International Journal of Accounting Information Systems 15 (2014) 102–121

Contents lists available at ScienceDirect

International Journal of Accounting Information Systems

Nonprofessional investors' perceptions of the incremental value of continuous auditing and continuous controls monitoring: An experimental investigation

Maia Farkas [a], Uday S. Murthy [b]

[a] *California State University, Fullerton, Department of Accounting, SGMH-4351, Mihaylo College of Business & Economics, 800 N. State College Blvd., Fullerton, CA 92831, United States*
[b] *School of Accountancy, University of South Florida, 4202 E. Fowler Ave, BSN 3403, Tampa, FL 33620, United States*

A R T I C L E I N F O

Article history:
Received 18 February 2012
Received in revised form 15 October 2013
Accepted 17 November 2013
Available online 17 December 2013

Keywords:
Continuous auditing
Continuous controls monitoring
Internal auditor
External auditor
Nonprofessional investors

A B S T R A C T

In this study, we investigate nonprofessional investors' perceptions of the incremental value of additional assurance provided by continuous auditing (CA) and continuous controls monitoring (CCM) relative to traditional periodic auditing. We also examine whether nonprofessional investors' perceptions of incremental value of CA and CCM depend on whether the procedure is performed by internal or external auditors, given that external auditors are likely to be perceived as more independent and objective than internal auditors. We conduct two experiments, one using 120 nonprofessional investors recruited by a national survey company, and the second using 184 participants recruited via Amazon's Mechanical Turk platform. The first experiment employed a 2 × 2 between-participants design in which we manipulate the type of assurance (CA or CCM) and the source of assurance (internal or external auditors). The second experiment was identical to the first experiment, with the addition of a fifth condition to test a conjecture stemming from the results of the first experiment. The results from both experiments indicate that although nonprofessional investors believe that continuous auditing decreases the likelihood of material errors and asset misappropriation, nonprofessional investors do not concomitantly increase their investment upon learning about the implementation of these sophisticated continuous assurance techniques. Evidence from the second experiment provides support for the contention that the reason why nonprofessional investors do not increase their investment pursuant to implementation of CA or CCM is due to the salience of the additional costs of these techniques. These results have important

E-mail addresses: mfarkas@fullerton.edu (M. Farkas), umurthy@usf.edu (U.S. Murthy).

http://dx.doi.org/10.1016/j.accinf.2013.11.002

implications for firms considering the implementation of additional assurance procedures such as CA and CCM.

1. Introduction

Investors and regulators demand timely and reliable information in order to improve their decision-making process by reducing the risk of unanticipated negative business performance. The Sarbanes–Oxley Act (SOX) of 2002 has led firms to increase resources allocated to effective internal controls monitoring (Masli et al., 2010). Section 409 of SOX requires material changes in financial condition to be disclosed on a rapid basis, while Section 411 requires certain companies to start reporting quarterly and annual reports within a smaller window of time. Modern technology makes it possible to monitor business processes in greater detail on a real-time basis (Alles et al., 2006b). With the implementation of enterprise resource planning (ERP) systems, many companies' business processes have become highly automated and fully integrated (Alles et al. 2006b). Thus, one way companies can respond to regulatory requirements in a proactive way is by implementing computer-based audit procedures such as continuous controls monitoring (CCM) and continuous auditing (CA). Coderre (2006) suggests that continuous monitoring and auditing can be a solution to the increasing pressures of more frequent and timelier monitoring procedures.

While the concept of continuous assurance is not new and the benefits of continuous assurance are well known, companies have been reluctant to adopt CA and CCM (PwC, 2006; KPMG, International 2009; Chan and Vasarhelyi, 2011). The adoption of CA and CCM has fallen far short of initial expectations (Vasarhelyi et al., 2012). A possible reason why CA and CCM technologies have not been more widely adopted is that the benefits of these techniques may not outweigh their substantial implementation costs. In this study, we experimentally examine whether nonprofessional investors perceive value in CA and CCM when the costs associated with these techniques are made salient. Specifically, we investigate whether nonprofessional investors' perceptions of the incremental value of additional assurance differ between CA and CCM relative to traditional periodic auditing in light of the additional costs of CA and CCM. We also examine whether nonprofessional investors' perceptions of the incremental value of CA and CCM depend on whether the procedure is performed by internal or external auditors, given that external auditors are likely to be perceived as more independent and objective than internal auditors.

It is important to evaluate the perceptions of nonprofessional investors because a growing proportion of capital market activity comprises of individual investors who use internet websites to trade on the market (NYSE, 2000). A NYSE study (NYSE, 2000) found that, in 2000, approximately 33.8 million individual investors owned stock directly. In a survey of top level management in corporations, Gonzalez et al. (2012) found that a significant factor influencing an organization's technology adoption decision was the perceptions of groups such as shareholders and the board of directors. Thus, information regarding nonprofessional investors' perceptions of the incremental value of CA and CCM over the status quo, periodic auditing, could be useful to companies that are considering the implementation of CA and CCM.

This study is also motivated by the need for research on investors' perceptions of continuous controls monitoring and auditing. Hunton et al. (2004) call for research that explores the ways in which CA influences the judgment and decision-making processes of individual investors. The authors suggest that by implementing CA companies can offer more reliable information to investors, reduce uncertainty, ease perceived information risk, and allow stock prices to more accurately reflect the underlying value of the company. These benefits might prove valuable to prospective investors who have to make investment choices. There are, however, considerable costs associated with the implementation and maintenance of CA and CCM. The ultimate success of CA and CCM will therefore depend in part on the economic feasibility of the techniques, i.e., whether their benefits outweigh their costs. To date there has been much literature addressing the benefits of CA or CCM (Groomer and Murthy, 1989; Vasarhelyi and Halper, 1991), but there is limited research on the potential reasons why such technology has not been more widely adopted. This study attempts to help fill that void.

Prior studies differentiate between CCM and CA. CCM is defined as the automated testing of internal controls and business processes against some pre-defined benchmarks (Alles et al., 2006a), while CA is a procedure that produces audit results and relevant events either simultaneously or quite close together in