**INFORMAL INTERACTIONS BETWEEN AUDIT COMMITTEES AND INTERNAL
AUDIT FUNCTIONS: EXPLORATORY EVIDENCE AND DIRECTIONS FOR
FUTURE RESEARCH**

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ABSTRACT

This paper provides evidence on the prominence of informal interactions between audit committees and internal audit functions and exploratory evidence on factors associated informal interactions. The findings, based on a questionnaire survey of chief audit executives (CAEs) in the UK, suggest that in addition to formal pre-scheduled meetings, audit committees rely on informal interactions with internal audit functions to undertake their monitoring role. The evidence also shows that informal interactions have a positive significant association with both audit committee independence and the knowledge and experience of the audit committee chair. Emphasizing the need for further research to better understand the nature and quality of audit committees' informal interactions the paper encourages further research focusing in particular on: (i) the effect of both audit committee and internal audit/CAE knowledge and objectivity on informal interactions; (ii) the nature, quality and variations in informal interactions; (iii) the antecedents and consequences of informal interactions; and (iv) the institutional and organizational contexts within which audit committees operate and within which informal interactions take place.

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ABSTRACT (JOURNAL STYLE)

Purpose:

This paper recognizes the importance of informal processes within corporate governance and complements existing research in this area by investigating factors associated with the existence of informal interactions between audit committees and internal audit functions; and in providing directions for future research.

Design/Methodology/Approach:

To examine the existence and drivers of informal interactions between audit committees and internal audit functions this paper relied on a questionnaire survey of chief audit executives (CAEs) in the UK from listed and non-listed, as well as financial and non-financial, companies. While prior qualitative research suggests that informal interactions do take place, most of the evidence is based on particular organizational setting or on a very small range of interviews. The use of questionnaire enabled the examination of the existence of internal interactions across a relatively larger number of entities.

Findings:

The paper finds evidence of audit committees and internal audit functions engaging in informal interactions in addition to formal pre-scheduled regular meetings. Informal interactions complement formal meetings with the audit committee and as such represent additional opportunities for the audit committees to monitor internal audit functions. Audit committees' informal interactions are significantly and positively associated with (i) audit committee independence, (ii) audit chair's knowledge and experience, (iii) and internal audit quality.

Research limitations/implications:

The paper is based on survey and solely reliant on the perception of CAEs. Further research examining the nature and quality of informal interactions, as well as the antecedents and consequences is needed. Research needs to move beyond providing evidence on existence (and/or increase or decrease) to examining the influence of institutional and organizational contexts on audit committees' informal interactions.

Originality/value:

The results demonstrate the importance of the background of the audit committee chair for the effectiveness of the governance process. This is possibly the first paper to examine the relationship between audit committee quality and internal audit on the existence and driver of informal interactions. Policy makers should recognize that in addition to formal mechanisms, informal processes, such as communication outside of formal pre-scheduled meetings, play a significant role in corporate governance.

Article type: Research Paper

Keywords: Audit committees, informal interactions, internal audit, corporate governance.

1. INTRODUCTION

This paper aims to provide (i) exploratory evidence on the factors associated with informal interactions between audit committees and internal audit functions; and (ii) reflective comments concerning directions for future research on audit committee informal interactions and relationships. The research is premised on recognition of the importance of informal processes as drivers of effective corporate governance (Turley and Zaman, 2007). The paper complements existing research by focusing on factors associated with informal interactions between audit committees and internal audit functions in the UK. Specifically, the paper provides empirical evidence on the influence of audit committee, audit committee chair, internal audit function and chief audit executive (CAE) characteristics on informal interactions between audit committees and the internal audit functions.

The limited research evidence in this area and the increasing reliance on audit committees for monitoring internal audit functions motivates this paper. First, despite the increasing emphasis on audit committee oversight of internal audit functions and the recognition that audit committees may rely on both formal as well as informal interactions in discharging their monitoring role (Arena and Azzone, 2009; Mat Zain and Subramaniam, 2007), very little is known about factors influencing informal interactions between audit committees and internal audit functions. The limited evidence on the formal interactions between audit committees and internal audit functions is mainly based on case studies (e.g. Turley and Zaman, 2007) or on studies conducted in institutional contexts different from that prevalent in the UK, i.e. research focusing on formal interactions are based on data from Australia (Goodwin, 2003), Belgium (Sarens et al., 2009), Canada (Scarbrough et al., 1998), Italy (Arena and Azzone, 2009), Malaysia (Mat Zain and Subramaniam, 2007), Singapore (Goodwin and Yeo, 2001), and the US (Raghunandan et al., 2001) and predates the significant developments affecting the role and functioning of audit committees in many environments post-Enron (see Zaman et al., 2011)

Second, in addition to formal interactions audit committees may also rely on informal interactions with management and auditors to undertake their monitoring role (Beasley et al., 2009; Turley and Zaman, 2007). The monitoring of the internal audit function is increasingly recognized as an important role in the governance process. The audit committee's demand for better internal controls may lead to greater focus on internal controls (Abbott et al., 2010) and

increase interactions between audit committees and internal audit functions. Interactions between the audit committee and the internal audit function are important for the audit committee in fulfilling its oversight role.

Third, concerns about corporate governance and auditing has prompted regulators to initiate measures aimed at restoring trust and legitimacy (Claus and Holm, 2012), and corporate governance codes in many countries now place significant emphasis on the oversight of the internal audit process by the audit committee. Audit committees are experiencing an ever-expanding monitoring role as corporate governance regulations and guidelines place greater emphasis on strengthening the relationship between the internal audit function and the audit committee via formal as well as informal meetings (Collier and Zaman, 2005; European Parliament and Council of the European Union, 2006; FRC 2010; Smith Report, 2008). For instance, while in the US the Sarbanes Oxley Act (SOX) “is silent on internal audit” and “does not address internal audit’s reporting relationship with the audit committee or the audit committee’s duties concerning internal audit resources” (Abbott et al., 2010: 2), the EU Eighth Directive (European Parliament and Council of the European Union, 2006) stipulates that the audit committees shall monitor the financial reporting process, the effectiveness of the company’s internal controls, its internal audits where applicable, and its risk management systems.

