounting studies and presenting relevant policy and managerial implications.

Acknowledgements: To my family for the support during these intensive years and for teaching me the fundamental value of freedom. To Marco, my future, for believing in me more than I believe in myself. To my supervisors Alessandro and Chiara for their mentor role not just as professors but as special people. To Cristina, Marco, and Riccardo (in alphabetical order) for their helpful suggestions and their friendship. To Mark, Don and Bruce for having allowed me to live a unique life-experience and for their precious - professional and human – teachings. Finally, to my Ph.D. colleagues, specially Giorgia, for their important presence in the several hard and funny moments we shared, and to all the friends I knew in US who makes me feel home despite the distance from it.

1. INTRODUCTION

The research project raises from an interest on the topic of risk and its government fed by the events of the 2008 crisis. We live today in a world of great uncertainty and complexity dictated by geo-political issues (e.g. the so-called Brexit), cyber threats and terrorism, increasing regulatory expectations, calls for alternative energy sources, combined to a disruptive technological innovation never seen before. Companies had to take into account risks emerging from wealth production by organizations and institutions which come to dominate public concern and policies.

Worldwide, a number of corporate governance-focused entities have issued calls for effective risk management processes within organizations including the introduction of specific corporate governance bodies, such as board risk committees or the hiring of a Chief Risk Officer (Beasley *et al.*, 2005¹; 2015²; Brown *et al.*, 2009³). To this aim many international frameworks have been developed to identify key elements that companies may adopt to better manage and oversight risks according to a holistic perspective, in contrast to a silos-based approach widespread prior to the crisis. For instance, the Committee of Sponsoring Organizations of the Treadway Commission framework (COSO 2004; 2016)⁴ sets core definitions, components, and principles, providing direction for all levels of management involved in designing, implementing, and conducting enterprise risk management.

Moreover, in Europe, financial companies are specifically required to have some risk process standards. Large banks, for instance, have to comply with the international regulatory framework Basel III (Directive 2013/36/EU and Regulation (EU) No. 575/2013). Likewise, insurance companies are subject to Solvency II (Directive 2009/138/CE) and as for U.S. insurers they must complete their “Own Risk and Solvency Assessment (ORSA)” for filing with state insurance regulators.

Around the world, also stock exchanges and their commissions started to ask for an explicit risk oversight: in the US, for instance, the New York Stock Exchange’s (NYSE’s) revised Corporate Governance (CG) rules issued in 2004 placing explicit risk oversight responsibilities on audit committees, and the Securities and Exchange Commission’s (SEC’s) expanded proxy disclosure rules effective in 2010 requiring greater transparency about the board’s role in risk oversight (NYSE,

¹Beasley, M.S., Clune, R. & Hermanson, D.R., 2005. Enterprise Risk Management: An Empirical Analysis of Factors Associated with the Extent of Implementation. *Journal of Accounting and Public Policy*, 24(6), pp.521–531.

²Beasley, M., Branson, B. & Pagach, D., 2015. An Analysis of the Maturity and Strategic Impact of Investments in ERM. *Journal of Accounting and Public Policy*, 34(3), pp.219–243.

³Brown, I., Steen, A. & Foreman, J., 2009. Risk Management in Corporate Governance: A Review and Proposal. *Corporate Governance: An International Review*, 17(5), pp.546–558.

⁴COSO, 2004. Enterprise risk management. available on the internet at <http://www.coso.org>; and COSO, 2016. Enterprise risk management - Aligning Risk with Strategy and Performance. available on the internet at <http://www.coso.org>.

2004⁵; SEC, 2010⁶). Furthermore, a number of credit rating agencies now evaluate the effectiveness of the organization's risk management processes as part of the credit rating evaluation process (Standard and Poor's, 2012)⁷.

Given such an increasing empirical interest on risk and its government, the research arises from the will to combine risk and corporate governance knowledge extending the current debate in accounting literature. Two main lines of inquiry derive from prior work in risk management. They are related to risk disclosure and risk management systems, respectively. The former is most developed, while the latter leaves space for greater investigation. However, several gaps emerge from both the streams of literature.

First, it emerges that positive accounting scholars dealing with risk management generally take into account corporate governance monitoring mechanisms as driving elements of the risk dimension, e.g. risk management systems. Separately, risk management systems have been found to affect firm's accounting dimension, for instance in terms of performance. Many studies indeed show corporate governance characteristics have been found to be determinants of the Enterprise Risk Management (ERM) system and of the level of its implementation (e.g. Beasley *et al.*, 2005; Paape and Specklè, 2012⁸; Florio and Leoni, 2016⁹). In addition, ERM has been found to positively affect firm value (McShane *et al.*, 2011¹⁰) and performance (Pagach and Warr, 2008¹¹; Baxter *et al.*, 2013¹²). For an overall representation of the relations identified by prior literature see Figure 1.

⁵ New York Stock Exchange (NYSE), 2004. Final NYSE Corporate Governance Rules. NYSE, New York. Available at: <http://www.nyse.com/pdfs/finalcorpgovrules.pdf>.

⁶ Securities and Exchange Commission (SEC), 2010. SEC Rule Release No. 33-9089 – Proxy Disclosure Enhancements, SEC. Washington, DC.

⁷ Standard and Poor's, 2012. Methodology: Management and Governance Credit Factors for Corporate Entities and Insurers. S&P, New York.

⁸ Paape, L. & Speklè, R.F., 2012. The Adoption and Design of Enterprise Risk Management Practices: An Empirical Study. *European Accounting Review*, 21(3), pp.533–564.

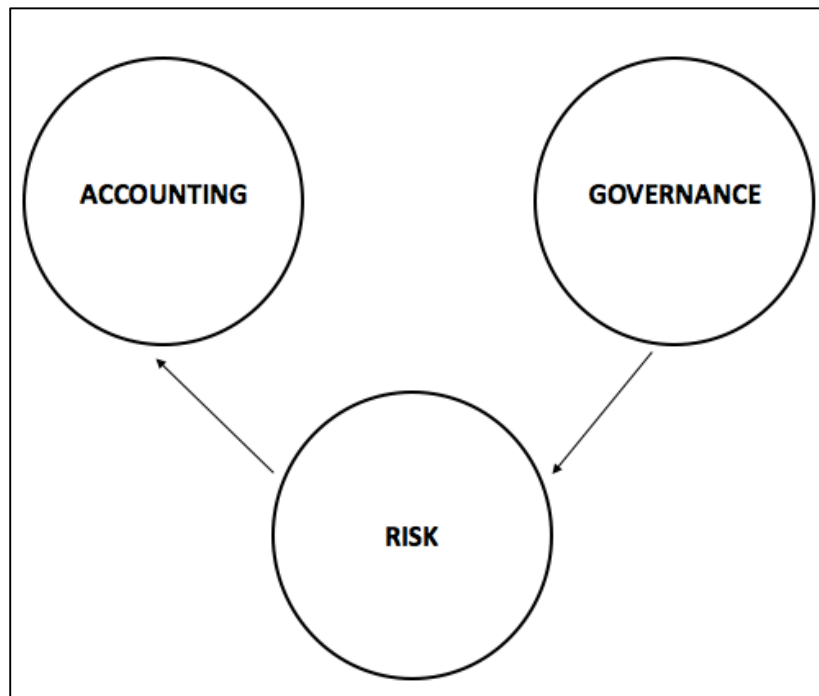
⁹ Florio, C. & Leoni, G., 2016. Enterprise Risk Management and Firm Performance: The Italian case. *The British Accounting Review*, 49(1), pp.56–74.

¹⁰ McShane, M. K., A. Nair, and E. Rustambekov. 2011. Does Enterprise Risk Management Increase Firm Value? *Journal of Accounting, Auditing and Finance*, 26 (4): 641–58.

¹¹ Pagach, D., and R. Warr. 2008. The Effects of Enterprise Risk Management on Firm Performance. Working Paper, North Carolina State University. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1155218.

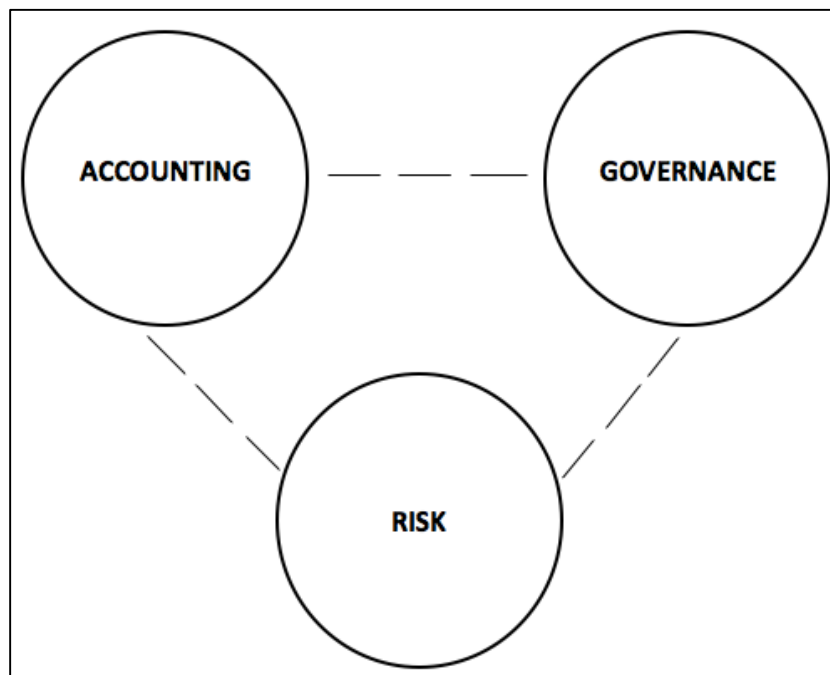
¹² Baxter, R. et al., 2013. Enterprise Risk Management Program Quality: Determinants, Value Relevance, and the Financial Crisis. *Contemporary Accounting Research*, 30(4), pp.1264–1295.

Figure 1. Risk, Accounting, and Governance: relations and their directions in prior literature



Nevertheless, different kinds of relations and their directions between accounting, governance and risk dimensions have not been taken into consideration yet. According to an original broader perspective, this thesis aims to fill this main theoretical gap investigating in each paper potential new relations and their directions between the key dimensions of the research (see circles represented in Figure 2). In a critical/interpretative perspective indeed the research is interested in investigating not just the measurement of risk but what role accounting can play impacting on both the level of risk and on governance. Thus, the study explores new directions of the arrows between the three dimensions passing a traditional agency perspective in favor of more holistic views.

Figure 2. Risk, Accounting, and Governance: potential relations to investigate



Second, prior studies mainly analyze private¹³ companies, almost excluding the process of risk government and management in the public context. Further, prior research shows the shift from a silo-based to a holistic risk management approach, but no one study took in consideration specific situations potentially deriving from the emerging integrated approach. For instance, no one has investigated decision-making situations in which risks to be governed are contrasting and incommensurable. Thus, the first paper specifically aims to fill these gaps investigating in the public context a case experiencing simultaneously contrasting risks.

Third, the stream of literature focusing on risk disclosure almost exclusively investigates disclosure on risk factors rather than on the risk management system. Further, except for few cases (Campbell *et al.*, 2014¹⁴; Buckby *et al.*, 2015¹⁵; Florio and Leoni, 2016), accounting scholars mainly analyze financial annual reports while not examining other corporate reports. Finally, another key point regarding prior research on risk disclosure is the fact that those studies implicitly rely on the assumption that public information is informative and transparent to stakeholders. However, there are studies showing disclosure on risk (Abraham and Shrides, 2014)¹⁶ and on risks' management

¹³ Private companies are here intended as companies hold and/or controlled by private subjects. In contrast, public companies are in this context considered those hold or controlled by public entities.

¹⁴ Campbell, J.L. *et al.*, 2014. The Information Content of Mandatory Risk Factor Disclosures in Corporate Filings. *Review of Accounting Studies*, 19(1), pp.396–455.

¹⁵ Buckby, S., Gallery, G. & Ma, J., 2015, An Analysis of Risk Management Disclosures: Australian Evidence. *Managerial Auditing Journal*, 30(8/9), pp. 812-869.

¹⁶ Abraham, S., & Shrides, P. J., 2014. Improving the Relevance of Risk Factor Disclosure in Corporate Annual Reports. *The British Accounting Review*, 46(1), pp. 91-107.

(Buckby *et al.*, 2015) are formal rather than substantial. It follows the second and the third papers of the thesis respectively aim at deeply investigating these aspects in different contexts.

Overall, this dissertation aims to originally provide a broader view of the risk dimension than that considered by the traditional approach predominantly employed in accounting studies. To this aim the thesis in its complex is enriched by the adoption of different methodological approaches and theoretical backgrounds. Each paper adopts methodologies supporting an interpretative/critical qualitative view or a positive accounting view adopting quantitative approaches. The first qualitative paper focuses on the risk government - the process of governing risks - at the state level. Specifically, it adopts a Foucauldian discourse analysis associated to an intertextual analysis to interpret findings about the case study. Whereas, probit models and factor analysis are used in the two quantitative papers to investigate risk's oversight and management disclosure at the corporate level. Further, the thesis is a response to the call "for greater theoretical pluralism" (Roberts *et al.*, 2005)¹⁷. In the three papers indeed many widely recognized theoretical perspectives on risks (governmentality framework, agency theory, proprietary costs theory, institutional theory, and signaling theory) are adopted and compared to answer the different research questions:

RQ1: To what extent and how accounting supports decision-making and public reason when Governors have to face with *contrasting incommensurable risks*?

RQ2: To what extent are public disclosures consistent with what companies privately declare about their internal ERM process?

RQ3: To what extent are proxy disclosures, about the board's role in risk oversight, informative to stakeholders?

The thesis has been developed under the supervisions of many professors. The research is indeed the result of a collaboration between the University of Verona and Ca' Foscari University of Venice represented by the two supervisors prof. Alessandro Lai and prof. Chiara Saccon, respectively. Further, part of the thesis has been developed in collaboration with Mark Beasley - Deloitte Professor of Enterprise Risk Management and Professor of Accounting, Bruce Branson - Alumni Distinguished Undergraduate Professor and Don Pagach - Accounting Professor. They are the director, the associated director and the director of research respectively of the Enterprise Risk Management Initiative research center at North Carolina State University (NCSU) where the candidate stayed for a visiting period of six months.

¹⁷ Roberts, J., McNulty, T. & Stiles, P. (2005), Beyond agency conceptions of the work of the non-executive director: creating accountability in the boardroom. *British Journal of Management*, 16 (1), pp. 5-26.

In detail, the first paper entitled **“Accounting, Soci(et)al Risks and Public reason: Governmental Risk Discourses about the ILVA Steel Plant of Taranto (Italy)”** is co-authored with prof. Alessandro Lai and prof. Riccardo Stacchezzini (University of Verona). It has been developed as follow-up study to the publication “The governance of risks, state accountability, and the rhetoric of accounting: A case study”¹⁸. The main conferences at which the paper or slightly different versions of it have been presented are:

- European Accounting Association annual conference hold in Valencia (Spain) in May 2017;
- Critical Perspective on Accounting Journal conference hold in Quebec City (Quebec) in July 2017;
- finally, a more recent version of the ILVA case study of the paper has been presented at the Italian Management and Accounting Association conference (AIDEA) hold in Rome in September 2017 in the special session of the Journal of Management and Governance (JMG). The paper has been considered eligible for the submission to the JMG Special Issue on “Emerging issues in management and governance in the paradoxical age of globalization: a low growth-rate world economy, hyper change and sustainability”. The paper is currently under review.

This paper aims at investigating how the Italian Government constructed its discourse on the risks associated with the (dis)continuity of the ILVA steel plant activities, and the role that accounting played in shaping such discourse in conditions where a decision should be taken to safeguard the public interest but different and contrasting risks were somehow quantifiable yet substantially incommensurable.

Second, the paper co-authored with prof. Mark Beasley, Bruce Branson and Don Pagach (NCSU) entitled **“The Information Content of Proxy Disclosures Concerning the Board’s Role in Enterprise Risk Oversight”** focuses on the US setting. The study aims at verifying whether the proxy disclosures related to the board of director’s role in risk oversight is informative to stakeholders. In particular, it examines how these disclosures are related to ‘management and governance’ scores developed by Standard & Poor’s (S&P) to enhance their credit ratings process. The paper has been presented at the ENROAC conference on “The contribution of management accounting to effective risk management”. Few additional tests are planned before submitting the work to one of the following target journals: European Accounting Review, Journal of Accounting and Public Policy, Accounting Horizons.

Finally, the single-author paper is entitled **“(In)consistency Between Private and Public Disclosure on Enterprise Risk Management and its Determinants”**. It focuses on the Italian

¹⁸ Lai A., Panfilo S., & Stacchezzini R. (2016). *The Governance of Risks, State Accountability, and the Rhetoric of Accounting: A Case Study*. In: Marchi L., Lombardi R. & Anselmi L. Il governo aziendale tra tradizione e innovazione. Franco Angeli, Milano.

setting, investigating the nature and extent of variation between public and private disclosure on risk management practices in a context of voluntary disclosure and the determinants of higher variation – intended in this paper as information inconsistency. The work or slightly different versions of it have been presented:

- as a working paper at the Accounting Department of the Poole Management College at the North Carolina State University on February the 8th, 2017;
- at the Ph.D. colloquium of the European Conference on Internal Audit and Corporate Governance hold in Athens (Greece) in April 2017;
- at the ENROAC conference hold in Naples;
- finally, at the AIDEA emerging scholar colloquium within the main conference hold in Rome in September 2017 where the essay has been awarded as the best paper of the Emerging Scholar Colloquium (see attachment).

Participating at the current debate on risk and risk management in accounting literature, the dissertation appears to be particularly timely considered either the international harmonization effort on risk governance regulation and a notion of risk so widespread that modern society has been defined in sociological studies as the “risk society”¹⁹ - a society increasingly preoccupied with identifying and managing risks that it has itself produced.

PAPER 1

¹⁹ Beck, U. (1992). *Risk society: Towards a New Modernity*, 17, Sage.

Accounting, Soci(et)al Risks, and Public Reason: Governmental Risk Discourses about the ILVA Steel Plant of Taranto (Italy)

Alessandro Lai*, Silvia Panfilo**, Riccardo Stacchezzini*

ABSTRACT

The case of the *ILVA steel plant of Taranto* and its impacts has not only worried Italian society and authorities for more than two decades; given its size, the amount of pollution that the factory has produced, as well as evidences of high cancer rates in the nearest districts, the case has received significant attention from the EU institutions, and echoed worldwide. In July 2012, the Italian Magistrature halted the steel plant. Four months after, the Italian Government declared the steel plant site as “Strategic National Interest Site”, and allowed the company to restart its activities.

The paper explores how the Italian Government legitimized its decision to allow the ILVA site to carry on the activities. Drawing on the Governmentality framework, the paper particularly investigates how the Italian Government constructed its discourse on the risks associated with the (dis)continuity of the ILVA activities, and explores the role that accounting played in shaping such discourse in conditions where a decision should be taken to safeguard the public interest but different and contrasting risks were somehow quantifiable yet substantially incommensurable.

Supported by a discursive analysis of the governmental speech, the research shows that the Italian Government based its decision on various experts’ risk appraisals, and shaped its discourse by giving more visibility and relevance to “social” risks (i.e. unemployment, economic development, productivity and competitiveness risks), rather than to the “societal” ones (i.e. environmental and health risks), which indeed were silenced²⁰.

Keywords: social and societal risks; calculative technologies; risk measures; governmental risk discourse; discursive practices.

1. INTRODUCTION

²⁰ This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

*Department of “Economia Aziendale” - University of Verona, Via Cantarane 24, 37121 Verona (Italy).

** Department of Management - Ca’ Foscari University of Venice, Cannaregio 873, 30121 Venice (Italy).

The case of the *ILVA steel plant of Taranto* and its impacts has not only worried Italian society and authorities for more than two decades; given its size and the amount of pollution that the factory has produced, the case has received significant attention from the EU institutions, and echoed worldwide (e.g. Pooler and Politi, 2017). It attests the political and legal complexities involved in addressing a case of environmental non-compliance in a factory of such a size, whose economic significance extends beyond the local level. The plant is an important employer in a region otherwise struck by high levels of unemployment, and its production is used internationally, as well as in other parts of Italy. With the employment of about 12,000 people and a capacity to produce 10 million tons of steel annually, the ILVA steel plant of Taranto is the largest steel factory in the EU (European Parliament, 2015). However, the pollution resulting from the activities has been linked to higher than average incidence of some diseases as well as number of deaths in areas close to the plant; further, other economical sectors (e.g. local agriculture) have suffered adverse impacts.

A number of disputes between the European Commission and the Italian Government occurred in the last years. For instance, in 2011 the European Commission opened an infringement procedure against the Italian government, arguing that the ILVA steel plant was not in compliance with the mandatory integrated pollution prevention and control regime.

What produced even a louder echo and, more significantly, had a direct impact on the company, its employees and the local community was due to the Italian Magistrature's provision to halt the "hot working area" of the steel plant. The stop was due to a level of pollution beyond the legal thresholds, and to evidences of causality between the ILVA's activities and the contamination of several 14 flocks of sheep, as well as evidences of high cancer rates in the nearest districts to the plant. Four months after the Magistrature's provision, the Italian Government allowed the company to restart its activities, having declared the steel plant site as "Strategic National Interest Site".

In arguing its reason, the Italian Government drew on the technical documentation prepared by several "experts" (e.g. chemical experts, environmental experts, epidemiologists, economists, experts of industrial associations, accountants, etc.). This documentation, as well as the discourses of the Italian Government's representatives, relied on a wide plethora of calculative technologies, mobilized to provide evidences of the environmental, health and economic risks associated with the (dis)continuity of the ILVA activities. The adoption of various calculative devices mobilized within the risk assessment processes, allowed for the measurement of various contrasting risks associated with the (dis)continuity of the ILVA activities. We are speaking of *contrasting risks* in the sense that the decision to allow the steel plant to continue its activities was related to the risks of reducing the rate of unemployment in the region and increase the competitiveness of Italy as an industrial country, but also to the risks of increasing environmental pollution and the death of employees and people of

the local community, and vice versa. Despite these various risks were measured both considering legal thresholds and other similar industrial situations, these risk measures remained largely *incommensurable* because they were calculated and expressed with different standards/measures (pollutants average daily concentrations; toxicological and epidemiological data; cancer rates; stochastic causality for risk estimation; rates of unemployment; financial values, etc.). These issues feeds interest in understanding how the Italian Government constructed its reason about a decision able to change the destiny of the steel plant, with impacts on its employees, the local community, and the competitiveness of Italy as an industrial country.

The present paper explores how the Italian Government legitimized its decision to allow the ILVA site to carry on the activities. More specifically the paper investigates how the Italian Government constructed its discourse on the risks associated with the (dis)continuity of the ILVA activities, and focuses on the role that accounting – here broadly intended as calculative technologies (Miller, 1994) – played in shaping such discourse.

While previous studies have predominantly focused on the role of accounting in calculating about environmental, economic, and health related risks, the present research investigates in a critical perspective how accounting is implicated in the creation of governmental *risk discourses* that governors mobilize in order to claim legitimacy about their decision-making. In other words, accounting is here intended not (only) as a “technical tool” adopted to quantify risks and rationally oriented decision-making, but also for its capacity to shape social reality by participating to the construction of “political truths” (Burchell *et al.*, 1980; March, 1987; Hopwood, 1992; Carruthers, 1995). In this respect, we take into great consideration the argument that accounting may participate to the “construction of an appearance of rationality” as they help shaping the “rationale for decisions” (Carruthers, 1995, p. 313 and 322).

The analysis focuses on the so-called “social and societal risks” (Asenova *et al.*, 2013 and 2015) attributed to the ILVA steel plant within the public governmental discourses and the technical documentations prepared by the “experts” involved in the investigation of the ILVA’s impacts. Specifically, “social risks are the focus of social policy such as unemployment, while societal ones are those emphasizing the macro-dimension and the public nature of these risks, such as environmental and health” (Asenova *et al.*, 2015).

The sociological studies on risk based on the Foucauldian Governmentality framework (Dean, 1998 and 1999; Lupton, 2006; Gephart *et al.*, 2009; O’Malley, 2009 and 2012) support the interpretation of accounting as a technology through which governmental risk discourses are created. According to this framework, government of risks becomes possible only through “discursive mechanisms that represent the domain to be governed as an intelligible field” (Miller and Rose, 1990,

p. 6), and accounting represents a form of “scientific” knowledge that provide rationales for risk discourses to be considered as “true” (Dean, 1998). The present paper also benefits from the work of Sheila Jasanoff (1990 and 2012) on how politicians construct “public reason”, i.e. “what emerge when states act so as to appear reasonable” (1990, p. 5). She argues that modern Governments, in claiming legitimacy, draw on a number of practices, discourses, techniques and instruments that help to cope with countless risks and manage them for citizens (Jasanoff, 2012). In constructing “public reason”, governors are required to face trade-off between risks to health or the environment and the economic issues (Jasanoff, 1990, p. 3), and they produce their arguments by drawing on technical knowledge produced by “science advisors” (i.e. experts in the field).

Such theorization is expected to produce an understanding of how accounting is mobilized within public discourse in conditions where a decision must be taken to safeguard the public interest but the incommensurability of risks on which the decision relates, makes the situation complex, uncertain and ambiguous. To the best of our knowledge no previous studies have empirically explored how accounting shapes governmental discourse in such a peculiar, complex context.

The remainder of the paper is organized as follows. *Section 2* unfolds previous studies on the relationships between accounting, (social and societal) risks, and public reason. *Section 3* constructs the theoretical frame of the paper, presenting how the Governmentality studies on risk and the Jasanoff’s work on public reason facilitate the analysis and the interpretation of the role of accounting in shaping the Italian Government’s risk discourse on ILVA. *Section 4* shows the research methodology, that based on a discursive analysis of the main documents through which the governmental discourse is created. *Section 5* presents the major findings. We briefly describe the antecedents to the Italian Government’s decisions to give to the ILVA steel plant the possibility to restart its activities, and show the risk measures highlighted by the experts. *Section 6* discusses the findings according to our theoretical frame and previous related literature. The paper concludes highlighting the main contributions of the research and its limitations.

2. ACCOUNTING, RISKS, AND PUBLIC REASON: PRIOR RESEARCH

Seminal accounting studies on the role of accounting in organizations and society (e.g. Hopwood, 1973 and 1983; Burchell *et al.*, 1980 and 1985) have figured out the relationships between accounting and decision-making. Going beyond a fully rational interpretation of the decision-making procedures, such studies assert the idea of accounting as “machinery” to be mobilized under conditions of uncertainty. Under these conditions, accounting often enacts complexity, ambiguity, and politics (March, 1987; Carruthers, 1995) as it cannot offer strict answers. Yet it may provide “learning” for

judging complex situations, “ammunitions” for “interested parties seeking to promote their own particular interests”, or serves as “rationalization machine” for parties that need to “justify actions that already have been decided upon” (Burchell *et al.*, 1980, pp. 14-15).

Decision-making on risks falls within this kind of “non-consequentialistic logics” (Mouritsen and Kreiner, 2016, p. 21), as it entails the consideration of uncertainty over the “patterns of causation which determine the consequences of action” (Burchell *et al.*, 1980, p. 14). The situation is considered to be even more complex when there is uncertainty (or disagreement) over the objectives of action (*ibidem*), as it can happen when *contrasting risks* are simultaneously at play and there is no agreed interpretations of the “best” objective to achieve and/or of the most proper way to commensurate various calculations (Samiolo, 2012).

In this vein, Broadbent (2002) and Broadbent *et al.* (2008) have elucidated the role of accounting as a “steering device” apt to adjudicating social conflict in the case of a controversial initiative (i.e. that of the “Private Finance Initiative” in the UK’s National Health Service): “the visibilities that are created [by accounting] become resources to justify the particular approach that is required by the institutional steering bodies (in this case the government)” (Broadbent, 2002, p. 443). The studies show the dominance of the “accounting logic” in making visible certain kinds of risk and legitimizing the public decision process. Indeed, a “privileged position” has been given to quantitative risk estimation based on accounting, with the result of “silencing” qualitative uncertainties intrinsically connected to decision-making. In brief, they show the role of accounting in shaping and constraining the nature of the decision criteria, and in turn the legitimation of (risk) government.

Other studies highlight that accounting can even create risks, or reinforce and redistribute existing ones. With a focus on social and societal risks (see note 2 for the distinction between these two categories of risk), Asenova *et al.* (2013 and 2015) show that the UK Government austerity measures on Scottish local authorities have finished to mostly affect disadvantaged vulnerable people exposed to risks of health and unemployment. Hasting *et al.* (2015), in analysing the impact of the cost of funding cuts on English and Scottish local governments, identified the implication of accounting in the rising levels of social inequality: State governmental measures, enacted through the intermediate level of local governments and inspired by accounting considerations, put poorest people at higher social risk. Further, as Beck *et al.* (2005) show in their study of the UK bovine spongiform encephalopathy’s crisis, accounting considerations that are made possible by the involvement of experts, are deemed to be of limited value for governmental decision-making when accounting cannot precisely quantify relevant health and safety risks.

Considered as a whole, these studies show that accounting is intrinsically involved in pondering, emphasizing or silencing, risks associated to public interest. Indeed, State and local

governors continuously drawn on accounting expertise/experts to make visible certain risks and affirm the “public reason” (Jasanoff, 1990). This is proved to happen when some risks can be quantified and other risks remain unquantified (e.g. Broadbent, 2002; Broadbent *et al.*, 2008) as well as when most of the risks remain unquantified (e.g. Beck *et al.*, 2005). What previous studies have lacked to highlight is how accounting is mobilized when a State government has to deal with *contrasting risks* – i.e. risks that suggest opposite decisions – and such risks are quantifiable but *incommensurable*. To what extent and how accounting supports decision-making and public reason when Governors have to face with *contrasting incommensurable risks*? The present research tries to answer this question.

3. THEORETICAL FRAMEWORK

Sociological inquiries in the past decades have been vastly attracted by the concept of risk, as Deborah Lupton (2006) confirms in her review of the major theoretical perspectives on risk (i.e. the “risk society”, the “cultural/symbolic” and the “Governmentality” perspectives). Such inquiries have gone beyond the interpretation of risk as a “straightforward matter, measurable and calculable” (Gephart *et al.*, 2009, p. 141). Rejecting the idea of risk as objective, socio-cultural perspectives neglect the idea that risk pre-exists in nature:

“Nothing is a risk in itself; there is no risk in reality. But on the other hand, anything can be a risk; it all depends on how one analyses the danger, considers the event” (Ewald, 1991, p. 199).

