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Mandatory management disclosure and mandatory independent audit of internal controls: Evidence of configural information processing by investors ☆

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ABSTRACT

We conduct an experiment where alumni participants from a Canadian accounting and finance undergraduate program assume they are in one of four regulatory regimes (manipulated between-subjects) and make investment potential evaluations for two firms (manipulated within-subjects): a firm disclosing no material weaknesses (No-MW disclosure firm) and a firm disclosing material weaknesses (MW disclosure firm) in internal controls over financial reporting (ICFR). We find evidence of configural information processing. For the No-MW disclosure firm, mandatory (versus voluntary) disclosure of ICFR material weaknesses and mandatory (versus voluntary) independent ICFR audit are substitutes in enhancing investment potential evaluations. However, for the MW disclosure firm, neither mandatory disclosure nor mandatory audit has any effect on investment potential evaluations. Supplementary experiments with undergraduate participants suggest that the pattern of configural information processing is a function of participants' knowledge of company disclosure incentives and the assurance value of an audit, wherein undergraduates with lower levels of knowledge are less able to perceive the effects of mandatory disclosure and mandatory audit on investment potential evaluations. Our findings have implications for regulators who are concerned about balancing the costs and benefits of different regulatory mechanisms.

1. Introduction

Management disclosure of material weaknesses in internal controls over financial reporting (ICFR) is presently a salient aspect of the disclosure environment in many countries, with variations as to whether disclosure and an independent ICFR audit are voluntary or mandatory across countries, companies, and time. United States mandates both disclosure and audit for large issuers but mandates only disclosure for small issuers, on the assumption that there is an incremental benefit of having a mandatory audit that outweighs the compliance cost for large issuers (i.e., mandatory audit and mandatory disclosure have complementary effects) (SEC, 2009; SEC, 2010). Canada decided to implement only mandatory disclosure and indicated that it would consider in the future whether a mandatory audit would have an incremental benefit that outweighs its costs (CSA, 2006). We use Canadian participants in experiments to examine whether and why they, acting as investors, may consider mandatory management disclosure of ICFR material weaknesses and mandatory independent ICFR audit to be substitutory rather than complementary regulatory mechanisms in terms of impact on the investment potential evaluation of companies. Thus, we examine whether Canadian investors process ICFR disclosures under different regulatory mechanisms in a configural manner (i.e., as substitutes rather than as complements).

Our study demonstrates that at least in the context of Canadian investors evaluating the investment potential of companies, mandatory disclosure and mandatory audit are perceived to be

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substitutes and mandatory audit has no incremental effect. Complying with both mandatory disclosure and mandatory audit is significantly more expensive than complying with only mandatory disclosure.[1] Understanding when and why mandatory disclosure and mandatory audit can be substitutes for investors is helpful to regulators who are concerned about balancing the costs and benefits of different regulatory mechanisms.

We expect that the effects of mandatory disclosure and mandatory audit on investment potential evaluations depend on whether a firm disclosed that it has material weaknesses (MW disclosure) or no material weaknesses (No-MW disclosure). A No-MW disclosure compared to a MW disclosure is more consistent with companies' incentives to disclose positive news, and thus may be perceived as having more potential for bias. As such, mandatory disclosure and mandatory audit are more likely to have an impact on perceived reliability and relevance of a No-MW disclosure than a MW disclosure. Therefore, we conduct our main experiment with a 2×2 (between-subjects) $\times$ 2 (within-subjects) mixed design, using alumni of an accounting and finance undergraduate program at a major Canadian university. We manipulated on a between-subjects basis mandatory (versus voluntary) management disclosure of ICFR material weaknesses and mandatory (versus voluntary) independent ICFR audit. Participants in each regulatory regime evaluate two firms which are manipulated within-subjects: a MW disclosure and a No-MW disclosure.[2] We find that mandatory disclosure and mandatory audit have substitutory rather than complementary effects on investment potential evaluation of a No-MW disclosure firm. Specifically, having both mandatory disclosure and mandatory audit does not incrementally increase investment potential evaluations beyond having each regulatory mechanism alone. With respect to investment potential evaluation of a MW disclosure firm, neither mandatory disclosure nor mandatory audit has any effects.