Relevant to the UK institutional context, numerous reports relating to internal audit and risk management, including audit committee oversight of the functions, have been issued in the UK (see Zaman, 2001; 2010; Zaman et al., 2011). The UK is characterized by long history of audit committees and having a relatively mature internal audit function. The UK Corporate Governance Code (FRC, 2010) stipulates that the board of directors is responsible for determining the “nature and extent of significant risks it is willing to take in achieving its strategic objectives” and the board is required to maintain sound systems of risk management and internal control systems. Boards of directors are also required to review the effectiveness of the system at least annually and to report to shareholders that they have done so.¹

¹ Audit committees in the UK are not required, unlike those in the US, to make a statement certifying the effectiveness of the system. But listing rules of the London Stock Exchange require companies to describe the main features of the internal control and risk management systems in relation to the financial reporting process (FSA, 2010).

Similarly, Guidance on Audit Committees issued by the UK Financial Reporting Council (Smith Report, 2008) states that:

The audit committee should review and approve the internal audit function's remit, having regard to the complementary roles of the internal and external audit functions. The audit committee should ensure that the function has the necessary resources and access to information to enable it to fulfill its mandate, and is equipped to perform in accordance with appropriate professional standards for internal auditors.

To examine the existence and drivers of informal interactions between audit committees and internal audit functions this paper relied on a questionnaire survey of CAEs in the UK. While prior qualitative research in the UK suggests that informal interactions do take place, most of the evidence is based on particular organizational setting or on a very small range of interviews. The use of questionnaire enabled the examination of the existence of informal interactions across a relatively larger number of entities. This paper finds evidence of informal interactions between audit committees and internal audit functions. The informal interactions complement formal meetings with the audit committee and as such represent additional opportunities for the audit committees to monitor internal audit functions. A large majority of the CAEs (88.1 percent) indicate that they have informal interactions with the audit committee chair and/or audit committee members outside the regular pre-scheduled formal meetings. This finding complements Turley and Zaman (2007) who observed from a case study that informal interactions play a significant role in audit committee effectiveness.

The findings show that the proportion of independent audit committee members and the background of the audit committee chair, more specifically his/her knowledge and experience in diverse areas, have a positive association with the existence of informal interactions between audit committees and internal audit functions. There is also a positive association between the existence of informal interactions and quality of the internal audit function. The findings are particularly interesting as they confirm both the crucial role of the audit committee chair as well as the importance of the audit committee chair's background for the effectiveness of the governance process. Emphasizing the need for further research to better understand the nature and quality of audit committees' informal interactions the paper encourages further research focusing in particular on: (i) the effect of both audit committee and internal audit/CAE knowledge and objectivity on informal interactions; (ii) the nature, quality and variations in informal interactions; (iii) the antecedents and consequences of

informal interactions; and (iv) the institutional and organizational contexts within which audit committees operate and within which informal interactions take place.

The rest of this paper is structured as follows: section two outlines the theoretical framework and develops research propositions; section three covers model specification, variable measurements and data collection; section four contains the empirical results. The paper ends with a summary and directions for future research.

2. THEORETICAL FRAMEWORK AND RESEARCH PROPOSITIONS

Informal Interactions

In framing the research on audit committee informal interactions, corporate governance is viewed in this paper from a behavioral perspective as a process in which various actors interact with one another both formally and informally. Forbes and Milliken (1999: 492) observe that “boards of directors can be characterized as large, elite, and episodic decision-making groups that face complex tasks pertaining to strategic-issue processing. Because boards are not involved in implementation, the ‘output’ that boards produce is entirely cognitive in nature. In addition, because boards are large, episodic, and interdependent, they are particularly vulnerable to ‘process losses’ (Steiner, 1972) - the interaction difficulties that prevent groups from achieving their full potential. Taken together, these factors suggest that the effectiveness of boards is likely to depend heavily on social-psychological processes, particularly those pertaining to group participation and interactions, the exchange of information, and critical discussion”. In discharging their oversight role audit committees may rely on participation and interactions, and exchange of information and discussions with internal auditors, external auditors and the management.

Audit committees’ exchange of information and interactions may be formal as well as informal in nature. As Kraut et al. (2002:5) note the essence of informal interactions is their lack of pre-specification and implies that “information is not prepackaged and then shipped intact to a recipient; courses of action are not pre-computed and then executed without modification. Rather, information is often exchanged interactively, through meetings and conversations, and courses of action are worked out in the context of the circumstances into which the actions must fit.” It tends to be unscheduled, unlike regular board/committee meetings, without an arranged formal agenda and may take place face-to-face or over the phone. Non-executive directors and audit committee members exercise influence on governance processes

through informal contacts, outside of formal board or committee meetings, with other executives and non-executives (Turley and Zaman, 2007).

Research on audit committees recognize that a productive relationship between the audit committee and executive management as well auditors improves the quality of financial reporting and related governance processes within organizations (Gramling et al., 2004; Mat Zain and Subramaniam, 2007; Spira and Page, 2003; Turley and Zaman, 2004). Audit committee members rely on the work of the internal audit function to develop their own appreciation of risk management and internal control effectiveness (Arena and Azzone, 2009; Krishnan, 2005). An audit committee is able to set a 'tone' that allows the internal audit function to have a certain degree of influence in the organization (Turley and Zaman, 2007) and can strengthen the internal audit function and which in turn can be an important resource to the audit committee in fulfilling its responsibilities (Beasley et al., 2009; Gendron and Bédard, 2006; Turley and Zaman, 2007). Furthermore, interactions between audit committees and internal audit function can reduce information asymmetry. An effective internal audit function can be an important resource to the audit committee in discharging its responsibilities, thereby enhancing the effectiveness of the audit committee (Raghunandan et al., 2001; Scarbrough et al., 1998).

