Towards a Decision Aid for External Audit Evaluation of the Internal Audit Function

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ABSTRACT

The purpose of this paper is to inform practitioners about leading research in the field of internal audit and corporate governance. There has been considerable progress in academic research towards the development of a decision aid for External Audit evaluation of the Internal Audit Function. Desai et al. (2009) developed a theoretical model of the decision process used by external auditors to determine the strength of their client’s internal audit function. They further tested this model using computer simulations. The model is based on three factors identified by auditing standards and prior academic research: Competence, Work Performance, and Objectivity. The results of the analysis revealed that modelling the “And” relationship is essential for assessing the strength of the IA function. As far as interrelationships are concerned, the analysis showed that when the three factors have a strong or a perfect relationship, the strength of the IA function remains high even if there is positive or negative evidence about one of the factors. The model developed by Desai et al. (2009) is an important step towards developing a decision aid for external auditors for evaluating the internal audit function. To advance the development of this model the next step will be to test the assumptions of the model empirically in the real audit world among real external auditors.

Introduction

The purpose of this paper is to inform practitioners about leading research in the field of internal audit and corporate governance. There has been considerable progress in academic research towards the development of a decision aid for External Audit evaluation of the Internal Audit Function. Desai et al. (2009) developed a theoretical model of the decision process used by external auditors to determine the strength of their client’s internal audit function. The structure of the model is represented in Figure 1. They further tested this model using computer simulations. The model is based on three factors identified by auditing standards and prior academic research: Competence, Work Performance, and Objectivity (SAS 65 1991; Messier and Schneider 1988; Krishnamoorthy 2002; PCAOB 2007). Desai et al. (2009) developed an analytical expression of the model using the belief function framework. By using this framework they overcame limitations of prior research regarding the modelling of interrelationships among factors and regarding difficulties in application. The results of their analysis revealed that modelling the “And” relationship is essential for assessing the strength of the IA function. As far as interrelationships are concerned, the analysis showed that when the three factors have a strong or a perfect relationship, the strength of the IA function remains high even if there is positive or negative evidence about one of the factors. This result holds as long as there are high levels of beliefs about the other two factors. Further, they demonstrated how the quality of corporate governance affects the evaluation of the IA function.

Internal Audit Function Evaluation Model

Need for a Decision Aid

The Sarbanes-Oxley Act of 2002 (hereafter SOX), significantly elevated the role of the internal audit (IA) function. Section 302 of SOX requires management to report on and certify to the effectiveness of its internal control structure and procedures with respect to the firm’s quarterly and annual reports. Section 404 of SOX requires management to document, evaluate, and report on the effectiveness of internal control over financial reporting, and requires the external auditor to evaluate and opine on management’s assessment of internal control. In May 2007, the Public Company Accounting...
Oversight Board (PCAOB) revised their guidance on auditing internal control by adopting Auditing Standard No. 5, _An Audit of Internal Control over Financial Reporting That is Integrated with an Audit of Financial Statements_. Through the adoption of this standard and its accompanying guidance, the PCAOB explicitly encourages external auditors to “use the work of others to a greater extent when the work is performed by sufficiently competent and objective company personnel” (PCAOB 2007, p. 13). This requirement may increase external auditors’ reliance on the work of internal auditors when they perform the integrated audit and internal control assessment work now required by Auditing Standard No. 5 (PCAOB, 2007). In addition, there is a growing importance placed on expanded roles for the IA function in ensuring quality corporate governance (Antoine 2004).

Increased reliance on the internal audit function by regulators, corporate governance actors and financial market participants heightens its need to be better understood. Auditing Standard No. 5 requires external auditors to use a principles-based approach to determining when and to what extent they can use the work of others (PCAOB 2007). Thus, auditor judgment in the assessment of internal control has assumed an even larger role in the performance of the integrated audit.

