INTERNAL AUDITOR'S CONTRIBUTION TO GOOD CORPORATE GOVERNANCE

AN EMPIRICAL ANALYSIS FOR THE ONE-TIER GOVERNANCE SYSTEM WITH A FOCUS ON THE RELATIONSHIP BETWEEN INTERNAL AUDIT FUNCTION AND AUDIT COMMITTEE

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Abstract

The effectiveness and efficiency of the corporate governance structure depends on different governance bodies within the organization. As crucial parts of good corporate governance they provide constituting, monitoring and controlling tasks concerning the risk management and internal control system. These corporate governance mechanisms include the internal control function (IAF) and the audit committee (AC). Based on a dataset of 550 responses from U.S. internal auditors, our study explores empirically the IAF's contribution to good corporate governance. Our results suggest that the IAF constitutes a central element of the governance structure. Furthermore, an intensive interaction between the IAF and the AC is positively linked with the efficiency and effectiveness of the governance processes, internal controls and risk management.

Keywords: Internal Auditing, Corporate Governance, Audit Committee, Risk Management

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1 Introduction

The effectiveness and efficiency of an entity's internal governance structure depends on different governance bodies within the organization (Crawford and Stein, 2002; Sarens and De Beelde, 2006). Theses bodies are crucial parts of good corporate governance, as they constitute, monitor and control the risk management and internal control framework. These internal corporate governance elements are the risk management, the compliance function and the internal control function and, of course, the internal audit function (IAF). The IAF is not only necessary to control but also to evaluate the effectiveness and efficiency of the enterprise risk management and to improve all underlying governance processes (Soh and Martinov-Bennie, 2011; Spira and Page, 2003). Although all or some of these functions may exist in many companies, the different players generally have an operational focus on their own tasks (or risks) and do not take a holistic perspective (Nocco

and Stulz, 2006). To organize and structure the position of the separate functions within a governance structure, different possible frameworks are discussed in theory and practice. The so-called "Three-Lines-of-Defence-Model" (TLOD) is one of the most important frameworks and tries to classify the internal corporate governance institutions as different "lines-of-defence" (Anderson and Daugherty, 2012; European Confederation Institutes of Internal Auditing [ECIIA], 2012; Institute of Internal Auditors [IIA], 2013). Under the TLOD-Modell the first line of defence thereby consists of the basic controls or an internal control system within the operative entity. The second line of defence is in charge of regulating and monitoring the operative control entities, combining the results of the operative entities and taking particular measures to further reduce the amount of risk. In addition, these results are passed on to the corporate management, which denotes a further reduction of risk. Typically the risk management and the compliance function are a part

of the second line of defence. The first two defence lines are supported by the third and last internal defence mechanism. The objective of the last (3rd) line is mainly to identify possible residual risks that were not detected by the first two defence lines to assure that the first and second line is working effective to minimizing the organization's total risk. These duties are generally administrated by IAF. Therefore, internal auditing (IA) incurs not only a monitoring and advising function for the responsible boards of the organization, furthermore the IAF is in charge of supervising the prior defence lines. All three lines are supporters of the management and the AC and help them to fulfil their oversight responsibilities (Anderson and Daugherty, 2012; Deloitte, 2011; Sarens et al., 2009).

The importance of a close cooperation between these different control functions is also strengthened by recent regulatory endeavours. Especially the relationship between IAF, as the third line of defence, and the AC, representing the function of the monitoring board, is a relevant determinant of today's IA, not only since the youngest regulatory developments. According to different US-regulations, like the Sarbanes-Oxley-Act (SOX), the board should monitor the accounting and risk management process and deal with the effectiveness of the internal control system, the risk management and the internal audit system. For the USA, the SOX from 2002 requires the establishment of an independent AC, which serves as an oversight body that is responsible for monitoring the internal and external auditors (Koch et al., 2012). Hence, these regulatory developments have specified a particular task for the AC that highlights the relevance of the IA in the overall corporate governance system. From the AC's perspective, this leads to a supervising role towards IAF in terms of efficiency and effectiveness. The regulatory codification furthermore leads to an appreciation of the importance of audits and the internal auditors in the entrepreneurial context of good corporate governance. Thus, the IAF is a central part of a risk-oriented management, just as the internal control system or the risk management.

Based on these considerations, the present study examines empirically the perception of the internal auditors' benefit for corporate governance and the role of the cooperation between the AC and the IAF for the US corporate governance system. The intention thereby is to contribute to a better understanding of how a close cooperation between the IAF and the AC could lead to more efficiency and effectiveness of the governance structure. To our knowledge, the impact of a close relationship between IAF and AC on corporate governance processes, internal controls and risk management has not been empirically analyzed for the US-governance system with a Structural Equation Model (SEM). Moreover, our research examines whether the cooperation of the IAF with the AC has an impact on the compliance with professional standards and regulations.

Our focus on the US system has multiple advantages. First of all, studies with a clear country-focus can suppress environmental influences caused by differences in the national regulatory frameworks. Additionally, the US governance guidelines including SOX represent a good working governance system.

The study begins presenting IAF's and AC's role in the one-tier system. This role is explored in light of principal-agent theory, and the actual necessity for a well-positioned IAF is developed. Furthermore, the relationship of IAF and AC is elaborated on based on prior empirical literature. Moreover, we investigate the relationship of IAF and AC empirically, considering the various governance mechanisms. Lastly, we present a summary of our findings and limitations of our research.