Existing audit committee research, in particular those referred to above, however does not distinguish clearly between routine interactions which take place as part of pre-scheduled formal meetings and interactions outside of formal pre-scheduled meetings (Turley and Zaman, 2007). Beasley et al. (2009) argue that there is significant potential for the audit committee to function as an effective, independent monitor through both its formal and informal processes. Gendron and Bédard (2006) find that the oversight of internal audit is often performed in a fairly informal manner. Turley and Zaman's (2007) finding is most significant in that they conclude the audit committee's greatest impact sometimes comes through informal processes. Mat Zain and Subramaniam (2007) note that encouraging private meetings and informal interactions with audit committee members may improve overall exchange of relevant and reliable information between the two governance functions.

The central research question explored in this paper is thus what are the factors influencing informal interactions between audit committees and internal audit functions. The preceding paragraphs focused on the importance of informal interactions in governance, the

following sections now develop propositions with respect to the variables expected to influence the existence of informal interactions between audit committees and internal audit functions.

Influence of Audit Committee Quality

The first two propositions tested in this paper relate to the influence of audit committee quality on informal interactions between audit committees and internal audit functions. Prior research has found that independence, activeness, and expertise of the audit committee are important factors affecting their effectiveness (see Turley and Zaman, 2004). Audit committees' informal interactions with executive management, including internal audit functions, are an important source of information for audit committees (Turley and Zaman, 2007). Independent audit committee members face greater information asymmetry, thus organizations in which the audit committee is independent the audit committee members are more likely to seek more information to perform their monitoring responsibilities. There is preliminary evidence that the more independent the audit committee is from executive management the more active is its approach to internal audit (Scarbrough et al., 1998). Also, more active audit committees are likely to encounter greater information needs and therefore be more interested in interacting with the internal audit function. Therefore, informal interactions between the audit committee and the internal audit function may be expected to occur when the audit committee is active and its members are independent. The first two propositions are thus:

Proposition 1: There is a positive association between audit committee independence and informal interactions between audit committees and the internal audit functions.

Proposition 2: There is a positive association between active audit committees and informal interactions between audit committees and internal audit functions.

Influence of Audit Committee Chair

While general characteristics of the audit committee are important, Turley and Zaman (2007) provide evidence of the audit committee chair playing a critical role in affecting governance outcomes. They find that the background of the audit committee chair and how the chair is perceived by those engaged in governance within the organization including senior management influenced financial reporting, risk management and control outcomes. Organizations in which the audit committee chair has more knowledge about and experience in the business, business specific risks, corporate governance, risk management and internal

control, accounting and financing as well as internal and external auditing is more likely to have informal interactions between the audit committee and the internal audit function. More knowledgeable and experienced audit committee chairs are more likely to seek information from the internal audit function. Similarly, CAEs are more likely to pursue informal interactions with knowledgeable, experienced audit committee chairs. This proposition is consistent with prior research finding that oversight of internal audit is often performed in a fairly informal manner (Gendron and Bédard, 2006) and private meetings and informal interactions between audit committee members and internal auditors improve overall exchange of relevant and reliable information (Mat Zain and Subramaniam, 2007). The third proposition is thus:

Proposition 3: There is a positive association between the perceived knowledge and experience of the audit committee chair and informal interactions between audit committees and internal audit functions.

Influence of Internal Audit Quality

The fourth proposition relates to the influence of internal audit related characteristics on informal interactions between audit committees and internal audit functions. Prior research suggests that organizations in which internal audit is strong (characterized for instance by the existence of members with professional qualifications who are involved in continuous professional development and who are well supported with staff and budget), the internal audit function tends to be more proactive in risk management (Goodwin-Stewart and Kent, 2006; Sarens and De Beelde, 2006; Spira and Page, 2003) and are thus better able to support the expanding monitoring role of audit committees in this area.

A high quality internal audit function represented by, for example, a high degree of realization of the audit plan, engagement in a quality assessment and improvement program, undertaking external independent assessments of internal audit quality and compliance with the IIA Code of Ethics and Standards, is more likely to be able to meet the information needs of the audit committee (see Leung and Cooper, 2009; Leung et al., 2011; Soh and Martinov-Bennie, 2011)². To address information asymmetry and satisfy its information needs the audit committee might choose to engage in informal interactions. As noted earlier, prior research suggests oversight of internal audit is often performed in a fairly informal manner (Gendron

² While these measures of internal audit quality have been used in prior research, and are also adopted in this paper, they do not fully capture the quality attributes affecting the governance contribution of internal audit functions. See the final section of this paper for more discussion on this.

and Bédard, 2006) and private meetings and informal interactions between audit committee members and internal auditors may improve overall exchange of relevant and reliable information (Mat Zain and Subramaniam, 2007). Thus the fourth proposition is:

Proposition 4: There is a positive association between the quality of the internal audit function and informal interactions between audit committees and internal audit functions.

Influence of Chief Audit Executive

Leung et al. (2011) find that CAEs strongly endorse the significance of access and communication with the right calibre people at the right level of the organization. They note that in order to provide relevant, timely and complete information for the board and senior management, CAEs should have a clear reporting role directly to audit committees. Similarly, Leung and Cooper (2009) note the importance of internal audit quality, including compliance with internal auditing standards and the behavioral and technical skills of the internal audit staff. Given that both formal and informal interactions between the audit committee and the internal audit function go via the CAE, who represents the internal audit function, particular characteristics of the CAE (in addition to the general internal audit function quality characteristics) are likely to influence informal interactions between audit committees and internal audit functions. More specifically, CAEs who have internal auditing qualifications, have working experience in internal auditing and invest in continuous professional development are likely to be perceived as more competent and experienced by the audit committee. CAEs perceived as competent and experienced are more likely to be relied upon by audit committees for their information needs. Thus the final proposition is:

Proposition 5: There is a positive association between the competence and experience of the chief audit executive and informal interactions between audit committees and internal audit functions.