Risk therefore is considered to be part of shared cultural understanding of society (Douglas, 1986), as well as a matter that increasingly surrounds late modern societies (Beck, 1992).

In line with a socio-cultural interpretation of society and its institutions, the Governmentality framework depicted by Michel Foucault (1991) offers a unique basis for discussing the role of risk in regulating societies (Ewald, 1991; Dean, 1999) that may fill the gap identified in the literature. According to Governmentality, risk is created through discourses, strategies and practices that the governors draw upon to manage citizens (Lupton, 2006). What is crucial about risk “is not risk itself but what risk gets attached to” (Dean, 1999, p. 131). Government of risk thus becomes possible only through “discursive mechanisms that represent the domain to be governed as an intelligible field” (Miller and Rose, 1990, p. 6). Notions of risk are mobilized to render reality in such a form as to make it amenable to types of action and intervention” (Dean, 1999, p. 132). Further, risk is not

considered to be “intrinsically real, but as a particular way in which problems are viewed or ‘imagined’ and dealt with” (O’Malley, 2009, p. 5). In Governmentality studies, attention is paid to the ways in which the risk discourse “creates new subjectivities and redefines relationships” (O’Malley, 2012, p. 9). It means that a focus is offered on how the risk discourse creates and assigns responsibilities to institutions and individuals involved in the government of risk.

To make risk “thinkable” and then “governable” to the governors’ eyes, several forms of knowledge are mobilized: “from statistics, sociology and epidemiology, to management and accounting” (Dean, 1999, p. 131) all are forms of “scientific” knowledge that provide rationales for risk discourses to be considered as “true”. Discourses produce “truths” on risk that are then the basis for action (Lupton, 2013, p. 113).

With her work on how politicians construct “public reason”, Sheila Jasanoff (1990 and 2012) strengthens the Governmentality perspective. She argues that modern Governments, in claiming legitimacy, draw on a number of practices, discourses, techniques and instruments that help to cope with countless risks and manage them for citizens (Jasanoff, 2012). In constructing “public reason”, governors are required to face “explicit trade-off between risks to health or the environment and the economic and social costs of regulation” (Jasanoff, 1990, p. 3), and they produce “true” and “relevant” arguments by drawing on technical knowledge produced by “science advisors” (i.e. experts in the field). In other words, Jasanoff suggests that:

“The authority of governments today is inseparable from expertise [...] We cannot imagine [...] an environment ministry without scientists, a public health agency without medical specialists, or a police department without law enforcement professionals. [...] The production of expert rationality then emerges as a special kind of democratic problem-solving” (Jasanoff, 1990, p. 11).

Governmental legitimation thus relies on “invoking science” (*ibidem*) in support of the governors’ planned actions. It follows that the rationality ascribed to expertise is “never natural but always achieved, through institutionalized rules of the game that admit or preclude particular modes of asserting expertise” (*idem*, p. 12). Jasanoff adds that experts and political authorities should commit to *accuracy* and *evidence*, but underlines that the former are more focused on the accuracy of their representation of nature, while the latter are more interested offering a “persuasive demonstration of causality and relevance (evidence)” (*idem*, p. 15).

As argued by Dean (1999, p. 132), accounting participates to the constitution of risk discourses and public reason, being one of the “practices, techniques and rationales that seek to make the

incalculable calculable”. Critical and interpretative accounting research has provided insightful interpretations of accounting as constitutive of organizational and social life (Burchell *et al.*, 1980; Hopwood and Miller, 1994), thus opening to the possibility of exploring the role of accounting in the governing of risk. As highlighted in the previous section, Burchell *et al.* (1980) have showed that the accounting role in decision-making extends beyond its “answer machine” character, as it may act as learning, ammunition and rationalization machines (see also Mouritsen and Kreiner, 2016).

Following the Governmentality perspective, accounting can be constitutive of risk whether it contributes to the construction of discourses around it. This condition for accounting to be constitutive of risk relies on the participation of accounting to the unfolding of risk discourses, allowing risk to be calculated. According to Michael Foucault, discourses not only rely on knowledge, but they are also productive of knowledge in the sense that they establish the basis for determining which statements count as true or false (Hardy and Maguire, 2016, p. 84). Thus, accounting can be constitutive of risk when it supports the “truth” that governors are trying to assert. In this respect, and in line with Sheila Jasanoff’s arguments on public reason, we should expect the marginalization of the use of accounting in the constitution of risk whether it does not allow supporting discourses contingently accepted as “true”. In brief, to be constitutive of risk, accounting should participate in the making of discourse by making this latter both possible and legitimate: accounting should make risk visible by creating discourses around it, but at the same time such role is conditioned by the necessity that accounting supports the governmental discourses by creating an aura of rationality around them.

4. METHODOLOGY

In order to support our analysis of how accounting informs the construction of the governmental risk discourses on ILVA, this research develops a *discursive analysis* of the Italian Government’s official speech in relation to the technical documentation produced by experts as a result of their risk assessments on ILVA activities. Our focus goes on how the Italian Government supports its claims by drawing on the accounting calculations that the “experts” made visible in their social and societal risk assessment. This means that we do not regard accounting only as a technique of risk assessment, but also as a “machine” (Burchell *et al.*, 1980) that legitimates the construction of a specific risk discourse. In this sense, we recognize the rhetorical dimension of accounting discourse (Burchell *et al.*, 1980; March, 1987; Carruthers, 1995 – see also Zhang and Andrew, 2016).

The seminal work by Michel Foucault (1972; 1977; 1982) offers a basis for developing our discursive analysis. Obviously, we have also taken into consideration extant studies that have made

reference to such a Foucauldian technique (e.g. Ezzamel and Wilmott, 2004; Bacchi and Bonham, 2014). Foucault argues that discourse contains discursive practices that operate to identify and order objects in particular ways. The discourse should be analyzed for its capability in “ordering the world in a particular way” as to create truth around it. In other words, Foucault calls us to investigate the discursive processes through which knowledge about particular objects is formed and defines what should be considered as true. In their analysis of the potential of the Foucauldian concept of discursive practice, Bacchi and Bonham (2014, 174) explain that “the term ‘discursive practices’ describes those practices of knowledge formation by focusing on how specific knowledges (‘discourses’) operate and the work they do. Hence discursive practices are the practices of discourses”. Foucault requires exploring the “set of regularities” on which the discourse is based. This means that we are required to detect the rules governing the emergence of “true” knowledge within the discourse (Bacchi and Bonham, 2014, p. 180). Further, Foucault (1972, p. 229) asks to “recognize the activity of cutting-out and rarefaction of a discourse”, paying attention to how the discourse normalizes certain subjects/objects and exclude others. As “comparing”, “ranking”, “classifying”, “hierarchizing” are considered as techniques of normalization and exclusion, we investigate how accounting plays this role. Further, we take inspiration from the Lemke’s (1995, p. 29) interpretation of the Foucault’s concept of discourse as a “general theory of intertextuality for the purposes of history”, to inspect how the risk discourse created by the Italian Government refer to other texts (i.e. the experts’ ones) in order to construct its truth. We are interested in detecting how the Italian Government refer to the experts’ texts to construct its risk discourse, and in particular to highlight how the experts’ accounting calculations are part of these (inter)textuality processes.

From a procedural point of view, the analysis started with the search of public sources about the case of the *ILVA steel plant of Taranto* (technical documentation produced by “experts”, Governmental speeches and decisional acts, Magistrature’s decisions, European Union’s reports, company’s communications and financial statements, magazines and newspapers, etc.). This stage took a long time, but finally allowed us to reach a comprehensive understanding of the main issues and the related risks ascribed to ILVA by the various parties involved in the debate about the (dis)continuity of the ILVA’s activities. According to our research aim, we decided to develop the discursive analysis by taking into consideration both the Italian Government’s public speech in front of the Italian Parliament and the technical documentation produced by experts in the period from 2010 to 2012. The time span goes from the starting period of the Magistrature’s inquiries, to the final Italian Government’s decisions to allow the ILVA steel plant to restart its full activities.

We sorted the sources into three categories: the “technical texts”, the “parliamentary debate texts”, and the “decisional texts”. The “*technical texts*” refer to the scientific reports produced by

experts: they are chemical and epidemiological appraisals as well as other reports cited by the Magistrature and the Italian Government as sources (e.g. the “Technical report for the analysis of pollution in the Tamburi’s district 2012” issued by the Regional Environmental Protection Agency and the public financial statements of the company). The “*Parliamentary debate texts*” report the Italian Government Ministers’ auditions in front of the Parliament. It is through such debates that discourses took form at the governmental level. Lastly, the “*decisional texts*” include the collection of the Italian Government’s decisions together with the texts of the Magistrature’s interventions. These last texts are very concise and do not offer possibility for developing a discursive analysis directly on them: they are considered to reveal both the Italian Magistrature’s and the Italian Government’s decisions. Further details are reported in Table 1.

[Insert Table 1]

The analysis of the “*technical texts*” allowed highlighting how calculative technologies were mobilized within the process of risk assessment developed by the “experts”. Operatively, we looked for numbers (e.g. benchmarks, target values, rates, averages, etc.) ascribable to the assessment of the social and societal risks. At this stage, accounting is investigated as a technique of risk assessment, and we highlight how the accounting calculations offer visibility to the social and societal risks. The focus goes on the risk measures, their actual values, and the descriptive details offered in the experts’ reports.

We then focused on the “*Parliamentary debate texts*” in order to inspect the rhetorical dimension of accounting discourse. The discursive construction of the Italian Government’s “truth” is investigated by focusing on the *discursive themes* associated to the social and societal risks. The analysis reveals how the governmental public reason on the ILVA’s risks is constructed by discursively referring to accounting calculations developed by the experts. In this sense, we investigate the textual and intertextual processes through which accounting is mobilized within the discourse. This allows detecting the discursive practices through which the knowledge on social and societal risks is created and made “true”.

5. FINDINGS

5.1. *The Italian Magistrature's intervention and the experts' appraisals*

At the end of 2009, the regional administrative authorities (i.e. the Regional Environmental Protection Agency and the Taranto Local Health Agency) mandated the abatement of 14 flocks of sheep. The decision was taken after an analysis made by the Taranto Local Health, which found that the animals were contaminated by dioxin. In particular, the animals were found to have three times the dioxin legal limit in their blood. All the flocks belonged to farms operating in the Taranto industrial area and, for that reason, a ban to graze within a twenty kilometers range from it was issued and it is still in place.

The Magistrature immediately asked for a consultation to understand which kind of dioxin contaminated the animals and where it came from. The public prosecutor started investigating the spread of pollutant effects around the ILVA industrial area plants. Two kind of analysis were run: a *chemical appraisal* to verify if there was any kind of pollutant inside and outside the industrial area and, whether identified, to establish its source; an *epidemiological appraisal* to inspect the local citizens' past, present and future potential health damages due to environmental pollution.

The Parliamentary Inquiry Commission on waste cycle illegal activities begun hearing Taranto's provincial President and the Mayor of the city, and requested to the Superior Health Institute (*Istituto Superiore della Sanità*) an opinion about beryllium and benzopyrene pollution levels in the Tamburi's area. The result of such opinion was a report called "SENTIERI study".

In September 2010, the Italian Government approved a decree to extend the dioxin legal limit. According to it, even if a company had values over the legal emissions benchmark until that moment, dioxin emissions would have been considered compliant for an additional period of three years. By mean of this law, the ILVA steel plant was not prosecuted due to its dioxin emission level at that time. However, in the same year, in accordance with European Union standards, a new Integrated Environmental Authorization (the so-called "*Autorizzazione Integrata Ambientale*", labeled as "A.I.A.") was introduced in Italy. This authorization is based on hundreds of technological and environmental prescriptions that companies have to adopt. The verification of such adoption is made by the Integrated Pollution Prevention and Control national commission. On the basis of the conclusions reach by this commission, the national Environment Ministry approves the authorization. The release of such an authorization is crucial as it decides about the (dis)continuity of business activities.

In 2010 the Ecological Operative Police Unit (the so called "Nucleo Operativo Ecologico", labeled as "NOE") started its investigation on ILVA too. The results were revealed in a note (prot. N.41/10) which highlighted many irregularities about air emissions detected within the ILVA's

Taranto plant. In particular, such irregularities were related to: the number of “slopping” – out of control emissions phenomena; a continuous and systematic activation of the steel mill torches; and issues in the “ferrous scrap management” area.

Following the NOE’s note, an inspection within the ILVA plant was requested by the Puglia Region’s Environmental Quality Department. The Environmental Protection Regional Agency (the so called “Agenzia Regionale per la Protezione Ambientale”, labeled as “ARPA”) was in charge of data collection. As technical-scientific body of the Puglia Region it has tasks of prevention, control, and monitoring. It constantly makes environmental analyses which contributed to the discovery of the dioxin in the blood of the flocks grazing around the ILVA plant. ARPA indeed released many reports on environmental data about Taranto’s area (document T1 in Table 1), Benzo(a)pyrene analysis (document T2 in Table 1), environmental and safety analysis (T3), pollutions in the Tamburi’s district (T4). ARPA was also in charge of data collection related to concentration levels, benchmark, range, average and pollutant quantities published in the reports about dioxin emissions from the ILVA E312 stack (T5), the ILVA agglomeration plants emissions chronology (T6), and technical results following the NOE note (T7). The latter text²¹ in particular reports that almost the 38% of the produced gas during the blowing operation is flared. Results therefore confirmed the NOE findings (T9) on the “slopping phenomena” and its huge environmental impact of the company that has been evaluated in almost 442.172.900 Nm³ of gas emissions spread in the air²².

Despite the NOE’s and ARPA’s “results”, the A.I.A. was granted to ILVA with a governmental decree (August, 4th 2011), thereby authorizing its activities while prescribing that the functioning of the plant had to occur in the respect of the interventions and emissions’ limit values indicated or requested in the measure itself. However, few months later (in March 2012), the European Commission defined the steel industry “Best Available Technologies” that all the European steel companies have to adopt. This upgrade urged the Italian Environment Ministry to update the A.I.A.’s requests and prescriptions, and to review the entire ILVA’s A.I.A. granting procedure.

The results of the chemical and epidemiological appraisals requested by the public prosecutors were revealed in July 2012. The findings of the chemical appraisal attested dangerous and out of control emissions, unloading powders, and toxic waste in contact with the aquifer (T10). Epidemiological results estimated deaths attributable to the exceedances of the limit for the annual average concentration of PM10 but also pointed out the limits of the study and the “great uncertainty in the estimations” (T11).

²¹ The ARPA investigation relies on the rules established into the European Best Reference industry document.

²² ARPA was also requested to account for a Cancer book for the year 2012. However, it has been released in 2013. Therefore, it is not part of the debate about ILVA made by Government at the decisional aim.

On the 26th July 2012, immediately after the revelation of both the chemical and epidemiological appraisals' findings, the Magistrature intervened with the ILVA's production stop measure (D1): *“functional to the protection of preventive-protective needs indicated in the law [omissis] and in particular about the serious and current situation of environmental and health emergency suffered by the Taranto's territory, attributed to the pollutant emissions by Ilva factory”*.

Italian and foreign newspapers strongly echoed the Magistrature's decision: *“so few were surprised when a magistrate ordered the shutdown of the most polluting furnaces, described ILVA as ‘an environmental disaster’ and placed members of the Riva family (ILVA's owner) under house arrest, claiming they were ‘perfectly aware’ of what they were dumping on Taranto. A former employee was also put under investigation for allegedly paying off a government inspector to tone down a report”*. But what happened next was less expected. Unions went on strike to protest against the magistrate's decision, blocking roads with banners. *‘Dioxin levels have been reduced and emissions can be cut further with new technology, without stopping production’ said the Rocco Palombella, secretary general of the UILM union. He has worked alongside the 1.300C furnaces at ILVA for 36 years without, he says, falling ill”* (The Guardian, 17th-August-2012).

5.2 The emergence of the social and societal risks in the experts' appraisals

The experts' appraisals allowed for the identification of the major risks surrounding the ILVA's (dis)continuity. Indeed, the experts' reports make “visible” the risk measures and values computed by the experts, as well as the related descriptive information (Table 2).

[Insert Table 2]

The major focus of the experts' appraisals is on the “societal” risks, and environmental and health risks in particular. The majority of information is about the chemical pollutants and the epidemiological risk data. Societal risks became manifest at the moment of the flock abatement around the ILVA plant. It indeed has convinced the Magistrature to start an inquiry to identify the causes that led to high levels of dioxin in the environment and within the animals.

The risk assessment developed by the experts allowed revealing several risk measures and values. As a technique of risk assessment, accounting allowed to measure the following risk measures: the daily or annual average concentration; their comparison with legal limits and between geographical areas; the calculation of mortality; diseases and hospitalization rates; the estimation of

death attributable to increasing levels of specific pollutants also referring to specific geographical areas.

The assessment of the risks is primarily aimed at verifying both a potential non-compliance to legal limits and a possible association of such risks to a specific source, i.e. the ILVA plant.

The experts' appraisals describe the environmental risk attributable to ILVA highlighting that its IPA emissions' level corresponds to almost the 95 percent of the national one, and identifying the pollutants deriving from its production as the main source of many legal overruns (Benzo(a)pyrene, PM10, NO₂, Polycyclic aromatic hydrocarbons). Other kinds of pollutants (such as PCDD/PCDF) instead register a concentration level in compliance to the limits. Then, results from temporal comparisons mainly reveal a decreasing trend of the risk. Current emissions level is under the limits while past data show their overrun.

The geographical comparisons between the Taranto city and the districts around the plant always indicate higher levels of health risks in the latter. Specifically, the districts of Borgo and Tamburi have higher levels of cancer rates, mortality from all causes, estimated deaths due to excess of pollutants concentration and risk of hospitalization.

The documentation produced at the "technical" level also refers to "social" risks. Such documentation is produced by the European steel associations (T15; T16), and by the ILVA itself, through ILVA financial statements and trends (T17; T18).

The social risk measures refer to specific company's values like the number of employees and financial costs deriving from their employment, and the trend of its revenues. The technical economic value of the steel industry at the international level in terms of production and employment units is also presented.

Descriptive details on social risks refer to geographical and temporal comparisons highlighting the significant role of the steel industry for Italy. Results indeed show that Italy is the second highest country in Europe for market share and employment level in this industry. Financial data about ILVA, instead, are about the contribution of the plant for the 40% to the national steel production, with a disclosure of the almost 20,000 (direct and indirect) employees in the Taranto area, the total cost for labor, and the amount and increasing trend of revenues despite the begin of an industrial crisis at the international level.

Overall, the "*technical texts*" give visibility to several "societal" and "social" risks. The Italian Government, as well as other public authorities, may draw their decision on a solid basis of risk measures, parameters, and comparisons.

5.3. *The Italian Government's decision on ILVA's activities*

On the same day of the Magistrature stop measure (26-July-2012), the Italian Government signed a protocol agreement (D2), to establish financial public resources for urgent environmental recovery and retraining measures for Taranto area. The protocol was signed by three Ministries of the Italian Government (the Environment, the Infrastructure and the Economic development and Local cohesiveness Ministries), the Puglia Region, the Taranto Province, the Taranto District, and the Commissioner for Taranto's harbour.

In the following months, the Italian Government, in the persons of the Environment and Economic Development Ministers - had auditions in front of Parliament to debate about the events related to ILVA (P1 and P2).

On the 26th October 2012 the Environment Minister signed the A.I.A. review for ILVA allowing the continuity of the business through a ministerial decree (D3). With such a decree the words of the UILM union secretary general about the possibility to reduce emissions without stopping production seemed to find confirmation and the Government's decision on the ILVA future established. However, the Magistrature on November 26th released a new measure according to which the company's finished and semi-finished products were seized (D4).

In response to the last Magistrature measure, a new governmental decree-law, dated December 3rd 2012, followed. The ILVA steel plant was declared a "*National Strategic Interest Site*". In this way, the Government ensured the ILVA's business continuity in terms of production and selling, even for those goods made prior to the entry into force of the decree (that is also for those previously seized). Finally, on the 24th December 2012, this decree became law and the steel plant could definitively continue to run its activities: "*In case of national strategic interest factory, identified with a Premier decree, when in it are occupied a number of subordinated employees, not smaller than 200 for at least one year, if there is the absolute need to safe employment and production, the Environment Ministry can authorize, at the moment of the review of the integrated environmental authorization, the business continuity for a determined period not superior to 36 months and conditioned to the prescriptions contained in the measure of such an authorization, according to the procedures and the indicated timing, at the aim of guaranteeing the most adequate environmental and health protection according to the best available techniques*" (D5).

5.4. The construction of risk discourse by the Italian Government

Some months before the final decision (D5), the Italian Government provided its speech in front of the Parliament (P1 and P2). This speech provides information on both the “social” and the “societal” risks. The first ones are presented in terms of refers to unemployment risks, local development risks, productivity and to international competitiveness risks. The latter refer to environmental and health risks. Details about the two categories of risks are provided in a very different manner (Table 3).

[Insert Table 3]

First, the discursive themes associated to the societal risks describe a situation of decreasing emissions trends, in particular related to a dramatic reduction of dioxin thanks to technological upgrades (see statement 10 of Table 3). Such themes suggest a decreasing relevance of the environmental risks. Government indeed underlines the many investments that the ILVA’s owner supported, since the company acquisition, and their high amount for environmental protection representing almost one fourth out of the total investments made for the Taranto plant (see statement 8 of Table 3). In addition, according to the competent Minister dealing with discursive themes on environmental risks a different practice is identified. Themes on environmental risks discussed by the Environment Minister adopt an *intertextual* reference to chemical measures presented in the epidemiological surveys, the chemical appraisals and the Environmental Protection Agency’s reports. Whereas, when such themes are discussed by the Economic Development Minister, a textual reference to the costs for environmental protection supported by the company is underlined. This latter discursive practice suggests the attachment of an economic connotation (costs) to societal risks (environmental protection).

Second, the discursive themes on health risks are always present in association with environmental risks (see statements 1, 2, 3 and 9 of Table 3). The discursive analysis highlights the research for a causality relationship between environmental contamination, health damages and the plant activities. *Intertextual* references to epidemiological measures computed by experts highlighted the evident excess of mortality presumably referring to environmental contamination deriving from the plant, which however was operating in accordance with the laws at that time. Governors highlight the impacts on environment and the likely diseases presenting a long evolution course (statement 3). The difficulty of establishing a direct cause-effect relationship implies an uncertain attribution of causality with the current ILVA activity (statements 1, 2 and 3) and such uncertainty suggests for more complex investigation (statement 2). Furthermore, it emerges that despite of the investments made by the ILVA’s owner, a serious situation of environmental damages and health risk remains and at the aim of environmental adjustments the Government decided to sign a Protocol Agreement.

To highlight such risks a textual reference to the costs sustained by the State has been adopted (statement 9).

Third, the discursive themes on unemployment risks tend to highlight the very high employment levels of the company. A textual reference to both direct and indirect involved employees (statement 6) is adopted to give relevance to such risks.

Fourth, the Governmental discourse underlines that ILVA has a very high production capacity equivalent to almost half of the national steel production, covering a third of the domestic demand (statement 6). Ministers, mentioning about the gross domestic product, the productive capacity and the domestic demand covered by the company, underlined its key economic role not only for the Taranto area, but also for the national economy as a whole. There are textual references to the percentage of the gross domestic product covered by the company at the local level, to production measures, and to percentages of the steel production and the national demand (statements 4 and 5).

Finally, discursive themes on international competitiveness risks highlight that ILVA is currently the largest European steelwork and among the largest in the world, and that its business closure would result in negative impacts on imports' growth, income support, and lower revenue for the public administration as well as in terms of reduced spending power for the Taranto area. The emerging themes therefore highlight the importance of the company at the international level and the impressive costs related to the ILVA closure (statements 4, 5 and 6). Discursive themes on competitiveness risk adopt a textual reference to costs and production values.

Furthermore, focusing just on the Environment Minister speeches it emerges that despite his professional skills, he tends to speak a lot about economical aspects. For instance, he underlines the possibility to take advantage of the environmental crisis and the mandatory adoption of new technologies for transforming it into an economic development opportunity for the area, giving also the chance of increasing the employment level (statement 4). In his speech, the Environment Minister offers an economic perspective on the environmental issues. For instance, he speaks about “environmental *performance*”, “*financial resources* for environmental adjustments” or “environmental best available technologies at the lower *cost*”. These discursive practices, linking even environmental words to an economical meaning appear to lead the attention on the social side of the debate giving societal risks ‘object’ a “social risk connotation”.

To summarize, the governmental discourse about occupational, productivity, economic development, and international competitiveness risks was based on textual reference to their measures, making them ‘visible’ and “relevant”. On the other side, relying on *intertextual* reference to societal risk measures, the governmental discourse emphasizes a decreasing environmental risk

while recognizing its direct association to ILVA's past activities. Whereas, the *intertextual* reference revealed that a direct association between diseases and current ILVA activity is difficult to identify. Thus, downsizing the relevance of the current environmental risks and the ILVA association with health risks.

Overall, these discursive practices allow the Government to feed the social risk "truth". The adoption of textual reference in particular conferred great relevance to this kind of risks, thus supporting a discourse oriented to silencing societal risks while arguing for the business continuity. The adoption of intertextual reference allowed the marginalization of the societal risks without excluding their assessment. Confirmation of such conclusions are found into the Governmental law attesting the "absolute need to *safe employment and production*" however conditioned to the adoption of the best available technologies "at the aim of guaranteeing the most adequate environmental and health protection" (D5).

6. DISCUSSION AND CONCLUSIONS

The sociological studies on risk informed by the Foucauldian Governmentality framework (Ewald, 1991; Dean, 1998 and 1999; Lupton, 2006; Gephart *et al.*, 2009; O'Malley, 2009 and 2012) reject the idea of risk as objective, and argue that risk is created through discourses, strategies and practices that the governors draw upon to manage citizens. Government of risk is made possible through discursive mechanisms that allow representing the risk domain to be governed. To make risk "thinkable" and then "governable", several forms of knowledge are mobilized to provide rationales for risk discourses. As a form of technical/scientific knowledge, accounting participates to the construction of risk discourse by making this latter "possible" and "legitimate". As underlined by Jasanoff (1990; 2012), the construction of governmental discourses is more and more based on the technical knowledge produced by "science advisors" (i.e., experts in the field): these latter offer politicians the possibility to produce "true" and "relevant" arguments while constructing the "public reason".

The present paper has drawn on this body of literature to inspect how the Italian Government has constructed its risk discourse in the controversial case of the ILVA steel plant of Taranto, where various and contrasting risks were associated to its (dis)continuity. The analysis reveals that a number of risk appraisals were developed by experts with the aim to highlight the most relevant social and societal risks ascribable to the ILVA's (dis)continuity. The analysis of the technical texts produced by the experts shows the presence of various social and societal risks. The technical texts give evidence to environmental and health risks (i.e. the "societal" risks) as well as to unemployment and

economic development risks (i.e. the “social” risks). Several risk measures are provided for each category of risk. At this stage, accounting acts as a technique of risk assessment, and provides the Italian Government and other authorities (e.g. the Magistrature) with a great number of risk measures. Citing the seminal work of Burchell *et al.* (1980, p. 14), we can say that accounting – mobilized in conditions of “uncertainty over the patterns of causation which determine the consequences of action” – supported the governmental decision-making by clarifying the specific risk conditions. The uncertain conditions do not allow the Government to have definitive assessment of risks, but the Government surely has “learned” a lot from these calculations. Drawing on the experts’ risk appraisals, the Italian Government comes to take its decision on the ILVA’s destiny. It decided to allow ILVA continuing its activities.

In the case under investigation the role of accounting extended beyond its capability to play as “learning machine” (Burchell *et al.*, 1980). Indeed, accounting was also mobilized to inform the risk discourse that the Italian Government produced in order to shape the “public reason” on such decision. The risk discourse produced by the Italian Government – made “visible” by mean of the “Parliamentary debate texts” – draws on risk measured based on accounting calculations in various ways. The discursive analysis developed on these texts allows detecting the governmental discursive practices used to make the discourse as “true”. We find that the Government broadly adopts the following discursive practices:

- a. When the statements present discursive themes inherent to the “societal” risks (e.g. health status and causality with environmental contamination from the plant; conceivable relationship between environmental risks and health damages; decreasing emissions trends, etc.), there is an *intertextual* reference to the experts’ appraisal, while the statements do not report any specific risk measures. In other words, there is an *implicit* reference to the experts’ risk assessment, but without any disclosure about the specific risk measure, e.g. the Environment Minister refers to “evident excess mortality” “detected by epidemiological surveys that have been carried out on behalf of the Magistrature but also from those which were made by the Higher Institute of Health”. The citation of the experts’ risk assessment allows legitimating the Governmental discourse as true, but there is no explicit visibility of the measure of the “societal” risks (see italics in the example);
- b. Differently, when the statements present discursive themes inherent to the “social” risks (e.g. very high production capacity and employment levels of the company; impressive economic and social costs related to the ILVA’s discontinuity; relevance of the ILVA’s activities at the local, national and EU, etc.), such statements also explicitly report specific risk measures or at least some calculation inherent to the situation and the context. For all, “Ilva of Taranto represents the 75

percent of the gross domestic product of the Taranto province and the *76 per cent* of the harbor activities”. The example shows there is a *textual* citation of the specific measures (see italics in the example) assessed by the experts in their risk assessment processes. The disclosure of the risk measures offers visibility to this category of risks.

This “set of regularities” (Foucault, 1972) on which the discursive practices of the Italian Government are based, highlights the governmental purpose to emphasize the relevance of the “social” risks while silencing the “societal” ones. While “social” risks measures are made “visible” within the discourse (Lupton, 2013), “societal” risks are not.

Another evidence corroborates our argument: the “societal” risks are often displayed in the governmental discourse by referring to economic calculations. While an economic perspective is quite usually associated to “social” risks like unemployment and economic development risks, this characterization sounds somehow “unnatural” for the “societal” risks like health. The Government recurrently spoke about the financial resources allocated by the State or by the company for protecting the environment. In other words, the Italian Government does not explicitly say that the “societal” risks are not relevant; however, it emphasizes the efforts made by the Government itself and by ILVA to safeguard the environment and consequently reduce health risks. These findings corroborate previous research (e.g. Broadbent 2002; Broadbent *et al.*, 2008) that has highlighted the dominance of the “accounting logic” in making visible certain kinds of risks, while silencing other risks.

