RISK MANAGEMENT AND INTERNAL AUDIT: EVIDENCE FROM GREECE

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Abstract

Risk management is ranked by financial executives as one of their most important objectives. For this reason, a wide range of literature on risk management has been developed. Within this fluid business environment, internal audit plays a key role in monitoring a company's risk profile and identifying areas for improving risk management processes. The purpose of this study is to provide a comprehensive overview of the factors that impact on risk management regarding internal audit function. Empirical evidence was collected by means of a mailed survey. Regression analysis is used in order to illustrate the information gathered. Consistent with theory and our expectations, the results indicate that internal audit, internal auditor and added value of internal audit are statistically significantly associated with risk management.

Keywords: Internal Audit, Internal Auditor, Value-Added of Internal Audit, Risk Management, Auditing

1. INTRODUCTION

Organizations are under pressure to identify all the business risks they face. Thus, boards need assurance that risk culture in the organization is robust and that risks are being managed effectively. Moreover, financial crisis and a series of scandals across other sectors were forcing risk management as a vital means of reducing the total business risk (Walker *et al.*, 2002). In this context, enterprise risk management (ERM) has emerged as a new paradigm for managing the portfolio of risks that face organizations (Beasley *et al.*, 2005). Thus, the importance to effective risk management has been also increasingly acknowledged, since it affects not only the business profitability, but also its survival in the long term (Spira and Page, 2003).

At the same time, organizations encountered rapid changes in economic complexity, requirements. expanded regulatory and technological advancements in recent years (Drogalas et al., 2016). These changes have given the internal audit function a set of expanded opportunities (Hass *et al.*, 2006). In this context, internal auditing, in both its assurance and its consulting roles, contributes to the management of risk in a variety of ways (Karagiorgos et al., 2010). More specifically, internal audit's core role is to provide objective assurance to the board on the effectiveness of risk management (IIA, 2009).

From the above, it is obvious that there is an increasing awareness of the internal audit and the

value-added role that internal audit can play in modern organizations (Al-Twaijry *et al.*, 2003). Also previous studies have largely focused on risk management (Selim and McNamee, 1999; Miccolis *et al.*, 2001; Spira and Page, 2003). However, until now, to the best of our knowledge no empirical research on the role of internal auditing in risk management has been conducted within a Greek context. In this study, we elaborate in detail how factors such as internal audit, added value of internal audit and internal auditors perceive their current role in risk management within the specific Greek context. In the perspective of the above approaches, the present paper aims at illustrating the interrelationship between internal audit and risk management.

Our results suggest that there are three important factors affecting the risk management regarding internal audit. These findings contribute to existing literature by providing evidence on the most significant factors for effective risk management in Greek companies. Accordingly, our findings may help managers in Greece to focus on these specific factors in order to generally improve risk management.

We organize the rest of the article as follows. Section 2 provides a review of the extant literature relating to risk management, internal audit, value-added of internal audit and internal auditor. In Section 3, the research method employed is outlined. Section 4 presents the findings, and finally, conclusions and suggestions for further research are provided in Section 5.

2. LITERATURE REVIEW

2.1. Internal Audit and Risk Management

Internal audit has developed gradually on the basis of social and economic growth and the inherent needs of enterprise management (Wang, 1997). According to the Institute of Internal Auditors, internal auditing is "an independent appraisal function, established within an organization to examine and evaluate its activities as a service to the organization" (Konrath, 1996). Simultaneously, the rapid evolution of information technology has spawned a new generation of business risks (Boulton et al., 2000). In this context, a risk-driven approach to the internal audit is examined by Colbert and Alderman (1995). They found that internal audit may select a procedures-driven or a risk-driven approach. However, the researchers indicate that a risk-driven approach is generally more efficient than a procedures-driven approach because the internal audit's efforts are focused on areas with relatively more risk.

More recently, Steward and Kent (2006) explored the use of internal audit by Australian companies. The findings reveal that internal audit use is associated with risk management. In the same period, Fernández-Laviada (2007) provided a global perspective of the operational risk management framework from an internal audit viewpoint. Describing the new role of the internal audit function regarding risk management, the researcher depicts the important role of internal audit in operational risk management.