3. MODEL SPECIFICATION, VARIABLE MEASUREMENT AND DATA

Model Specification

To test the research propositions discussed in the previous section the following model is used in this paper:

$$Y = \alpha + \beta_1 \text{AC_Independence} + \beta_2 \text{AC_Meetings} + \beta_3 \text{AC_Chair} + \beta_4 \text{IAF_Quality} + \beta_5 \text{CAE_Quality_1} + \beta_6 \text{CAE_Quality_2} + \beta_7 \text{Financial_Industry} + \beta_8 \text{Listed} + \beta_9 \text{Formal_Interactions} + \varepsilon$$

where:

$Y =$	informal interactions between AC and IAF (represented by CAE) (0/1)
$AC_Independence =$	proportion of independent AC members (%)
$AC_Meetings =$	number of AC meetings
$AC_Chair =$	vector of AC chair characteristics (knowledge and experience)
$IAF_Quality =$	vector of internal audit quality characteristics (%)
$CAE_Quality_1 =$	vector of CAE characteristics (experience and qualification) (%)
$CAE_Quality_2 =$	vector of CAE characteristics (training and development) (%)
$Financial_Industry =$	firm operates in the financial industry or not (0/1)
$Listed =$	firm listed on the London Stock Exchange or not (0/1)
$Formal_Interactions =$	proportion of formal AC meetings attended by the CAE (%)
$\varepsilon =$	error term

Variable Measurement

(i) **Informal interactions.** To measure the dependent variable, CAEs were asked to indicate whether or not they have informal interactions with the audit committee chair and/or audit committee members outside the regular pre-scheduled meetings (yes/no). This measure thus captures additional meetings that have been arranged, outside of the formal pre-scheduled regular meetings, at the initiative of either the CAE or the audit committee chair.³

(ii) **Audit committee characteristics.** Propositions 1 and 2 were tested using two items. First, CAEs were asked to indicate the number of audit committee members as well as the number of independent audit committee members. This enabled the computation of the proportion of independent audit committee members. Second, CAEs were also asked to indicate the number of audit committee meetings held. Both items are commonly used in existing studies to proxy for audit committee independence and activeness (DeZoort et al. 2002, Zaman et al., 2011).

(iii) **Audit committee chair characteristics.** CAEs were asked to assess the audit committee chair's knowledge and experience in eight different areas on a scale of 1 to 5: (1) the business in general; (2) corporate governance; (3) business specific risks; (4) accounting and finance; (5) risk management and internal control in general; (6) business specific risk management and internal control; (7) external auditing; and (8) internal auditing. A factor analysis confirms that all eight items load on one factor (factor loadings range from .718 to .861). The Cronbach's alpha of .91 is high given that all these items are newly created items.

³ A limitation of this measure is that it does not take into account different forms of informal interactions, nor variation in extent of internal interactions in different institutional and regulatory context.

A vector indicating the average score (ranging from 1 to 5) on these eight items was computed to test proposition 3.

(iv) *Internal audit quality characteristics.* CAEs were asked to indicate: (1) the percentage of the internal audit plan that was expected to be completed in the current financial year. If the response indicated that at least 95 percent of the internal audit plan was expected to be completed then it is regarded as positive, indicating a strength of the internal audit function; (2) whether or not their internal audit function has a formal quality assurance and improvement program currently in place (cf. Elliot et al., 2007); (3) whether or not their internal audit function has been subject to an external quality assessment (cf. IIA, 2009); and (4) whether or not their internal audit function fully complies with the Code of Ethics and Standards for Professional Practice of Internal Auditing issued by the IIA (cf. Abdolmohammadi, 2009). Factor analysis shows that all four items load on one factor (factor loadings range from .427 to .859) with a Cronbach's alpha of .57. A vector indicating the proportion of the criteria met by the responding internal audit functions was computed to test proposition 4.

(v) *Chief audit executive characteristics.* CAEs were asked to indicate: (1) whether or not they have at least one internal auditing qualification; (2) whether or not they had experience in internal audit before joining the current internal audit function; (3) the number of hours spent on continuous professional development (CPD). This was considered a positive quality criteria if at least 40 hours were spent on CPD as per the IIA (2009) guidance; and (4) the percentage of these training hours that was spent on behavior skills. This item was considered a positive quality if at least 25 percent of the training hours were spent on behavior skills. Items 1, 2 and 4 are based on Pforsich et al. (2006, 2008). A factor analysis shows that the four items load on two different factors: a first factor comprises the first two items (factor loadings: .781 and .811) whereas a second factor comprises the two items relating to CPD (factor loadings: .707 and .784). Two vectors indicating the proportion of the criteria met by the responding CAEs (expressed as percentage) was computed to test proposition 5.

(vi) *Control variables.* The model also controls for the intensity of the formal interactions between the audit committee and the internal audit function by including the proportion of formal audit committee meetings attended by the CAE (ranging from 0 to 100

percent). CAEs were asked to indicate the total number of audit committee meetings in the current financial year and the number of audit committee meetings they attended. In addition, two firm characteristics, i.e. (1) whether or not the firm for which the CAE works operates in the financial industry; and (2) whether or not the firm is listed on the stock exchange were used to control for firm characteristics because audit committees and internal audit functions in both groups are subject to more stringent laws and regulations (cf. FRC, 2010; FSA, 2010).