The Government does not provide any evidence of tentative commensuration between the “social” and the “societal”, nor there are traces of commensuration within the experts’ risk assessments. The Government has created its discourse without explicitly explaining how the confrontation between the “social” and the “societal” risks took place. However, the characterization of both the “social” and the “societal” risks from an economic point of view creates an *aura* of commensuration around the two categories of risks. The previous studies that have highlighted the rhetorical dimension of accounting (Burchell *et al.*, 1980; March, 1987; Carruthers, 1995) offers a basis for the interpretation of this finding. We can say that the Italian Government used the experts’ calculations as an “*ammunition machine*” in order “to promote [its] own particular position” (Burchell *et al.*, 1980, p. 15). Accounting was mobilized in a “political rather than computational rationale for the decision making process” (p. 14).

While the Italian Government offered its public speeches in front of the Parliament in August and September 2012, its first intervention can be dated 26th July 2012, when it signed the environmental Protocol agreement. This means that the speeches followed its first intervention about the environmental matter. Thus, we can interpret accounting even as a “*rationalization machine*”, used to “legitimize and justify actions that already have been decided upon” (*ibidem*, p. 5). To

summarize, accounting can play different roles concurrently, as the seminal work of Burchell *et al.* (1980) has called to investigate but the majority of studies has largely neglected (Mouritsen and Kreiner, 2016).

In his work on risk and Governmentality, O'Malley (2009 and 2012) urges to consider how the risk discourse creates and assigns responsibility to institutions and individuals involved in the government of risk. Our analysis confirms this argument by showing that the risk discourse created by the Italian Government finally came to assign responsibility to the ILVA's directors and managers, while avoiding the Government itself directly managing the unemployment of 20,000 citizens in a region (the Italian "Mezzogiorno") struck by high levels of unemployment. At the same time, the governmental decision assigns to the ILVA's workers a very difficult choice: continuing to work for the company, thus exposing themselves and their families to the societal risks, or trying to find a different "solution" elsewhere. Prior studies that have explored the relationships between accounting and soci(et)al risks, advocate that accounting can create risks, or reinforce and redistribute existing ones (Asenova *et al.*, 2013; 2015; Beck *et al.*, 2005; Hasting *et al.*, 2015). We enrich this body of literature by showing how this role is mediated by the mobilization of accounting itself within a risk discourse.

According to the Sheila Jasanoff's (1990 and 2012) body of research on the construction of public reason, the construction of a "credible" and "relevant" discourse strongly relies on technical/scientific knowledge: "The authority of governments today is inseparable from expertise" ascribable to experts/scientists (Jasanoff, 1990, p. 11). Jasanoff also argues that while the experts are more focused on the *accuracy* of their representation of nature, the governors are more interested in offering a persuasive demonstration of relevance. The present study confirms this argument by showing the fundamental role of experts in legitimizing/rationalizing the governmental public reason. Further, the present research shows the different "work" made by the experts and the politicians: the former offered an accurate representation of the social and societal risks by detailing several risk measures. Differently, the latter constructed a discourse by omitting almost the totality of the risk measures but continuously referring to the experts' appraisals. These textual and intertextual practices allowed to persuasively demonstrating the "relevance" of the social risks in comparison with the societal ones.

The research has a number of limitations. In particular, these limitations refer to the deliberate choice to inspect some texts and to exclude other in order to concentrate the attention on the experts' risk appraisals commissioned by both the Magistrature and Italian Government. In this sense, we omitted to apply our discursive analysis to the documentation produced by the European Commission and the European Human Right Court. Further, given the aim to approach the governmental

discourses by focusing only on its official speech, the discursive analysis does not consider the comments of the Italian Government's representative within newspapers, TV and other media.

Despite these limitations, we believe that the paper contributes to the critical and interpretative accounting research by depicting how accounting can be mobilized when a State government has to deal with *contrasting risks* – i.e. risks that suggest opposite decisions – and such risks are quantifiable but *incommensurable*. The paper shows that accounting played several roles: it worked as a learning machine to reduce uncertainty and allowed the Governor to take its decision on the ILVA's destiny on the basis of the risk measured highlighted by the experts. Further, accounting also served as “ammunition” and “rationalization” machine to create an “elusive link” between information and decision-making (March, 1987). Accounting participated to the governance of risk as it allowed to construct a discourse by making this latter “credible” and “relevant”.

These findings can be transposed into several practical contributions. Results revealing a strict connection between “accounting information” and “experts’ information” show how this latter, deriving from technical texts, may have a twofold use in case of incommensurability. “Experts’ information” is not only used by governors to legitimize their discourses when presenting the ‘societal risks’. It also helped to strengthen the emergence of an ‘accounting logic’ (Broadbent *et al.*, 2008) giving visibility to “accounting information” just because the adoption of an intertextual reference has the effect of marginalizing ‘societal’ aspects.

Further, such considerations may be extended from the governmental level to the firm level highlighting the processes used by leaders who are faced with responding to competing risk issues in an organization's portfolio of risks. Thus, simultaneously providing a lens with which leaders may act in such critical situation and people affected by those decisions can interpret the leaders' decisions. We really hope that these evidences may foster further investigations of the relationships between accounting, risks, and public reason in the streams of critical accounting.

References

Primary sources

ARPA PUGLIA, 2009. Relazione sui dati ambientali dell'area di Taranto.

ARPA PUGLIA, 2010. Benzo(a)pirene aerodisperso presso la stazione di monitoraggio della qualità dell'aria di Via Macchiavelli a Taranto – attribuzione alle sorgenti emmissive – relazione tecnica preliminare.

ARPA PUGLIA, 2011. Rapporto Ambiente e Sicurezza 2011 – ILVA Taranto.

ARPA PUGLIA, 2012. Emissioni di diossine dal camino E 312: Il risultato della campagna di monitoraggio 2011.

ARPA PUGLIA, 2012. Relazione tecnica: Analisi delle tendenze di inquinanti nel quartiere Tamburi di Taranto per il 2012.

ARPA PUGLIA, 2012. Cronologia emissioni da impianti agglomerazione ILVA 1994-2011.

ARPA PUGLIA, 2012. Relazione tecnica a seguito di sopralluogo del 2/08/2011 nello stabilimento siderurgico ILVA di Taranto effettuato a seguito di nota del NOE di Lecce prot. N.41/2010 del 2/07/2011 trasmesso da Regione Puglia con nota prot. N. AOO_169_0000412.

ARPA PUGLIA et al., 2012. Valutazione del Danno Sanitario Stabilimento ILVA di Taranto ai sensi della LR 21/2012 - Scenari emissivi pre-AIA (anno 2010) e post-AIA (anno 2016).

Commissione Parlamentare di inchiesta sulle attività illecite connesse al ciclo rifiuti, 2012. Relazione territoriale sulle attività illecite connesse al ciclo rifiuti della Regione Puglia. Doc. XXIII 10.

Commissione Parlamentare di inchiesta sulle attività illecite connesse al ciclo rifiuti, 2012. Relazione territoriale sulle attività illecite connesse al ciclo rifiuti della Regione Puglia. Doc. XXIII n.12.

Commissione bicamerale ciclo rifiuti, 6.08.2012. Audizione Presidente dell'ILVA S.p.A., Bruno Ferrante.

Commissione lavoro, previdenza sociale Senato della Repubblica, 13.11.2012. Audizione del Presidente dell'ILVA S.p.A. Dr. Bruno Ferrante

Comba et al., 12.10.2012. Ambiente e salute a Taranto: evidenze disponibili e indicazioni di sanità pubblica. Studio SENTIERI

Giudice indagini preliminari, 2012. Conclusione perizia chimica.

Giudice indagini preliminari, 2012. Conclusione perizia epidemiologica.

Giudice indagini preliminari, 26.07.2012. Ordinanza di chiusura di ILVA S.p.A.

Giudice indagini preliminari, 2012. Ordinanza di fermo della produzione e sequestro prodotti ILVA S.p.A.

EUROFER, 2011. European steel in figures 2007-2011.

EUROFER, 2011. Annual report 2011.

European Parliament, 2015, The ILVA Industrial Site in Taranto, report produced by the Directorate-General for Internal Policies – Policy Department Economic and Scientific Policy A. Available at: [http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/563471/IPOL_IDA\(2015\)563471_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/563471/IPOL_IDA(2015)563471_EN.pdf)

ILVA, 2010. Bilancio annuale e consolidato.

ILVA, 2011. Bilancio annuale e consolidato.

ILVA, 2011. Trend finanziari 2007-2011.

ISPRA-IPPC Commissione investigativa (2011). Autorizzazione Integrata Ambientale per l'esercizio dello stabilimento siderurgico ILVA S.p.A: ubicato nel comune di Taranto.

NOE di Lecce, 2011. Nota prot. N.41/2010.

Senato della Repubblica, 1 agosto 2012. 782^a seduta pubblica (antimeridiana). Informativa del Ministro dell'ambiente e della tutela del territorio e del mare sull'ILVA di Taranto.

Senato della Repubblica, 5 settembre 2012. 788^a seduta pubblica. Informativa del Ministro dello sviluppo economico e delle infrastrutture e dei trasporti e del Ministro dell'ambiente e della tutela del territorio e del mare sui più recenti sviluppi della vicenda dell'Ilva di Taranto.

Ministero dell'Ambiente e della Tutela del Territorio e del Mare, Ministero delle Infrastrutture e dei Trasporti, Ministero dello Sviluppo Economico, Ministero per la Coesione Territoriale,

- Regione Puglia, Provincia di Taranto, Comune di Taranto, Commissario straordinario del Porto di Taranto, 26.07.2012. Protocollo di intesa per interventi urgenti di bonifica, ambientalizzazione e riqualificazione di Taranto.
- Decreto legge 26.10.2012. Riesame dell'autorizzazione integrata ambientale n. DVA/DEC/2011/450 del 4/8/2011 rilasciata per l'esercizio dello stabilimento siderurgico della società ILVA S.p.A. ubicato nel comune di Taranto
- Decreto - Legge 3 dicembre 2012, n. 207, convertito in legge 24 dicembre 2012, n. 231 - Disposizioni urgenti a tutela della salute, dell'ambiente e dei livelli di occupazione, in caso di crisi di stabilimenti industriali di Interesse Strategico Nazionale.

Secondary sources

- Asenova, D., Bailey, S.J. & McCann, C., 2013. *Managing the Risks of Public Spending Cuts in Scotland*. Available at: <http://www.jrf.org.uk/sites/files/jrf/public-spending-cuts-scotland-full.pdf>.
- Asenova, D., McKendrick, J., McCann, C. & Reynolds, R., 2015. *Redistribution of Social and Societal risk: The impact on Individuals, their Networks and Communities*. Available at: <http://www.jrf.org.uk/sites/files/jrf/social-societal-risk-full.pdf>.
- Bacchi, C., & Bonham, J., 2014. Reclaiming Discursive Practices as an Analytic Focus: Political Implications. *Foucault Studies*, (17), 179-192.
- Beck, U., 1992. *Risk society: Towards a New Modernity*, 17, Sage.
- Beck, M., Asenova, D., & Dickson, G., 2005. Public Administration, Science, and Risk Assessment: A Case Study of the U.K. Bovine Spongiform Encephalopathy Crisis. *Public Administration Review*, 65(4), 396–408.
- Broadbent, J., 2002. Critical Accounting Research: A View from England. *Critical Perspectives on Accounting*, 13(4), 433–449.
- Broadbent, J., Gill, J., & Laughlin, R., 2008. Identifying and Controlling Risk: The Problem of Uncertainty in the Private Finance Initiative in the UK's National Health Service. *Critical Perspectives on Accounting*, 19(1), 40–78.
- Burchell, S., Clubb, C., Hopwood, A., Hughes, J., & Nahapiet, J., 1980. The Roles of Accounting in Organizations and Society. *Accounting, Organizations and Society*, 5(1), 5-27.
- Burchell, S., Clubb, C., & Hopwood, A. G., 1985. Accounting in its Social Context: Towards a History of Value Added in the United Kingdom. *Accounting, Organizations and Society*, 10(4), 381-413.
- Carruthers, B. G., 1995. Accounting, Ambiguity, and the New Institutionalism. *Accounting, Organizations and Society*, 20(4), 313-328.
- Dean, M., 1998. Risk, Calculable and Incalculable. *Soziale Welt*, 25-42.
- Dean, M., 1999. Risk, Calculable and Incalculable. In D. Lupton (Ed.), *Risk and Sociocultural Theory: New directions and Perspectives*: 131–159. Cambridge: Cambridge University Press.
- Douglas, M., 1986. *Risk Acceptability According to the Social Sciences* (Vol. 11). Russell Sage Foundation.
- Ewald, F., 1991. Insurance and risk, in Burchell G., Gordon C. and Miller P., *The Foucault Effect: Studies in Governmentality*. Hemel Hempstead: Harvester Wheatsheaf.
- Ezzamel, M. & Willmott, H., 2004. Rethinking Strategy: Contemporary Perspectives and Debates. *European Management Review*, 1, 43-48.
- Foucault, M., 1972. *The Archeology of Knowledge and The Discourse on Language*. Pantheon books: New York.
- Foucault, M., 1977. *Discipline and Punishment*. Allen Lane: London.
- Foucault, M., 1982. The Subject and Power. *Critical Inquiry*. 8(4), 777-795.

- Foucault, M., 1991. Questions of Method. In: Burchell G., Gordon, C., and Miller, P. (eds.) *The Foucault Effect: Studies in Governmentality*. Hemel Hempstead: Harvester Wheatsheaf.
- Gephart Jr., R. P., van Maanen, J., & Oberlechner, T., 2009. Organizations and Risk in Late Modernity. *Organization Studies*, 30(2/3), 141–155.
- Hardy, C., & Maguire, S., 2016. Organizing Risk: Discourse, Power, and “Riskification”. *Academy of Management Review*, 41(1), 80–108.
- Hastings, A., Bailey, N., Bramley, G., Gannon, M., & Watkins, D., 2015. *The Cost of the Cuts: The Impact on Local Government and Poorer Communities*. Joseph Rowntree Foundation Report: New York.
- Hopwood, A.G., 1973. *An Accounting System and Managerial Behaviour*, Saxon House and Lezington.
- Hopwood, A.G., 1983. On Trying to Study Accounting in the Contexts in Which It Operates. *Accounting, Organizations & Society*, 8(213), 287-305.
- Hopwood, A. G., 1992. Accounting Calculation and the Shifting Sphere of the Economic. *European Accounting Review*, 1(1), 125-143.
- Hopwood, A. G., & Miller, P., 1994. *Accounting as Social and Institutional Practice* (Vol. 24), Cambridge University Press: Cambridge.
- Jasanoff, S., 1990. American Exceptionalism and the Political Acknowledgment of Risk. *Daedalus*, 61-81.
- Jasanoff, S., 2012. Reason in practice. In: *Science and Public Reason*. Routledge: Milton Park, UK.
- Kington, T., 2012. “Italian Town Fighting for its Life Over Polluting Ilva Steelwork”, *The Guardian*, 17 August 2012. Available at: <https://www.theguardian.com/world/2012/aug/17/italy-ilva-steelworks-cancer-pollution>.
- Lemke, J.L., 1995. Intertextuality and Text Semantics. *Advances in Discourse Processes*, 50, 85-114.
- Lupton, D. (2006). Sociology and Risk. In: *Beyond the Risk Society: Critical Reflections on Risk and Human Security*, 11-24.
- Lupton, D., 2013. *Risk* (2nd ed.). Routledge: Milton Park, UK.
- March, J. G., 1987. Ambiguity and Accounting: The Elusive Link between Information and Decision Making. *Accounting, Organizations and Society*, 12(2), 153-168.
- Miller, P., & Rose, N., 1990. Governing Economic Life. *Economy and Society*, 19(1), 1–31.
- Miller, P., 1994. Accounting as a Social and Institutional practice: An Introduction. In: Hopwood A.G. and Miller P. *Accounting as Social and Institutional Practice* (Vol. 24). Cambridge University Press: Cambridge.
- Mouritsen, J., & Kreiner, K., 2016. Accounting, Decisions and Promises. *Accounting, Organizations and Society*, 49, 21–31.
- O’Malley, P., 2009. Governmentality and Risk. *Social Theories of Risk and Uncertainty*, pp. 52-75, J. Zinn, ed., Oxford, 2008. Sydney Law School Research Paper No. 09/98. Available at SSRN: <https://ssrn.com/abstract=1478289>.
- O’Malley, P., 2012. *Risk, Uncertainty and Government*. Routledge: Milton Park, UK.
- Pooler, M., & Politi, J., 2017, “Bidding Race to Win Europe’s Biggest Steel Plant Heats up”, *Financial Times*, 5 March 2017. Available at: <https://www.ft.com/content/24c73c76-ff6f-11e6-8d8e-a5e3738f9ae4>.
- Samiolo, R., 2012. Commensuration and Styles of Reasoning: Venice, Cost-Benefit, and the Defence of Place. *Accounting, Organizations and Society*, 37(6), 382–402.
- Zhang, E., & Andrew, J., 2016. Rethinking China: Discourse, Converge and fair Value Accounting. *Critical Perspectives on Accounting*, 36, 1-21.

Table 1 – Official documents covered by the discursive analysis.

	Institution	Document name (and our coding)	Date of publication
Technical Texts	Regional Environmental Protection Agency (ARPA)	Environmental data relation about Taranto's area 2009 (T1) Benzoapyrene (BaP) analysis 2010 (T2) Environment and safety analysis 2011 (T3) Technical report for the analysis of pollution in the Tamburi's district 2012 (T4) Dioxin emissions from E312 stack (T5) ILVA agglomeration plants emissions chronology (T6) Technical report following NOE inspection (T7) Health damage assessment SENTIERI project 2012 (T8)	2010, 2011 and 2012
	Lecce's NOE (Police Environmental Operative Unit)	Note prot. 41/10 (T9)	2-Jul-2011
	Judge for the preliminary inquiries (GIP)	Chemical appraisal (T10) Epidemiological appraisal (T11)	2012
	Superior Institute for the Environmental Protection and Research together with the Integrated Pollution Prevention and Control National Investigation Commission	Decisive opinion (T12)	Oct-2012
	Inquiry Parliamentary Commission about waste cycle illegal activities	Doc. XXIII n.10 (T13) Regional relation (T14)	20-Jun-2012 17-Oct-2012
	Eurofer – European steel industry association	European Steel in Figures 2007-2011 (T15) EUROFER Annual Report 2011 (T16)	2007, 2008, 2009, 2010 and 2011

	ILVA	Financial statements (T17) Financial trends (T18)	2010 and 2011 2007-2011
Parliamentary debates texts	Government	Environment Minister audition (P1) Economy and Environment Ministers audition (P2)	1-Aug-2012 24-Sep-2012
Decisional Texts	Magistrature	Ilva's stop production measure (D1)	07/26/2012
	Government	Protocol agreement (D2)	07/26/2012
	Government	Environment Ministry Decree (D3)	Oct-2012
	Magistrature	Production's requisition measure (D4)	Nov-2012
	Government	Decree modified into the 231/2012 law (D5)	24-Dec-2012

Table 2. Examples of risk measures and values related to the social and societal risks, as reported in the experts' appraisals.

Source (see Table 1)	Risk category	Risk Measures	Values	Legal parameters and terms for comparison	Descriptive details
T1	Environmental risk	PM10, NO ₂ pollutants	In 2008 59 days of PM10 concentration over 50 µg/m ³ . NO ₂ annual average concentration (µg/m ³): 49 in 2007, 39 in 2008, 32 in 2009 (first semester).	35 days/year with greater PM10 daily concentration of 50 µg/m ³ . NO ₂ annual average concentration limit 40 µg/m ³ . Geographical comparison.	Despite a positive trend, the limit on daily PM10 concentrations, continues to report exceedances in respect to the daily legal threshold.
T2	Environmental risk	Polycyclic aromatic hydrocarbons emissions	IPA 25.84 tons/year 93% of the total national emission PAHs in air of 18.82 tons/year	Large industrial sources with pollutants emissions above 50 Kg/year.	In 2005 ILVA polluting emissions' levels are equal to the 93% of the total national emissions.
T2	Environmental risk	Benzo(a)pyrene	1.31 Ng/m ³	1 ng/m ³	The predominant emission source of the legal overrun consists of the production processes conducted in the ILVA steelwork's hot area.
T8	Environmental risk	Benzo(a)pyrene	1.8 Ng/m ³ annual average concentration	1 ng/m ³	In 2010, there is a significant excess of the target value of 1 ng/m ³ indicated by Legislative Decree 155/2010.
T8	Health risk	Cancer mortality	10% and 13% cancer rate	Geographical comparisons	The geographical comparison shows an excess of cancer rates around the steel plant.
T8	Health risk	Polycyclic aromatic hydrocarbons pollutant	25% of workers had levels above 2.3 microMol/Molcreat	2.3 microMol/Molcreat	Data shows higher limits compared to the 2.3 microMol/Molcreat guideline.

T10	Environmental risk	PCDD/PCDF pollutants	0.27 ng I-TEQ/Nm ³	0.40 ng I-TEQ/Nm ³	Pollutants values are below the limit according the Regional Decree no. 44 of 19/Dec./2008.
T11	Health risk	Increase of PM10 and hospitalization rates	0.8% risk of hospitalization due to increments of 10 mg/m ³ of PM10. 8.3% vp risk of hospitalization for respiratory diseases in Tamburi district. 5.83% vp risk of hospitalization for respiratory diseases in Taranto.	Geographical comparison	The analysis on residents in the nearest districts shows an association with mortality from all causes higher than for the Taranto city.
T11	Health risk	PM10, estimated deaths	83 attributable deaths in Taranto due to PM10 exceedance of 20 micrograms per m ³ . 91 estimated deaths for Borgo and Tamburi districts.	20 micrograms per m ³ Geographical comparison	Estimated deaths nearer the plant are attributable to the exceedance of the PM10 concentrations legal limit.
T13	Health risk	PM10, NO ₂	0.84% increment of death risk for PM10. 0.60 % increment of death risk for NO ₂ .	Geographical comparison	There is an increase in the risk of death due to increments of PM10 and NO ₂ . Results show higher levels of risk in the area around the plant.
T15	Occupational risk	Employees units	An average of 14,790 employees, 11,586 of which located in Taranto. Euro 634,400 for cost of labor.	Geographical comparison between business units and with the previous year	In 2011 most of the ILVA employees are located in Taranto and the labor cost is increased compared to the previous year.
T15	Economical risk	Revenues	Increase of revenues equal to € / 000 1,046,333 (from 4,619,903 to 6,026,236).	Comparison with the previous year	Despite, the crisis, the revenues increased between 2010 and 2011.
T16	Economical risk	Metric tons	2007 2008 2009 2010 2011 IT 31,553 30,590 19,848 25,750 28,726 (metric tons) 16.2% Italian market share; 25% German market share.	International comparison and with previous years	In 2011, in line with the European market, Italy has an increasing trend of crude steel output and with the 16.2% of the European market share it represents the second country for production after Germany.

T17	Occupational risk	Employment	36,898 employment units in the Italian steel industry. 90,645 employment units in the German steel industry.	International comparison	In 2010 Italy represents the second country (after Germany) for number of employees in the EU steel industry.
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Table 3. The governmental speech: examples of risk categories, discursive themes and the (inter-)textual reference to the risk measures appraised by the experts.

Source (see Table 1)	Authority	Statements	Risk categories	Discursive themes	Textual or inter-textual references to risk measures
P1	Environment Minister	1. “Therefore, part of the problems detected, for example, by epidemiological surveys that have been carried out on behalf of the Magistrature, but also from those which were made by the Higher Institute of Health, gives an account of the population health status, with evident excess mortality, which presumably refers to environmental contamination derived from plants that were operating in accordance with laws of that time. Evident environmental impacts and likely health impacts, which however need to be correlated with the standards of that time and with the authorizations that over time these plants have received, as for all the technologies and plants operating in Europe over the last fifty years”.	<i>Societal risks</i> – Environmental risk – Health risk	Health status and causality with environmental contamination from the plant.	<i>Intertextual</i> reference to epidemiological measures.
P1	Environment Minister	2. “The analysis has shown that there is a broader spectrum, both in women and child population, which does not exclude that there is a relationship between environmental risks and damage to health; but this requires a more complex investigation”.	<i>Societal risks</i> – Environmental risk – Health risk	Conceivable relationship between environmental risks and health damages.	<i>Intertextual</i> reference to epidemiological measures.
P1	Environment Minister	3. “Nevertheless, what also it emerges from the inquiry that was carried out by Taranto Magistrature’s experts, is that we are in the presence of data that	<i>Societal risks</i> – Environmental risk	Difficulty to establish a direct cause-effect relationship between	<i>Intertextual</i> reference to epidemiological measures by experts.

		<p>refer to diseases which, however, have the characteristic of long evolution course, and they have the characteristic of chronicity, when they are not tumors. In other words, these data are based on diseases that are manifested in the course of time and, in the event that it would be detected a relationship between the environment and these pathologies, among the environmental risks and these diseases, we must consider that the environmental risks are those of past decades, while it might be more difficult to identify a direct relationship of cause and effect with the current situation of the Ilva plant in Taranto which, as a result of the measures imposed by the environmental authorization, due to regional laws and national laws, however, has evolved.”</p>	<p>– Health risk</p>	<p>the environment, diseases and the current situation of the ILVA plant.</p>	
P1	Environment Minister	<p>4. “ILVA is currently the largest European steelwork, in the world, and the hot area of the Ilva Taranto plant is the first step of the all domestic steel industry production cycle. That is, it is from Taranto that semi-products depart to the various sites and steel industry plants of our country. It must be said that Ilva of Taranto represents the 75 percent of the gross domestic product of the Taranto province and the 76 per cent of the harbor activities.”</p>	<p><u>Social risks</u> – Competitiveness risk – Local development risk</p>	<p>Important role of ILVA at the local, national and EU levels.</p>	<p><u>Textual</u> reference to percentage of the gross domestic product covered by the company at the local level.</p>
P2	Economic Development Minister	<p>5. “Overall, it (business closure) would result in a negative impact, which has been estimated at over 8 billion euro per year, attributable to approximately 6 billion euro to the imports’ growth, 1.2 billion euro to income support and lower revenue for the public administration, and for about 500 million euro in terms of reduced spending power for the directly affected area”.</p>	<p><u>Social risks</u> – International competitiveness risk – Productivity risk</p>	<p>Impressive costs related to the ILVA’s discontinuity.</p>	<p><u>Textual</u> reference to the costs of the ILVA closure.</p>

P2	Economic Development Minister	6. “The Taranto pole is one of the main European steel poles, with a production capacity of about 10 million tons per year, equivalent to more than 40 percent of national steel production. In the field of flat rolled production Taranto covers more than 60 percent of domestic demand, contributing decisively to the supply of strategic sectors for the Italian industry, such as household appliances, shipbuilding, automotive and mechanics. By occupation, Ilva employs more than 11,600 workers directly employed, to which must be added a closely related induced on the vertical plane, which brings direct employment to nearly 15,400 units. To this figure must add up 9,200 units linked to indirect industries”.	<u>Social risks</u> – Productivity risk – International competitiveness risk – Unemployment risk	Very high production capacity and employment levels of the company.	<u>Textual</u> reference to production values, percentages of the steel production and national demand, and number of direct and indirect employees.
P2	Environment Minister	7. “This is not a conflictual approach with the business continuity, but it intended to make sure that industrial activities - through technological innovations aiming at protecting the environment - acquire better productive capacity and thus enhance its competitiveness. Because the European target is to make sure that the European economy's competitiveness is driven by interventions that improve environmental quality. This is the address that we have too”.	<u>Social risks</u> – Competitiveness risk <i>Societal risks</i> – Environmental risk	Technological innovations for both protecting the environment and enhancing competitiveness.	<i>Intertextual</i> reference to economic and environmental measures.
P2	Economic Development Minister	8. “The company's commitment about the investments during these years was important, as evidence of a shareholder genuine interest to remain in the industry and in the area. Altogether, since it was acquired in 1995 until 2011, the Riva Group has invested more than 4.5 billion euro in the Taranto factory, concentrating in it almost the 72 percent of the investments made in the whole Ilva Group, in Italy and abroad. In the same period, the share of investment devoted to environmental protection	<i>Societal risks</i> – Environmental risk	Relevant corporate investments in the area and for the environmental protection.	<u>Textual</u> reference to the costs for environmental protection investments supported by the company.

		accounted for 24 percent (approximately 1.1 billion euro) of the total invested in the Taranto plant.”			
P2	Economic Development Minister	9. “However, those findings can not justify the serious situations of environmental damage and risk to health which remain despite the investments supported by the Riva Group: for this reason, it was signed a Protocol agreement and 396 million euro have been allocated for environmental adjustments, adaptation of the harbor area (which recently entered into a strategic network of European harbors and it is affected by material infrastructure projects) and industrial upgrading.”	<i>Societal risks</i> – Environmental risk – Health risk	Governmental money allocation for enhancing environmental conditions.	<u>Textual</u> reference to the costs for environmental protection investments allocated by the State.
P2	Environment Minister	10. “There was, that is, an upgrade of technology; from the point of view of the technological performance, there have been significant results in terms of reducing emissions. In particular, dioxin emissions have been cut down drastically, but there was also a significant reduction of dust emissions, of the hot cycle emissions, also with regard to polycyclic aromatic hydrocarbon compounds”.	<i>Societal risks</i> – Environmental risk	Decreasing emissions trends.	<i>Intertextual</i> reference to chemical measures.

PAPER 2

The Information Content of Proxy Disclosures Concerning the Board's Role in Enterprise Risk Management Oversight

Mark Beasley, Bruce Branson, Don Pagach*, Silvia Panfilo**²³

ABSTRACT

The purpose of this paper is to better understand the information content of proxy disclosures related to the board of director's role in risk oversight. On February 28, 2010, the U.S. Securities and Exchange Commission (SEC) approved enhanced disclosure rules regarding board risk oversight, including assessments of risks related to compensation arrangements and corporate governance. The SEC rule requires disclosures in the proxy statement that specifically describe how the board provides oversight of risk management activities for their organization. While the SEC's rule does not mandate any specific tasks to be performed by the board with respect to risk oversight, the SEC's rule requires boards to provide information to help investors better understand how the board of directors oversees the company's risk management practices implemented on a day-to-day basis by management. As a result, we do not know if those proxy disclosures provide any information content valuable to stakeholders. We adopt a comparative theoretical approach adopting institutional, agency and signaling theories at the aim of interpreting results. To assess the information content of the board risk oversight proxy disclosures, we use Standard & Poor's (S&P's) independently determined management and governance scores they use as inputs to their credit rating evaluations to examine whether there is any association of those scores with information included in the proxy disclosures about the board's role in risk oversight. We identify specific elements disclosed in the proxy related to risk oversight activities and use them to explore differences in management and governance scores assigned to a set of firms who either received "strong" or "weak/fair" scores from S&P. We find that an association does exist between the extent of board risk oversight elements and the S&P score. Additional analysis also highlights specific board risk oversight elements most associated with the S&P score. Our results suggest that there may be informational content associated with board risk oversight elements that might indicate firms with stronger management and governance practice. These results are consistent with agency and signaling theories. We believe these associations help validate the importance of the required proxy disclosures to investors in that many are directly related to the S&P evaluation.