2 Agency theoretical foundation of the relationship between IAF and AC

The economic need to establish an IAF is consistently confirmed by means of the principal agent theory (Anderson et al., 1993; DeFond, 1992; Ettredge et al., 2000; Sarens & Abdolmohammadi, 2011). Hence, the two staged model developed by Tirole (1986) is of particular importance as an extension of the traditional one-staged concept designed by Ross (1973) and Jensen and Meckling (1976). The two-staged model incorporates not only principal and agent, but also an independent supervising entity. Generally, the shareholders are identified as the principals, who provide the joint stock company with the necessary financial resources (Lentfer, 2005). Due to a lack of available resources in terms of time and professional knowledge, the shareholders delegate their managing function to the executive board (two-tier system) or board of directors (one-tier system), which thereby acts as their agent and is subject to reporting obligations (Jaschke, 1989). Likewise, internal control is assigned to either the supervisory board (two-tier system) or the board of directors (one-tier system). In each system the implementation of an AC serves to render the supervisory activity more effective through the concentration of expert knowledge. In the one-tier system, the executive board is responsible for the daily business. From the perspective of the supervisory board or the non-executive members of the board, the management board or the executive directors can similarly be considered as agents (Welge and Eulerich, 2015). In contrast to the external audit, IA is usually an intra-company (staff) department, which performs audit and advisory services for the management at all levels of the company. Through the provision of effective support to the management in the framework of bonding and monitoring, IA constitutes an important element of the company's internal corporate governance (Sarens and Abdolmohammadi, 2011). But we have to point out that this double function of the IAF to assist management in

areas of consulting and efficiency on the one hand and its requirement to assist the AC with monitoring issues in the other hand may lead to conflicts of interest (Messier, 2010, 323). This goes hand in hand with the controversial discussion of the degree of independence of the IAF. More independent members can increase the quality of monitoring in accordance with the cooperation of the AC but can decrease the assistant role for the management because they are not involved in the management strategy.

The IAF in the one-tier system is qualified as an agent of the board of directors, as the board bears the responsibility for its establishment and maintenance. IA among other things (on behalf of the board) supervises the executive directors. This function cannot be delegated. Analogously to the executive board's role in the two-tier system, the board members in the one-tier system are required to supervise the IAF. However, this responsibility is usually delegated to the AC. In one-tier systems, the AC plays a key role in generating an adequate corporate governance quality. Therefore, the Sarbanes Oxley Act stipulated an implicit obligation for the implementation of audit committees as permanent committees of the board of directors for all corporations listed at an US stock exchange. In addition, the job specification of the audit committee's members was described in detail. All members of the audit committee have to be financially and personally independent of the corporation's management. In addition to the requirements of independence, the Sarbanes Oxley Act is demanding for at least one financial expert within the audit committee. Initially, the SEC was interested in stipulating that this person ought to be an expert in terms of accounting. The necessity to be fully independent in US audit committees can be considered as a convergence towards the two-tier system with the supervisory board.

In the two-tier system, the IAF is to be considered as an agent of the management board, while the management board is responsible for the establishment and maintenance of the IAF. On behalf of the management board, the IAF is assigned to supervise the board's subordinate bodies and, among other things, evaluate the internal control system (Schartmann & Lindner, 2006). In addition, the supervisory board or the AC has to supervise the IA in order to ensure adequate management of the IA by the executive board. However, the competencies of the AC in the two-tier system are not as comprehensive as in the one-tier system, since certain tasks cannot be transferred into the two-tier system as a result of the separation into two responsible bodies (Velte, 2009). In particular, direct informational access to the results of the IAF by the supervisory board or the AC is not possible unless the executive board has given its prior consent to such a practice. Consequently, the restricted supply of information to the supervisory board or AC represents an essential disadvantage of the two-tier system. A way to improve the level of information access and cooperation between IA and supervisory board is the adoption of internal information regulations as part of the executive board's internal rules and regulations (Velte, 2011). Within these internal information regulations, issues such as the timely submission of internal audit reports, the participation of the head of IA in supervisory board meetings, and the degree of access to information by the supervisory board can be defined (Huwer, 2008). Moreover, the executive board can be obliged by means of such internal information regulations to submit comprehensive and timely reports to the IAF and the supervisory board. This shall be done prior to the adoption of new organizational procedures and the adoption of new audit and operational schedules, respectively (Huwer, 2008). The agency relationships between the general meeting, the executive directors, the board of directors and the IAF in the one-tier system can be represented graphically as shown in figure 1.

## 3 Empirical evidence on the cooperation between IAF and AC and hypothesis development

The relationship of the IAF and the AC is, especially in the US, in the focus of empirical studies (see Eulerich et al., 2013). Based on the organizational structure in the one-tier systems, the large quantity of empirical research is not surprising. The monistic board structure allows the IAF to support simultaneously the management and the AC as a supervising body. For the Anglo-American context, numerous studies (e.g. Abbott et al., 2010; Gramling and Hermanson, 2006; McHugh and Raghunandan, 1994) identify a close relationship between IAF and AC, which enhances audit and supervisory activities. An effective and efficient IAF improves the supervising and control capabilities of the AC, often achieved by well-defined reporting lines (see also Lenz and Hahn, 2015).