Research Method

To examine the existence and drivers of informal interactions between audit committees and internal audit functions this paper relied on a questionnaire survey of CAEs in the UK. While prior qualitative research in the UK suggests that informal interactions do take place, most of the evidence is based on particular organizational setting or on a very small range of interviews. The use of questionnaire enabled the examination of the existence of internal interactions across a relatively larger number of entities. However, a major drawback of this approach is admittedly that it is not particularly suitable for examining instigations and locations of informal interactions and its impact on corporate governance outcomes. The aim of this paper is thus modest, i.e. to provide exploratory evidence on factors associated with informal interactions between audit committees and internal audit functions. The survey solicited information on characteristics of internal audit functions and audit committees as well as that of the respondent's organization. Given that CAEs are the respondents to the survey, it is inevitable that the findings might have been affected by their perceptions.⁴

The data for this study is based on questionnaire survey sent via the Institute of Internal Auditors in the UK to 672 CAEs in November 2009. The survey was pilot tested with CAEs and revised prior to being sent out for completion. After follow-ups, 220 responses, representing a response rate of 32.7 percent, were obtained. Of the 220, only 187 (27.8 percent) were useable due to missing data. This response rate is reasonable compared to prior survey research. For instance it compares with 85 usable responses representing 21.4 percent response rate in Leung et al.'s (2011) investigation of accountability structures and management relationships of internal audit in Australia. Respondents who replied after

⁴ In a study of this type such a limitation is not uncommon (Leung et al., 2011). Future research can complement and contribute to the growing literature on this important topic. However, there is ample scope for future research to build on the limitations of this paper, both in relation to choice of subject and in relation to the focus on existence of interactions. See the final section of this paper for future research directions.

receiving the reminder were considered late respondents and used as a proxy for non-respondents. Comparing all independent and control variables between early and late respondents does not reveal significant differences. Including a dummy variable in the regression analysis does not change the results either. Thus, non-response bias does not appear to be a problem. The analyses reported in the next section are based on 160 responses (85.6 percent) from private sector organizations with an audit committee. About 22% of the respondents are from companies in the financial sector and about 33% are listed on the London Stock Exchange.

4. EMPIRICAL FINDINGS

Descriptive Statistics

[INSERT TABLE 1 HERE]

Informal interactions. Table 1, Panel A shows that informal interactions between audit committees and internal audit functions are important feature of corporate governance in the UK. A large majority of the CAEs (88.1 percent) indicate that they have informal interactions with the audit committee chair and/or audit committee members outside the regular pre-scheduled formal meetings. This finding complements Turley and Zaman (2007) who observed from a case study that informal interactions play a significant role in audit committee effectiveness.

Audit committee characteristics. As indicated earlier, propositions 1 and 2 were tested using two items (see Table 1, Panel B). First, the proportion of independent audit committee members is 63.8 percent (standard deviation: 32.2). Second, the number of formal audit committee meetings ranges from 2 to 15 with a mean of 4.6 meetings (standard deviation: 1.8). The mean proportion of audit committee meeting attended by the CAE is 97.4 percent (standard deviation: 12.39).

Audit committee chair characteristics. CAEs were asked to assess the audit committee chair's knowledge and experience in eight different areas (on a scale of 1 to 5). Table 1 Panel C shows the results. Chairs have most knowledge and experience about the business in general (average score: 4.29), corporate governance (average score: 4.01) and business specific risks (average score: 3.97). In contrast they are perceived as having least

knowledge and experience about internal auditing (average score: 3.50) and external auditing (average score: 3.69). A vector indicating the average score on these eight items are used to test proposition 3 (cf. Table 1 Panel C). The average knowledge and experience score of audit committee chairs range from 1.63 to 5 with a mean of 3.86 (standard deviation: 0.71).

Internal audit quality characteristics. Table 1 Panel D shows the four criteria that were taken into consideration to construct the vector. First, in 54.4 percent of the cases, at least 95 percent (= median) of the internal audit plan is expected to be completed. Second, almost half of the responding internal audit functions (49.4 percent) have a formal quality assurance and improvement program currently in place. Third, 63.6 percent have been subject to an external quality assessment. Fourth, 70.0 percent of the responding internal audit functions fully conform to the Code of Ethics and Standards for Professional Practice of Internal Auditing issued by the IIA. A vector indicating how many of these four quality criteria were met by the responding internal audit functions (cf. Table 1 Panel G) was computed to test proposition 4. The proportion of criteria met ranges from 0 to 100 percent with a mean of 59.6 percent (standard deviation: 32.2).

Chief audit executive characteristics. Table 1 Panel E shows the results for the four criteria considered. First, 40.9 percent of the CAEs have at least one internal auditing qualification. Second, 83.1 percent of the CAEs had experience in internal audit before joining the current internal audit function. Third, less than two third of the CAEs (60.8 percent) spent at least 40 hours on CPD. Fourth, slightly less than half of the CAEs (48.4 percent) spent at least 25 percent (= median) of their training hours on behavioral skills. To test proposition 5 two vectors are computed indicating how many of the criteria are met by the responding CAEs (cf. Table 1 Panel F). The first vector ranges from 0 to 100 percent with a mean of 62.0 percent (standard deviation: 34.3). The second vector ranges from 0 to 100 percent with a mean of 57.0 percent (standard deviation: 32.3).

Control variables. As shown in Table 1, Panel G, 22.5 percent of the CAEs work in the financial industry whereas 33.1 percent of the respondents work in listed firms. With respect to the formal interactions between audit committees and internal audit (Panel B), on average, almost all formal audit committee meetings (97.4 percent) are attended by the CAE.

Multivariate Statistics

Correlation matrix. Table 2 shows the correlation matrix for the dependent, independent and control variables included in this study. The existence of informal interactions between audit committees and internal audit functions is significantly and positively correlated with the audit committee independence (AC_Independence) and the audit committee chair's knowledge and experience (AC_Chair), proportion of formal audit committee meetings attended by the CAE (Formal_Interactions), internal audit quality (IAF_Quality), and CAE's qualifications and experience in internal auditing (CAE_Quality_1). Although Table 2 shows a highly significant correlation between Formal_Interactions and AC_Meetings, there are no significant problems of multicollinearity given that the VIF values are lower than 1.380.