Key words: Board risk oversight, enterprise risk management, risk governance, risk management.

²³ *Department of Accounting at Poole College of Management - North Carolina State University, 2801 Founder Dr., 27695 Raleigh (North Carolina).

** Department of Management - Ca' Foscari University of Venice, Cannaregio 873, 30121 Venice (Italy).

1. INTRODUCTION

In December 2009, the U.S. Securities and Exchange Commission (SEC) approved enhanced proxy disclosure rules regarding the board's role in risk oversight effective in March 2010 (SEC 2009). Since the rule was adopted, companies that are registrants of the SEC have expanded their proxy disclosures to include an explicit discussion concerning board risk oversight practices and disclosures of specific risk-related practices, such as implementation of an enterprise risk management process or the naming of a Chief Risk Officer. For many institutional investors, board oversight of risk management is an important aspect of effective corporate governance. In addition, there have been a number of entities that have called for boards to take a more important role in risk management. For example, the Dodd-Frank Act requires specific risk management activities for large financial institutions, such as having a separate risk committee of the board that includes at least one risk management expert. In addition, the National Association of Corporate Directors (NACD) provides best practices for board oversight of risk management (NACD 2016).

By mandating proxy disclosures about board risk oversight for all entities, the SEC is implying that disclosures about the board's risk oversight are informative and stakeholders benefit from this information. However, given the lack of any mandate for what specific aspects of board risk oversight should be disclosed, firms may simply provide disclosures that are uninformative with respect to the actual risk oversight that the board provides in order to look better in comparison to peers. For this reason, it is important to examine if these disclosures provide relevant risk oversight information to stakeholders.

We attempt to assess the quality and validity of the board risk oversight disclosures by examining if there is any association between certain risk oversight proxy disclosures with an independently determined assessment of the quality of an entity's overall "management and governance" effectiveness made by Standard & Poor's (S&P). Beginning in 2012, S&P now independently assesses an entity's "management and governance" using a host of information (mostly not publicly disclosed) provided by the entity privately to S&P as part of the credit evaluation process. S&P's analysis of this information is supplemented with other information identified by S&P, including interviews of management and onsite visits at the entity. Part of S&P's "management and governance" assessment includes consideration of the effectiveness of management's risk management processes and the board's overall governance of those processes.

S&P's scoring of "management and governance" effectiveness is based on a 15-component model consisting of eight management components and seven governance components. One of the eight management components explicitly focuses on the entity's enterprise-wide risk management processes, and two of the governance components explicitly focus on the board's assessment of management's risk oversight processes and its risk taking actions. S&P uses their evaluation of the 15 components to arrive at an overall "management and governance" score (S&P score), which consists of four levels: (1) strong, (2) satisfactory, (3) fair, or (4) weak.

As a result, these scores provide us an independently determined measure about the effectiveness of the company's risk management practices based on mostly non-public information that we can examine to determine if there is any association between those scores and the board risk oversight disclosures contained in the publicly available proxy statement. An association would suggest that the public information about the board's risk oversight provided in the entity's proxy statements has information value to stakeholders.

We obtained S&P "management and governance" scores for 2,275 corporate entities as of October 2015. To evaluate whether the board risk oversight proxy disclosures are associated with S&P's independently determined management and governance scores, we compared board risk oversight proxy disclosures for 83 firms with a management and governance score of "strong" with board risk oversight proxy disclosures of 83 firms with management and governance scores of "weak" or "fair". While controlling for the riskiness of the firms as proxied by the firm size, leverage, and volatility of earnings, we find that there is an association between a "strong" S&P score and the extent of board risk oversight elements disclosed in the proxy. Additional analysis also finds that there may be specific board risk oversight elements particularly associated with strength of management and governance as assessed by S&P. Specifically, we find that an explicit acknowledgement that the board is responsible for risk oversight is significantly associated with a "strong" S&P score. In addition, disclosures of the presence of a management level risk committee and the provision of an annual report of top risk exposures to the board are also significantly positively associated with a "strong" S&P score. Interestingly, we find that an explicit focus on strategic risks is actually negatively associated with a "strong" score and no other specific disclosures that we capture exhibit a significant association.

Our research contributes to the risk management literature by examining required disclosures concerning the board's oversight of risk by quantifying elements of the proxy

disclosures and comparing them to contemporaneous independent rankings about management and governance, while controlling for the riskiness of the firm. This should give evidence for the SEC to determine if its disclosure rules are providing useful information to stakeholders and identifying potential investor benefits from the enhancement of risk management disclosure (Baxter *et al.*, 2013; Campbell *et al.*, 2014).

2. INSTITUTIONAL BACKGROUND

Over the past 15 years many organizations have faced major risk events that have negatively affected their pursuit of strategic value for key stakeholders. Events such as the collapse of Enron, WorldCom, Lehman Brothers, and MF Global, the terrorist attacks of September 11th, disruptive technologies, turmoil surrounding currencies such as the Euro, political uncertainty, cyber security risks, and the 2008 economic crisis, among numerous others, have all highlighted the importance of having effective processes in place to identify, assess, and respond to risk events affecting the enterprise. To help develop these processes, many entities have embraced ERM as a strategy to develop increased resilience and agility.

To assist management in determining what might constitute an effective enterprise risk management process, COSO issued its *Enterprise Risk Management – Integrated Framework* to provide guidance about the key elements of an effective, top-down, enterprise-wide approach to risk management.²⁴ COSO's 2004 Framework defines ERM as follows:

ERM is a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives (COSO 2004).

Other organizations have issued similar frameworks, such as ISO's 31000 – *Risk Management Framework*, the United Kingdom's *Corporate Governance Code*, and Australia/New Zealand's

²⁴ In September 2017, COSO issued a revision of their 2004 *Enterprise Risk Management – Integrated Framework*.

4360 *Risk Management*²⁵ standard. These frameworks emphasize the important leadership role of the board of directors and senior management in successfully implementing a robust risk management process (ISO 2009; UK 2012; AS/NZS 2009).

2.1. Board’s Role in Risk Oversight

A number of governance organizations have issued calls to strengthen risk management processes within organizations, with a particular emphasis on the role of the board in risk oversight. In 2004, the NYSE revised its corporate governance rules to include explicit requirements for the audit committee of the board to “discuss policies with respect to risk assessment and risk management” (NYSE 2004). While those rules placed responsibility for the management of risks on the CEO and senior management, they assign specific responsibility to the audit committee to govern the process by which risk management is conducted by management. The majority of public company boards, even for non-NYSE registrants, have assigned their risk oversight responsibilities to the audit committee (COSO 2010a; Deloitte 2011). Audit committees have responded by turning to individuals with whom they interact regularly in regards to accounting, internal control, and financial reporting matters, such as the CFO and chief audit executives, among others, to provide leadership of the risk management process.

To enhance the transparency of information about the board’s role in risk oversight and to encourage more effective board risk oversight, the Securities and Exchange Commission (SEC) expanded its proxy disclosure rules effective March 1, 2010 (SEC 2009). Those rules now require all SEC registrants to include disclosures in their annual proxy statements to shareholders about how the board administers its risk oversight function. While SEC rules do not mandate any specific guidelines for how the board should engage in risk oversight, the proxy disclosure rules suggest that information, such as whether the board’s oversight is done through the whole board, or through a separate risk committee, and how the board oversees individuals who supervise the organization’s day-to-day risk management responsibilities, might be relevant for disclosure. Furthermore, the SEC’s focus on risk continues as it explores enhancements in disclosures related to how entities manage cyber security related risks (SEC 2011).

²⁵ Originally issued in 1995 and revised in 2004 by the Standards New Zealand, the joint Australian/New Zealand Committee decided to not revise it in 2009 and instead promote ISO’s 31000–*Risk Management* standard.

Consistent with growing expectations related to the board’s risk oversight, other industry specific regulations now focus on the board’s oversight of risk. The Dodd-Frank legislation requires the creation of board risk committees for large financial institutions (U.S. Congress 2010). Insurance regulators have adopted the National Association of Insurance Commissioner’s “Risk Management and Own Risk and Solvency Assessment Model Act,” which requires U.S. insurers to file annually with their state regulator a report that includes a summary of the insurer’s risk management framework that includes an assessment of the risk culture and governance (NAIC 2012). In July 2016, the U.S. Office of Management and Budget (OMB) revised its Circular A-123 to require U.S. federal agencies to implement an Enterprise Risk Management (ERM) capability to strengthen agency risk oversight and to better coordinate risk oversight with strategic planning (OMB 2016). In response to this new requirement, the United States Chief Financial Officers Council has issued its *Playbook: Enterprise Risk Management for the U.S. Federal Government* to assist those in CFO and other management roles within federal agencies with the implementation of ERM (U.S. Council 2016).

Collectively, these emerging expectations focus on the role of the board of directors and that has created pressure for management to evaluate the design and implementation of risk management processes they have in place within the organization. Consistent with this view, Beasley *et al.* (2012; 2017) find that out of 618 and 432 organizations respectively surveyed (mostly U.S.), boards of directors are cited as one of the most common factors increasing senior executive focus on risk oversight, with the largest organizations especially emphasizing the board’s influence.

2.2. Standard & Poor’s Evaluation of Management and Governance

In 2008, credit rating agencies, such as Standard & Poor’s, began to announce expanded consideration of the processes used by management and the board in the oversight of risks for the organization as a component of their credit rating evaluations (Standard & Poor’s 2008). Based on the belief that the strategic competence, operational effectiveness, and the ability to manage risks shape an enterprise’s competitiveness in the marketplace and its ultimate success, S&P is now using evaluations of an organization’s “management and governance” as one of the factors in the assessment of the enterprise’s creditworthiness (Standard & Poor’s 2012).

According to S&P, *“The term ‘management and governance’ encompasses the broad range of oversight and direction conducted by an enterprise’s owners, board representatives, executives, and functional managers. Their strategic competence, operational effectiveness, and ability to manage risks shape an enterprise’s competitiveness in the marketplace and credit profile. If an enterprise has the ability to manage important strategic and operating risks, then its management plays a positive role in determining its operational success. Alternatively, weak management with a flawed operating strategy or an inability to execute its business plan effectively is likely to substantially weaken an enterprise’s credit profile”* (Standard & Poor’s 2012). S&P evaluates an entity’s “management and governance” using a 15-factor model that consists of eight factors related to “management” and seven factors related to “governance”.

The comprehensiveness of the organization’s enterprise-wide risk management techniques and the board’s overall oversight effectiveness are sub-components of S&P’s ratings evaluation. The eight management components center on S&P’s assessment of management’s strategic positioning, risk management/financial management, and organizational effectiveness. One of those eight management components focuses explicitly on the entity’s risk management. For that factor, S&P is evaluating the entity’s *“Comprehensiveness of enterprise-wide risk management standards and tolerances”*. S&P would assess that component positively if it concludes that *“Management has successfully instituted comprehensive policies that effectively identify, monitor, select, and mitigate key risks and has articulated tolerances to key stakeholders”*.

The seven governance factors focus on the board’s effectiveness. Two of those seven factors focus on the board’s risk oversight capabilities. Specifically, those two factors assess whether (1) *“The board maintains sufficient independence from management to provide effective oversight of it. The board retains control as the final decision-making authority with respect to key enterprise risks, compensation, and/or conflicts of interest”* and (2) *“Management and the board of directors have professional, independent members who are capably engaged in risk oversight on behalf of all stakeholders, including minority interests. The influence of controlling shareholders is offset by risk-aware professional management and a board that effectively serves the interests of all stakeholders”* (Standard & Poor’s 2012).

S&P uses its evaluations of these 15 factors to arrive at an overall “management and governance” score. S&P ultimately arrives at one of the following four “management and governance” scores: (1) strong, (2) satisfactory, (3) fair, or (4) weak. That score then becomes an

input to S&P's overall credit rating assessment. While the overall credit rating is publically available, S&P does not separately disclose individual scores for the 15 components of its "management and governance" assessment.²⁶

3. THEORETICAL BACKGROUND

Prior literature has already identified corporate governance factors as strictly related to the use, implementation and maturity of ERM. Liebenberg and Hoyt (2003) first attempted to identify the determinants of the ERM adoption finding the appointing of a Chief Risk Officer (CRO), charged with the responsibility of implementing and managing the ERM program, as a tool to reduce information asymmetry regarding the firm's current and expected risk profile. Supporting prior results, Beasley *et al.* (2005) found that the presence of a CRO and the CEO/CFO support for ERM are positively associated with the implementation of ERM.

While it is management's responsibility to design and implement ERM processes to identify, assess, and manage key risks to the enterprise, the ultimate responsibility for the oversight of management's risk-taking actions is at the board of director level. Boards play a significant role in overseeing on management's risk-taking actions in their pursuit of value to ensure risks assumed are in line with shareholder appetite for risk-taking (Beasley *et al.*, 2015). Kleffner *et al.* (2003) found that many Canadian companies adopting ERM cited support from the board of directors as a main driver of the ERM adoption. Later, Desender (2007) identified that board composition is related to the degree of enterprise risk management implementation, while Brown *et al.* (2009) provided evidence of the relationship between corporate governance structure and risk management in high technology firms. Moreover, Gordon *et al.* (2009) documented that board monitoring is an important factor positively contributing to the relationship between ERM and firm performance. Baxter *et al.* (2013) found a positive association of better corporate governance, presence of risk officers/committees and longer boards tenure with higher ERM quality – as measured by S&P ratings for financial services companies. They also found that ERM quality is

²⁶ Note: S&P uses a different process to separately score "management and governance" factors for insurance entities and those scores are publically available. However, when S&P began evaluation of "management and governance" for all other non-insurance corporate entities in 2012, they chose at that time to not make those assessments publically available. This paper examines "management and governance" scores for non-insurance corporate entities we obtained privately.

positively associated with operating performance and that information contained in ERM quality ratings was used by investors during the crisis period to identify companies more likely to rebound. More recently, Beasley *et al.* (2015) provides insights about board of director and senior management internal processes which are associated with more mature ERM programs and the usefulness of ERM as a strategic tool for competitive advantage.

Directors and executives are seeing increased expectations from shareholders, regulators, rating agencies, and other stakeholders that they understand and are managing risks, and that there is transparency around that management process (Frigo and Anderson, 2011). Therefore, the disclosure of risk - and of risk management oversight - become an integral part of board's accountability (Allini *et al.*, 2016). Knowledge of the ERM and its oversight might help stakeholders to evaluate the company's governance while helping investors to assess whether risk's oversight activities are in line with their risk-appetite. Prior scant literature about the benefits of ERM information to investors found it helps them in assessing the usefulness of financial reports in predicting future cash flows (Baxter *et al.*, 2013). Further, it is found investors incorporate risk information into their price decisions thus improving the market liquidity by reducing information asymmetry (Campbell *et al.*, 2014).

Focusing on corporate governance drivers of ERM and on risk disclosure, prior research relies on the assumption that companies' disclosure is informative. Nevertheless, we have little insight about the information relevance of the board risk oversight proxy disclosures for stakeholders. Moreover, also from the empirical point of view, by mandating proxy disclosures about board risk oversight for all entities, the SEC is implying that disclosures about the board's risk oversight are informative and stakeholders benefit from this information. However, given the lack of any mandate for what specific aspects of board risk oversight should be disclosed, firms may simply provide disclosures that are uninformative with respect to the actual risk oversight that the board provides in order to look better in comparison to peers. For this reason, it is important to examine if these disclosures provide relevant risk oversight information to stakeholders. The current paper aims to fill the gap answering the following research question:

RQ: To what extent are proxy disclosures about the board's role in risk oversight informative to stakeholders?

From a theoretical point of view, a comparative approach may help to answer the research question. Therefore, we use institutional, agency and signaling theories to help interpret our results.

Institutional theory, developed in the sociology of organizations and organizational behavior literatures, suggests that, in the presence of emerging expectations, regulations, and conceptual frameworks, a number of organizations may feel pressure to state that they have embraced and implemented ERM processes so that their organizations are in line with basic external expectations about board risk oversight (Powell, 1991; Cohen *et al.*, 2008). In such a way, companies may implement just minimal ERM elements to be compliant with external expectations, but the board would fail to substantively adopt specific and robust key elements of what would be deemed as effective enterprise-wide risk oversight (Beasley *et al.*, 2015). Thus, institutional theory would predict a lack of variation in board risk oversight disclosures among firms, suggesting there is little, if any, unique information content for stakeholders of a particular firm. That is, institutional theory would suggest that board risk oversight information contained in the proxy is unrelated to the quality of the entity's enterprise risk management processes.

In contrast, agency and signaling theories (Jensen and Meckling, 1976; Spence, 1973) would explain variations among companies' risk oversight practices and disclosures; specifically, these theories would suggest a positive relation between the board's role in risk oversight disclosure and effective enterprise-wide risk oversight.

Agency theory proposes that the interests of managers diverge from those of the owners (Jensen and Meckling, 1976). It also argues the board serves in an important governance role by monitoring and overseeing management's actions to ensure those actions are aligned with shareholder interests (Fama and Jensen, 1983) and to improve accountability (O'Sullivan, 2000).

Consistent with this agency theory view of the importance of the board's role in governance, many studies show boards are key driver of ERM implementation. For instance, Beasley *et al.* (2005) found that the stage of ERM implementation is increasing as the independence of the board of directors is greater, and Beasley *et al.* (2015) found that boards are engaging in processes to advance the maturity of the organization's oversight of risk-taking by management. Boards have responsibility for risk oversight, and the implementation of an ERM system provides a corporate control mechanism for reducing information asymmetry (O'Sullivan, 2000; Heap, 2008) and for fostering higher levels of disclosure (Oliveira *et al.*, 2011a). Such corporate control mechanisms indeed help to monitor the attitudes of managers towards risk and

to assure appropriate flows of risk reporting information (Linsley and Shrides, 2003). Therefore, any association between more disclosures about risk oversight and the independently determined S&P management and governance score suggests the information disclosed in the proxy actually contains information value, thereby lowering information asymmetry.

Information asymmetry also underpins signaling theory (Spence, 1973), mostly used to explain voluntary disclosures publicly released by firms. Such a theory rationalizes wider voluntary reporting to capital markets (Elshandidy *et al.*, 2013). That is, managers in well performing companies will use voluntary disclosure to signal their embrace of risk management best practices, thereby promoting transparency and attracting more investment (Merkl-Davies and Brennan, 2007; Oliveira *et al.*, 2011b). Thus, risk and risk oversight disclosures may be used by the boards both to signal their company's good performance and to increase their legitimacy (Oliveira *et al.*, 2011b). Therefore, according to signaling theory - and in line with agency view - it is expected that a positive association will exist between S&P's independently determined score and the extent of information disclosed about board risk oversight processes, after controlling for differences in the overall riskiness of the firms as proxied by the volatility of firm earnings, financial leverage, and firm size.

4. METHODOLOGY

We use the independently determined S&P score to evaluate whether there is any information content in the proxy disclosures about the board's role in risk oversight. Given S&P has access to a number of sources of information provided privately by management to S&P, including the ability to interview management and make onsite visits to obtain additional insights, the credit rating agency's assessment of the overall "management and governance" effectiveness of the entity provides an independent proxy of the entity's overall risk governance. We are interested in assessing whether there is any association between the risk oversight disclosures provided publicly by the entity in the proxy statement with S&P's "management and governance" score.

We have access to the final S&P scores for 2,275 U.S. non-insurance firms evaluated by S&P through October 2015 (note: we do not have access to the individual scores for each of the 15 factors). Recall that S&P assigns a "management and governance" score to one of four levels:

(1) strong, (2) satisfactory, (3) fair, and (4) weak. The breakdown of the scores for the 2,275 firms is as follows:

Strong – 121 firms (5.3% of the sample)

Satisfactory – 498 firms (21.9% of the sample)

Fair – 1,633 firms (71.8% of the sample)

Weak – 23 firms (1.0% of the sample)

The ratings provided to us were for both public and private firms that issued debt during the ratings period. Our need for financial statement data decreased our sample to 783 public firms with the following ratings:

Strong – 83 (10.8%)

Satisfactory – 295 (37.6%)

Fair – 398 (50.7%)

Weak – 7 (0.9%)

To examine the association between the proxy disclosures about the board’s role in risk oversight and the S&P scores, we would ideally compare those entities with a score of “strong” to those with a score of “weak” to best discriminate between these groups of firms. However, due to the small number of “weak” firms we randomly selected 76 “fair” firms to combine with the seven “weak” firms to compare to the set of 83 “strong” firms.

In order to assess the information content of board proxy disclosures about risk oversight we identified eleven specific elements related to activities impacting the board’s risk oversight capabilities that we observed are mentioned in the discussion of risk oversight best practices. These eleven elements reflect board risk oversight practices, including information about the leadership structures in place to provide the board risk related information and whether the risk information is connected to the strategy of the enterprise they oversee. We used these eleven elements to develop an overall measure of the quality of the board’s risk oversight. These elements are rated 1 if the proxy addresses the issue and 0 otherwise. The eleven elements are:

1. **Board Risk Oversight:** The proxy explicitly acknowledges that the board is responsible for the risk oversight of the firm (if yes, coded = 1; otherwise coded = 0).
2. **Board Delegates Risk:** The proxy states that the board has delegated responsibility for oversight of ERM (or risk oversight) to a board level committee (if yes, coded = 1; otherwise coded = 0).
3. **Mgt Risk Committee:** The proxy states that the organization has a management-level risk committee responsible for risk management (if yes, coded = 1; otherwise coded = 0).
4. **Strategic Risks:** The proxy states that the ERM process considers “strategic risks” as one of the types of risks it monitors (if yes, coded = 1; otherwise coded = 0).
5. **Strategic Planning:** The proxy states that the risk management process is used, integrated, or is an input to the strategic planning process (if yes, coded = 1; otherwise coded = 0).
6. **Report Top Risks:** The proxy states that the board receives a report from management of the top risks facing the organization (if yes, coded = 1; otherwise coded = 0).
7. **Report Annually:** The proxy states that the frequency of ERM reporting to the board occurs at least annually (if yes, coded = 1; otherwise coded = 0).
8. **Specific ERM Responsibility:** The proxy identifies that a specific member of management, such as a Chief Risk Officer, has responsibility for leading the risk management process (if yes, coded = 1; otherwise coded = 0).
9. **Risk Owners:** The proxy discusses the assignment of risk owners among management to manage specific risks (if yes, coded = 1; otherwise coded = 0).
10. **Risk Culture:** The proxy mentions the consideration of “risk culture” in some way (if yes, coded = 1; otherwise coded = 0).
11. **Risk Appetite:** The proxy states that the board is involved in setting/overseeing risk appetite in the ERM process (if yes, coded = 1; otherwise coded = 0).

We manually collected each section of the proxy that discusses the board’s role in risk oversight. The sample of 166 proxies was split between the four researchers. Each researcher analyzed independently 83 proxies, but no one researcher has the same (full) subsample of the colleagues. Specifically, to increase the reliability of the content analysis each half of the subsample was in turn split among two researchers who crossed their proxies with the other two researchers. That is, the researcher A has 42 proxies equal to the ones analyzed by the researcher B, and the other 41

are equal to the ones of the researcher C. B in turn shared the other half of the subsample with D. Finally, C shared half of his/her subsample with D. In this way each proxy was analyzed independently by two members of the author team to obtain measures for each of the above board risk oversight components. Each of the eleven variables is measured as a dichotomous variable, with the variable = 1 if the proxy included disclosed information about that element and 0 otherwise. After the content analysis each couple of readers sharing the same subsample met to agree on a final score. In almost all instances both parties scores agreed. In a final meeting possible differences were discussed between all the researchers, the proxy was reread at that time and an agreed upon score was negotiated.

Using these proxy disclosure scores for each of the 11 board risk oversight elements, we first create an overall ERM score (*ERMTotal*) by summing the number of the 11 elements disclosed by the firm in the proxy. Thus, *ERMTotal* ranges from 0 to 11. A higher score for *ERMTotal* represents those firms with more information disclosed about board risk oversight practices. We use *ERMTotal* to then examine the association between the extent of board risk oversight processes and the S&P score (which is represented by the variable, SCORE). A strong association between the public proxy board risk oversight disclosures and S&P's separately determined "management and governance" scores suggests that there is information value in the content publicly disclosed. This is consistent with agency and signaling theories. A lack of strong association may suggest little information value in the public disclosures as compared to other information privately shared by the firm with S&P, consistent with institutional theory. Because the nature of the riskiness of the firm may impact both the strength of the board's risk oversight and S&P's management and governance score, we control for it by including three control variables – firm size, leverage, and earning volatility.

Our primary analysis uses a probit regression model and the full set of variables (variable definitions are provided in Table 1):

$$\text{SCORE} = \beta_0 + \beta_1 \text{ERMTotal} + \beta_2 \text{Logassets} + \beta_3 \text{FinLev} + \beta_4 \text{Stdev EBIT} + \varepsilon$$

[Insert Table 1 About Here]

While a positive association between *ERMTotal* and S&P's management and governance score (SCORE) suggests that there is information content in the disclosures that is linked to an independent assessment of the entity's management and governance effectiveness, we are unable to determine which specific aspects of board risk oversight are most associated with S&P's separate management and governance assessment. Therefore, we perform an analysis that separately captures each of the 11 board risk oversight elements to determine whether any specific disclosures are associated with S&P's evaluation, using the following probit regression model and the full set of variables (variable definitions are provided in Table 1):

$$\begin{aligned} \text{SCORE} = & \beta_0 + \beta_1 \text{Board Risk Oversight} + \beta_2 \text{Board Delegates Risk} + \beta_3 \text{Mgt Risk} \\ & \text{Committee} + \beta_4 \text{Strategic Risks} + \beta_5 \text{Strategic Planning} + \beta_6 \text{Report Top} \\ & \text{Risks} + \beta_7 \text{Report Annually} + \beta_8 \text{Specific ERM Resp} + \beta_9 \text{Risk Owners} \\ & + \beta_{10} \text{Risk Culture} + \beta_{11} \text{Risk Appetite} + \beta_{12} \text{Logassets} + \beta_{13} \text{FinLev} + \\ & \beta_{14} \text{Stdev EBIT} + \varepsilon \end{aligned}$$

Due to the correlation among the board risk oversight elements obtained from the proxy disclosures and the observation that a number of those elements may be measuring the same underlying variables we perform an additional analysis to reduce our set of board risk oversight proxy disclosure variables. In that analysis, we group our 11 variables according to what we believe the underlying concepts are that the proxy measure is capturing. We simply combine scores for the 11 individual variables described above to create 6 overarching aspects of board risk oversight, which are described below:

ERM1 - *Board Risk Oversight*

ERM2 - *Strategic Risks + Strategic Planning*

ERM3 - *Report Top Risks + Report Annually*

ERM4 - *Specific ERM Resp + Risk Owners + Mgt Risk Committee*

ERM5 - *Risk Culture + Risk Appetite*

ERM6 - *Board Delegates Risk*

For this analysis, we employ the following probit model for this analysis:

$$\text{SCORE} = \beta_0 + \beta_1 \text{ERM1} + \beta_2 \text{ERM2} + \beta_3 \text{ERM3} + \beta_4 \text{ERM4} + \beta_5 \text{ERM5} + \beta_6 \text{ERM6} \\ + \beta_{12} \text{Logassets} + \beta_{13} \text{FinLev} + \beta_{14} \text{Stdev EBIT} + \varepsilon$$

As a final analysis, we use factor analysis to reduce our variable set. Factor analysis reduces our eleven proxy variables to four independent factors. The disadvantage of factor analysis is that we are not able to observe the four latent variables determined by factor analysis. The probit model we use for our last analysis is:

$$\text{SCORE} = \beta_0 + \beta_1 \text{Factor 1} + \beta_2 \text{Factor 2} + \beta_3 \text{Factor 3} + \beta_4 \text{Factor 4} \\ + \beta_{12} \text{Logassets} + \beta_{13} \text{FinLev} + \beta_{14} \text{Stdev EBIT} + \varepsilon$$

5. RESULTS

We provide a summary of the 166 sample firms by industry classification in Table 2. Both subsamples (strong vs. weak/fair) include a broad sample across a variety of industries. No obvious clustering appears to dominate either subsample. We do note that there are more firms from the Capital Goods/Machinery and Equipment industry and the High Technology industry represented in the “strong” subsample while the “weak/fair” subsample includes more firms from the Media, Entertainment and Leisure industry as well as the Oil, Gas, and Mining industry relative to the “strong” subsample we examine.

[Insert Table 2 About Here]

In Table 3 we provide descriptive statistics for the ERM proxy variables and the three control variables split by subsample. We observe significant univariate differences in the direction we expect for five of our eleven ERM proxy variables. *Mgt Risk Committees*, *Report Top Risks* and *Report Annually* all have significantly larger means and medians for the “strong” firms at the 1% level and *Board Risk Oversight* and *Risk Owners* are significantly larger at the 10% level. This finding is consistent with the view that the proxy disclosures about specific board risk oversight

elements are more descriptive for firms rated higher by S&P for management and governance than firms rated lower. Except for the means for the *Strategic Risks*, *Risk Appetite*, and *Risk Culture* variables, the means for the eight other board risk oversight elements disclosed in proxies are higher for “strong” firms than the “weak/fair” firms. This suggests that the nature and extent of information provided in the proxy statements about board risk oversight is providing information that may be reflective of the effectiveness of management and governance of the firm.

Using the log of total assets to proxy for size we find surprisingly that the sample of “weak/fair” are larger ($p < 10\%$) than the “strong” firms. However, the “strong” firms have higher financial leverage and significantly less volatile earnings before interest and taxes ($p < .01$).