In Greece Koutoupis and Tsamis (2008) examined a risk based internal auditing within Greek banks. The findings indicate that Greek banks develop risk based audit plans; however the vast majority of them could not prove it through a clearly documented risk assessment. In the same period, the role of internal auditing in enterprise wide risk management is examined by the Institute of the Internal Auditors (IIA, 2009). The results reveal that core internal audit roles regarding risk management are: assurance on the risk management processes, assurance that risks are correctly evaluated, evaluation of risk management processes, evaluation of reporting key risks and review key risks' management.

Internal audit's role in the contemporary life of a company is presented by Caratas and Spatariu (2014). The researchers found that within an increased business risk environment, internal audit should anticipate risks and identify trends in control field. The findings also propose that a strong cooperation between internal audit and the audit committee regarding risks monitoring could affect the achievement of company's objectives. According to the above, the first research hypothesis can be developed as follows:

 H_1 : Internal Audit contributes to effective Risk Management.

2.2. Added Value of Internal Audit and Risk Management

In the past, internal audit's role typically consisted of verifying compliance with policies and procedures, without providing recommendations for improvement. However, today added value is widely considered as an integral part of the internal audit process.

Bou-Raad (2000) found that internal audit, providing a value-added approach, contributes to the fulfillment of organizations' objectives and improves the quality of information for decision making purposes.

Moreover, over 60 percent of the respondents (from eight European countries) participating in a KPMG (2002) survey believed that their systems of risk management and internal control add value to their organization.

More recently, value-added role of internal audit is also examined by Mihret and Woldeyohannis (2008). The study demonstrates that the level of risk faced by organizations to which internal audit provides service, appears to shape the attributes of a value-adding internal audit department.

In the same period, the Institute of the Internal Auditors (IIA, 2009) examined the role of internal auditing. The findings reveal that one of the most important factors regarding internal auditing added value to the organization is the provision of objective assurance that internal control framework is operating effectively. According to the above, the second research hypothesis can be developed as follows:

H: The added value of Internal Audit constitutes one of the most important tools in effective Risk Management.

2.3. Internal Auditors and Risk Management

Internal auditors have a professional obligation to use risk assessment techniques at both macro and micro levels (Institute of Internal Auditors, 1997). In their study, Selim and McNamee (1999) investigated the way Internal Audit should operate as well as the tools and techniques that will make Internal Audit more effective. Basic conclusion of their research was the need for stronger interdependence between risk management and Internal Audit. The results also confirm that the existence of Internal Auditors with appropriate knowledge and qualifications is vital for effective internal audit.

More recently, Mousa (2005) considered proficiency and due professional care (competence) as a significant element of internal auditing. In the same period, Sarens and De Beelde (2006) comparing how internal auditors perceive their role in risk management, found that internal auditors are of paramount importance in the creation of a more formalized risk management system.

Leung and Cooper (2009) in a more recent study, provide an overview of the profile of internal audit in five Asia-Pacific countries. The results affirm that internal auditors in New Zealand, Japan, Chinese Taiwan, China and Australia have a reasonably high level of usage of Standards.

The impact of internal auditors' involvement in enterprise risk management is also examined by Zwaan *et al.* (2011). The findings reveal that willingness to report to the audit committee when the relationship between internal auditors and audit

committee is strong is not dependent on the level of risk management involvement.

Finally, Abdullatif and Kawuq (2015) explore the internal auditors' practices in Jordan banks in regard with risk management. The results indicate different types of risks, and how internal auditors would respond to the presence of each individual one. Also the results point out those internal auditors is most involved with risks which are related to the Jordanian economy and culture. Thus, the following research hypothesis is developed:

H₃: Internal Auditor constitutes one of the most important tools in effective Risk Management.

3. RESEARCH DESIGN

3.1. Sample and Questionnaire

We based the survey questions on both prior research and discussions with audit professionals (internal and external auditors). The data was collected by means of a questionnaire sent to managers, accountants and internal auditors from Greek organizations that conduct internal audits. Closed questions were used to avoid ambiguous interpretation, to make answer coding easier, and to facilitate statistical analysis. The data collection process took about six months, from July 2016 to December 2016, with numerous reminders sent to each participant. At the end of the collection process, of the 230 questionnaires mailed, 84 usable responses were received, generating a response rate of 36,52 per cent.