[INSERT TABLE 2 HERE]

Regression analysis. Table 3 shows the results of the logistic regression analysis testing the model specified in the previous section and includes both the independent and control variables. The model is significant and has a good explanatory power (Nagelkerke R square: 47.6 percent and classification accuracy: 91.9 percent). The results reveal three highly significant associations and one marginally significant association.

[INSERT TABLE 3 HERE]

The results provide support for proposition 1, 3 and 4, i.e. there is a positive significant association ($p = .004$) between the proportion of independent audit committee members and the existence of informal interactions between the audit committees and internal audit functions.⁵ The results reveal that an audit committee chair with more knowledge and experience about the business, business specific risks, corporate governance, risk management and internal control, accounting and finance, internal and external auditing is positively significantly associated ($p = .002$) with the existence of informal interactions. Thus there is support for proposition 3. The results also show a positive significant association ($p = .015$) between the quality of the internal audit function and the existence of informal interactions which supports proposition 4. The regression results however do not

⁵ The results hold when independence is redefined as the proportion of non-executive audit committee members.

provide support for propositions 1 and 5, although the association is positive. The characteristics of the CAEs are not significantly associated with informal interactions between the internal audit function and the audit committee.

The number of audit committee meetings though not significant has a positive association with the existence of informal interactions suggesting that audit committees that have more frequent formal meetings are more likely to engage in informal interactions with internal audit functions. This latter finding is particularly interesting and highlights the need for further research on the nature of informal interactions, the circumstances giving rise to it and its impact on corporate governance. The control variables, i.e. firm listing, financial industry, and formal interactions, are all positive though not significant.

Additional analysis. As noted earlier in this paper, interactions between audit committees and internal audit functions are important because it helps to protect the independence of internal audit functions and enables both parties to have real impact in organizations (Turley and Zaman, 2007). One might thus ask whether informal interactions with the audit committee also stimulate the internal audit function to improve its quality. To test whether the existence of informal interactions with the audit committee has a significant and positive impact on the quality of the internal audit function other explanatory variables such the age of the internal audit function, the internal audit budget, the quality of the CAE (measured by the two variables from the previous analyses) as well as the three control variables included in the previous analyses are explored using a tentative model of internal audit quality. Internal audit functions with a 75 percent (cf. proportion of criteria met based on the four items) or more score are rated as having a high quality.⁶

[INSERT TABLE 4 HERE]

Table 4 shows the results of the additional regression analysis. It shows that existence of both formal and informal interactions with the audit committee is not significantly associated with the quality of the internal audit function. Thus, suggesting that there is no reciprocal association between the variables. The quality of the internal audit function is

⁶ Due to limitations of the data it is not possible to provide more nuanced analysis of the effect of internal audit quality here. Further research examining the interrelationship between audit committee quality and internal audit quality is needed to address such limitations.

significantly associated with listing on the stock exchange, the budget of the internal audit function and CAE characteristics such as internal audit certification and professional experience in internal audit. The additional analysis underpins the need for more detailed investigations into the antecedents and consequences of audit committee informal interactions. The next section provides a summary, highlights the limitations of this paper and makes suggestions for future research on audit committee informal interactions.

5. SUMMARY AND DIRECTIONS FOR FUTURE RESEARCH

Summary and Limitations

This paper is motivated by recognition of the increasing reliance on audit committees' monitoring role and prior literature finding that both formal and informal interactions between audit committees and executive management and external auditors influence governance outcomes. A major shortcoming of existing research on audit committee interactions is that it does not distinguish between routine interactions which take place as part of pre-scheduled formal meetings and informal interactions outside of formal pre-scheduled meetings. This paper recognizes the importance of informal processes within corporate governance and complements existing research in this area. The scope of this paper is limited to examining factors associated with informal interactions between audit committees and internal audit functions using a survey of CAEs in the UK.

The paper extends prior research (e.g. Arena and Azzone, 2009; Goodwin, 2003; Goodwin and Yeo, 2001; Raghunandan et al., 2001; Scarbrough et al., 1998) and shows that independent audit committees voluntarily engage in informal interactions with internal audit functions to better perform their monitoring roles. Complementing Turley and Zaman's (2007) finding that the audit committee chair plays an important influential role in the corporate governance process, this paper finds that the background of the audit committee chair, more specifically his/her knowledge and experience in diverse area, has a positive association with audit committee informal interactions with the internal audit function. Consistent with Zwaan et al.'s (2011) Australian finding that audit committee involvement in risk management affects internal auditors' willingness to report a breakdown in risk procedures to audit committees, this paper also finds a positive and significant association between informal interactions and quality of the internal audit function, although CAE characteristics are not a significant influence.

The exploratory research reported in this paper has a number of limitations and further research is needed to fill gaps in the literature and to make more substantive advancement in understanding of the issues surrounding audit committee informal interactions. The next paragraphs first highlight the limitations of this paper before providing some directions for future research on audit committee informal interactions.

The empirical evidence in this paper has been limited by the fact that it is based on questionnaire approach and solely reliant on the perceptions of internal auditors. An implication of this is that this paper is not able to provide a comprehensive analysis of the issues. Notwithstanding some of its inherent limitations, the use of questionnaire approach is not uncommon and the approach taken in this paper is consistent with, for example, Mat Zain, Subramaniam and Stewart (2006) and Goodwin-Stewart and Kent (2006). CAE perceptions, as captured in this study, may reflect their expectations toward the audit committee chair instead of the actual situation. Thus there is a need to undertake comparative analysis incorporating the views of all the parties involved in informal interactions. A further limitation of the present study is that it examines factors influencing the existence of informal interactions between audit committees and internal audit functions and does not take into account the nature, extent and quality of the interactions and the circumstances giving rise to it. Similarly, audit committee, internal audit and CAE characteristics used in this paper are not comprehensive. Internal audit quality, for instance, does not take into account the objectivity and accountability (including reporting lines) of internal audit functions. Also, this paper has not investigated (differing) meanings of informal interactions which is likely to be subject to organizational and institutional contexts. These important aspects need to be explored in future research.