[Insert Table 3 About Here]

Pearson correlations between the set of independent variables we employ in our tests are provided in Table 4. We observe that there are certain variables that exhibit significant correlation. For example, *Report Annually* is correlated with five of the ten board risk oversight proxy variables and other variables are correlated at significant levels. These correlations suggest that we may be measuring more variables than the underlying concepts. For example, *Report Annually* and *Report Top Risks* are correlated at the 1% level and may represent one underlying concept tied to reporting. We alleviate this concern by using our judgment-based clustering of proxy variables based on our a priori knowledge and the more statistical based factor analysis method. As stated previously, factor analysis suggests that there are four underlying concepts.

[Insert Table 4 About Here]

We provide in Table 5 the results of the probit regressions we employ to investigate our research question. As discussed previously, we run four separate analyses to explore the association between the ERM proxy variables we obtain from the required proxy disclosures and the S&P management and governance scores. Our first set of results are provided in Table 5 Panel A. These results reveal that there is a significant positive association between extent of board risk oversight elements disclosed in the proxy statement and the receipt of a score of “strong” from S&P. Firms that provide information in the proxy about a larger number of elements related to

board risk oversight are more likely to have received a management and governance score of “strong” by S&P. This suggests that extent of information provided in the proxy about different board risk oversight practices does differ between firms with a strong management and governance practices from those firms with weak or fair management and governance practices. These finding is consistent with agency theory and signaling theory, but not institutional theory.

[Insert Table 5 About Here]

Our next analysis breaks down the *ERMTotal* measure to provide individual measures related to each of the 11 elements examined in our analysis of the proxies. This more detailed analysis allows us to determine whether there are specific aspects of the board’s risk oversight that are associated with S&P management and governance scores of “strong”. Our results are provided in Table 5 Panel B. These results reveal that there is a significant positive association between receiving a strong S&P score and three of our ERM proxy variables – *Board Risk Oversight*, *Mgt Risk Committee*, and *Report Annually*. We also observe one interesting negative association between S&P score and *Strategic Risks*.

We find it interesting that the mere acknowledgement that the board has an explicit duty to provide oversight leadership to the risk management process is a significant discriminator between firms that receive a strong S&P rating and those that receive a weak/fair score. It seems obvious – but perhaps it is simply the lack of such acknowledgement that signals a poor governance structure in general. The presence of a management-level risk committee is also strongly associated with a strong S&P rating. Thus, the presence of this committee seems to be viewed by S&P as an indicator of a strong risk management and governance commitment by the organization.

The provision of a formal report to the board identifying key risks to the organization on an at least annual basis is strongly associated with a strong S&P score. Hence, organizations whose boards are regularly updated on key risks seem to be viewed by S&P as having stronger management and governance practices in place. Our finding with respect to the *negative* association between a focus on strategic risks and a strong S&P score is counter intuitive. We believe this result is driven by significant correlations that exist among several of our independent variables. We then performed two additional tests designed to counter the effect of these correlations.

The results from our first additional test are found in Table 5 Panel C. Here we combine the eleven individual proxy elements into six distinct ERM variables (ERM1 – ERM6 as indicated in the legend included in Panel C of Table 5). We judgmentally grouped similar ERM concepts together to develop these six variables. For example, ERM3 combines two elements – *Report Top Risks* and *Report Annually* – into a single measure. Similarly, ERM5 is a combination of *Risk Culture* and *Risk Appetite*. All six ERM variables are described in Table 5 Panel C. Our results reveal a significant association between both ERM1 (acknowledgment of the board’s responsibility for risk oversight) and ERM3 (at least annual reporting by management of top risks to the board of directors) and a strong S&P score. Importantly, the unusual *negative* association between a strong score and a focus on strategic risks is no longer observed (ERM2 is the variable that combines *Strategic Risks* and *Strategic Planning* into a single combined measure).

ERM1 consists only of the *Board Risk Oversight* component so it is unsurprising (but comforting) that it continues to exhibit a strong positive association with a strong S&P score. The variable, ERM3, a combination of *Report Top Risks* and *Report Annually*, is also significantly positively associated and remains consistent with our main findings reported in Table 5 Panel B. We do not observe a significant association between a strong S&P score and ERM4 – the variable that includes *Mgt Risk Committee*. This is likely explained by the noise contributed by the two additional ERM elements also included in ERM4 – *Specific ERM Resp* and *Risk Owners* – that presumably negate the effect of *Mgt Risk Committee* to some extent.

Our final test results are reported in Table 5 Panel D. In this probit regression we first employ factor analysis to reduce the eleven ERM proxy elements to distinct factors. Four factors were identified and used in this test (along with the three control variables employed in our first two tests). Two of the four factors are significant. Factor 1 is strongly positively associated with a strong S&P score while Factor 2 exhibits a significant negative association. Unfortunately, we cannot attribute specific ERM proxy elements to specific factors so all we can readily conclude is that there is a subset of ERM proxy elements that do have a statistically significant association with the S&P score – a finding consistent with our first two tests.

6. DISCUSSION AND CONCLUSIONS

We investigate the information content of proxy disclosures related to the board of director's role in risk oversight and how these disclosures are related to management and governance scores developed by Standard & Poor's (S&P) to enhance their credit ratings process. Beginning in 2010, the U.S. Securities and Exchange Commission (SEC) now requires enhanced disclosure rules regarding board risk oversight. The SEC rule requires disclosures in the proxy statement that specifically describe how the board provides oversight of risk management activities for their organization. While the SEC's rule does not mandate any specific tasks to be performed by the board with respect to risk oversight, the rule does require boards to provide information to help investors better understand how the board of directors oversees the company's risk management practices implemented on a day-to-day basis by management.

We identify eleven specific elements disclosed in the proxy related to risk oversight activities and use them to explore differences in management and governance scores assigned to a set of firms who either received "strong" or "weak/fair" scores from S&P. We find that an association does exist between the extent of elements disclosed about the board's risk oversight in the proxy statement and the S&P score. Firms that provide information about more aspects of board risk oversight are more likely to be firms receiving a "strong" score on management and governance from S&P. Given S&P's evaluation is based on different sources of information, this positive association suggests that more information provided in the proxy about board risk oversight processes may provide informational value about the strength of the entity's management and governance.

Our analysis of the association between S&P scores and each of the 11 board risk oversight elements finds that three elements – *Board Risk Oversight*, *Management Risk Committee*, and *Report Annually* – are all significantly positively associated with an organization receiving a strong management and governance score from S&P. We believe these associations help validate the importance of these required disclosures to investors in that many are directly related to the S&P evaluation. We did observe one unusual *negative* association between *Strategic Risks* and the S&P score. We believe this anomalous result is driven by significant correlation among the set of ERM proxy elements. Our alternative test (with six ERM grouped elements) seems to support this interpretation.

In all our analyses, we control for the riskiness of the entity by including measures that proxy for firm risk, financial leverage, and volatility of earnings. Our results indicate that size is never significantly associated with a strong management and governance score, while surprisingly financial leverage assumes a positive significant association with ‘strong’ scores in the regression grouping the 11 ERM elements into 6 and in the one of the factor analysis. Finally, standard deviation of EBIT has consistency of results in all regressions showing companies having greater volatility of earnings are negatively associated with strong S&P management and governance score.

Overall, results validate the agency and signaling theories interpretation suggesting a positive relation between the board’s role in risk oversight disclosure and the effective enterprise-wide risk oversight, after controlling for the riskiness of the firm (as proxied by firm size, leverage, and volatility of earnings). In contrast, there is no evidence supporting institutional theory expectations about a formal rather than substantial disclosure about board’s risk oversight in proxy statements.

The study identifies the disclosure of boards’ risk oversight is informative to stakeholders with regard to the quality of management and governance as assessed by S&P. This provides some initial evidence that there is information content contained in the proxy-based board risk oversight disclosures. Our findings provide additional insights about the roles of boards as determinants of enterprise risk management (Kleffner, 2003; Beasley *et al.*, 2005; Beasley *et al.*, 2015). These findings may be informative to future academic research that uses the board risk oversight disclosures as a proxy for ERM effectiveness.

Moreover, we believe the presence of a management-level risk committee strongly associated with a strong S&P rating is an important finding, especially when viewed alongside evidence that there is a growing trend towards the use of management-level risk committees in organizations (Beasley *et al.*, 2017).

The paper tests and positively supports the assumption of prior studies on corporate governance drivers of ERM and on risk disclosure about the informativeness of companies’ disclosure. Thus, contributing to extend prior research assessing the quality and validity of the board risk oversight disclosures and identifying the specific elements associated with a higher quality of an entity’s overall “management and governance” effectiveness.

Further, following the academic call to investigate the dilemma between better and more regulation, in times where the issue of compliance and risk management become more important for top management (AIDEA, 2017), the study brings new insights about how SEC regulations for public companies to disclose information about the board's role in risk oversight may be contributing by providing useful information to stakeholders. Specifically, it empirically shows how some elements of the ERM are more associated than others to a stronger management and governance.

The analysis relies on our ability to accurately score the ERM proxy elements. While we required agreement between two authors at all times, it remains possible that we have misclassified certain elements as present or absent based on our readings of the proxy disclosures. To the extent this occurred, we have introduced additional noise into our analysis which we believe would bias against finding significant results. We also found it necessary to include a sizable number of organizations rated "fair" by S&P. Tests would be stronger if we had been able to directly compare a full set of firms rated "strong" vs. rated "weak". The small number of "weak" firms with available data prevented us from this ideal comparison. Despite these limitations, we believe the results help validate the importance of the proxy disclosures to investors required by SEC in that many enterprise-wide risk oversight elements are directly related to the S&P evaluation.

A number of governance organizations and regulators have recently called for more enhanced disclosures about how organizations manage risks. Therefore, findings may also contribute to the current debate of risk disclosure regulation and practice still open as national and international regulatory bodies try to harmonize their efforts.

To conclude, future research will be asked to examine more about the boards' role in risk oversight and its disclosure at the international level. Further, additional investigation could interest the link between the benefits that may derive from such kind of disclosure and the performance, both at the investors and companies level of analysis.

References

- AIDEA, 2017. "New Trends" in Business Economics and Management Studies Rewriting the Relationship between Business and Society. <http://www.accademiaaidea.it/wpaidea/wp-content/uploads/2016/12/CFP-AIDEA-2017-ENG1.pdf>
- Allini A., Manes Rossi, F., and Hussainey, K., 2016. The Board's Role in Risk Disclosure: An Exploratory Study of Italian Listed State-Owned Enterprises. *Public Money and Management*. <http://dx.doi.org/10.1080/09540962.2016.1118935>
- Baxter, R., Bedard, J. C., Hoitash, R., and Yezegel, A., 2013. Enterprise Risk Management Program Quality: Determinants, Value Relevance, and the Financial Crisis. *Contemporary Accounting Research*, 30(4), pp.1264–1295.
- Beasley, M., Clune, R., Hermanson, D. 2005. Enterprise Risk Management: An Empirical Analysis of Factors Associated with the Extent of Implementation. *Journal of Accounting and Public Policy*, 24 (6), pp. 521-531.
- Beasley, M, Branson, B. and Hancock, B. 2009. Report on the Current State of Enterprise Risk Oversight. Raleigh, NC: ERM Initiative at North Carolina State University (March).
- Beasley, M., Branson, B., Hancock, B., 2012. Report of the Current State of Enterprise Risk Oversight. In: Management Accounting Research Series, fourth ed. AICPA Durham; North Carolina State University, Raleigh, NC.
- Beasley, M., Branson, B. and Pagach, D. 2015. An Analysis of the Maturity and Strategic Impact of Investments in ERM. *Journal of Accounting and Public Policy*, 34 (3), pp. 219-243.
- Beasley, M., Branson, B. and Hancock, B., 2017. The State of Risk Oversight: An Overview of Enterprise Risk Management Practices (8th edition).
- Brown, I., Steen, A. and Foreman, J., 2009. Risk Management in Corporate Governance: A Review and Proposal. *Corporate Governance: An International Review*, 17(5), pp.546–558.
- Campbell, J. L., Chen, H., Dhaliwal, D. S., Lu, H. M., & Steele, L. B., 2014. The Information Content of Mandatory Risk Factor Disclosures in Corporate Filings. *Review of Accounting Studies*, 19(1), pp.396–455.
- Cohen, J., Krishnamoorthy, G., Wright, A., 2008. Form versus Substance: The Implications for Auditing Practice and Research of Alternative Perspectives on Corporate Governance. *Auditing, Journal of Practice Theory*, 27 (2), pp. 181–198.
- Desender K. 2007. On the Determinants of Enterprise Risk Management. ssrn.com/abstract=1025982.
- Elshandidy, T., Fraser, I. and Hussainey, K. 2013. Aggregated, Voluntary, and Mandatory Risk Disclosure Incentives: Evidence from UK FTSE all-share Companies. *International Review of Financial Analysis*, 30, pp.320–333.
- Fama, M. and Jensen, E.F. 1983. Separation of Ownership and Control. *Journal of Law and Economics*, 26 (2), pp. 301–26.
- Frigo, M.L. and Anderson, R.J., 2011. Strategic Risk Management: A Foundation for Improving Enterprise Risk Management and Governance. *The Journal of Corporate Accounting & Finance*, pp.81–88, doi:10.100.
- Gordon, L. A., Loeb, M. P. and Tseng, C. 2009. Enterprise Risk Management and Firm Performance: A Contingency Perspective. *Journal of Accounting and Public Policy*, 28 (4), pp. 301–27.
- Hassan M. K., 2009. UAE Corporations-Specific Characteristics and Level of Risk Disclosure. *Managerial Auditing Journal*, 24 (7), pp. 668-687.

- Heap, A., 2008. Risk Transparency in the Aftermath of the Credit Crisis. *Corporate Finance Review*, 12(4), pp. 30–35.
- Jensen, M.C., and Meckling, W.H., 1976. Theory of the Firm: Managerial. *Journal of Financial Economics*, 3, pp.305–360.
- Kleffner, A.E., Lee, R.B. and McGannon, B., 2003. The Effect of Corporate Governance on the Use of Enterprise Risk Management: Evidence from Canada. *Risk Management & Insurance Review*, 6 (1), pp. 53-73.
- Liebenberg, A. P., and R. E. Hoyt., 2003. The Determinants of Enterprise Risk Management: Evidence from the Appointment of Chief Risk Officers. *Risk Management and Insurance Review*, 6 (1), pp. 137–52.
- Linsley, P.M., and P.J. Shrives, 2003. *Risk Reporting by UK and German Companies: Towards Meaningful Disclosure?* 26th Annual Congress of the European Accounting Association, Seville: *Unpublished*.
- Merkel-Davies, D.M. and Brennan, N.M., 2007. Discretionary Disclosure Strategies in Corporate Narratives: Incremental Information or Impression Management? *Journal of Accounting Literature*, 26, pp.116–196.
- National Association of Directors (NACD), 2016. Director Essentials: Strengthening Risk Oversight, Washington, DC.
- National Association of Insurance Commissioners (NAIC), 2012. Risk Management and Own Risk Solvency Assessment Model Act. Washington, DC. http://www.naic.org/documents/committees_e_risk_management_orsa_adopted_120906.pdf
- Office of Management and Budget, 2016. OMB Circular No. A-123, Management’s responsibility for enterprise risk management and internal control. Executive Office of the President, Office of Management and Budget. Washington, DC. July 15, 2016.
- Oliveira, J., Lima Rodrigues, L. and Craig R., 2011a. Risk-Related Disclosure Practices in the Annual Reports of Portuguese Credit Institutions: An Exploratory Study. *Journal of Banking Regulation*, 12, pp.100-118.
- Oliveira, J., Lima Rodrigues, L. and Craig, R., 2011b. Risk-Related Disclosures by non-Finance Companies. *Managerial Auditing Journal*, 26(9), pp.817–839.
- O’Sullivan, N., 2000. The Impact of Board Composition and Ownership on Audit Quality: Evidence from large UK Companies. *The British Accounting Review*, 32(4), pp.397–414.
- Powell, W., 1991. Expanding the scope of institutional analysis. In: Powell, W., DiMaggio, P. (Eds.), *The New Institutionalism in Organizational Analysis*. The University of Chicago Press, Chicago, IL, pp. 183–203.
- Spence, A. M., 1973. Job Market Signaling. *Quarterly Journal of Economics*, 87 (3), August, pp. 355-374.
- Standard and Poor’s, 2008. Enterprise Risk Management: Standard & Poor’s to Apply Enterprise Risk Analysis to Corporate Ratings. S&P, New York.
- Standard and Poor’s, 2012. Methodology: Management and Governance Credit Factors for Corporate Entities and Insurers. S&P, New York.
- U.S. Chief Financial Officers Council (U.S. Council), 2016. Playbook: Enterprise Risk Management for the U.S. Federal Government. Washington, DC.
- U.S. Congress (Congress), 2010. Dodd-Frank Wall Street Reform and Consumer Protection Act. Public Law 111-203. Washington, DC.

- U.S. Securities and Exchange Commission (SEC), 2009. "Proxy Disclosure Enhancements," Securities and Exchange Commission, 17 CFR PARTS 229, 239, 240, 249 and 274 [RELEASE NOS. 33-9089; 34-61175; IC-29092; File No. S7-13-09] RIN 3235-AK28, Washington, DC. <https://www.sec.gov/rules/final/2009/33-9089.pdf>.
- U.S. Securities and Exchange Commission (SEC), 2011. "CF Disclosure Guidance: Topic No. 2, Cybersecurity, Washington, DC. <https://www.sec.gov/divisions/corpfin/guidance/cfguidance-topic2.htm>

Table 1: Variable Definitions

<i>SCORE</i>	1 if Standard and Poor's Management and Governance rating is Strong. 0 if Weak or Fair.
<i>Board Risk Oversight</i>	1 if proxy states that the board is responsible for the risk oversight of the firm, 0 otherwise.
<i>Board Delegates Risk</i>	1 if proxy states that the board has delegated responsibility for oversight of ERM (or risk oversight) to a board level committee (e.g., audit committee, risk committee, etc.), 0 otherwise.
<i>Mgt Risk Committee</i>	1 if proxy states that management has established a management-level risk committee, 0 otherwise.
<i>Strategic Risks</i>	1 if proxy states that the ERM process considers "strategic risks" as one of the types of risks it monitors, 0 otherwise.
<i>Strategic Planning</i>	1 if proxy states that the risk management process is used, integrated, or an input to the strategic planning process (or strategic focus of the firm), 0 otherwise.
<i>Report Top Risks</i>	1 if the proxy states that the board receives a report from management of the top risks, 0 otherwise.
<i>Report Annually</i>	1 if the proxy states that the frequency of report of top risks to the board occurs at least annually, 0 otherwise.
<i>Specific ERM Resp</i>	1 if proxy states that a specific member (or title) of management has the responsibility for leading the risk management process, 0 otherwise.
<i>Risk Owners</i>	1 if proxy states that there is an assignment of risk owners among management to manage specific risks, 0 otherwise.
<i>Risk Culture</i>	1 if proxy states that there is a consideration of "risk culture" in some way, 0 otherwise.
<i>Risk Appetite</i>	1 if proxy states that the board is involved in setting/overseeing risk appetite, 0 otherwise.
<i>Logassets</i>	Natural log transformation of 2015 FYE total assets.
<i>FinLev</i>	2015 FYE Total Assets / 2015 FYE shareholders' equity.
<i>Stdev_EBIT</i>	Standard Deviation of 2011-2015 Earnings before Interest and Tax.

Table 2 – Sample by Industry

	S&P Management and Governance Rating	
	Strong	Weak/Fair
AEROSPACE/DEFENSE	5	3
FINANCIAL	4	2
AUTO/TRUCKS	2	4
CAP GOODS/MACHINE&EQUIP	12	4
CHEMICALS	5	4
CONSUMER PRODUCTS	4	4
FOREST PROD/BLDG MAT/PACKAGING	1	5
HEALTHCARE	5	2
HIGH TECHNOLOGY	11	6
MEDIA. ENTERTAINMENT & LEISURE	6	14
OIL, GAS & MINING	5	18
REAL ESTATE	7	3
REGULATED UTILITIES	3	0
RESTAURANTS/RETAILING	8	7
TELECOMMUNICATIONS	2	3
TRANSPORTATION	3	4
	83	83

Table 3 - Summary Statistics and Sample Comparisons

	Strong Firms (n = 83)			Weak/Fair Firms (n = 83)			Test of Differences	
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	T- test of Means	Rank Sum test of Medians
Board Risk Oversight	0.939	1	0.241	0.850	1	0.359	1.86**	1.84**
Board Delegates Risk	0.524	1	0.502	0.488	0	0.503	0.47	0.47
Mgt Risk Committee	0.280	0	0.452	0.100	0	0.302	2.98***	2.91***
Strategic Risks	0.549	1	0.501	0.563	1	0.499	-0.17	-0.17
Strategic Planning	0.463	0	0.502	0.375	0	0.487	1.14	1.14
Report Top Risks	.695	0	.463	.500	.500	.503	2.57***	2.52***
Report Annually	.549	0	.501	.225	0	.420	4.45***	4.21***
Specific ERM Resp	0.207	0	0.408	0.138	0	0.347	1.17	1.17
Risk Owners	0.171	0	0.379	0.075	0	0.265	1.86**	1.84**
Risk Culture	0.037	0	0.189	0.088	0	0.284	-1.35	-1.33
Risk Appetite	0.073	0	0.262	0.075	0	0.265	-0.04	-0.04
Logassets	11.946	10.848	2.649	12.723	14.005	2.990	-1.75*	-1.49*
FinLev	2.737	2.270	1.362	2.308	2.45	3.05	1.16	0.44
Stdev EBIT	0.213	0.156	0.385	0.493	0.249	1.22	-1.93***	-3.83***

See Table 1 for Variable definitions. The means test is a one sided t-test. The medians test is a Wilcoxon Sign Rank test with the z-statistic reported. ***, **, * indicate significance at the 1%, 5%, 10% level, respectively.

Table 4: Pearson Correlation Matrix for ERM Proxy Variables

	Board Risk Oversight	Board Delegates Risk	Strategic Risks	Strategic Planning	Report Top Risks	Report Annually	Specific ERM Resp	Mgt Risk Committee	Risk Owners	Risk Culture
Board Delegates Risk	0.105 (0.184)									
Strategic Risks	0.221 (0.005)***	-0.014 (0.862)								
Strategic Planning	0.169 (0.032)**	0.190 (0.016)**	0.207 (0.008)***							
Report Top Risks	0.090 (0.257)	-0.002 (0.975)	0.104 (0.187)	0.007 (0.927)						
Report Annually	0.149 (0.058)*	0.003 (0.972)	0.204 (0.009)***	0.143 (0.070)*	0.472 ($<.0001$)***					
Specific ERM Resp	-0.003 (0.967)	0.027 (0.733)	-0.183 (0.020)**	0.074 (0.347)	0.174 (0.027)**	0.104 (0.187)				
Mgt Risk Committ	0.064 (0.417)	0.041 (0.604)	0.056 (0.478)	0.063 (.424)	0.206 (0.009)***	0.095 (0.230)	0.110 (0.165)			
Risk Owners	0.129 (0.103)	0.183 (0.020)**	0.185 (0.019)**	0.099 (0.210)	0.116 (0.142)	0.240 (0.002)***	0.126 (0.110)	0.056 (0.480)		
Risk Culture	0.088 (0.266)	-0.157 (0.046)**	0.126 (0.110)	0.146 (0.064)	-0.104 (0.188)	-0.047 (0.555)	-0.117 (0.137)	0.006 (0.943)	-0.018 (0.817)	
Risk Appetite	0.020 (0.801)	0.044 (0.581)	0.016 (0.842)	0.237 (0.002)***	-0.009 (0.911)	-0.081 (0.308)	0.120 (0.128)	0.162 (0.039)**	0.037 (0.639)	0.123 (0.118)

Amounts in parentheses are p-values.

***, **, * indicate significance at the 1%, 5%, 10% level, respectively.

Table 5 – Probit Regressions***Panel A: Proxy Variables***

Variable	Coefficient	Std. Error	Chi-Square
Intercept	-0.221	0.948	0.05
ERMTotal	0.269	0.101	7.10***
Control variables			
Logassets	-0.077	0.062	1.53
FinLev	0.148	0.084	3.09*
Stdev EBIT	-0.469	0.029	4.36**

See Table 1 for variable definitions.

***, **, * indicate significance at the 1%, 5%, 10% level, respectively.

Table 5 – Probit Regressions
Panel B: Proxy Variables

Variable	Coefficient	Std. Error	Chi-Square
Intercept	-0.242	1.080	0.05
Board Risk Oversight	1.118	0.612	3.34*
Board Delegates Risk	0.020	0.392	0.00
Mgt Risk Committee	1.226	0.560	4.80**
Strategic Risks	-0.778	0.420	3.44*
Strategic Planning	0.202	0.406	0.25
Specific ERM Resp	-0.351	0.519	0.46
Risk Owners	0.322	0.600	0.29
Report Top Risks	-0.058	0.439	0.02
Report Annually	1.377	0.472	8.53***
Risk Culture	-0.990	0.823	1.45
Risk Appetite	-0.195	0.767	0.06
Control variables			
Logassets	-0.084	0.067	0.211
FinLev	0.115	0.093	0.217
Stdev EBIT	-0.404	0.229	0.078*

See Table 1 for variable definitions.

***, **, * indicate significance at the 1%, 5%, 10% level, respectively.

Table 5 – Probit Regressions
Panel C: Sub group regression

Variable	Coefficient	Std. Error	Chi-Square
Intercept	-0.809	1.081	0.560
ERM1	1.068	0.602	3.150*
ERM2	-0.232	0.404	0.330
ERM3	0.802	0.377	4.540**
ERM4	0.666	0.386	2.970
ERM5	-0.658	0.564	1.360
ERM6	0.160	0.361	0.200
Control variables			
Logassets	-0.078	0.064	1.500
FinLev	0.189	0.094	4.070**
Stdev EBIT	-0.406	0.242	2.820*

ERM1 - Board Risk Oversight

ERM2 - Strategic Risks + Strategic Planning

ERM3 - Report Top Risks + Report Annually

ERM4 - Specific ERM Resp + Risk Owners + Mgt Risk Committee

ERM5 – Risk Culture + Risk Appetite

ERM6 - Board Delegates Risk

See Table 1 for variable definitions.

***, **, * indicate significance at the 1%, 5%, 10% level, respectively.

Table 5 – Probit Regressions**Panel D: Factor Analysis**

Variable	Coefficient	Std. Error	Chi-Square
Intercept	0.774	0.815	0.900
Factor 1	0.621	0.194	10.230***
Factor 2	-0.301	0.179	2.820*
Factor 3	-0.044	0.179	0.060
Factor 4	-0.012	0.176	0.010
Control variables			
Logassets	-0.071	0.064	1.240
FinLev	0.143	0.087	2.700*
Stdev EBIT	-0.407	0.229	3.140*

Factors 1 – 4 result from factor analysis of eleven ERM proxy variables (defined in Table 1).

***, **, * indicate significance at the 1%, 5%, 10% level, respectively.

PAPER 3

(In)consistency between Private and Public Disclosure on Enterprise Risk Management and its Determinants

Silvia Panfilo*

ABSTRACT

A number of governance organizations and regulators have recently called for more enhanced disclosures about how organizations manage risks. Most of these requirements do not ask for uniform and mandatory information about that. The debate of risk disclosure regulation and practice is still open as national and international regulatory bodies try to harmonize their efforts.

Enterprise Risk Management (ERM) is recognized as a value-contributing best practice in corporate governance (CG) even when legal standards do not require it (Whitman, 2015). Public disclosure on such a process is not generally mandatory. However, in Italy a recent revision of the Corporate Governance Code for listed companies forced companies to “transparently disclose in their Corporate Governance report the coordination among people and bodies designed to the Internal Control Risk Management System” (art. 7.C.1, lett. d).

Relying on the ERM fundamental concepts provided by the Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2004) the author submitted an on-line survey to all Italian listed companies seeking information about their risk management practices. Private disclosure - obtained from the surveys - is compared to Corporate Governance reports released to the public by the same companies. The paper aims at investigating a potential variation between private source of information and public disclosure on ERM in a setting of voluntary disclosure, i.e. before the recent Corporate Governance Code review.

The comparison between the two sources of disclosure shows Italian companies tend to privately reveal that they have a more effective ERM process than the one they voluntarily disclose in their CG reports. It follows an examination of the determinants of higher variation – here intended as information inconsistency. The findings interpreted according a comparative theoretical approach between agency and proprietary costs theories support more the latter one. Specifically, ownership’s concentration, leverage and ERM experience positively affect higher variation. Whereas, board independence and market to book ratio negatively affect it. Results therefore seem to support the decision of the Italian Corporate Governance committee to compulsorily enhance the disclosure on the risk management system of listed companies. The study might have international policy implications.

Keywords: Enterprise Risk Management (ERM), private disclosure, public disclosure, information (in)consistency

* Department of Management - Ca’ Foscari University of Venice, Cannaregio 873, 30121 Venice (Italy).

1. INTRODUCTION

Worldwide, a number of corporate governance-focused entities have issued calls for effective risk management processes within organizations including the introduction of specific corporate governance (CG) bodies, such as Chief Risk Officers (CRO) and/or risk committees (Brown *et al.*, 2009).

In the US, the New York Stock Exchange's (NYSE's) revised CG rules issued in 2004 placing explicit risk oversight responsibilities on audit committees, and the Securities and Exchange Commission's (SEC's) expanded proxy disclosure rules effective in 2010 requiring greater transparency about the board's role in risk oversight (NYSE, 2004; SEC, 2010). Furthermore, a number of credit rating agencies evaluate the effectiveness of the organization's risk management processes as part of the credit rating evaluation process, while the Dodd-Frank legislation requires the creation of board risk committees for large financial institutions (Standard and Poor's, 2012; U.S. Congress, 2010).

In the UK, over the last two decades, the Institute of Chartered Accountants in England and Wales (ICAEW) has paid great attention to how UK firms provide information about risk (ICAEW, 1997, 1999, 2002). In Italy, emphasis on risk disclosure stems from a consultative document that was issued in 2008 by the Council of Italian Chartered Accountants (IRDCEC, 2008) to assist entities with implementing the new requirements for management reporting that emerged after the introduction of the European Directive 2001/65/EC (Elshandidy and Neri, 2015).