To begin with, an essential focus of previous empirical corporate governance research is on the network of relations between IA and AC. Beside effectiveness and efficiency considerations, a close cooperation between IAF and AC can also be motivated economically in line with the lean auditing concept. That the AC partly draws on results from internal audit to perform its auditing obligations has been proved empirically for instance by Gramling and Hermanson (2006) and McHugh and Raghunandan (1994). Insofar, the relationship qualifies as "symbiotic", since an effective AC strengthens the quality of the IAF and, vice versa, an impartial IAF supports the AC for example in identifying critical developments in the company as early as possible (Abbott and Parker, 2000, p. 47; Abbott et al., 2010, p. 4). However, this requires that adequate attention is paid to independence within the AC (Velte, 2009), which is so far only ensured on the US capital

market as a result of SOX. With respect to this issue, Raghunandan et al, (2001) provide empirical evidence that AC with fully independent members and at least one financial expert produce better exchange of information with the CAE (Chief Audit Executive) and are able to evaluate the auditing results of the IAF in a better way. Between the independent board members and the IAF, a substitutive relationship can be identified according to Sarens and Abdolmohammadi (2011). According to Abbott et al (2010), the specification of reporting obligations, rights of termination and budget control are key determinants of the exchange relationship between the IAF and the AC. Moreover, the authors are able to identify a positive correlation between the supervision performed by the AC and internal auditing's budget for auditing the internal control system, which leads to an increase in the supervision quality of the IAF. Zain et al. (2006) provide evidence of a positive correlation between the internal auditing's supervision of the financial accounting process, independence and financial expertise on the AC and the AC's supervision of the IAF. In addition, Carcello and Neal (2000) prove that there is a positive correlation between supervision of internal auditing's budget by the AC and the amount of this budget. The fact that both parties are able to enhance the quality of their supervision activity by means of a constructive cooperation is likewise proved empirically by Goodwin and Yeo (2001). Turley and Zaman (2004) show that, in the one-tier system, the AC unequivocally dominates the internal supervision process and employs the IAF as an aid. Abbott and Parker (2000) as well as Carcello and Neal (2000) prove that, through their function as an interface between internal auditing and the external auditor, ACs are able to exert positive influence on the overall auditing quality and hence lower the risk of the company plunging into a crisis. At the same time, a close relationship between the AC and internal auditing can essentially create conflicts with the management which, in turn, does not regard the internal auditing as a critical monitoring body, but rather as an assistant providing advisory services ("value added" services) (Anderson, 2003; Gray, 2004; Hermanson and Rittenberg, 2003). In particular, target conflicts can also result from internal auditing's reporting to the management and the AC. Although, for instance, direct reporting from the IAF to the AC has a positive influence on IA's independence and impartiality, this procedure can also produce latent mistrust on the part of the management and prevent the necessary supply of information from the management to the internal auditing.

Figure 1. Agency theory-based foundation of the internal auditing in the one-tier system
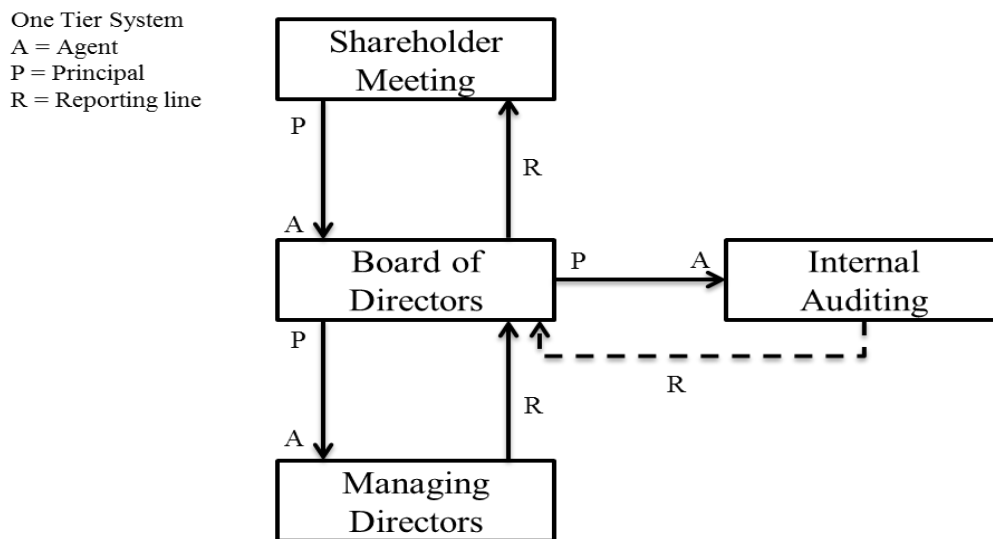
Consequently, we include the construct "cooperation between AC and IA" in our structural equation model. We picked up the major aspects of cooperation carried out by previous literature (e.g. Abbott and Parker, 2000, Abbott et al., 2010) and thus included the indicators "appointment", "evaluation", "appropriate access", "regular private sessions" and "reporting line" (see table 1 and figure 2).

Corresponding, the practical component of IA's work is also considered as an impact factor for good corporate governance. The professional standards and the code of ethics by the IIA not only shape the profession, but also the performance of IA within the internal governance structure and the appreciation of the audit in the overall context of good corporate governance. IAF's work is determined first and foremost by the professional standards independence and

objectivity (IIA International Professional Practices Framework, Attribute Standard 1100) and by the aspect of credibility, which condenses the elements of professional ethics as outlined by the code of ethics (integrity, objectivity, confidentiality and competence, IIA Standards, 2011). Hence, we include the construct "professional ethics" (reflecting both professional standards and ethics), which consists of the indicator variables "credibility", "independence" and "objectivity" in our structural equation model (see table 1 and figure 2).