Research Opportunities

Future research which takes into account the limitations of this paper has the potential to make a valuable contribution to the literature. Potentially fruitful avenues for future research include the following:

Knowledge and objectivity: Future research should investigate how variations in audit committee knowledge and objectivity, as well as that of the CAE, affect informal interactions. Stewart and Subramaniam (2010) observe the importance of research on internal auditor objectivity and independence. In addition to considering the CAE's reporting lines,

future research should consider the accountability of internal audit functions – CAEs (/internal audit functions) having a dual reporting line to the audit committee and the chief executive officer are likely to behave differently than those directly accountable to the audit committee. Future research should seek to provide more nuanced understanding of reporting lines versus actual accountability to the chief executive officer/audit committee and their effects on audit committee interactions. This paper does not focus on the behavior of audit committee financial experts (for example those with a professional accounting and/or internal audit qualification) vis-à-vis non-experts. It is likely that individuals' prior experience as well as qualifications affect the extent of audit committee informal interactions. Future research should seek to differentiate the effects associated with audit committee qualifications vis-à-vis audit committee experience since most regulations tend to put emphasis on formal qualifications.

Nature and quality of interactions: Notwithstanding the finding of this paper, a better understanding of the nature and quality of audit committee informal interactions is needed. Research needs to move beyond providing evidence on the existence (or increase/decrease) in audit committee informal interactions. Likewise, although this paper found a positive, but not significant, association between formal audit committee meetings and informal interactions future research should explore the use of informal interactions as a complement to, and/or substitute for, formal meetings. If there is a substitution effect then greater frequency of formal audit committee meetings may dispense with, and or reduce, the need for informal interactions.

Also, the complexity and quality of informal interactions cannot be truly captured using binary, interval (or scaled) measures. Survey methods are not particularly suitable for capturing such complex behavioral concepts. Similarly, constructs such as internal audit quality cannot be easily or reliably captured using survey data, especially if based on CAE perceptions alone. Future research on informal interactions between audit committees and, for instance, internal audit functions should seek to use better measures of internal audit quality and include factors such as the structure of the internal audit functions (in-house versus out-sourced, or co-sourced), the reporting and accountability lines of the internal audit functions, internal audit budget setting, and the hiring/firing responsibilities relating to CAEs. It is important to recognize that quantitative measures can be quite arbitrary proxies and fail to adequately reflect qualitative attributes influencing audit committee interactions. The use

of composite variables to proxy for internal audit, chief audit executive and audit committee chair quality characteristics may sometimes obfuscate the interpretation of the results. Relying on survey data alone is unlikely to provide significant new insights. However, research using qualitative methods has greater potential to provide more substantive contextual understanding of audit committee informal interactions.

Antecedents and consequences: Future research would benefit from using multi-theory and multi-method approaches to fully illuminate the antecedents and consequences of audit committees' informal interactions with management and external auditors. Whether informal interactions are a positive desirable thing for corporate governance was beyond the scope of the current paper, but is certainly a matter warranting future research. Though providing evidence on the existence of informal interactions, this paper does not examine the circumstances giving rise to informal interactions and outcomes resulting from them. Future research should examine what triggers informal interactions, how audit committees interact with others involved in the governance process in resolving disputes and issues, and what are the consequences of informal interactions on governance outcomes such as quality of financial reporting and auditing.

Institutional context: Given the significant variation in national requirements concerning corporate governance and audit committees, future research should examine the influence of international differences and institutional characteristics on audit committee informal interactions and relationships. Turley and Zaman (2007) and Mat Zain and Subramaniam (2007) suggest that the relationship between audit committees and internal audit functions can vary depending on the national and organizational context. Internationally, there is variety in the role and functioning of audit committees in practice. Some audit committees may for instance be more 'accounting centric', and thus monitoring and interacting with internal audit function may not rank very high in their priority. It is also important to examine informal interactions with regard to the corporate structure and accountability mechanisms prevalent in specific sectors – e.g. regulated versus non-regulated, private versus public sector, emerging versus developed economies. Future research examining the role of informal interactions in different institutional and cultural contexts and how it is embedded in organizational micro-politics has the potential to make valuable contribution to the literature.

In conclusion, this paper provides evidence on the prominence of informal interactions between audit committees and internal audit functions and exploratory evidence on factors associated informal interactions. The findings suggest that in addition to formal pre-scheduled meetings, audit committees rely on informal interactions with internal audit functions to undertake their monitoring role. The evidence also shows that informal interactions have a positive significant association with both audit committee independence and the knowledge and experience of the audit committee chair. Further research is however necessary for more substantive understanding of the nature and quality of audit committee informal interactions. The antecedents and consequences of informal interactions and the micro-politics that may surround and influence the parties involved in informal interactions with the audit committee needs to be researched with particular attention to the institutional and organizational contexts within which audit committees operate in practice.