Respondents were asked to indicate their degree of agreement or disagreement with each of the nineteen statements on a five-point Likert response scale that ranged from "not at all" (scored as 1) to "very much" (scored as +5).

Descriptive technique has been employed to analyze and interpret the data captured in various tables drawn from the accepted copies of the questionnaire.

3.2. Measurement of Variables

All the items for the dependent and the three independent variables were measured on a 5-point scale (1 = not at all to 5 = very much). "Risk Management" variable forms our dependent variable. Based on the studies of Wang (1997), Konrath (1996), Boulton *et al.* (2000), Fernández-Laviada (2007) and Steward and Kent (2006), we include four questions in evaluating risk management.

questions in evaluating risk management.

"Internal audit", "internal audit added value" and "internal auditor" are our independents variables. In order to create an appropriate measure of "internal audit", we include three questions concerning internal audit objectives, internal audit use in regular and in emergency situations and internal audit cooperation with audit committee regarding risk management (Steward and Kent,

2006; Koutoupis and Tsamis, 2008; IIA, 2009; Caratas and Spatariu, 2014). Based on the above literature (Bou-Raad, 2000; KPMG, 2002; Mihret and Woldeyohannis, 2008; IIA, 2009) regarding "added value of internal audit" we set three questions. More specifically, adding value of internal audit, quality of information for decision making purposes and effective operation of internal control framework are used. Finally, based on the studies of Mousa (2005), Leung and Cooper (2009), Zwaan *et al.* (2011) and Abdullatif and Kawuq (2015) four questions are used to measure "internal auditor". Specifically, we include questions concerning professionalism, knowledge of the IPPF, relationship with the audit committee and training via attending educational seminars.

3.3. Model

Taking into consideration the above literature review, four variables are selected to be examined in the present research. The first is "Risk Management" which is the dependent variable, and three independent variables which are "Internal Audit", "Internal Audit Added Value" and "Internal Auditor". Consequently, three research hypotheses were developed for each one of the independent variables.

Multiple regression analysis was performed to estimate the magnitude of the effect of the independent variables. The Ordinary least squares (OLS) regression model was:

$$RM = a + b_1 IA + b_2 IAAV + b_3 AC + e_1$$

The variables are defined below:

RM = Risk Management IA = Internal Audit

IAAV = Internal Audit Added Value

IAR = Internal Auditor

4. RESULTS

4.1. Descriptive statistics

4.1.1. General

Demographic characteristics of the respondents regarding the age, the educational level, the work experience, the business sector and the position of the participants are presented on Table 1.

The table shows that the total percentage of companies (100%) operate on the private sector and in particular 64.3% of them are industrial enterprises, while the rest 35.7% are service enterprises. As for the respondents' age, 57.1% of them are between 31-40 years of age, while the rest 35.7% are between 41-50 years of age. The education level of the respondents is considered satisfactory, since 38.1% of them are University graduates and 61.9% of them are post-graduate degree holders. Finally, 42.9% of the respondents are Accountants; while a large proportion (57.1%) are Managers.

Table 1. Professional demographics of the participants

		Frequency	Percent
	Industrial	54	64.3
Sector	Services	30	35.7
	Commercial	0	0.0
Private/public	Private	84	100.0
_	Public	0	0.0
	20-30	0	0.0
Ago	31-40	48	57.1
Age	41-50	30	35.7
	51-60	6	7.2
	Secondary	0	0.0
Education	University	32	38.1
Euucation	Master	52	61.9
	Ph.D	0	0.0
	Employee	0	0.0
Docition	Accountant	36	42.9
Position	Financial Manager	48	57.1
	Director	0	0.0

Source: Field Survey, 2016

4.1.2. Risk Management

Table 2 presents descriptive statistics for risk management. To better highlight the results, we shall have a closer look at table 2 below.