Finally, we introduce the major construct of interest in our structural equation model with which we intend to capture the effectiveness and efficiency of corporate governance.

The construct "corporate governance" in our structural equation model consists of indicators covering important corporate governance mechanisms "governance process", "internal control", "risk management" and "sufficiency" (see table 1 for the interpretation of the indicators).

The presentation of the theoretical framework and the illustration of the existing research does not only serve as a deductive basis for the constructs utilized in our study, but enables us also to state hypotheses concerning the relationship between the constructs. First of all, the construct "corporate governance", measuring the efficiency and effectiveness of the corporate governance mechanisms, is the major construct of interest and hence the dependent endogenous construct. As a result of the close cooperation, the AC becomes a more efficient corporate governance body within the overall system. Thus, there is a positive effect on the overall efficiency of the corporate governance structure. For instance, this increase in efficiency in the governance system can be perceived by an enhanced level of information provided by the IAF to the AC. Moreover, an AC receiving support from the IAF obtains a stronger position in the framework of the TLoD model as mentioned earlier. Consequently, we state our hypothesis H_1:

H_1: A close cooperation between the AC and the IAF exerts a positive influence on the efficiency and effectiveness of the corporate governance mechanisms. (Path 1 in figure 2).

Furthermore, a close cooperation between AC and IAF should promote the internalization of professional standards and the code of ethics within a company's IAF. This leads us to hypothesis H_2:

H_2: A close cooperation between the AC and the IAF exerts a positive influence on the degree of compliance with professional standards and the code of ethics (Path 2 in figure 2).

In addition, compliance with professional standards and the code of ethics within the company enhances the performance of internal auditing within the internal governance structures. This is the case because the compliance increases the appreciation of the IAF within the company, which in turn positively influences the efficiency and effectiveness of the corporate governance mechanisms in the overall context of good corporate governance. Finally, we state our hypothesis H3:

H_3: A close compliance of IAF with professional ethics exerts a positive influence on the efficiency and effectiveness of the corporate governance mechanisms (Path 3 in figure 2).

Figure 2 depicts the structural equation model which contains the three constructs (latent variables) composed of the 12 indicators. In the following section, we estimate the outlined structural equation model and test our hypotheses based on an extensive dataset.

4 Empirical study

4.1 Sample structure

To test the hypotheses, the empirical analysis is based on the data of the "Common Body of Knowledge (CBOK)"-study of the research foundation of the Institute of Internal Auditors from 2010[1]. The CBOK-study utilizes a questionnaire-based research instrument including more than 80 questions capturing the (personal and professional) background of the respondent, questions concerning the organization in which the respondent is active, its IA function, different aspects of IA standards, audit activities, tools, skills and competencies and questions concerning the future development of the IAF (emerging issues). The CBOK-study did not address itself explicitly to a *certain* group of potential participants, but referred expressly to a wide group of target persons with relations to the internal auditing sector. The complete database of the CBOK-study comprises of 13.582 evaluable returns from 107 nations. In a global perspective, more than 30% of the survey participants have passed the examination of "Certified Internal Auditor (CIA)", and 22% of the survey participants hold the position of "Chief Audit Executive (CAE)" in their companies. In addition, more than 90% of the survey participants are members of the IIA.

According to the principal agent theory, a close cooperation between the IAF and the AC will lead to more efficiency and effectiveness in supervising the management, the risk management and internal control system. The cooperation in the one tier system is by

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[1] The CBOK study provides a unique dataset for research on internal auditing and was last conducted in 2010. Hence, we utilize the latest available data to estimate our structural equation model.

tendency closer than in the two tier system because of the unrestricted information excess of the AC to the results of the IAF. In view of these facts we chose the USA as an example for the one-tier system because of the long tradition of the one-tier system and the regulatory environment (especially the SOX). This clear country-focus can suppress environmental influences caused by differences in the national regulatory frameworks and serves as a blocking factor.

The special job specification of the AC in line with the Sarbanes Oxley Act (fully independence) promotes a closer cooperation between the IAF and the AC. For the present study, the available raw data were grouped by countries. The observations were assigned based on the respective country, in which the survey participant predominantly pursues his or her professional activity, since the focus of the conducted research was supposed to be on corporate governance structures within organizations. For the USA, a total of 550 evaluable responses were available.

Figure 2. Structural equation model describing the cooperation between internal auditing and the audit committee
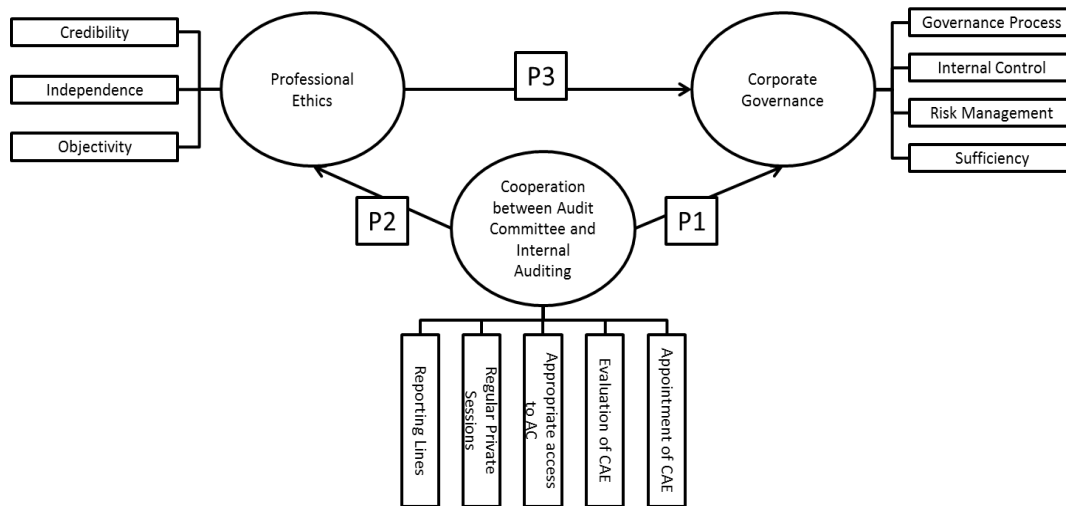
4.2 Methodological approach