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Table 1: Descriptive Statistics

Panel A: Informal Interactions

Informal interactions between the audit committee and the internal audit function % of IAFs
88.1

Panel B: Audit Committee Characteristics

	Min	Max	Mean	StdDev
Proportion of independent audit committee members	0	100	63.79	32.24
Number of audit committee meetings	2	15	4.58	1.80
Proportion of formal audit committee meetings attended by the CAE	0	100	97.40	12.39

Panel C: Audit Committee Chair Characteristics

Knowledge and Experience in:

	Min	Max	Mean	StdDev
Business in general	1	5	4.29	.74
Corporate governance	1	5	4.01	.90
Business specific risks	1	5	3.97	.82
Accounting and finance	1	5	3.91	1.06
Risk management and internal control in general	1	5	3.82	.92
Business specific risk management and internal control	1	5	3.72	.88
External auditing	2	5	3.69	.97
Internal auditing	1	5	3.50	.94

Panel D: Internal Audit Quality Characteristics

	% of IAFs
At least 95% of the internal audit plan in 2009 was going to be completed	54.4
The IAF currently has a formal quality assurance and improvement program in place	49.4
The IAF has been subject to an external quality assessment	63.6
The IAF fully conforms to the Code of Ethics and Standards for the Professional Practice of Internal Auditing issued by the IIA	70.0

Panel E: Chief Audit Executive (CAE) Characteristics

	% of CAEs
The CAE has at least one internal auditing qualification	40.9
The CAE had experience in internal audit before joining the current IAF	83.1
The CAE spent at least 40 hours on continuous professional development	60.8
The CAE spent at least 25% of its training hours on behavioral skills	48.4

Panel F: Vectors

	Min	Max	Mean	StdDev
IAF_Quality	0	100	59.58	32.24
CAE_Quality_1	0	100	61.95	34.43
CAE_Quality_2	0	100	56.97	32.34
AC_Chair	1.63	5.00	3.86	.71

Panel G: Firms Characteristics

	% of IAFs
Financial industry	22.5
Listed firm	33.1

Table 2: Correlation

	Informal Interactions	Financial Industry	Listed	Formal Interactions	IAF Quality	CAE Quality_1	CAE Quality_2	AC Independence	AC Meetings	AC Chair
Informal Interactions	1.000									
Financial Industry	.102	1.000								
Listed	.050	.193**	1.000							
Formal Interactions	.140*	.047	-.180**	1.000						
IAF Quality	.151*	.140*	-.149*	.106	1.000					
CAE Quality_1	.157**	-.052	-.008	.064	.091	1.000				
CAE Quality_2	.034	.088	-.097	.173*	-.025	.077	1.000			
AC Independence	.233***	.079	.254***	-.050	-.120	-.031	-.021	1.000		
AC Meetings	.089	.127	.017	-.425***	.182**	.012	.038	.037	1.000	
AC Chair	.243***	.149*	.083	.032	.173**	.177**	-.093	.207**	-.005	1.000

***= significant at 1% level; **= significant at 5% level; *= Significant at 10% level

Variable definitions: *Y*=informal interactions between AC and IAF (represented by the CAE) (0/1); *Financial Industry*=financial company or not (0/1); *Listed*=listed firm or not (0/1); *Formal Interactions*=proportion of formal AC meetings attended by the CAE (%); *IAF Quality*=vector of internal audit quality characteristics (%); *CAE Quality_1*=vector of CAE characteristics (experience and qualification) (%); *CAE Quality_2*=vector of CAE characteristics (training and development) (%); *AC Independence*=proportion of independent AC members (%); *AC Meetings*=number of AC meetings; *AC Chair*=vector of AC chair characteristics (knowledge and experience)

Table 3: Regression Results - Informal Interactions

Variable	Exp. Sign	Statistics		
		B	Wald	Sign.
AC Independence	+	.043	7.237	.004
AC Meetings	+	.407	1.478	.112
AC Chair	+	1.265	4.091	.022
IAF Quality	+	.032	4.766	.015
CAE Quality 1	+	.009	.528	.234
CAE Quality 2	+	.014	.973	.162
Formal Interactions	+/-	.087	2.221	.068
Financial Industry	+/-	.821	.376	.270
Listed	+/-	.029	.001	.490
Error		-17.542	4.463	.018
N		160		
Chi square		28.507 (p = .001)		
Classification accuracy		91.9%		
Nagelkerke (pseudo) R ²		.476		

Variable definitions: dependent variable (Y)=informal interactions between AC and IAF (represented by the CAE) (0/1); *AC_Independence*=proportion of independent AC members (%); *AC_Meetings*=number of AC meetings; *AC_Chair*=vector of AC chair characteristics (knowledge and experience); *IAF_Quality*=vector of internal audit quality characteristics (%); *CAE_Quality_1*=vector of CAE characteristics (experience and qualification) (%); *CAE_Quality_2*=vector of CAE characteristics (training and development) (%); *Formal_Interactions*=proportion of formal AC meetings attended by the CAE (%); *Financial_Industry* =financial company or not (0/1); *Listed*=listed firm or not (0/1);

Table 4: Internal Audit Quality

Variable	Exp. Sign	Statistics		
		B	Wald	Sign.
Financial Industry	+/-	.714	1.437	.116
Listed	+/-	-1.730	8.845	.002
Formal Interactions	+	.039	1.366	.121
Informal Interactions	+	.110	.023	.439
CAE Quality 1	+/-	.020	8.564	.002
CAE Quality 2	+/-	-.008	1.224	.135
IAF Age	+/-	.021	.556	.228
IAF Budget	+/-	.000	5.436	.010
Error		-5.049	2.285	.066
N		160		
Chi square		38.715 (p = .000)		
Classification accuracy		69.2%		
Nagelkerke (pseudo) R ²		.377		

Variable definitions: dependent variable (Y)=high quality internal audit function (0/1); *IAF_Quality*=vector of internal audit quality characteristics (%); *Financial_Industry*=financial company or not (0/1); *Listed*=listed firm or not (0/1); *Formal_Interactions*=proportion of formal AC meetings attended by the CAE (%); *Informal_Interactions*=informal interactions between AC and IAF (represented by the CAE) (0/1); *CAE_Quality_1*=vector of CAE characteristics (experience and qualification) (%); *CAE_Quality_2*=vector of CAE characteristics (training and development) (%); *IAF_Age*=age of the internal audit function (years); *IAF_Budget*=budget of internal audit function (GBP)

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