Furthermore, in Europe, financial companies are required to have some risk process standards. Large banks, for instance, have to comply with the international regulatory framework Basel III (Directive 2013/36/EU and Regulation (EU) No. 575/2013). Likewise, insurance companies are subject to Solvency II (Directive 2009/138/CE) and as for U.S. insurers they must complete their "Own Risk and Solvency Assessment (ORSA)" for filing with state insurance regulators. Those initiatives require insurers to implement an effective and integrated risk management process and to report focusing on the enterprise risk management effectiveness.

In response to so much attention and push on Enterprise Risk Management (ERM) as part of good corporate governance, risk management information is expected to be increasingly sought by the firm's stakeholders and information users (Lajili and Zèghal, 2005). Nevertheless, previous literature on risk disclosure has limited its focus on risk factors (Beretta and Bozzolan, 2004; Linsley and Shrives, 2005; 2006) rather than exploring the disclosure of risk management and governance practices.

The relationship between risk management disclosure and corporate governance is of interest to regulators because less concentrated ownership and independent directors are expected to reduce agency problems, and thus reduce the need for regulatory intervention in corporate reporting (Abraham and Cox, 2007). Following this increasing push for transparency on risk management systems and practices, there is a call for examining disclosure about that attempting to answer the overarching research question: To what extent are public disclosures consistent with what companies privately declare about their internal ERM process?

Considering ERM is recognized as a value-contributing best practice in CG even when legal standards do not require it (Whitman, 2015), this paper relies on the *Enterprise Risk Management - Integrated Framework* issued by Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2004). It is the most adopted framework (Hayne and Free, 2014) providing guidance about the key elements of an effective, top-down, enterprise-wide approach to risk management. The paper adopts the ERM fundamental concepts provided by COSO (2004) and operatively aims at investigating: (1) the nature and extent of variation between public and private disclosure on risk management practices in a context of voluntary disclosure and (2) the determinants of higher variation – interpreted as information inconsistency.

These two research questions can provide impetus to the debate of risk disclosure regulation and practice among national and international regulatory bodies as they try to harmonize their efforts.

To answer the former research question, in line with Marshall and Weetman (2002) the author compared data collected from two disclosure sources: a private on-line survey submitted to all Italian listed companies, and the public CG reports drafted by the same respondents' companies. A score is developed for both the private and the public source of disclosure on ERM. The difference between the two scores allowed the identification of the level of disclosure variation on ERM and the investigation of the information (in)consistency.

Finally, to answer the second research question, adopting a theoretical comparative approach, the paper examines corporate governance factors (board independence and ownership's concentration) and firm's risk characteristics (leverage and market to book ratio) as determinants explaining information inconsistency about risk management practices.

Therefore, the paper helps extending previous literature on risk disclosure focusing on risk management process instead of risk factors. In addition, prior research mainly analyzes entities in a non-financial setting while the current study takes into account also financial companies. Results showing how most of the companies' public reports are inconsistent with the private disclosure on the internal process shed insights that may support the need for more disclosure transparency. In particular, companies tend to not fully disclose information about ERM processes in place. That is,

the private disclosure suggests more extensive risk management processes than public disclosures reveal.

The study finds that board independence, the extent of ownership's concentration, the extent of leverage, market to book ratio, companies size, financial industry, and years of ERM experience are factors associated with information inconsistency. Findings support the Italian CG committee decision to mandatory enforce additional disclosure on the risk management process at the aim of improving transparency about these processes.

The next section presents the prior studies on risk management disclosure that allow to motivate the need for an explicit focus on the ERM process and the theoretical background relying on managers' incentives theories used in the paper to develop the hypotheses. Sections about the research design, analysis and results are then provided. Finally, conclusions with a discussion of the key findings.

2. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

Healy and Palepu (2001) claim investors view voluntary disclosures as credible information. Prior literature on risk disclosure has predominantly examined the nature and extent of risk disclosures and their influencing factors by applying content analyses to data collected from annual reports (Buckby *et al.*, 2015). Indeed, most of the prior studies focused on the investigation of risk factors in terms of information quality (Beretta and Bozzolan, 2004; 2008; Oliveira *et al.*, 2011; Miinhkinen, 2012; Abraham and Shrivess, 2014), and their determinants (Linsley and Shrivess, 2005, 2006; Abraham and Cox, 2007; Amran *et al.*, 2009; Hassan, 2009; Elshandidy *et al.*, 2013; Elshandidy and Neri, 2015). Differently, Buckby *et al.* (2015) focus on risk management practices disclosure in corporate governance reports.

Risk management information is expected to be increasingly sought by the firm's stakeholders and information users (Lajili and Zèghal, 2005). The benefits of enhancing risk management disclosure could be many (Courtnage, 1998). For instance, knowledge of the Enterprise Risk Managemet (ERM) may help investors in assessing the usefulness of financial reports in predicting future cash flows (Baxter *et al.*, 2013). Investors in addition might incorporate risk information into their price decisions and thus improve the market liquidity by reducing information asymmetry (Campbell *et al.*, 2014). Nevertheless, a key constraint on empirical research on management control systems is the lack of information on what corporations do internally (Zimmerman, 2001).

Prior scant literature shows corporations disclose only minimal details of their risk management program (Tufano, 1996; Maizatulakma *et al.*, 2015; Buckby *et al.*, 2015) and risk

management disclosure becomes a compliance exercise (Collier *et al.*, 2007). Further Marshall and Weetman (2002) find evidence that, even for specific risk management practices (i.e. disclosure of foreign exchange risk management) in a mandatory disclosure regime, companies persist to have information asymmetry. Specifically, companies tend to publicly disclose less information in the annual report compared to what they declare privately in a prior questionnaire.

The current paper, taking into account these prior studies, aims at investigating the consistency of Enterprise Risk Management information in a setting of voluntary disclosure. Specifically, the paper examines the nature and extent of variation between public disclosure compared to a private source of information on risk management practices, and the determinants of the (in)consistency.

Managers' incentives theories (agency and proprietary costs) are used in the current paper to explain variation in voluntary disclosures released by firms (privately vs. publicly). The most adopted agency theory proposes that in public companies the interests of managers diverge from those of the owners (Jensen and Meckling, 1976). For the owners, solutions include corporate control mechanisms to counter managerial power and CG to monitor management and improve accountability (O'Sullivan, 2000). In the risk literature agency theory has been widely used in the area of disclosure (Abraham and Cox, 2007; Oliveira *et al.*, 2011; Tao and Hutchinson, 2013; Buckby *et al.*, 2015) and ERM characteristics (Beasley *et al.*, 2005, 2008).

Proprietary cost theory (Verrecchia, 1983) instead focuses on the competitive disadvantage of greater disclosure. Proprietary costs indeed include not only the costs of preparing, disseminating and auditing information, but also the cost deriving from disclosing information which may be used by competitors and other parties in a way that is harmful for the reporting company (Prencipe, 2004). The threat of economic disadvantage may give rise to disincentives to disclose risk information voluntarily (Dobler, 2008). Proprietary cost theory argues that the incentive of disclosing information is a decreasing function of the potential costs attached to a disclosure, and that it is an increasing function of the favorableness of the news in a disclosure (Verrecchia, 1983). Whether proprietary costs are higher than the benefits of full disclosure, managers have incentives to not disclose (Prencipe, 2004). Abraham and Shrive (2014) adopt proprietary cost theory to explain the behavior emerging from their results, suggesting that company managers prefer providing formal rather than substantial risk disclosures.

2.1. Determinants hypothesized to affect inconsistency on ERM disclosure

A significant body of literature demonstrates that the monitoring function of corporate governance significantly influences the propensity for better disclosure (see Patelli and Prencipe, 2007).

Governance and ownership factors may play a vital role in firms' risk reporting because directors are accountable for the CG report prepared for shareholders. Thus, the governance arrangements of the board of directors can be expected to influence disclosure policy.

A first monitoring mechanism of CG is the presence of independent directors (Abraham and Cox, 2007; Lajili, 2007). Independent directors are considered to enhance the quality of the board as they are expected to be more unbiased representatives of shareholders due to an assumed absence of conflicts of interest between the principal and the agent (O'Sullivan, 2000). Furthermore, Chen and Jaggi (2000) argue that a board comprising more independent directors is more likely to promote high quality performance-related disclosure. Thus, more independent directors may provide greater information on risk and risk management process information to reduce agency costs, resulting in reduced information asymmetry and lower inconsistency.

Previous research identifies a positive relation between the number of independent directors and voluntary risk disclosure (Abraham and Cox, 2007; Oliveira *et al.*, 2011) having lower proprietary costs. According both agency and proprietary cost theories, companies with higher percentages of independent directors are expected to have a lower variation between public and private source of information on the ERM process. Thus, it is expected a negative association between the number of independent directors and greater variation between public and private source of information on the ERM process - i.e. inconsistency.

Hyp 1. There is a negative association between the number of independent directors and information inconsistency about the ERM process.

A second monitoring mechanism of agency costs is the nature of the specific ownership structure (Abraham and Cox, 2007; Kajuter, 2006; Lajili, 2007). In ownership structures more closely held, agency costs are generally lower (Ball *et al.*, 2000). High concentrated ownership indeed plays a key role in controlling and monitoring the firm mitigating agency costs. Thus, in highly concentrated ownership structure, public disclosure is less needed and proprietary costs of voluntary disclosure higher. On the contrary, in companies less closely held there is more need to monitoring managers' activities, and a greater level of public disclosure is expected given its lower proprietary costs. Therefore, given such premises and according to both the tested theories, it is hypothesized that highly closely held companies, that is companies with high level of ownership concentration show greater inconsistency.

Hyp 2: There is a positive association between highly closely held companies and information

inconsistency about the ERM process.

Although a range of disclosure studies have documented the impact of various influential CG factors on the level of risk management disclosures, little prior research has addressed the possible impact of companies' risk-related factors (Buckby *et al.*, 2015). Because risk is inherently proprietary in nature (Woods *et al.*, 2008), proprietary cost theory would suggest that higher risky companies disclose less information not willing to attract market attention. A first risk-related factor considered is leverage. Literature on the association between risk disclosures and leverage offers mixed results. Specifically, agency theory by Jensen and Meckling (1976) argues that highly leveraged firms have higher monitoring costs. Such firms may seek to reduce these costs by disclosing more information in their annual report narratives. Empirical studies such as Linsley and Shrivies (2006), Abraham and Cox (2007), and Amran *et al.* (2009) find that leverage does not significantly affect risk disclosure. Elshandidy *et al.* (2013), instead, find a positive association between leverage and aggregated risk disclosures.

Whereas, proprietary cost theory suggests that debt is negatively related to corporate disclosure levels: managers of companies having less risk or a better risk management process have less costs of disclosing their better ability; companies having higher risks are less prone to disclose about them because of proprietary costs such as deriving from competitive reasons. Evidence on the relationship between financing risk and risk disclosure is still mixed. Therefore, the author adopts a non-directional hypothesis between companies' leverage and greater variation between public and private source of information on the ERM process.

Hyp 3. There is an association between company's leverage and information inconsistency about the ERM process.

Finally, a second risk-related factor is the market to book ratio (Francis *et al.*, 2008; Baxter *et al.*, 2013) measured as the ratio between the firm's market capitalization and the book value of shareholder's equity. According to agency theory and consistent with Buckby *et al.* (2015) bigger market to book ratio indicates greater expectations about future cash flows than a lower ratio. As future cash flows are inherently uncertain, high market to book ratio firms tend to have more volatile share prices than small market to book ratio firms. Thus, companies with larger market to book ratio are expected to disclose greater amount of information.

According to proprietary cost theory only firms financially sound may be able to trade off the benefits from additional disclosure with the cost of revealing potentially damaging information

(Cormier and Magnan, 2003). Thus, given higher market to book ratio is interpreted as greater expectation about future cash flows, it is expected these firms are able to better bear proprietary costs despite the greater financial risk and to disclose more information.

Therefore, relying on the interpretation of both agency and proprietary cost theories it is expected a negative relation between the market to book ratio factor and greater variation between public and private source of information on the ERM process.

Hyp 4. There is a negative association between company's market to book ratio and information inconsistency about the ERM process.

3. RESEARCH DESIGN

3.1. Sample selection and data: The Italian institutional context

In Italy the debate and regulation on corporate governance emerged around the 2000's. Both financial scandals and financial crisis of those years not only affected the US, but also European countries, and Italy in particular (Florio and Leoni, 2016). For this reason several regulatory reforms took place and Italy was one of the first countries adopting a Corporate Governance (CG) Code drafted by the Italian stock exchange Corporate Governance Committee in 1999. Then reviewed in 2002, 2006, 2010, 2011, 2014 and in 2015. It is based on the "comply or explain" principle, according to which listed companies may decide whether to adopt it or if they do not comply - fully or partially - they need to explain the reason. The changes in the Italian regulation highlight the importance of board structure and the independent directors as a means to overcome Italian market weaknesses such as the markedly concentrated ownership and the trend for large owners to expropriate minority shareholders (Elshandidy and Neri, 2015).

Since the 2011 Corporate Governance revision, greatest attention has been put on risk with a specific appendix included to discuss the importance of risk management disclosure. The revision recommends the creation of an integrated system of internal control and risk management (Borsa Italiana, 2011; art. 7.C.1.a). The Internal Control and Risk Management shall be integrated and treated as a unitary system focused on risks, and integrated within the overall organizational, administrative and accounting system of the firm (Florio and Leoni, 2017). It follows the board commitment in disclosing, within the CG report, about the main internal control and risk management system's characteristics (Borsa Italiana, 2011; art. 7.C.1.d; see Table 1).

Thus, the choice of an Italian sample may be useful from an international perspective

considering the possible interest in the results by a European audience. The obligation in directive 2006/46/CE to describe the risk management systems requires the explanation of risk management functions, policies, structures, and procedures. The resulting risk governance requirements and recommendation for listed companies by each member State reveals how the Italian context is the only one (not only at the European level) recommending and requiring through the Corporate Governance code or laws all the following:

- specific provisions describing the board responsibilities for risk management;
- the establishment of a board-level committee charged with risk management;
- the implementation of the internal control and risk management system;
- the identification of a person in charge of risk management (OECD, 2014).

[Insert Table 1]

Further, in 2015 Risk Management duties were partially increased. Specifically, it was introduced the obligation to “transparently disclose in the Corporate Governance report the coordination among people and bodies designed to the Internal Control Risk Management System” (Borsa Italiana, 2015; art. 7.C.1, lett. d). The Corporate Governance committee which approved the revised code invited the companies to apply the changes within the following year reporting. Thus, the recent 2015 review of the CG code compulsorily enhances the disclosure on the risk management process.

Furthermore, it has to point out how a mandatory description of the main risks and uncertainties is requested in the Management Discussion and Analysis (MD&A) section of the annual report since Legislative Decree no. 32/2007 that modified Article 2428 of the Civil Code (Elshandidy and Neri, 2015). Therefore, managers have already to explain in detail all of the risks faced by their company during the past year, and how they have managed these risks, in their annual reports. However, the focus of the current paper is on the ERM process disclosure, thus attention is on the annual CG report²⁷.

The sample is drawn from companies listed into the ordinary market of the Italian Stock Exchange at the end of the years 2013 and 2015²⁸. The year selection is driven by two main reasons. First, in 2011 there was the greatest amendment of the Italian Corporate Governance code effective from 2012. The choice of the year 2013 aims at reflecting a sufficient time for listed companies to

²⁷ An analysis on MD&A section has been done as a robustness check but information about the risk management process are exclusively provided in the CG reports.

²⁸ In line with prior studies to assure homogeneity of listing requirements, those companies listed in the Star Segment and the Nuovo Mercato Segment have been excluded from the analysis (see Beretta and Bozzolan, 2004; and Florio and Leoni, 2017).

achieve compliance to the 2011 revision of the code in particular about the risk management duties. Given the partially increased duties of the risk management system in 2015, CG reports referring to this fiscal year are the last ones before the revised code. Thus representing the last year in which companies can disclose more information on internal control and risk management system on voluntary basis. Therefore, the period selection constitutes a time frame in which there have been no institutional changes about risk management duties to disclose in the CG report. Thus helping to better investigate the voluntary disclosure on the ERM process. Second, survey methodology asks for repeating the survey after two years at the aim of increasing reliability to the analysis.

In total, the author received 75 completed surveys (32 in 2013 and additional 43 in 2015). She excluded 9 companies because of incomplete questionnaires or due to missing CG reports (4 in 2013; 5 in 2015), leaving a final sample of 66 companies for the analysis²⁹.

[Insert Table 2]

Table 2 provides the profile of the sample. In terms of positions held by the respondents, individuals serving in high-level positions (i.e., board members, internal auditors, Chief Risk Officers and top managers) represent more than 50% of the respondents. The classification of the represented industries relies on the Italian Stock Exchange (Borsa Italiana) website. More than one third of the respondents in the sample (34.84) are industrial (manufacturing) companies, followed by financial industry (19.70%) which includes both banks and insurance companies. Public services entities - mostly utilities - represent the 12.12% of the sample. In terms of revenues size, almost 50% of the companies range between € 25 million and €500 million. Only a few companies have revenues lower than €25 million. In addition, more than half of respondents (56.06%) indicate their organizations have adopted an enterprise risk management process for at least 3 years. Therefore, it is expected that ERM process as described both in the survey and in the CG reports is quite developed.

²⁹ The sample size depends on different reasons. First, the high difficulty of data access in Italy and to set data on this context given the small size of the Italian stock market. Second, the complexity of collecting data on internal processes as already highlighted by prior studies (Zimmerman, 2001). Nevertheless, the overall response rate reflects about the 30% of the total number of Italian listed companies (on average 255 in the main Italian market in the considered time span excluding those companies not compliant to the CG code). In addition, the response rate is higher than previous studies adopting the survey methodology (see Beasley *et al.*, 2005; Paape and Specklè, 2012). Further, there are many prior studies on risk disclosure with a similar sample size (see for instance, Beretta and Bozzolan, 2004; Allini *et al.*, 2016). Finally, considering Italy is the 8th largest country in the world based on GDP and it has an advance environment in terms of risk management disclosure since 2011, the data collected represent the ERM practices of a large part of the Italian market capitalization [about the 40% of the total market capitalization in the years of analysis].

3.2. Three-stage approach

The analysis is based on a three-stage approach. First, to investigate the ERM internal practices, an online survey tool consisting of 30 questions has been structured relying on the ERM definition developed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in the 2004 framework³⁰ and its fundamental concepts³¹. Specifically, the framework states:

“It is a process, effected by an entity’s board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of the entity’s objectives.”

The ERM definition reflects certain fundamental concepts, which are highlighted explicitly in the COSO framework, according to which “Enterprise risk management is:

1. A process, ongoing and flowing through an entity;
2. Effected by people at every level of an organization;
3. Applied in strategy setting;
4. Applied across the enterprise, at every level and unit, and includes taking an entity-level portfolio view of risk;
5. Designed to identify potential events that, if they occur, will affect the entity and to manage risk within its risk appetite;
6. Able to provide reasonable assurance to an entity’s management and board of directors;
7. Geared to achievement of objectives in one or more separate but overlapping categories.”

As stated by COSO (2004) the definition “focuses directly on achievement of objectives established by a particular entity and provides a basis for defining enterprise risk management effectiveness”.

From the operational point of view, most of the survey’s questions require a five-point scale response developed according to prior literature (see details in the Appendix B). The two highest options are considered to represent an effective ERM implementation according to the COSO (2004) definition, while the three lowest options are not considered to be reflective of an effective ERM

³⁰ The author is aware of the changed ERM definition according to the recent COSO draft (2016) which states the following: *The culture, capabilities, and practices, integrated with strategy-setting and its execution, that organizations rely on to manage risk in creating, preserving, and realizing value.* However, given the intention to investigate the level of ERM implementation in the Italian setting the author chooses to rely on the most adopted framework (Hayne and Free, 2014; and as supported by results) at the period of analysis.

³¹ Enterprise Risk Management - Integrated Framework Executive summary (2004).

component. Survey data are coded according to the score obtained by respondents; a value of 0 is attributed in case of no answer to the items of interest related to each of the seven fundamental concepts.

The second stage of the analysis is based on the hand collection of respondents CG reports related to the year of survey collection (i.e. 2013 survey matched with 2013 CG report and 2015 survey with 2015 CG report). A thematic content analysis (Buckby *et al.*, 2015) has been done on the CG reports section regarding the internal control and risk management system. Specifically, information has been categorized according to themes corresponding to the seven ERM fundamental concepts and related items of interest (see Table 3). Data have been categorized as categorical variables ranging from 0 to 5 to investigate public disclosure as well, where the value of 0 reflects no disclosure on the specific item.

Finally, once coded both the survey and the report for each company, the author summed up the scores attributed to each item to define an ERM score ranging from 0 to 53 for both the disclosure sources (private and public). To verify the level of ERM disclosure variation the author computes the difference between the scores attributed respectively to the report and the survey, specifically as:

$$\mathbf{ERM_Variation_Index = ERM_Report\ Score - ERM_Survey\ Score.}$$

ERM_Variation_Index if positive is interpreted as an overstatement in the public disclosure; vice versa, if negative, as an understatement of the ERM process in the public voluntary disclosure. To better analyze the extent of ERM_Variation_Index and its determinants, such a score is distinguished into two sets (high vs. low) representing the level of information INCONSISTENCY between the sources of disclosures. It amounts to the dummy dependent variable on which the hypothesized CG and firm's risk characteristics are regressed (as outlined below).

3.3. Research model for testing hypotheses

A Probit model is used to test the association between INCONSISTENCY and the hypothesized determinants:

$$\mathbf{INCONSISTENCY = \beta_0 + \beta_1BOARD + \beta_2OWNERSHIP + \beta_3LEVERAGE + \beta_4MTB_RATIO + \beta_5CONTROL\ VARIABLES + \varepsilon}$$

Dependent variable:

INCONSISTENCY = equal to 1 if ERM_Variation_Index is high, that is negatively beyond the mean (equals to -17.86364), 0 otherwise (see Table 5b).

Independent variables comprise:

Governance variables

BOARD = number of independent directors out of the total number of directors;

OWNERSHIP = a dummy variable equals to 1 if the highest percentage of shares owned by a single shareholder is over the 50 percent, 0 otherwise.

Firms' risk variables

LEVERAGE = defined as the ratio between total liabilities and total assets (sourced by Compustat database);

MTB_RATIO = market to book ratio, measured as the market capitalization over the book value of shareholder's equity at the end of the year (Compustat database).

Control variables

SIZE_REVENUE = the natural logarithm of the total revenues (Compustat database);

TOBINQ = performance on the capital market at the end of the year, measured as market value of equity plus book value of liabilities divided by the book value of assets (sourced by Compustat database).

FINANCIAL = a dummy variable equals to 1 if the company belongs to the financial industry as classified by Borsa Italiana;

ERM_experience = how long the companies declare to have adopted the risk management process [1=less than 6 months; 2= at least 1 year; 3= at least 3 years; 4= at least 5 years; 5= at least 10 years].

Control variables are justified as following. First, based on agency theory, high-quality risk disclosure is needed for large firms to satisfy the requests of a larger group of stakeholders (Amran *et al.*, 2009). In addition, larger companies have an incentive to improve investors' confidence and reduce political sensitivities by providing higher quality risk disclosure (Hassan, 2009). Previous studies reveal a positive association between firm size and risk disclosure quantity (Linsley and Shrivess, 2005, 2006; Abraham and Cox, 2007; Dobler *et al.*, 2011; Elshandidy *et al.*, 2013). In addition, larger companies also have the expertise and resources to cover the cost of producing high-quality disclosure (Miihkinen, 2012). Proprietary cost theory indeed would suggest that managers in large firms will disclose more risk information than those in small firms having larger competitive disadvantage. Thus, both the theories support a negative relation between size and information inconsistency about the ERM process.

Second, literature also supported the relationship between performance measures and levels

of disclosures. To investigate such relation, the current study analyzes the Tobin's Q ratio measuring the firm's performance on the capital market (Gordon *et al.*, 2009; Hoyt and Liebenberg, 2011; McShane *et al.*, 2011). The higher Tobin's Q is, the better is the judgment expressed by the financial market about the company representing a measure of future investors' expectations (Florio and Leoni, 2017). Agency theory suggests that managers disclose information for promoting personal interests as a number of prior studies documented the relation between managers' stock-based compensation and extent of disclosures (for all Murphy, 1996). Proprietary cost theory would suggest that more profitable companies have lower costs of disclosing information, even if evidence show mixed results (Leuz, 1999; Giner *et al.*, 1997). Both the theories therefore suggest a negative relationship between profitability and information inconsistency about the ERM process.

Third, different industries may provide different risk and risk management process disclosure because of industry specific characteristics and regulations. Beretta and Bozzolan (2004) find no relation between industry and risk disclosure. Hassan (2009) instead find a significant relation with variation in corporate risk disclosure. Further, financial industry is quite specific operating under a greater layer of increased regulation and scrutiny (see Basil III; Solvency II; ORSA). As the financial companies constitute the 20 per cent of the total sample, the current study controls for industry effects by including the financial industry as a control variable (Amran *et al.*, 2009). In particular, financial companies being enforced of greater disclosure on risk management effectiveness are expected to signal a lower information inconsistency about the ERM process.

Finally, another factor that can affect ERM disclosure and specifically the (in)consistency between private and public disclosure is for how long the companies have adopted the process (defined as ERM experience). On one side, agency theory would suggest that companies implementing the ERM process for a longer time would be more willing to disclose about it. On the other side, companies having an ERM process for a longer period could incur in higher proprietary costs and therefore are expecting having a greater variation between private and public disclosure. As best of the author's knowledge no prior literature has examined such a relation.

4. RESULTS AND ANALYSIS

4.1. Nature and extent of ERM disclosures variation (RQ1)

Findings reveal that companies tend to give more information on their ERM process through the private source (survey) rather than in their public disclosure (CG report). Data provided by the on-line surveys about the internal ERM process are self-reported and cannot be independently verified.

Nevertheless, all respondents indicate the company name and their e-mail contact (voluntary option). The author is not aware of any reason why a survey participant would willfully falsify their responses and she believes the responses obtained provide an opportunity to explore information about their internal ERM process. As a way of assurance and to find confirmation about the reliability of the answers, after the analysis, fifteen respondents have been randomly interviewed to better understand how the risk management disclosure process works and if they were in charge of it. The results of this “triangulation” check (Routhbauer, 2008) confirmed their high knowledge of the risk management process and their key role in the preparation of the CG report section related to the disclosure of the Internal Control Risk Management System. Thus, assuring the reliability of the data collected through the survey.

Table 3 shows the mean and standard deviation values of each ERM item examined both in the survey and in the report. Additionally, it presents the results of a test of difference in mean and median. Results in detail show that the extent of ERM implementation (item 1) is one of the item most privately disclosed. On average it takes value of 3.9242, while in the public reports its extent is described on average with a value of 1.5758. The most highly privately disclosed item relates to the information about the identification and prioritization of risks (item 4a) with an average value near to the maximum of 5. Whereas, on the voluntary public disclosure side, it is disclosed for a value on average equal to 2.48. Among the most highly privately disclosed items there are also the ones referring to the extent of integration in risk prioritization (item 4c) and to the level of comprehensiveness of risks considered (item 7).

Looking at the public reports, the most highly disclosed factors are the ones referring to the application in the strategy setting (item 3) and to the frequency of risk managers’ meetings (item 6b). Specifically, companies on average publicly disclose to link their ERM process to the strategic planning with a value of almost 3 out of the 5 scale, even if privately such a value results higher. The highest value corresponding to the item about the frequency of risk reporting is publicly declared higher than 4, that is at least annually; while in the private disclosure source companies on average declare a value lower than 4.

Overall, from what directly emerge from the surveys, companies on average indicated the presence of 39.12 out of the maximum 53 values that ERM survey score can assume. In contrast, their public CG reports revealed the presence of 21.29 out of the 53 values of the ERM report score. This suggests that while there may be a high degree of ERM maturity (Beasley *et al.*, 2015) within companies, those entities on average are not so willing to voluntary public disclose of it.

The test of difference (two-sided) in means reveals a significant univariate difference for all the twelve items of interest examined. Specifically, the mean is highly negative significantly different

($p < 0.001$) for the items related to: the extent of implementation, the training activities about risk and risk management, the business plan resource allocation for the ERM process, the identification and prioritization of risks, the methodology used for risk prioritization, the extent of integration in risk prioritization, the frequency of risk reporting, the temporal orientation of risk reporting and the level of comprehensiveness. With the exemption of the item related to the frequency of ERM managers' meetings presenting a positive significant difference in mean ($p < 0.05$), the remaining items related to the ERM relation with strategic planning and to the ERM process accountable person show a negative difference in mean ($p < 0.05$). Thus, with the exclusion of the frequency of ERM managers' meetings, all the items present a higher mean for data obtained from a private source of information compared to the public disclosure. Such results are also confirmed by the Wilcoxon test of difference in median.

[Insert Table 3]

Given these findings, the author further dug into the ERM voluntary disclosure and the differences between information privately obtained by the companies and publicly available. Table 4a shows the distribution of the companies per each level of ERM_Variation_Index. The companies of the sample are normally distributed in a range from -40 to +7. With the exemption of the positive extreme of the range, all companies' ERM_Variation_Index present negative sign, stressing the lower level of public disclosure on ERM rather than that obtained from the private channel. The mean of the distribution (-17.86) is considered as the threshold to distinguish firms into two sets: high vs. low ERM_Variation_Index (see Table 4b). A low variation is considered to be in those firms falling in the interval [-17.86; +7] and it is interpreted as a higher level of information consistency. Vice versa, results external to such interval are considered to be representative of information inconsistency. According to such a distinction about half of the companies (35 out of 66) are consistent in term of ERM disclosure, while 31 are not. Thus, it follows the aim of the second research question of understanding which are the determinants of the ERM disclosure (in)consistency comparing the two opposite sets (high vs. low variation).

[Insert Table 4a]

[Insert Table 4b]

4.2. Determinants of inconsistency between private source of information and public disclosure on ERM (RQ2)

4.2.a. Descriptive statistics and correlation analysis

Descriptive statistics in Table 5a show the dependent (dummy) variable mean equals to 0.4696 meaning almost 47% of the companies tend to have high disclosure variation. Thereby, on the opposite side 53% of the companies have a low disclosure variation demonstrating relatively consistent private and public disclosures. Corporate governance factor such as board independence variable shows on average boards are composed by 44.48% of independent directors, representing less than half of the board. Companies for the 57.57% are owned by a single person controlling more than the 50% of the shares³². The accounting literature generally defines a company as dominated by a controlling shareholder when there is at least one owner who has 10% or more of the voting rights. It must be pointed out that Italian companies, even when listed on an official securities market, are in most cases family controlled. This means that even when a large portion of a company's equity is widespread among investors on the market, there is no real separation between owners and managers (Prencipe, 2004).