As described, in a first step, the key determinants affecting the perceived relationship between IA and AC as well as the efficiency and effectiveness of the governance processes, internal control and risk management were deduced based on a broad theoretical elaboration and on prior studies. Then, we have identified the questions that match the deduced key determinants from the scope of more than 80 questions from the CBOK-Survey 2010. In detail, 12 questions (indicators) have been recognized to serve as proxies for our research issue within the corporate governance context (see appendix for a list of questions used in the empirical analysis). The CBOK data, and hence, survey responses (predominantly) of internal auditors, provide unique insight into a company, which we need to fulfil the purpose of our research. However, we acknowledge that the CBOK-study provides auditors' "self-perceptions", which might have inferring effects on the results of our study. As often the case in questionnaire based research, we cannot rule out a self-selection bias and the possibility of "self-fulfilling prophecy" issues related to participant´s answers.

By means of a structural equation model (SEM), the 12 indicators are aggregated to the three constructs described above, which depict the research issue, help to visualize the underlying relationships between the constructs and – in their relations – mirror the stated hypotheses. *Table 1* outlines the applied indicators and the developed constructs (see table 2 for a correlation matrix and table 3 for descriptive statistics for the indicators).[2]. At this point, we have only included short indications of how the indicators should be interpreted in table 1, for a complete representation of the utilized questions with labels of respective endpoints and default answers, see Appendix.

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[2] For the assignment of indicators to respective constructs we apply a two-step approach. First, in line with Borsboom et al. (2003, 2004) and Rossiter (2002), we primarily focus on the theoretical implications outlined in this paper. Second, in line with Diamantopoulos (2005) and Finn and Kayande (2005), we acknowledge that empirical criteria should be applied to validate measurement models (Coltman et al. 2008). Table 2 shows that the indicators in general correlate considerably within but not between constructs. Furthermore, other quality criteria described below ascertain the adequacy of indicator assignment and the measurement model.

Table 1. Constructs and indicators

Latent Variable		Indicator	Interpretation of Values [CBOK-Question utilized, see Appendix]
Professional Ethics	y_{11}	*Credibility*	"Your internal audit activity is credible within your organization." [25b(12)]
	y_{12}	*Independence*	"Independence is a key factor for your internal audit activity to add value." [25b(10)]
	y_{13}	*Objectivity*	"Objectivity is a key factor for your internal audit activity to add value." [25b(11)]
Cooperation between audit committee and internal auditing	x_{11}	*Appointment*	*1=AC appoints, 0=else* [17a]
	x_{12}	*Evaluation*	*1=AC evaluates respondent, 0=else* [18]
	x_{13}	*Appropriate Access*	*1=respondent has appropriate access to AC, 0=else* [21a]
	x_{14}	*Regular Private Sessions*	*Relative number of formal AC-Sessions on which participate the internal auditing* [20b/20a]
	x_{15}	*Reporting Line*	*1=respondent reports to AC, 0=else* [9]
Corporate Governance	y_{21}	*Governance Process*	"Your internal audit activity brings a systematic approach to evaluate the effectiveness of governance processes." [25b(5)]
	y_{22}	*Internal Control*	"Your internal audit activity brings a systematic approach to evaluate the effectiveness of internal controls." [25b(4)]
	y_{23}	*Risk Management*	"Your internal audit activity brings a systematic approach to evaluate the effectiveness of risk management." [25b(3)]
	y_{24}	*Sufficiency*	"Your internal audit activity has sufficient status in the organization to be effective." [25b(9)]

The indicators y_{11}- y_{13} and $y_{21-}y_{24}$ are measured on a 5-Point-Likert-Scale (1= strongly disagree, 5=strongly agree).

Table 2. Correlation matrix for indicators

Indicators	Credibility	Independence	Objectivity	Appointment of CAE	Evaluation of CAE	Appropriate Access to AC	Regular Private Sessions	Reporting Lines	Governance Process	Internal Control	Risk Management	Sufficiency
Credibility	1.00											
Independence	0.50	1.00										
Objectivity	0.59	0.70	1.00									
Appointment of CAE	0.08	0.06	0.13	1.00								
Evaluation of CAE	0.11	0.03	0.10	0.51	1.00							
Appropriate Access to AC	0.16	0.07	0.09	0.25	0.22	1.00						
Regular Private Sessions	0.09	0.00	0.07	0.39	0.38	0.28	1.00					
Reporting Lines	0.01	0.09	0.05	0.12	0.12	0.09	0.10	1.00				
Governance Process	0.34	0.23	0.24	0.07	0.07	0.12	0.07	0.04	1.00			
Internal Control	0.56	0.39	0.50	0.10	0.09	0.16	0.14	0.03	0.49	1.00		
Risk Management	0.44	0.33	0.31	0.00	0.06	0.08	0.09	0.09	0.55	0.53	1.00	
Sufficiency	0.68	0.42	0.47	0.16	0.17	0.28	0.13	0.04	0.30	0.42	0.35	1.00