Table 2. Statements Regarding Risk Management

	1	2	3	4	5
To what extent has an Occupational Risk Assessment Study been drafted, together with the active participation of staff responsible for the Internal Audit?	0	0	30	48	6
	0%	0%	35.7%	57.1%	7.1%
To what extent your business develops a risk based audit plan?	0	0	6	72	6
	0%	0%	7.1%	85.7%	7.1%
To what extent internal audit evaluate risk management processes?	0	0	18	42	24
	0%	0%	21.4%	50%	28.6%
To what extent internal audit gives assurance that risks are correctly evaluated?	0	0	12	54	18
	0%	0%	14.3%	64.3%	21.4%

Source: Field Survey, 2016

The largest percentage of respondents, (57.1%) considers that an Occupational Risk Assessment Study has been drafted together with the participation of staff on a "large scale". However, 35.7% of the respondents consider that the Occupational Risk Assessment Study was drafted together with the participation of staff on a "moderate scale". Similarly, according to almost every respondent (94%), the company develops a risk-based audit plan on a "large scale", or "very much". However, a significant proportion of respondents (21%) believe, that internal audit

evaluate risk management processes on a "moderate scale". Finally, more than 64 percent of the respondents believe that internal audit gives regarding correct risk evaluation.

4.1.3. Internal audit

The results regarding the internal audit are encouraging. To better highlight the results, we shall have a closer look at table 3 below.

Table 3. Statements Regarding internal audit

1	2	3	4	5
0	0	18	60	6
0%	0%	21.4%	71.4%	7.1%
0	0	0	72	12
0%	0%	0%	85.7%	14.3%
0	0	6	66	12
0%	0%	7.1%	78.6%	14.3%
	0 0% 0	0 0 0% 0% 0 0	0% 0% 21.4% 0 0 0 0% 0% 0% 0 0 6	0% 0% 21.4% 71.4% 0 0 0 72 0% 0% 0% 85.7% 0 0 6 66

Source: Field Survey, 2016

From the table, it is observed that the largest percentage (71,4%) believe that internal audit's objectives are specified on a "large scale". However, significant proportion (21%) believes that the objectives of the Internal Audit are specified on a "moderate scale". Conversely, every respondent (100%) believes that Internal Audit is carried out not

only on scheduled, but also in emergency situations on a "large scale" or "very much". Finally, more than 78 percent of the respondents consider that internal audit cooperate with audit committee regarding risk management on a "large scale".



4.1.4. Added Value of Internal Audit

The results regarding value added of internal audit are also encouraging. To better highlight the results, we shall have a closer look at table 4 below.

Table 4. Statements Regarding added value of internal audit

	1	2	3	4	5
To what extent Internal Audit adds value to your business?		0	0	60	24
		0%	0%	71.4%	28.6%
To what extent internal audit improves the quality of information for	0	0	6	54	24
decision making purposes?	0%	0%	7.1%	64.3%	28.6%
To what extent internal audit provides objective assurance that	0	0	6	48	30
internal control framework is operating effectively?	0%	0%	7.1%	57.1%	35.7%

Source: Field Survey, 2016

Every respondent considers that Internal Audit adds value to the enterprise on a "large scale" or "very much". Also, a significant percentage (64.3%) believes that internal audit improves the quality of information for decision making purposes on a "large scale". Finally, 93 percent of the respondents believe that internal audit provides objective

assurance regarding effective internal control framework on a "large scale" or "very much".

4.1.5. Internal auditor

The results regarding internal auditor are also encouraging. To better highlight the results, we shall have a closer look at table 5 below.

Table 5. Statements Regarding Internal Auditor

	1	2	3	4	5
To what extent Internal Auditors perform their job with professional care?	0	0	6	70	8
To what extent internal Additors perform then Job with professional care:	0%	0%	7.1%	83.3%	9.5%
To what degree Internal Auditors maintain current knowledge of the IPPF?		0	0	64	20
		0%	0%	76.2%	23.8%
To what extent Internal Auditors have strong relationship with the audit	0	0	20	42	22
committee?	0%	0%	23.8%	50.0%	26.2%
To what extent Internal Auditors attend educational seminars for their	0	0	0	54	30
training?	0%	0%	0%	64.3%	35.7%

Source: Field Survey, 2016

The results here are also very positive; since every respondent considers that the Internal Auditors maintain current knowledge of the IPPF and attend seminars, on a "large scale" or "very much". In the same context, most respondents (83%) believe that the Internal Auditors perform their job with professional care on a "large scale". On the contrary, a significant proportion (23.8%) believes that the Internal Auditors have strong relationship with the audit committee on a "moderate scale".