For what concern firms' risk characteristics, the average amount of leverage is 61.27% showing Italian listed companies mostly rely on debt as tool for financing their activities. The systematic risk of the company on average is pretty high having a mean of 0.7552 (not shown in the Table). Market to book ratio has a mean of 2.831 interpreted as a pretty high undervaluation of stocks in the market. The average of the natural logarithm of revenues is equal to 12; for a better understanding of the amount of companies' revenues see details in Table 2. The market profitability of the companies is on average equals to 0.1083, confirming the undervaluation of the stocks value. Financial companies represent almost the 20% of the sample. Finally, regarding the years of ERM experience, companies on average declare to have implemented the process for a period ranging between 3 and 5 years.

[Insert Table 5a]

The results of the Spearman rank correlation are presented in Table 6b. They show a correlation at 10% level of market to book ratio and the control variable ERM experience with the dependent

³² Additional descriptive statistics not inserted in Table 5a show ownership concentration in the sample is on average 47.86%.

variable (INCONSISTENCY). Thus, suggesting potential associations also in the regression analysis. Few correlations among independent variables are also found. Tests on multicollinearity and endogeneity suggest data do not present such issues³³.

[Insert Table 5b]

4.2.b. Inconsistency between private and public disclosure: determinants

Table 6a presents the results of the empirical Probit model developed to answer the second research question.

[Insert Table 6a]

Results of the probit model show both the corporate governance characteristics are significantly associated to information inconsistency on ERM. Either the proxy for board independence and the variable related to the percentage of control present the expected sign. Results indeed show the number of independent directors has a negative significant impact on the information inconsistency about the ERM process ($p < 0.05$), while higher levels of ownership concentration positively affect such information inconsistency ($p < 0.1$). Hypotheses 1 and 2 are therefore supported.

For what concern firm risk characteristics, a positive and significant result ($p < 0.05$) is found for leverage thus supporting the association stated in hypothesis 3 and contributing to prior mixed results. Results show firms more leveraged are generally less forthcoming in public disclosures about their ERM processes. A significant association ($p < 0.05$) is also found for the market to book ratio variable. In contrast to findings related to leverage, the relation with such a firm risk characteristic is negative. It indicates more consistent information on the ERM process at the companies' financial risk increase. Hypothesis 4 is also supported.

Among control variables companies size and industry have a negative significant association with the dependent variable ($p < 0.1$). This shows that bigger companies have more consistent disclosures supporting expectations. The variable related to industry shows that financial companies are negatively significant related to inconsistency, again supporting expectations. That is, given financial companies have different characteristics, and in particular stronger regulations about risk management it is expected they have greater disclosure consistency. Further, contrary to expectations

³³ Multicollinearity was checked by the variance inflation factor (VIF) test. VIF value of 1.22 for this model ruled out a multicollinearity problem. IVprobit test for endogeneity displays no endogenous variables.

market firm profitability is not associated to information inconsistency about the ERM process. Finally, interestingly the variable proxing for firm's ERM experience is positively significant associated ($p < 0.1$) to inconsistency; at the enhancement of ERM experience, measured in term of years of adoption, it is found greater information inconsistency about the process.

The tested model has an explanatory power with a pseudo- R^2 equal to 0.2602. Overall, results show that highest levels of disclosure variation on ERM are either associated to CG characteristics and to firm's risk characteristics.

Given the significance of the variable ERM experience, further investigation is requested on this aspect. At this aim the model is tested splitting companies into two sets: those having a shorter experience (less than 3 years of adoption) and those having a longer experience of ERM adoption (equal or longer than 3 years). Results are shown in Table 6b and 6c, respectively.

Table 6b shows how the explanatory power of the model increases to a pseudo- R^2 of 0.5740. Findings reflect a situation in which just firm's risk factors affect information inconsistency on ERM, supporting hypotheses 3 and 4. Specifically, leverage maintains a positive significant association ($p < 0.05$) and market to book ratio a negative significant association ($p < 0.05$) with inconsistency. Whereas, both the CG variables loose their association with the dependent variable. Among the control variables just financial industry ($p < 0.1$) confirm prior results.

[Insert Table 6b]

Examining data for companies declaring to adopt ERM for longer, table 6c shows instead just CG variables significantly affect ERM information inconsistency, supporting hypotheses 1 and 2. However, no other variable of the model appears affecting the dependent variable in this set.

To summarize, findings of the complete model reveal how both CG variables (board independence and ownership's concentration) and firm's risk factors (leverage and market to book ratio) affect information inconsistency on the ERM process. Nevertheless, controlling for the level of ERM process' experience, interestingly it emerges how in companies adopting the process in recently time the disclosure inconsistency is driven by firm's risk factors, while for companies more mature in terms of ERM adoption the inconsistency is driven just by CG characteristics.

[Insert Table 6c]

4.2.c. Sensitivity analysis

A sensitivity analysis on an identical model has been run using an alternative variable to the dummy related to the ownership concentration. Specifically, the highest percentage of shares owned by a single shareholder has been adopted. Results (not shown in the paper) confirm the significant association with the independent variables (hypotheses 1, 2, 3 and 4 are supported). Specifically, it shows a negative and significant relation between board independence, market to book ratio and inconsistency. Whereas, it shows a positive and significant association between ownership concentration and leverage with inconsistency. Among control variable just size maintains the significance.

The slight significance of financial companies' variable in the findings represented in Table 6a would suggest for further investigation. However, given impossibility to run the same model either on non financial and financial companies because of the small sample of the latter (n=13), Table 7a aims at showing the results of the model just on non financial companies. Findings confirm the role of both risk factors in the association with information inconsistency (both hypothesis 3 and 4 are supported). CG variables play a partial role in the association with inconsistency: only board independence is found negatively significant (hypothesis 1 is supported; hypothesis 2 is not). Among control variables just size maintains its significance.

[Insert Table 7a]

Finally, given six of the respondent companies participated to the survey both the years 2013 and 2015, an additional analysis has been run not considering the 2015 data for those companies. In such a way the sample for the two years become more homogeneous with 28 companies in 2013 and 32 in 2015. Results confirm all the hypotheses. Significant associations between CG variables (board independence and ownership concentration at $p < 0.05$) and firm's risk variables (leverage and market to book ratio at $p < 0.05$) are found. The control variables too are confirmed significant as in the original model: companies' size, financial companies and ERM experience.

[Insert Table 7b]

5. DISCUSSION AND CONCLUSIONS

Over the last years an increasing call has emerged at the international level for effective risk management processes within organizations and for greater transparency about that. Emerging academic research provides limited evidence about the ERM implementation around the world while still little is known about how companies publicly disclose information related to their ERM process. The current paper contributes to prior research offering meaningful insights about which factors companies disclose both publicly and privately, finding some variation between these two sources.

Variation determined as difference between information obtained from CG report and the submitted survey respectively, underlines how companies even if adopting an effective ERM process according to COSO (2004) are sometimes less willing to voluntarily disclose of it. Specifically, companies tend to understate information about: the extent of their ERM process implementation; the training activities about risk and risk management put in place; the business plan resources allocated for the ERM process; the ERM relation with the strategic planning; the identification and prioritization of risks; the methodology used for risk prioritization; the extent of integration in risk prioritization; the frequency of risk reporting and its temporal orientation; the ERM process accountable person; and, the level of comprehensiveness of risks considered. These results support previous findings about the company managers' preference of providing risk related disclosure that are formal rather than substantial (Abraham and Shrives, 2014; Tufano, 1996) understating their effective ERM process.

On the contrary, companies tend to overstate information related to the frequency of ERM managers' meetings. This latter result may be explained by the risk management duties requested by the CG code. Specifically, the need to report to the board at least biyearly (see Table 1). Thus, suggesting potential "boiler plate" information (Woods *et al.*, 2008).

It follows, the study additionally investigates which are the determinants of ERM disclosure inconsistency identifying both CG and firms' risk characteristics as significant drivers of it. Among corporate governance characteristics, the association with board independence is stronger than the one between ownership's concentration and ERM disclosure inconsistency. The study also finds that firm's risk characteristics such as leverage and market to book ratio are significantly associated to ERM disclosure inconsistency, even if according to opposite signs. Companies having a greater level of debt tend to be more inconsistent on ERM disclosure supporting the results by Elshandidy *et al.* (2013) which identify leverage as a determinant of risk voluntary disclosure; while, companies having greater market to book ratio present a negative sign of the association, showing greater consistency. Both results support proprietary cost theory expectations. These findings may contribute to prior

results and to a still understudied relation between firm's risk characteristics and ERM process disclosure (Buckby *et al.*, 2015).

Among control variables firm size and financial industry have a light negative significant influence on ERM disclosure inconsistency, in line with the expected sign according to both the tested theories. The latter finding about financial companies, in particular, suggests that the greater specific regulations requested for those firms - including also disclosure on ERM - is not so much reflected into their CG reports. In addition, it is found a positive and slightly significant relation with the so called ERM experience – the years of ERM adoption the companies declared. Such a positive relation appears to support proprietary cost theory according to which companies limit voluntary disclosure when proprietary costs emerge from it. Information on the ERM process is perceived proprietary in nature, mainly at the beginning of the companies ERM experience, thus affecting the decision by the firms to not fully disclose about it. Indeed, a deeper investigation shows this variable has an impact on results when the sample of companies is split according to a shorter or longer ERM experience. Such additional investigation helps to verify that for companies with lower ERM experience the greater disclosure inconsistency on the process is driven by firm's risk factors. In contrast, for those companies having greater ERM experience the drivers of disclosure inconsistency are corporate governance variables, in particular the fact of being closely held by a single owner, condition pretty common in the context analyzed. In line with the results by Buckby *et al.* (2015) which find that board independence does not impact on the level of risk management disclosure in the Australian context, the additional test finds that this factor does not affect so much inconsistency between public and private source of information on ERM. Thus suggesting that board independence acts just partially as control mechanisms of information asymmetry on such a topic. The relationship between ERM and CG is of interest to regulators because less concentrated ownership and independent directors are expected to reduce agency problems (Abraham and Cox, 2007). Therefore, the results of the current study demand for carrying on the international reflection about the need for reducing regulatory intervention on corporate reporting.

Thus, all together the findings mainly support proprietary cost interpretation, the additional analysis based on the distinction of shorter versus longer ERM experience helps to orient even more towards such an interpretation in contrast to the agency one.

The paper has both theoretical and practical implications. First, from a theoretical point of view, it contributes to literature on risk disclosure focusing on risk management practices instead of risk factors. Second, the paper originally contributes to the literature benefiting of private information on the internal ERM process and comparing such information to public disclosure of it. In addition, the study investigates a new variable (ERM experience) which is found to affect the ERM process

disclosure and that asks for future investigations. Third, prior research mainly analyzes non-financial setting while the current study takes into account also financial companies surprisingly showing that such industry does not affect so much the analyzed relation. Finally, results contribute to both risk disclosure and ERM literature streams focusing on the Italian context (Arena *et al.*, 2011; Elshandidy and Neri, 2015; Florio and Leoni, 2017). In particular, the paper allows to extend prior findings given the double perspective offered by data obtained through a survey compared to what companies publicly voluntarily disclose. The resulting inconsistency between the two sources indeed suggests a general understatement of public voluntary disclosure and a potential underestimation of the investors' benefits prior international literature identifies. Thus, due to perceived proprietary costs that companies suffer, additional research is needed to identify the potential benefits that companies might have when disclosing more informative disclosure on ERM.

From a practical point of view, the results appear to support the decision of the Italian stock exchange CG committee to increasing transparency through the compulsorily enhancement of the risk management process disclosure. In particular, given riskier companies tend to have higher variation scores, the findings would suggest not only for a mandatory disclosure regime but also for the adoption of a stricter rule-based approach instead of a principle-based approach. Indeed, just because riskier companies publicly disclose less, it is expected that if they are asked to be compliant to a principle-based approach on ERM process disclosure they continue to act in the same way (in the absence of a CG report audit). This may lead to contribute to the international increasing attention and push on Enterprise Risk Management (ERM) as part of good CG, and to the debate about the different investors' benefits from the enhancement of risk management disclosure (Baxter *et al.*, 2013; Campbell *et al.*, 2014). The study can shed light to understand if CG reports information content is informative to stakeholders given also the international increasing interest for the assessment of companies' "management and governance". Specifically, such assessment, with reference to the effectiveness of risk management processes, is based on information (mostly not publicly disclosed) provided by the entity to rating agencies as part of the credit evaluation process (see S&P, 2012). Therefore, finding public disclosure on ERM process is undervalued compared to the internal process described through private disclosure, the research empirically shows how - in the analyzed context - ERM public disclosure may not be informative about the effective quality of "management and governance". Thus, requiring further investigation.

Findings can also contribute to the academic call to investigate the dilemma between better and more regulation, in times where the issue of compliance and risk management becomes more important for top management (AIDEA, 2017). The paper suggests the limits of voluntary disclosure regulation and the conditions under which this happened showing how companies tend to not fully

disclose their effective internal ERM process. Specifically, the paper allows to identify the presence of disclosure's proprietary costs associated to CG and firm's risk characteristics. These are factors the regulators should take into account when recommend information on such a topic. Nevertheless, the paper can not claim the superiority of a mandatory disclosure on risk management process. A further investigation of the same context after the year 2015 may provide empirical evidences on that.

Finally, the study can also contribute to the current debate about the Integrated Reporting, given that one of the content elements relates to risk and risk management process disclosure (IIRC IR, 2013).

The paper however presents many limitations. First of all, the sample size associated to the specificity of a voluntary disclosure context could affect the generalizability of results in different settings. Second, the construction of the variables leave room for alternatives; sensitivity analysis attempt to mitigate such a limitation. Future research that captures potential inconsistency between private and public disclosure on ERM in different settings could enable to extend the debate. The study in addition leaves space for further analysis on risk management process disclosure in Integrated Reports of Italian companies. Finally, an analysis of the same context after the 2015 CG code review may help to investigate changes in the behavior of the company under a stricter disclosure regime.

References

- AIDEA, 2017. "New Trends" in Business Economics and Management Studies Rewriting the Relationship between Business and Society. <http://www.accademiaaidea.it/wpaidea/wp-content/uploads/2016/12/CFP-AIDEA-2017-ENG1.pdf>
- Abraham, S. & Cox, P., 2007. Analysing the Determinants of Narrative Risk Information in UK FTSE 100 Annual reports. *British Accounting Review*, 39(3), pp.227–248.
- Abraham, S., & Shrivs, P. J., 2014. Improving the Relevance of Risk Factor Disclosure in Corporate Annual Reports. *The British Accounting Review*, 46(1), pp. 91-107.
- AICPA & NCSU, 2016. The State of Risk Oversight: An Overview of Enterprise Risk Management Practices. Available at: https://erm.ncsu.edu/az/erm/i/chan/library/AICPA_ERM_Research_Study_2016.pdf.
- Allini A., Manes Rossi, F. and Hussainey, K., 2016. The Board's Role in Risk Disclosure: An Exploratory Study of Italian Listed State-Owned Enterprises. *Public Money and Management*. <http://dx.doi.org/10.1080/09540962.2016.1118935>
- Amran, A., Bin, A.M.R. & Hassan, B.C.H.M., 2009. Risk Reporting: An Exploratory Study on Risk Management Disclosure in Malaysian Annual Reports. *Managerial Auditing Journal*, 24(1), pp.39–57.
- Arena, M., Arnaboldi, M. & Azzone, G., 2011. Is Enterprise Risk Management Real? *Journal of Risk Research*, 14(7), pp.779–797.
- Ball, R., Kothari, S. P., & Robin, A., 2000. The Effect of International Institutional Factors on Properties of Accounting Earnings. *Journal of Accounting and Economics*, 29(1), 1-51.
- Baxter, R. et al., 2013. Enterprise Risk Management Program Quality: Determinants, Value Relevance, and the Financial Crisis. *Contemporary Accounting Research*, 30(4), pp.1264–1295.
- Beasley, M.S., Clune, R. & Hermanson, D.R., 2005. Enterprise Risk Management: An Empirical Analysis of Factors Associated with the Extent of Implementation. *Journal of Accounting and Public Policy*, 24(6), pp.521–531.
- Beasley, M., Pagach, D. & Warr, R., 2008. Information Conveyed in Hiring Announcements of Senior Executives Overseeing Enterprise-Wide Risk Management Processes. *Journal of Accounting, Auditing & Finance*, 23(3), pp.311–332.
- Beasley, M., Branson, B. & Pagach, D., 2015. An Analysis of the Maturity and Strategic Impact of Investments in ERM. *Journal of Accounting and Public Policy*, 34(3), pp.219–243.
- Beretta, S. & Bozzolan, S., 2004. A Framework for the Analysis of Firm Risk Communication. *International Journal of Accounting*, 39(3), pp. 265–288.
- Borsa Italiana, 2011. Codice di Autodisciplina. Available at: <http://www.borsaitaliana.it/comitato-corporate-governance/codice/2011.pdf>.
- Borsa Italiana, 2015. Codice di Autodisciplina. Available at: <http://www.borsaitaliana.it/comitato-corporate-governance/codice/2015clean.pdf>
- Brown, I., Steen, A. & Foreman, J., 2009. Risk Management in Corporate Governance: A Review and Proposal. *Corporate Governance: An International Review*, 17(5), pp.546–558.
- Buckby, S., Gallery, G. & Ma, J., 2015, An Analysis of Risk Management Disclosures: Australian Evidence. *Managerial Auditing Journal*, 30(8/9), pp. 812-869.
- Campbell, J.L. et al., 2014. The Information Content of Mandatory Risk Factor Disclosures in Corporate Filings. *Review of Accounting Studies*, 19(1), pp.396–455.
- Chen, C.J.P. & Jaggi, B., 2000. Association Between Independent Non-Executive Directors, Family Control and Financial Disclosures in Hong Kong. *Journal of Accounting and Public Policy*, 19, pp. 285–310.
- Collier, P. M., Berry, A.J., & Burke, G.T, 2007. *Risk and Management Accounting: Best Practice Guidelines for Enterprise-Wide Internal Control Procedures*. Elsevier. Vol. 2. No. 11.

- Cormier, D., & Magnan, M., 2003. Environmental Reporting Management: A Continental European Perspective. *Journal of Accounting and Public Policy*, 22(1), pp. 43-62.
- COSO, 2004. Enterprise risk management. available on the internet at <http://www.coso.org>.
- COSO, 2016. Enterprise risk management - Aligning Risk with Strategy and Performance. available on the internet at <http://www.coso.org>.
- Courtnage, S., 1998. Financial Reporting of Risk. *Tolley's Practical Audit & Accounting*, 9(6), pp. 61-63.
- Dobler, M., 2008. Incentives for risk reporting—A Discretionary Disclosure and Cheap Talk Approach. *The International Journal of Accounting*, 43(2), pp. 184-206.
- Dobler, M., Lajili, K. & Zéghal, D., 2011. Attributes of Corporate Risk Disclosure: An International Investigation in the Manufacturing Sector. *Journal of International Accounting Research*, 10(2), pp.1–22.
- Ellul, A. & Yerramilli, V., 2013. Stronger Risk Controls, Lower Risk: Evidence from U.S. Bank Holding Companies. *Journal of Finance*, 68(5), pp.1757–1803.
- Elshandidy, T., Fraser, I. & Hussainey, K., 2013. Aggregated, Voluntary, and Mandatory Risk Disclosure Incentives: Evidence from UK FTSE all-share Companies. *International Review of Financial Analysis*, 30, pp.320–333.
- Elshandidy, T. & Neri, L., 2015. Corporate Governance, Risk Disclosure Practices, and Market Liquidity: Comparative Evidence from the UK and Italy. *Corporate Governance: An International Review*, 23(4), pp.331–356.
- Florio, C. & Leoni, G., 2017. Enterprise Risk Management and Firm Performance: The Italian case. *The British Accounting Review*, 49(1), pp.56–74.
- Francis, J., Nanda, D., & Olsson, P. (2008). Voluntary Disclosure, Earnings Quality, and Cost of Capital. *Journal of Accounting Research*, 46(1), pp. 53-99.
- Frijo, M.L., & Anderson, R.J., 2011. Strategic Risk Management: A Foundation for Improving Enterprise Risk Management and Governance. *The Journal of Corporate Accounting & Finance*, pp.81–88, doi:10.100.
- Giner, B., Ruiz, A., Cervera, N. and Arce, M., 1997. Accounting Policy Choice and the Disclosure of Segmental Information: Spanish Evidence. Paper presented at the 20th EAA Annual Congress, Graz, April.
- Gordon, L. A., M. P. Loeb, & C. Tseng, 2009. Enterprise Risk Management and Firm Performance: A Contingency Perspective. *Journal of Accounting and Public Policy*, 28 (4), pp. 301–27.
- Hassan, M.K., 2009. UAE Corporations-Specific Characteristics and Level of Risk Disclosure. *Managerial Auditing Journal*, 24(7), pp.668–687.
- Hayne, C. & Free, C., 2014. Hybridized Professional Groups and Institutional Work: COSO and the Rise of Enterprise Risk Management. *Accounting, Organizations and Society*, 39(5), pp.309–330.
- Healy, P. & Palepu, K., 2001. Information Asymmetry, Corporate Disclosure, and the Capital Markets: A review of the Empirical Disclosure Literature. *Journal of Accounting and Economics*, 31, pp.405–440.
- Holland, J. & Stoner, G., 1996. Dissemination of Price-Sensitive Information and Management of Voluntary Corporate Disclosure, *Accounting and Business Research*, Vol. 26, No. 4, pp. 295–313.
- Hoyt, R.E. & Liebenberg, A.P., 2011. The Value of Enterprise Risk Management. *Journal of Risk and Insurance*, 78(4), pp.795–822.
- IIRC, 2013. The International Integrated Reporting Framework. www.theiirc.org.
- Jensen, M.C. & Meckling, W.H., 1976. Theory of the Firm: Managerial. *Journal of Financial Economics*, 3, pp.305–360.
- Jordan, S., Jørgensen, L. & Mitterhofer, H., 2013. Performing Risk and the Project: Risk Maps as Mediating Instruments. *Management Accounting Research*, 24(2), pp.156–174.

- Kajüter, P., 2006. Risk Disclosures of Listed Firms in Germany: a Longitudinal Study. In *10th Financial Reporting & Business Communication Conference, July, Cardiff Business School: Unpublished*.
- Lajili, K. & Zeghal, D., 2005. A Content Analysis of Risk Management Disclosures in Canadian Annual Reports. *Canadian Journal of Administrative Sciences*, 22(2), pp.125–142.
- Lajili, K., 2007. Board Characteristics, Ownership Structure and Risk disclosures: Canadian Evidence. In *30th Annual Congress of the European Accounting Association, April, Lisbon: Working Paper*.
- Leuz, C., 1999. Proprietary versus Non-Proprietary Disclosures: Voluntary Cash Flow Statements and Business Segment Reports in Germany. Working Paper, Department of Business and Economics, Johann Wolfgang Goethe-Universität, Frankfurt.
- Linsley, P.M. & Shrive, P.J., 2005. Examining Risk Reporting in UK Public Companies. *The Journal of Risk Finance*, 6(4), pp.292–305.
- Linsley, P.M. & Shrive, P.J., 2006. Risk reporting: A Study of Risk Disclosures in the Annual Reports of UK Companies. *British Accounting Review*, 38(4), pp.387–404.
- Maizatulkama, A. et al., 2015. Risk Management Disclosure: A Study on the Effect of Voluntary Risk Management Disclosure Toward Firm Value. *Journal of Applied Accounting Research*, 16(3), pp. 400-432.
- McShane, M.K., Nair, A. & Rustambekov, E., 2011. Does Enterprise Risk Management Increase Firm Value? *Journal of Accounting, Auditing & Finance*, 26(4), pp.641–658.
- Murphy, K. J., 1996. Reporting Choice and the 1992 Proxy Disclosure Rules. *Journal of Accounting, Auditing & Finance*, 11(3), 497-515.
- Marshall, A., & Weetman, P., 2002. Information Asymmetry in Disclosure of Foreign Exchange Risk Management: Can Regulation be Effective? *Journal of Economics and Business*, 54, pp. 31-53.
- Miihkinen, A., 2012. What Drives Quality of Firm Risk Disclosure? The Impact of a National Disclosure Standard and Reporting Incentives under IFRS. *International Journal of Accounting*, 47(4), pp.437–468.
- Mikes, A., 2009. Risk Management and Calculative Cultures. *Management Accounting Research*, 20(1), pp.18–40.
- NCSU & Protiviti, 2016. *Executive Perspectives on Top Risks for 2016. Key Issues Being Discussed in the Boardroom and C-Suite*. Research Conducted by North Carolina State University's ERM Initiative and Protiviti. Available at: https://www.protiviti.com/sites/default/files/united_states/insights/nc-state-protiviti-survey-top-risks-2016.pdf.
- New York Stock Exchange (NYSE), 2004. Final NYSE Corporate Governance Rules. NYSE, New York. Available at: <http://www.nyse.com/pdfs/finalcorpgovrules.pdf>.
- OECD (2014). *Risk Management and Corporate Governance*, OECD Publishing. Available at: <http://dx.doi.org/10.1787/9789264208636-en>.
- Oliveira, J., Lima Rodrigues, L. & Craig, R., 2011. Risk-Related Disclosures by non-Finance Companies. *Managerial Auditing Journal*, 26(9), pp.817–839.
- O'Sullivan, N., 2000. The Impact of Board Composition and Ownership on Audit Quality: Evidence from large UK Companies. *The British Accounting Review*, 32(4), pp.397–414.
- Paape, L. & Speklé, R.F., 2012. The Adoption and Design of Enterprise Risk Management Practices: An Empirical Study. *European Accounting Review*, 21(3), pp.533–564.
- Patelli, L. & Prencipe, A., 2007. The Relationship between Voluntary Disclosure and Independent Directors in the Presence of a Dominant Shareholder. *European Accounting Review*, 16(1), pp.5–33.
- Prencipe, A., 2004. Proprietary Costs and Determinants of Voluntary Segment Disclosure: Evidence from Italian Listed Companies. *European Accounting Review*, 13(2), pp.319–340.

- Rothbauer, P., 2008. Triangulation. In Given, Lisa (Ed.), *The SAGE Encyclopedia of Qualitative Research Methods*. Sage Publications.
- Securities and Exchange Commission (SEC), 2010. SEC Rule Release No. 33-9089 – Proxy Disclosure Enhancements, SEC. Washington, DC.
- Standard and Poor’s, 2012. Methodology: Management and Governance Credit Factors for Corporate Entities and Insurers. S&P, New York.
- Tufano, P., 1996. Who Manages Risk? An Empirical Examination of Risk Management Practices in the Gold Mining Industry. *The Journal of Finance*, 51(4), pp. 1097-1137.
- Tao, N.B. & Hutchinson, M., 2013. Corporate Governance and Risk Management: The Role of Risk Management and Compensation Committee. *Journal of Contemporary Accounting and Economics*, 9, pp. 83-99.
- U.S. Congress (Congress), 2010. Dodd-Frank Wall Street Reform and Consumer Protection Act. Public Law 111-203. Washington, DC.
- Verrecchia, R. E., 1983. Discretionary Disclosure. *Journal of Accounting and Economics*, 5, pp. 179-194.
- Whitman, A.F., 2015. Is ERM Legally Required? Yes for Financial and Governmental Institutions, No for Private Enterprises. *Risk Management and Insurance Review*, 18(2), pp. 161-197.
- Woods, M., Dowd, K. & Humphrey, C., 2008. Market Risk Reporting by the World’s Top Banks: Evidence on the Diversity of Reporting Practice and the Implications for International Accounting Harmonisation. *Spanish Accounting Review*, 11(2), pp.9–41.
- Woods, M., 2009. A Contingency Theory Perspective on the Risk Management Control System within Birmingham City Council. *Management Accounting Research*, 20(1), pp.69–81.
- Zimmerman, J.L., 2001. Conjectures Regarding Empirical Managerial Accounting Research. *Journal of Accounting and Economics*, 32(1–3), pp.411–427.

APPENDIX A. Tables

Table 1. Risk management duties according to the 2011 Italian CG code

Subject	Duties
<i>Board of Directors (BoD)</i>	<ul style="list-style-type: none"> • Lead the internal control and risk management (ICRM) system to favour the identification, measurement, management, and control of risks in the company and its subsidiaries, according to its risk appetite and its strategy. • Evaluate, at least yearly, the suitability and the effectiveness of the ICRM system according to the characteristics of the company and its risk appetite. • Endorse, at least yearly, the IC program, consulting the Board of Statutory Auditors (BoSA) and the ICR officer. • Describe in the CG report the main features and the suitability of the ICRM system. • Assess, in accordance with the BoSA, the results of the external audit. • Appoint and overrule the internal audit manager, ensure the availability of his resources, and define his remuneration according to the company's policies.
<i>Internal Control and Risk (ICR) committee</i>	<ul style="list-style-type: none"> • Evaluate, in collaboration with the chief financial officer, the external auditor, and the BoSA, the accuracy of the use of accounting principles. • Give opinions about the approach to the identification of the firm's risks. • Study the reports provided by the ICRM system and the internal audit function. • Check the independency, suitability, effectiveness, and efficacy of the internal audit function. • Report to the BoD, at least biyearly, about its activity and the suitability of the ICRM system.
<i>Internal Control and Risk (ICR) officer</i>	<ul style="list-style-type: none"> • Identify the company's risks, with reference to the characteristics of the business, and report timely on risks to the BoD. • Carry out the guidelines provided by the BoD, programming, executing, and managing the ICRM system, maintaining constant control of its suitability and effectiveness. • Accomplish the coordination of the ICRM system with the operating and regulatory conditions. • Ask for verifications from the internal audit function regarding compliance with rules and strategy, reporting to the BoD, the ICR committee, and the BoSA. • Report timely to the ICR committee (in case of absence to the BoD) about identified critical issues.