Table 3. Descriptive statistics for indicators

Indicator	Mean	Std. Dev.	Min	Max
Credibility	4.35	0.76	1	5
Independence	4.49	0.78	1	5
Objectivity	4.64	0.65	1	5
Appointment of CAE	0.77	0.42	0	1
Evaluation of CAE	0.73	0.44	0	1
Appropriate Access to AC	0.95	0.21	0	1
Regular Private Sessions	0.77	0.42	0	1
Reporting Lines	0.46	0.50	0	1
Governance Process	3.78	0.83	1	5
Internal Control	4.47	0.70	1	5
Risk Management	4.04	0.82	1	5
Sufficiency	4.14	0.93	1	5

The structural equation model, which contains the three latent variables (constructs) composed of the 12 indicators, is estimated using the "Partial Least Square (PLS)-Method" accomplished with SPLS. Table 6 shows the estimation-results of the structural equation model. The model meets the required validity and reliability standards (see table 4 and 5). In order to assess the reliability and validity of the structural equation model, we make recourse to the values for Cronbach's Alpha and the Composite Reliability of the latent variables. As these values exceed in general 0.7, which is the highest of potentially critical values (Fornell and Larcker, 1981), the internal consistency of the indicators reflecting the constructs is high and the construct reliability can be confirmed. The values for the Average Variance Extracted (AVE) for the constructs are in general higher than 0.5 (Fornell and Larcker, 1981). Thus, our measurement models are distinguished by a high level of convergence validity (that is, the variances recorded by the constructs significantly exceed the variances induced by measurement errors). The convergence validity as well as the reliability of the measurement model can be verified by analysing the construct's standardized loadings and the respective bootstrap-t-statistics (Anderson and Gerbing, 1988). Most of the loadings exceed the value of 0.7, while all loadings are highly significant (untabulated).

Table 4. Reliability and validity measures

Latent Variables	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Professional Ethics	0.81	0.89	0.73
Cooperation	0.62	0.84	0.40
Corporate Governance	0.76	0.76	0.57

The discriminant validity of the reflective measurement models can also be affirmed with reference to the Fornell-Larcker criterion (Fornell and Larcker, 1981). The square root of the Average Variance Extracted for each construct is higher than the correlation between the respective construct and all other constructs. When discriminant validity is affirmed, each of the latent variables does explain the variances of its own indicators better than the variance of all other latent variables (table 5).

Table 5. Correlations between latent variables

	Profesional Ethics	Cooperation	Governance
Profesional Ethics	**0.85**	0.15	0.69
Cooperation		**0.64**	0.24
Governance			**0.75**

Numbers shown in boldface denote the square root of the average variance extracted

When model estimation results of a structural equation model are assessed, the explanatory potential of the model is of substantial interest. The R2 values for the endogenous constructs are very high in comparison to other studies, as outlined in table 6.

For our data set, the "corporate governance" construct as the latent variable of major interest has an R^2-value of 0.494, and the "professional ethics" construct of 0.023. All in all, the explanatory potential of the presented structural equation model is good, which supports the validity of the study once more.

Table 6. Results of the structural equation model and the effect size (f2)

Latent Variable		Predictor	USA		
			R^2	Path coefficient	f^2
Professional Ethics		Cooperation between AC and IA	**0.023**	***0.151	-
Corporate Governance		Cooperation between AC und IA	**0.494**	***0.139	**0.04**
		Professional Ethics		***0.668	**0.85**

***: significant on a <0.01 level (two-tailed test)
 **: significant on a <0.05 level (two-tailed test)
[a] The *Effect Size* (f^2) depicts the meaning of each predictor and mirrors the difference between the R²-Value of the Factor in consideration of these predictor and R²-Value excluding this variable.

Following, the estimated path coefficients of the structural equation model are presented. The endogenous variable "professional ethics" exerts – with a loading of 0.668 – a strong, positive and significant effect on the endogenous latent construct "corporate governance" (effect size $f^2 > 0.15$; compare Wilson et al., 2007).

Furthermore, the exogenous construct "cooperation between IA and AC" reveals a positive, significant, but weak effect (effect size $f^2 < 0.15$; see Wilson et al., 2007) on the "corporate governance" construct (with a path coefficient of 0.139). Lastly, we find a highly significant positive effect of the construct "cooperation between AC and IA" on the "professional ethics" construct. In all described cases, the respective loadings are significant on the 1%-level. In the following section, we will pick up and interpret the outlined estimation results of the structural equation model.

5 Conclusions and limitations

The estimation results for the structural equation model suggest that a close cooperation between the IAF and AC has a positive impact on the effectiveness of corporate governance processes, internal controls and risk management. Consequently, our hypothesis H_1 can be fully confirmed. We consider this finding to be evidence for the beneficial effect of the double function of the IA to assist the management and the AC in consulting and monitoring duties. Insofar, conflicts of interests in view of this tradeoff are not obvious. Instead, the members of the IA might see the "sandwich" position between management and AC not as a risk of decreased corporate governance quality.

Furthermore, our results suggest that a close cooperation between AC and IAF indeed positively influences the degree of IAF's compliance with professional standards and the code of ethics, as hypothesized with H_2. Additionally, a close compliance of the IA with professional standards and the code of ethics – driven (also) by the degree of cooperation between the AC and the IA – again promotes the overall effectiveness and efficiency of the governance structure

(H_3). Hence, a close cooperation between IAF and AC has both a direct and an indirect effect on the governance structure's efficiency and effectiveness.