4.2. Regression

Pearson's correlation was used to analyse correlations among the dependent and independent variables (Table 6). From the Table, it is observed that there is a significant and positive correlation (r=0.672) between "Risk Management" and "Internal Audit" at p<0.01, a significant and positive correlation (r=0.580) between "Risk Management" and "Internal Audit Added Value" at p<0.01 and a significant and positive correlation (r=0.505) between "Risk Management" and "Internal Auditor".

Table 6. Correlation Matrix

	RM	IA	IAAV	IAR
RM	1			
IA	0.672**	1		
IAAV	0.580**	0.569**	1	
IAR	0.529**	0.505**	0.268	1

**. Correlation is significant at the 0.01 level

Source: Field Survey, 2016

Finally, Table 7 reports the results of the regression analysis.

Table 7. Regression Analysis

Variables	Coeff.	Value	S.E.	T	p-value			
Constant	b_{o}	-,466	,945	-,493	,625			
IA	b_{i}	,421	,167	2,520	,016			
IAAV	b_{3}	,313	,136	2,296	,027			
IAR	<i>b</i> ,	,305	,145	2,105	,042			
R ² -0.560: Adjusted R ² -0.526: F-16.143: n-0.000								

Source: Field Survey, 2016

From the table, the results reveal that there is a significant association between "Risk Management" and "Internal Audit". Therefore H1 is supported at the 5 per cent significance level (p=0.016 < .05). Consistent with H2, the results indicate that there is a positive and significant association between "Risk Management" and "Internal Audit Added Value" (p=0.027 < .05). Thus H2 is also strongly supported. Finally, the regression analysis shows a positive and significant association between "Risk Management" and "Internal Auditor" (p=0.030 < .05). Thus, H3 is supported.

5. CONCLUSION

Financial development, has received over the last decade, a great deal of attention as a source of economic growth (Gazdar and Cherif, 2014). Managing risk is a fundamental concern in today's dynamic global environment (Gordon et al., 2009), as risk management is necessary to ensure the survival of the firm in the long term (Scarabino, 2013).

At the same time, internal audit, varying significantly among companies from a traditional assurance orientation to that of a value-added orientation, is an activity of strategic importance especially during the current post-crisis period (Nagy and Cenker, 2002; Cordos, 2014).

In this study, we explore the impact of internal audit, internal auditors and added value of internal audit on effective risk management. Firstly, the study provides descriptive evidence of the current relationship between risk management and internal audit. Then, through our research hypotheses, the findings also revealed that "internal audit" "added value of internal audit" and "internal auditors" are statistically significantly associated with "risk management". More specifically, H1 is supported at the 5 per cent significance level (p=0.016 < .05). Thus similar to other studies findings (Koutoupis and Tsamis, 2008; Caratas and Spatariu, 2014), our results also show that internal audit affects effective risk management. Further, H2 is also supported at the 5 per cent significance level (p=0.027 < .05), thus the results are in line with existing literature (Bou-Raad, 2000; KPMG, 2002; Mihret and Woldeyohannis, 2008), suggesting the strong relationship between the value-added role of internal audit and risk management. Finally, H3 is also supported (p=0.030 < .05). The results of this study are consistent with Mousa (2005), Leung and Cooper (2009) and Abdullatif and Kawuq (2015), suggesting a positive significant association between "Risk Management" and "Internal Auditor".

There are a number of limitations in our study which should be borne in mind when interpreting our findings. First, the use of a mail questionnaire may threaten the validity of the study. Second, the researchers recognize that other factors may also be important regarding the relationship between risk management and internal audit.

In addition to the research opportunities arising from the limitations of the present study, there are several suggestions for future research. Research could explore the perceptions of other governance parties such as board members and external auditors regarding the relationship between risk management and internal audit. Moreover,

interviews should be conducted, enabling a more comprehensive viewpoint of risk management. Clearly, further work is necessary and could prove fruitful in this area.

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