**Figure 1: Analytical Model for Evaluating the Strength of the Internal Audit Function**

** A rounded box represents a factor, a rectangle represents an item of evidence, and a hexagonal box represents a relationship. The definitions of the factors and items of evidence have been incorporated from SAS 65. SAS No. 65 (AICPA, 1991) describes the IA function quality characteristics as comprising Competence (e.g., educational level, certification), Objectivity (e.g., reporting relationship, party responsible for the IA function employment decisions), and Work Performance (e.g., adequacy of audit programs, scope of work performed).
How is the IA Evaluation Model Better than Previous Models?

The purpose of the Desai et al. (2009) paper was to advance prior research in internal audit (IA) evaluation by developing a comprehensive IA assessment model that incorporates the following features. First, it explicitly models the interrelationships among the three specific factors: competence, work performance, and objectivity, used by external auditors when evaluating the strength of the IA function (SAS 65 1991; Messier and Schneider 1988; Krishnamoorthy 2002). Second, it explicitly models the "And" relationship between the IA function and these three factors. The prior model by Krishnamoorthy (2002) did not explicitly model the "And" relationship. Third, it provides a structured approach to gather and aggregate items of evidence pertaining to various IA factors that finally yield an overall judgment concerning the strength of the IA function. This judgment can aid the external auditor in assessing the reliability of a client's internal control system and, thus, determining the extent of reliance on the work of internal auditors. Fourth, it examines the effect of the quality of corporate governance on the evaluation of the IA function by the external auditors. Cohen et al. (2007) suggested a potential link between governance quality, including the audit committee, and the internal audit function. They argued that further research is needed to examine how “the expertise of the internal audit function affects the ability to incorporate audit committee quality into the internal audit judgments” (p.175). Because evaluating the IA function entails a process of gathering and aggregating uncertain items of evidence pertaining to each IA factor, Desai et al. (2009) developed the IA assessment model using the evidential reasoning approach of Srivastava et al. (2006) under the Dempster-Shafer theory (hereafter DS) of belief functions (Shafer 1976). DS theory is a better framework for representing uncertainties associated with the items of evidence than the probability framework (Shafer and Srivastava 1990, see also Krishnamoorthy 1993).

Uses of the IA Evaluation Model

The model developed in this paper can be effectively used by external auditors for assessing the strength of the IA function due to its intuitive appeal and ease of use. For example, the external auditor can use the evidential diagram of the model to add and/or delete certain items of evidence pertinent to specific IA factors in a structured way, as appropriate in the specific situation. In addition, the external auditor can incorporate the judgments, in terms of belief masses on a scale 0-1 whether the corresponding IA factor is supported or negated, into the model. Finally, the auditor can use the model to aggregate these belief masses to determine the overall strength of IA function. Thus, the model can assist external auditors in determining the extent to which they want to rely on the internal auditors’ work.

Important Findings of the Model

The results of the analysis revealed that modelling the “And” relationship is essential for assessing the strength of the IA function. As far as interrelationships are concerned, the analysis revealed that when the three factors have a strong or a perfect relationship, the strength of the IA function remains high even if we have positive or negative evidence about one of the factors. This result holds true as long as there are high levels of beliefs about the other two factors. Further, they found that the quality of corporate governance has a significant impact on the strength of the IA function and should be considered by the external auditors in their evaluation of the IA function.

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1 Competence has been defined as the educational level and professional experience of the internal auditor and other such factors. Objectivity has been defined as the organizational status of the internal auditor and organizational policies affecting the independence of the internal auditor. Work Performance has been defined as the assessment of internal control, risk assessment, and substantive procedure performed by the internal auditor. These definitions have been taken from SAS 65 (AICPA, 1991). PCAOB Auditing Standard No.5 (2007) emphasizes objectivity and competence and implies that work performance must also be taken into consideration.

2 In fact, prior literature in accounting/auditing has documented counter-intuitive results from the use of Bayesian models in other contexts mainly because of improper modeling of ignorance. See Krishnamoorthy (1993) for more discussion.
Conclusion

The model developed by Desai et al. (2009) is an important step towards developing a decision aid for external auditors for evaluating the internal audit function. To advance the development of this model the next step will be to test the assumptions of the model empirically in the real audit world among real external auditors.

References


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