Source: Florio and Leoni, 2017

Table 2. Profile of the sample

Respondents position held	2013	2015	Total number of respondents	% number of respondents
Board member	-	2	2	3.03
Chief Risk Officer	6	4	10	15.15
Internal Auditor	6	3	9	13.64
Top manager (CEO/ CFO)	4	10	14	21.21
Middle manager	10	17	27	40.91
Not available	2	2	4	6.06
N	28	38	66	100

Industry represented	2013	2015	Total number of respondents	% number of respondents
Chemical and basic material	-	1	1	1.52
Consumer goods	4	6	10	15.15
Consumer services	-	3	3	4.55
Financial	6	7	13	19.70
Health care	-	1	1	1.52
Industrial	10	13	23	34.84
IT	4	1	5	7.57
Oil and gas	-	2	2	3.03
Public services	4	4	8	12.12

Revenues	2013	2015	Total number of respondent	% number of respondents
€0 ≤x≤ €5 million	2	7	9	13.64
€5 million ≤x≤ €25 million	1	1	2	3.03
€25 million ≤x≤ €100 million	8	8	16	24.24
€100 million ≤x≤ €500 million	6	11	17	25.75
€500 million ≤x ≤ €1 billion	3	8	11	16.67
x > €1billion	8	3	11	16.67

Year of ERM adoption	2013	2015	Total number of respondents	% number of respondents
Less than 6 months	5	12	17	25.76
At least 1 year	3	9	12	18.18
At least 3 years	6	11	17	25.76
At least 5 years	12	5	17	25.75
10 years	2	1	3	4.55

Table 3. Description of report and survey coding

COSO ERM fundamental concepts	ERM items of interest	Description	Report (n=66)		Survey (n=66)		Test of difference	
			Mean	S.d.	Mean	S.d.	T-test of means (two-sided)	Test of median Wilcoxon test
1. A process, ongoing and flowing through an entity	1	Extent of ERM implementation	1.575758	2.327499	3.924242	1.256498	-8.8959***	-5.929***
2. Effected by people at every level of an organization	2a	Training activities about risk and risk management	.1363636	.7822328	3.318182	1.266845	-17.6247***	-7.025***
	2b	Business plan resource allocation for ERM	1.69697	2.183643	2.969697	1.380855	-3.9513***	-3.557***
3. Applied in strategy setting	3	ERM relation with strategic planning	2.712121	2.021158	3.469697	1.349868	-3.0417**	-2.368**
4. Applied across the enterprise, at every level and unit, and includes taking an entity-level portfolio view of risk	4a	Identification and prioritization of risks	2.484848	2.451012	4.727273	.5696275	-7.8719***	-5.687***
	4b	Methodology used for risk prioritization	1.060606	.5038315	1.666667	.4750169	-5.5177***	-4.588***
	4c	Extent of integration in risk prioritization	1.30303	1.968754	3.939394	.8923398	-11.5562***	-6.605***
5. Designed to identify potential events that, if they occur, will affect the entity and to manage risk within its risk appetite	5a	Frequency of risk reporting	1.363636	2.027779	3.636364	1.260481	-8.9105***	-6.096***
	5b	Temporal orientation of risk reporting	.1818182	.5793655	1.712121	.4562439	-17.5983***	-7.171***
6. Able to provide reasonable assurance to an entity's management and board of directors	6a	ERM process accountable person	1.742424	1.791524	2.484848	1.243351	-3.3193**	-3.169**
	6b	Frequency of ERM managers meetings	4.242424	1.627273	3.575758	1.489043	2.7690**	3.267**
7. Geared to achievement of objectives in one or more of separated but overlapping categories	7	Level of comprehensiveness (range) of risks considered	2.757576	2.411897	3.924242	1.206528	-3.9771***	-2.743**

Overall average score	21.29 out of 53	39.12 out of 53
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Table 4a. ERM disclosure variation distribution

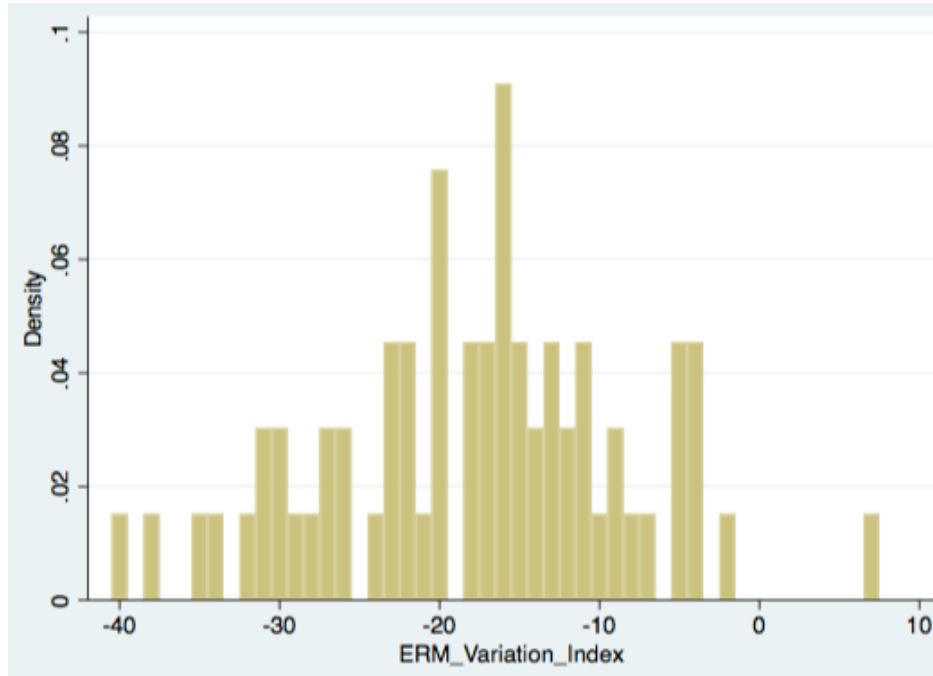


Table 4b. ERM disclosure (in)consistency: high vs. low variation

ERM_Variation_Index	# companies	(IN)CONSISTENCY
-40	1	High Variation/ INCONSISTENCY
-38	1	
-35	1	
-34	1	
-32	1	
-31	2	
-30	2	
-29	1	
-28	1	
-27	2	
-26	2	
-24	1	
-23	3	
-22	3	
-21	1	
-20	5	
-18	3	
-17	3	Low Variation/CONSISTENCY
-16	6	
-15	3	
-14	2	
-13	3	
-12	2	
-11	3	
-10	1	

-9	2
-8	1
-7	1
-5	3
-4	3
-2	1
7	1

Table 5a. Descriptive statistics

	Mean	S.d.	Min.	Max.
<i>Dependent variable:</i>				
INCONSISTENCY	0.469697	0.5029053	0.00	1.00
<i>Independent variables:</i>				
Board	0.4448	0.1582446	0.1538	0.8947
Concentration	0.5757576	0.4980147	0.00	1.00
Leverage	0.6127	0.2098272	0.00055	1.109
Market_to_book	2.831	4.422469	0.07895	26.33
Size_revenue	12.67	2.48213	8.16	23.24
TobinQ	0.1083272	0.5017228	0.0001009	2.901489
Financial	0.197	0.4007569	0.00	1.00
ERM_experience	2.651515	1.24644	1.00	5.00

Table 5b. Spearman rank correlation analysis

	INCONS~Y	board owners~p	leverage	mtb_ra~o	size_r~e	TobinQ	financ~l	ERM_ex~e	
INCONSISTE~Y	1.0000								
board	-0.0798	1.0000							
ownership	0.1322	0.1105	1.0000						
leverage	0.1920	0.2043*	-0.0821	1.0000					
mtb_ratio	-0.3020*	0.0119	-0.0241	-0.0842	1.0000				
size_revenue	0.0247	-0.0290	0.0129	0.1841	-0.2107*	1.0000			
TobinQ	-0.1729	0.2098*	-0.0338	-0.1274	0.1389	0.1398	1.0000		
financial	-0.0081	0.1763	-0.1915	0.3630*	-0.2810*	-0.0210	0.1030	1.0000	
ERM_experi~e	0.2125*	0.1881	-0.0456	0.1060	-0.1541	0.2032	0.1541	-0.0227	1.0000

Notes: * Correlation is significant at the 0.10 level (two-tailed)

Table 6a. Probit model results

Probit regression	Number of obs	=	66
	LR chi2(8)	=	23.74
	Prob > chi2	=	0.0025
Log likelihood = -33.755981	Pseudo R2	=	0.2602

INCONSISTENCY	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
board	-.0285908	.0136425	-2.10	0.036	-.0553295	-.001852
ownership	.7044636	.3801403	1.85	0.064	-.0405977	1.449525
leverage	2.525829	1.084318	2.33	0.020	.4006042	4.651054
mtb_ratio	-.1451485	.0586969	-2.47	0.013	-.2601924	-.0301047
size_revenue	-.1461361	.0808337	-1.81	0.071	-.3045674	.0122951
TobinQ	6.501505	4.563714	1.42	0.154	-2.44321	15.44622
financial	-.9844539	.5882721	-1.67	0.094	-2.137446	.1685382
ERM_experience	.2729999	.1590768	1.72	0.086	-.0387848	.5847847
_cons	.6978686	1.259426	0.55	0.579	-1.77056	3.166297

Table 6b. Probit model on companies having lower ERM experience (ERM_experience < 3)

Probit regression	Number of obs	=	29
	LR chi2(7)	=	22.10
	Prob > chi2	=	0.0024
Log likelihood = -8.1998233	Pseudo R2	=	0.5740

INCONSISTENCY	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
board	-.0266093	.0336661	-0.79	0.429	-.0925937	.0393751
ownership	.4272366	1.180986	0.36	0.718	-1.887454	2.741927
leverage	4.977333	2.224641	2.24	0.025	.617117	9.33755
mtb_ratio	-1.08703	.5433583	-2.00	0.045	-2.151993	-.0220673
size_revenue	-.0245758	.4060654	-0.06	0.952	-.8204493	.7712977
TobinQ	-18.4437	30.1739	-0.61	0.541	-77.58347	40.69606
financial	-2.183997	1.192284	-1.83	0.067	-4.520832	.1528371
_cons	.1982419	4.193619	0.05	0.962	-8.021101	8.417585

Table 6c. Probit model on companies having greater ERM experience (ERM_experience >= 3)

Probit regression		Number of obs	=	37		
		LR chi2(7)	=	11.73		
		Prob > chi2	=	0.1099		
Log likelihood = -19.661265		Pseudo R2	=	0.2297		
INCONSISTENCY	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
board	-.0315463	.0176528	-1.79	0.074	-.0661452	.0030525
ownership	1.027232	.5176948	1.98	0.047	.0125684	2.041895
leverage	2.404916	1.629697	1.48	0.140	-.7892319	5.599065
mtb_ratio	.0575061	.1098233	0.52	0.601	-.1577437	.2727558
size_revenue	-.0912594	.0858561	-1.06	0.288	-.2595344	.0770155
TobinQ	5.433301	6.25702	0.87	0.385	-6.830233	17.69684
financial	.1258688	.8456043	0.15	0.882	-1.531485	1.783223
_cons	.4190353	1.537313	0.27	0.785	-2.594043	3.432114

Table 7a. Probit model on non-financial companies

Probit regression		Number of obs	=	53		
		LR chi2(7)	=	20.45		
		Prob > chi2	=	0.0047		
Log likelihood = -26.428417		Pseudo R2	=	0.2789		
INCONSISTENCY	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
board	-.0391189	.0155148	-2.52	0.012	-.0695274	-.0087104
ownership	.5777792	.4258586	1.36	0.175	-.2568883	1.412447
leverage	3.216437	1.264891	2.54	0.011	.737296	5.695579
mtb_ratio	-.1362497	.0652187	-2.09	0.037	-.2640759	-.0084234
size_revenue	-.151717	.08709	-1.74	0.081	-.3224102	.0189762
TobinQ	1.272287	1.549131	0.82	0.411	-1.763954	4.308528
ERM_experience	.1420315	.1740244	0.82	0.414	-.1990501	.4831131
_cons	1.235772	1.457809	0.85	0.397	-1.621481	4.093025

Table 7b. Probit model: no data 2015 for those companies answering both the survey's years

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Probit regression                               Number of obs   =           60
                                                LR chi2(8)      =           24.31
                                                Prob > chi2     =           0.0020
Log likelihood = -29.400349                    Pseudo R2      =           0.2925
    
```

INCONSISTENCY	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
board	-.0415123	.0168042	-2.47	0.013	-.0744479	-.0085766
ownership	1.024538	.4475649	2.29	0.022	.1473272	1.90175
leverage	2.73705	1.156123	2.37	0.018	.4710906	5.00301
mtb_ratio	-.1603119	.0634761	-2.53	0.012	-.2847228	-.0359011
size_revenue	-.1725365	.0880017	-1.96	0.050	-.3450168	-.0000563
TobinQ	6.833866	4.870918	1.40	0.161	-2.712958	16.38069
financial	-1.040656	.627776	-1.66	0.097	-2.271074	.1897628
ERM_experience	.4379525	.1965347	2.23	0.026	.0527515	.8231535
_cons	1.015507	1.327002	0.77	0.444	-1.585369	3.616383

APPENDIX B. Survey

The survey questions about an ERM process were developed using the seven fundamental concepts defining ERM from the COSO framework as a basis. Twelve questions in the survey map to the seven fundamental concepts from COSO to operationalize them. Thus, scores based on the 12 factors were created based on the survey responses and scores based on the same 12 factors were created based on the reading of the CG reports. Specifically, as summarized in Table 3, the first concept - defining ERM as a process on-going and flowing through the entity - is composed by one factor identifying the extent of ERM implementation (Paape and Specklè, 2012). The second concept relates to the participation extent of people at every level of the organization. Therefore, the two factors by which it is composed respectively ask for training activities (Beasley *et al.*, 2015) and business plan resources allocated to the ERM process (NCSU- Protiviti report, 2016). Both these factors indeed aim at widening the ERM scope among people within the organization.

The third fundamental concept is about the application in the strategy setting and thereby the factor investigates the relation of ERM with strategic planning (Frigo and Anderson, 2011; Beasley *et al.*, 2015; COSO framework draft, 2016). The fourth concept is composed by three factors investigating the identification and prioritization of risks, the methodology used for risk prioritization, and the extent of integration³⁴ in risk prioritization to verify the application of the process across the enterprise (Arena *et al.*, 2011; Paape and Specklè, 2012). In particular, Arena *et al.* (2011) in their study based on the Italian setting find that generally an entity's risk evaluation method comprises a combination of qualitative and quantitative techniques. Also other studies find a combination of the two methodologies (Woods, 2009; Jordan *et al.*, 2013; and Mikes, 2009). Thus, for this factor based on a three-point scale and related to the methodology used for risk prioritization, it is attributed a 1 only in the case both the methodologies are applied by the company, 0 otherwise.

Then, the ERM process according to the fifth concept needs to be designed to identify potential events that, if they occur, will affect the entity and to manage risk within its risk appetite. A crucial element to identify potential events is a frequent communication in terms of risk reporting (Paape and Specklè,

³⁴ The integration concept introduced by Arena *et al.* (2011) refer to how risks are governed within all levels and functions of an organization.

2012). Thus, the current study aims to investigate the frequency of risk reporting and its temporal orientation (back vs. forward-looking). Considering the proactive aim of ERM, the coding choice is to attribute a 1 if respondents answer forward-looking, 0 otherwise.

The sixth concept relates to the ERM process' ability to provide reasonable assurance to an entity's management and board of directors. Beasley *et al.* (2005) is the first study identifying Chief Risk Officer role (or a person having the same role but with a different title) as a good proxy for ERM effectiveness. The presence of such a person in charge for the process can provide the requested reasonable assurance of the ERM process (Baxter *et al.*, 2013; Ellul and Yeramilli, 2013). Another related factor providing assurance to the process is the frequency of risk managers' meetings. Finally, the seventh concept geared to the achievement of objectives in one or more separate but overlapping categories is operationalized in a question asking for the level of comprehensiveness (i.e. range of risks) considered (Arena *et al.*, 2011). Risks can be classified according many overlapping categories linked to the companies' goals, such as strategic, operative, compliance and reporting (COSO, 2004; AICPA - NCSU, 2016). Wider and more holistic level of risks comprehensiveness considered can contribute to overcome a silo-based approach and to the companies' objectives achievement. For a detail about the survey/report factors and corresponding five-point scale answers see the following.

Concept 1. A process, ongoing and flowing through an entity:

Item 1. How much has Enterprise Risk Management (ERM) process been implemented?

1. Risk management is mainly incident-driven; no plans exist to implement ERM.
2. We actively control risk in specific areas (e.g. health & safety, financial risk); we are considering to implement a complete ERM.
3. We identify, assess and control risk in specific areas; we are planning to implement a complete ERM.
4. We identify, assess and control strategic, financial, operational and compliance risks; we are in the process of implementing a complete ERM.
5. We identify, assess and control strategic, financial, operational and compliance risks; ERM is an integral part of the (strategic) planning & control cycle.

Concept 2. Effected by people at every level of an organization:

Item 2. Are training activities about risk carried out?

1. Not at all
2. Minimally
3. Somewhat
4. Mostly
5. Extensively

Item 3. Are business plan resources allocated to ERM initiatives?

1. Not at all
2. Minimally
3. Somewhat
4. Mostly
5. Extensively

Concept 3. Applied in strategy setting:

Item 4. To make stronger the responsibilities is there a relation between capital allocation, budget decisions and identified risks? Namely, risk management process is related to strategic planning?

1. Not at all
2. Minimally
3. Somewhat
4. Mostly
5. Extensively

Concept 4. Applied across the enterprise, at every level and unit, and includes taking an entity-level portfolio view of risk:

Item 5. Do you identify and prioritize risks?

1. No at all;
2. Minimally;
3. Somewhat;
4. Mostly;
5. Extensively

Item 6. Which kind of methodology do you use to prioritize risks:

1. Qualitative: phenomenon description;
2. Quantitative: phenomenon description in monetary terms;
3. Both

Item 7. What is the extent of integration in risk prioritization?

1. Not at all widespread
2. Uncommon
3. Spread just at top levels: board and top management
4. Spread in the majority of the organization: board, top and middle managers
5. Enterprise widespread: board, top and middle managers and operative levels

Concept 5. Designed to identify potential events that, if they occur, will affect the entity and to manage risk within its risk appetite:

Item 8. What is the frequency of general risk reporting?

1. Every 3 years or never
2. Once a year
3. Every 9 months
4. Twice a year (every 6 months)
5. Every 3 months or less

Item 9. Temporal orientation of risk reporting:

1. Past-looking (overcame risks)
2. Forward-looking (expected risks)

Concept 6. Able to provide reasonable assurance to an entity's management and board of directors:

Item 10. Who is accountable for ERM process?

1. CEO
2. Internal Auditor

3. Board
4. Chief Risk Officer
5. Others (specify)

Item 11. ERM managers meeting: what is their frequency?

1. Every 3 years or never
2. Once a year
3. Every 9 months
4. Every 6 months
5. Every 3 months or less

Concept 7. Geared to achievement of objectives in one or more separate but overlapping categories:

Item 12. What is the level of comprehensiveness - range of of risks considered (strategic, operative, compliance and reporting risks...)?

1. Not at all
2. Minimally
3. Somewhat
4. Mostly
5. Extensively

5. CONCLUSIONS

The thesis investigates risk, accounting, and governance dimensions in different contexts, in the light of the main gap identified in the introduction. Specifically, each paper analyzes uninvestigated relations and their directions between the three dimensions. Relying on different theoretical backgrounds and methodological approaches, each paper presents a specific definition of the dimensions of accounting, risk and governance. The overall findings, represented with a model composed by three circles (representing the three dimensions) connected by arrows, show the identified relations. Such a representation allows to extend prior risk literature in the accounting field.

In the first paper, where accounting is intended broadly as calculative technologies (Miller, 1994)³⁵, it is shown how it played a role in shaping risk - i.e. social and societal risk discourses. The paper contributes to the critical and interpretative accounting research by depicting how accounting can be mobilized when a State government has to deal with *contrasting risks* – i.e. risks that suggest opposite decisions – and such risks are quantifiable but *incommensurable*. The paper shows that accounting played several roles: it worked as a learning machine to reduce uncertainty and allowed the Government to take its decision on the ILVA’s destiny on the basis of the risk measured highlighted by the experts. Further, accounting also served as “ammunition” and “rationalization” machine to create an “elusive link” between information and decision-making (March, 1987³⁶). Accounting participated to the governance of risk as it allowed to construct a discourse by making this latter “credible” and “relevant”. Thus, differently from prior literature, the study analyzes and found evidence of a reverse relation between the governance and risk dimensions. In particular, the paper shows how the governance dimension (i.e. governmental decision) is affected by the risk one (i.e. social and societal discourses) which in turn is shaped by the ‘machinery’ role of accounting (Burchell *et al.*, 1980³⁷; Mouritsen and Kreiner, 2016³⁸).

In the second paper, the main focus is on the relation between governance and risk dimensions. Findings show indeed an association between a “strong” S&P score (governance dimension) and a subset of proxy disclosures related to board risk oversight (risk dimension). Specifically, it is found that an explicit acknowledgement that the board is responsible for risk oversight is significantly associated with a “strong” S&P score. In addition, the presence of a management level risk committee

³⁵ Miller, P. (1994). Accounting as a Social and Institutional practice: An Introduction. In: Hopwood A.G. and Miller P. *Accounting as Social and Institutional Practice* (Vol. 24). Cambridge University Press: Cambridge.

³⁶ March, J. G. (1987). Ambiguity and Accounting: The Elusive Link between Information and Decision Making. *Accounting, Organizations and Society*, 12(2), 153-168.

³⁷ Burchell, S., Clubb, C., Hopwood, A., Hughes, J., & Nahapiet, J. (1980). The Roles of Accounting in Organizations and Society. *Accounting, Organizations and Society*, 5(1), 5-27.

³⁸ Mouritsen, J., & Kreiner, K. (2016). Accounting, Decisions and Promises. *Accounting, Organizations and Society*, 49, 21-31.

and the provision of an annual report of top risk exposures to the board are also significantly positively associated with a “strong” S&P score. Whereas, it is found that an explicit focus on strategic risks is actually negatively associated with a “strong” score and no other specific disclosures that we capture exhibit a significant association. Finally, a significant relation is also identified with some of the pre-disclosure measures that proxy for firm risk (accounting dimension). The research contributes to the risk management literature by examining required disclosures concerning the board’s risk oversight by quantifying elements of the proxy disclosures and comparing them to contemporaneous independent rankings about management and governance, while controlling for the riskiness of the firm. Therefore, the study contributes to investigate under-investigated relations between the dimensions of risk, accounting, and governance. Specifically, it shows how both risk dimension (proxy disclosures related to board risk oversight) and accounting dimension (firm riskiness measure) affect the governance one (S&P management and governance score). This gives evidence for the SEC that its disclosure rules are providing useful information to stakeholders and identifying potential investor benefits from the enhancement of risk management disclosure (Baxter *et al.*, 2013; Campbell *et al.*, 2014³⁹).

Finally, the last paper shows - in a voluntary disclosure setting - companies tend to not fully disclose information about their ERM processes. That is, the private disclosure suggests more extensive risk management processes than public disclosures reveal. The study finds that both corporate governance variables (governance dimension) and accounting firm’s risk measures (accounting dimension) are associated to ERM disclosure inconsistency (risk dimension). Specifically, it is found a significant relation with board independence, the extent of ownership’s concentration, the extent of leverage, and the market to book. From a theoretical point of view, the paper originally contributes to the empirical research on management control systems (Beasley *et al.*, 2005⁴⁰; Paape and Speklè, 2012⁴¹; Beasley *et al.*, 2015⁴²) benefiting of private information on the internal ERM process and comparing such information to what companies publicly voluntary disclose. The resulting inconsistency between the two sources suggests a general understatement of public voluntary disclosure and a potential underestimation of the investors’ benefits prior accounting literature identifies. The study also contributes to accounting literature on risk disclosure focusing on

³⁹ See reference at footnote 12 and 14, respectively.

⁴⁰ Beasley, M.S., Clune, R. & Hermanson, D.R., 2005. Enterprise Risk Management: An Empirical Analysis of Factors Associated with the Extent of Implementation. *Journal of Accounting and Public Policy*, 24(6), pp.521–531.

⁴¹ Paape, L. & Speklè, R.F., 2012. The Adoption and Design of Enterprise Risk Management Practices: An Empirical Study. *European Accounting Review*, 21(3), pp.533–564.

⁴² Beasley, M., Branson, B. & Pagach, D., 2015. An Analysis of the Maturity and Strategic Impact of Investments in ERM. *Journal of Accounting and Public Policy*, 34(3), pp.219–243.

risk management practices instead of risk factors. Third, the study investigates a new variable (ERM experience) which is found to affect the ERM process disclosure and that asks for future investigations. Finally, prior research mainly analyzes non-financial setting while the current study takes into account also financial companies surprisingly showing that such industry does not affect so much the analyzed relation.

In its complex, the dissertation highlights new perspectives on the relation between risk, accounting, and governance. The holistic view adopted in the thesis to analyze the topic of risk governance in accounting literature allowed to contribute to prior research hypothesizing and finding evidence of new directions of those relations. The findings of the three papers are “merged” in Figure 3 showing the role played by each dimension.

First, it emerges accounting plays a key role in governing corporate risks. The concept of accounting, indeed, even if interpreted according to different meanings in the three papers, has found to be associated directly with risk (paper 1 and 3), and both directly (paper 2) and indirectly with governance (paper 1). Specifically, accounting in the first paper plays concurrently three roles as ‘learning’, ‘ammunition’, and ‘rationalization machine’ participating to the construction of risk discourses. In the second paper, accounting - that is firm’s risk measure - has been found to play a supportive role in the relation between board’s risk oversight disclosure and S&P “management and governance” assessment. While, in the third paper, accounting - referring to firm’s risk measures - has been found to play a trigger role affecting the Enterprise Risk Management disclosure inconsistency at least in the first period of ERM adoption.

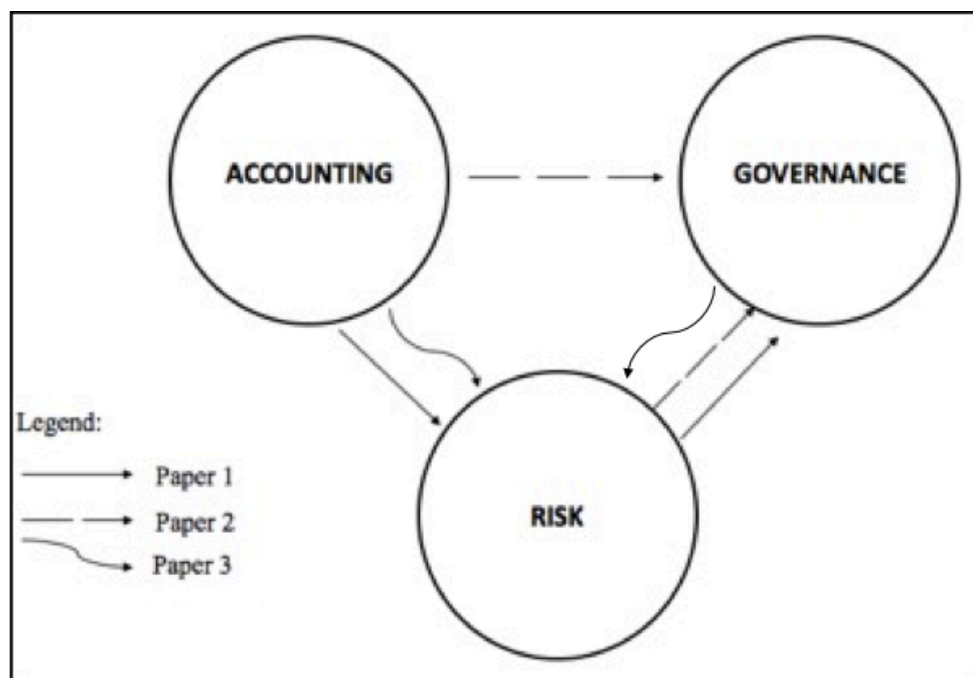
Second, looking at the risk dimension in the intertwined relations with accounting and governance it emerges it also plays many roles. It has an intermediary role between accounting technologies and governmental decision-making in the first paper. In the second paper, it has a driver role together with accounting firm’s measures affecting the governance dimension of the S&P’s score. Whereas, in the third paper of the thesis, it has a response (variable) role being affected by corporate governance and firm’s risk characteristics. This contributes to prior literature which sees risk dimension separately affecting accounting dimension or affected by the governance dimension (see figure 1).

Finally, according to the same representation, the governance dimension is affected by risk dimension (paper 1) or simultaneously by both risk and accounting dimensions (paper 2). In addition, the governance dimension also affects the risk one (paper 3). In the first paper the governance dimension represents the output of the governmental decision based on risk discourses; these latter in turn constructed by accounting technologies. In the second paper, the S&P’s management and governance score (governance dimension) represents the response variable affected by both proxy

disclosures related to risk oversight and firm's risk measures. Whereas, in the third paper the governance dimension (through the proxies of the corporate governance explanatory variables) affects ERM disclosure inconsistency.

Therefore, the thesis embracing a broad perspective on the topics of risk, accounting and governance allows to extend prior literature in accounting and risk management. From the theoretical point of view, it contributes at the debate on risk investigating and identifying new relations and their directions between the three dimensions under the lens. In particular, the research shows the intertwined relations among them and the role each dimension can play. Such new evidences are the results of the adoption of different theoretical backgrounds (critical/interpretative and positive accounting) and methodologies (Foucauldian discourse analysis, intertextual analysis, and regressions). The research therefore leaves space for future investigation on the relations between risk, accounting, and governance adopting mix methods of analysis.

Figure 3. The intertwined relations between risk, accounting and governance: new evidences



Living in a world of great uncertainty and complexity dictated by geo-political issues, cyber threats and terrorism, increasing regulatory expectations, calls for alternative energy sources, combined to a disruptive technological innovation, the results may have many policy implications regarding risk government processes, risk oversight and disclosure. Following, the study may also help stakeholders to better assess such activities and to become aware of the potential role that

accounting can play in risk government situations. Investors in addition may gain insights about more or less informative disclosure on risk management processes in different contexts. This in turn can have managerial implications to enhance the companies credit ratings processes and in affecting better performance; future research may further investigate on that thanks to the emerging availability of Big data tools.

To conclude, thanks to the broader perspective adopted in the thesis and to the empirically findings about what accounting does to the risk and the governance dimensions, the thesis demonstrates how it is possible identifying material influences between the three dimensions. Thus, the dissertation opens new paths of investigation in accounting and risk management literature. New relations between the three dimensions may be analyzed according to corporate governance or sociological literature interpretations. Further, an interdisciplinary approach between accounting, corporate governance and sociological literature on risk may raise new research challenges.