To summarize it, our study contributes to the prior literature and the practical discussion by providing first evidence that a close cooperation between IAF and AC and IAF´s compliance with professional standards and the code of ethics increase the effectiveness and efficiency of the governance processes, internal controls and risk management within the one-tier system.

However, the present study is not without limitations. It should be considered that the presented model only illustrates a part of the entire system and excludes the connection between the board of directors and the other governance bodies. Furthermore, as we have argued before, the CBOK questionnaire only captures the respondents´ perceptions of the IAF´s role within the corporate governance structure. Other limitations relate to the fact that more than one respondent might work for the same company and that there are no firm specific control variables included in our model. However, the high number of observations included in our analysis should provide a sound database for our conclusions.

A potential impact of different regulatory frameworks on the efficiency or structure of IAF was not in the focus of empirical research, yet. Hence, a profound and integrated research concerning the positioning of internal auditing seems to be of potential interest for future research. Further research activities can also integrate the difference between one- and two-tier systems and the different role of the AC and IAF or analyze the differences of insider- and outsider systems of corporate governance (e.g. activity of the equity market). Furthermore, the external auditor should be integrated in these kinds of analyses, because the external auditor should also closely cooperate with the IA and the AC according to the lean auditing concept.

References

1. Abbott, L.J. and Parker, S. (2000) 'Audit Committee characteristics and auditor selection', Auditing, Vol. 19, No. 2, pp.47-66.
2. Abbott, L.J. Parker, S., and Peters, G.F. (2010) 'Serving two masters. The association between audit committee internal audit oversight and internal audit activities', Accounting Horizons, Vol. 24, No. 1, pp.1-24.
3. Anderson, D., Francis, J.R. and Stokes, D.J. (1993) 'Auditing, directorships and the demand for monitoring', Journal of Accounting and Public Policy, Vol. 12, No. 4, pp.353-375.
4. Anderson, J.C. and Gerbing, D.W. (1988) 'Structural Equation Modeling in Practice: a Review and Recommended Two-Step Approach', Psychological Bulletin, Vol. 103, No. 3, pp.411-423.
5. Anderson, U. (2003) Assurance and consulting services, Institute of Internal Auditors Research Foundation, Altamonte Springs, FL.
6. Anderson, U. and Daugherty, B. (2012) 'The Third Line of Defence: Internal Audit's Role in the Governance Process', .Internal Auditing, July/August 2012, pp.38-41.
7. Borsboom, D., Mellenbergh, GJ., Heerden JV (2003) 'The theoretical status of latent variables', Psychological Review, Vol. 110, No. 2, pp. 203-219.
8. Borsboom, D., Mellenbergh, GJ., Heerden JV (2004) 'The concept of validity'. Psychological Review, Vol. 111, No. 4, pp.1061-1071.
9. Carcello, J.V. and Neal, T.L. (2000) 'Audit committee composition and auditor reporting', Accounting Review, Vol. 75, No. 4, pp.453-467.
10. Coltman, T., Devinney, TM., Midgley, DF. & Veniak, S. (2008) 'Formative versus reflective measurement models: Two applications of formative measurement', Journal of Business Research, Vol. 61, No. 12, pp. 1250-1262.
11. Crawford, M. and Stein, W. (2002) 'Auditing Risk Management: Fine in Theory but who can do it in Practice?', International Journal of Auditing, Vol. 6, pp.119-131.
12. DeFond, M.L. (1992) 'The association between changes in client firm agency costs and auditor switching', .Auditing, Vol. 11, pp.16-31.
13. Deloitte (2011) Combined Assurance: Taking corporations to the next level of maturity, White Paper, Deloitte & Touche.
14. Diamantopoulos, A (2005) 'The C-OAR-SE procedure for scale development in marketing: a comment.' International Journal of Research in Marketing, Vol. 22, No. 1, pp. 1-9.
15. Ettredge, M., Reed, M. and Stone, M. (2000) 'An examination of substitution among monitoring devices', Review of Quantitative Finance and Accounting, Vol. 15, No. 1, pp.57-79.
16. Finn A., Kayande U. (2005) 'How fine is C-OAR-SE? A generalizability theory perspective on Rossiter's procedure'. International Journal of Research in Marketing, Vol. 22, No. 1, pp. 11-21.
17. Fornell, C. and Larcker, D.F. (1981) 'Evaluating Structural Equation Models with Unobservable Variables and Measurement Error', Journal of Marketing Research, Vol. 18, No. 1, pp.39-50.
18. Goodwin, J. and Yeo, T.Y. (2001) 'Two factors affecting internal audit independence and objectivity: Evidence from Singapore', International Journal of Auditing, Vol. 5, No. 2, pp.107-125.
19. Gramling, A.A. and Hermanson, D.R. (2006) 'What role is your internal audit function playing in corporate governance?', Internal Auditing, Vol. 6, pp.37-39.
20. Gray, G.L. (2004) Exploring the effects of the Sarbanes-Oxley Act on internal auditors. Working Paper, California State University.
21. Hermanson, D.R. and Rittenberg, L.E. (2003) Internal Audit and Organizational Governance. Institute of Internal Auditors Research Foundation, Altamonte Springs, FL.
22. Huwer, W. (2008). Der Prüfungsausschuss des Aufsichtsrats. Aufgaben, Anforderungen und

Arbeitsweise in der Aktiengesellschaft und im Aktienkonzern, Berlin.

23. IIA (2013) The Three Lines of Defence in Effective Risk Management and Control, IIA Position Paper, The Institute of Internal Auditors.

24. IIA Framework (2013) IIA International Professional Practices Framework, Attribute Standard 1100, The Institute of Internal Auditors.

25. IIA Standards (2011) IIA Standards, The Institute of Internal Auditors

26. .Jaschke, T. (1989). Die betriebswirtschaftliche Überwachungsfunktion aktienrechtlicher Aufsichtsräte, Cologne.

27. Jensen, M.C. and Meckling, W.H. (1976) 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure', Journal of Financial Economics, Vol. ,3 No. 4, pp.305-360.

28. Koch, C., Weber, M. and Wüstemann, J. (2012) 'Can Auditors Be Independent? Experimental Evidence on the Effects of Client Type', European Accounting Review, Vol. 21, No. 4, pp.797-823.

29. Lentfer, T. (2005) Einflüsse der internationalen Corporate Governance-Diskussion auf die Überwachung der Geschäftsführung, Wiesbaden.

30. Lenz, R. and Hahn, U. (2015) 'A synthesis of empirical internal audit effectiveness literature pointing to new research opportunities', Managerial Auditing Journal, Vol. 30, No. 1, pp. 5-33.

31. McHugh, J. and Raghunandan, K. (1994) 'Internal auditors' independence and interactions with audit committees', Advances in Accounting, Vol. 12, pp.313-333.

32. Messier, W.F. (2010) 'Opportunities for Task-Level Research within the Audit Process', International Journal of Auditing, Vol. 14, No. 3, pp. 320-328.

33. Nocco, B. W. and Stulz, R.M.(2006) 'Enterprise Risk Management: Theory and Practice', Journal of Applied Corporate Finance, Vol. 18, No. 4, pp.1-8.

34. Raghunandan, K., Read, W.J. and Rama, D. V. (2001) 'Audit Committee composition, Gray Directors and interaction with internal auditing', Accounting Horizons, Vol. 15, No. 2, pp.105-118.

35. Ross, S.A. (1973) 'The Economic Theory of Agency: The Principal's Problem', American Economic Review, Vol. 63, No. 2, pp.134-139.

36. Sarens, G. and De Beelde, I. (2006) 'The relationship between internal audit and senior management', International Journal of Auditing, Vol. 10, No. 3, pp.219-241.

37. Sarens, G., De Beelde, I. and Everaert, P. (2009) 'Internal audit: A comfort provider to the audit committee', The British Accounting Review, Vol. 41, pp.90-106.

38. Sarens, G. and Abdolmohammadi, M.J. (2011) 'Monitoring Effects of the Internal Audit Function: Agency Theory versus other Explanatory Variables', International Journal of Auditing, Vol. 15, No. 1, pp.1-20.

39. Sarens, G., Decaux, L. and Lenz, R.(2012) Combined Assurance, Case Studies on a Holistic Approach to Organizational Governance, The Institute of Internal Auditors Research Foundation, Altamonte Springs, FL.Shleifer, A. and Vishny, R. (1997) 'A survey of corporate governance', Journal of Finance, Vol. 52, No. 2, pp. 737-783.

40. Soh, D.S.B. and Martinov-Bennie, N. (2011) 'The internal audit function: Perceptions of internal audit roles, effectiveness and evaluation', Managerial Auditing Journal, Vol. 26, No. 7, pp.605-622.

41. Spira, L.F. and Page, M. (2003) 'The reinvention of internal control and the changing role of internal audit', Accounting, Auditing & Accountability Journal, Vol. 16, No. 4, pp.640-661.

42. Tirole, J. (1986) 'Hierarchies and Bureaucracies: On the Role of Collusion in Organizations', Journal of Law, Economics and Organization, Vol. 2, No. 2, pp.181-214.

43. Turley, S. and Zaman, M. (2004) 'The corporate governance effects of Audit Committees', Journal of Management and Control, Vol. 8, No. 3, pp.305-332.

44. Velte, P. (2009) 'Die Implementierung von Prüfungsausschüssen/Audit Committees des Aufsichtsrats/Board of Directors mit unabhängigen und finanzkompetenten Mitgliedern'., Management Quarterly Review, Vol. 59, No. 3, pp.123-174.

45. Velte, P. (2011) Interne Revision und Aufsichts-/Verwaltungsrat, in Freidank C.-C. and Peemöller, V.H. (Eds.) Kompendium der Internen Revision. Internal Auditing in Wissenschaft und Praxis, Berlin, pp. 557-589.

46. Welge, M.K. and Eulerich, M. (2015) Corporate Governance-Management, 2nd ed. Wiesbaden.

47. Wilson, B., Callaghan, W., Ringle, C. M. and Henseler, J. (2007) 'Exploring Causal Path Directionality For a Marketing Model Using Cohen's Path Method', in H.Martens, et al (Eds.), Causalities Explored by Indirect Observation: Proceedings of the 5th International Symposium on PLS and Related Methods (PLS'07), Matforsk, pp.57-61.

48. Zain, M. M., Subramaniam, N. and Stewart, J. (2006) 'Internal Auditors' Assessment of their Contribution to Financial Statement Audits. The Relation with Audit Committee and Internal Audit Function Characteristics', International Journal of Auditing, Vol. 10, No. 1, pp.1-18.