Additional analyses indicate that alumni participants believe that both mandatory (versus voluntary) disclosure and mandatory (versus voluntary) audit increases the reliability (i.e., free from error and bias) and the relevance (i.e., makes a difference to investors' decisions) of a No-MW disclosure. Alumni participants also believe that mandatory audit increases the reliability of a No-MW disclosure more than mandatory disclosure, but they do not believe mandatory audit increases the relevance of a No-MW disclosure more than mandatory disclosure. This may explain why alumni participants consider mandatory audit and mandatory disclosure to be substitutes. If mandating disclosure alone or mandating audit alone already increases the reliability of the No-MW disclosure above a threshold level that makes a difference to investment potential evaluations, adding the other regulatory mechanism may not further increase the relevance of the No-MW disclosure to investment potential evaluations.

In order to better understand why investors consider mandatory disclosure and mandatory audit to be substitutes, we further conduct verbal protocol analyses with additional alumni participations as well as two supplementary experiments with first-year and third-year undergraduate participants from the same accounting program as our alumni participants, all with the same design as our main experiment. Undergraduate participants do not exhibit the same configural information processing as alumni participants. Only mandatory audit but not mandatory disclosure has effects on investment potential evaluation of a No-MW disclosure firm for third-year undergraduates, while neither mandatory disclosure nor mandatory audit has any effects on investment potential evaluation for first-year undergraduates. Alumni and third-year undergraduates likely know more about the assurance value of an independent audit compared to first-year undergraduates who have not taken any auditing courses; and we speculate that this explain why mandatory audit has effects for alumni and third-year undergraduates but not for first-year undergraduates. Consistent with the verbal protocols of additional alumni participants, we also speculate that alumni, compared to undergraduates, better understand how mandatory disclosure increases the reliability of positive disclosures of effective ICFR because they have more exposure to companies' incentives for opportunistic voluntary disclosures through their auditing/accounting work experience and experience analyzing financial performance of firms. Alumni, through their work experience, may also have more exposure to the enforcement mechanisms associated with mandatory disclosure that makes mandatory disclosure more reliable. These knowledge differences may explain why investment potential evaluations are affected by mandatory disclosure for alumni but not for third-year and first-year undergraduates. Finally, verbal protocol analyses of additional alumni participants suggest that the substitutory effects are sub-conscious in that they stated that these two mechanisms have complementary rather than substitutory roles.

Using experiments to examine the effects of mandatory disclosure and mandatory audit on investor judgments complements prior archival studies that have examined investor reactions under particular regulatory regimes or between different regimes.[3] Fig. 1 Panel A summarizes the various regulatory regimes in the U.S. and Canada.[4] The voluntary disclosure and voluntary audit regime (Cell 1) first occurred in the U.S. prior to the Sarbanes-Oxley Act (SOX), and in Canada prior to National Instrument (NI) 52-109. The mandatory disclosure and mandatory audit regime (Cell 4) was next introduced in the U.S. in 2004 for *large* issuers under SOX Sections 404a and 404b. Subsequently, the mandatory disclosure and voluntary audit regime (Cell 3) came into effect in the U.S. in 2007 for *small* issuers subject to only Section 404a but not Section

[1] A survey conducted by the U.S. Securities Exchange Commission (SEC) reported that the mean total compliance costs was $2.33 million for companies complying with both Sections 404a (mandatory disclosure) and 404b (mandatory audit) of the Sarbanes Oxley Act (of which $0.65 million was attributed to the independent ICFR audit) and $0.34 million for companies complying with only Section 404a (mandatory disclosure) (SEC, 2009).

[2] A No-MW disclosure is more common in practice than a MW disclosure. A survey by the SEC in the U.S. indicates that only about 22 percent of companies complying with mandated disclosure under Section 404a disclosed an ineffective ICFR with material weaknesses, while the remaining 78 percent disclosed an effective ICFR with no material weaknesses (SEC, 2009). A No-MW (MW) disclosure is also informationally equivalent to disclosing that the ICFR is effective (ineffective) because U.S. and Canadian regulations require companies to disclose that their ICFR is ineffective if there are one or more material weaknesses (CSA, 2009; SEC, 2003).

[3] For example, Ashbaugh-Skaife et al. (2009) find that firms that disclose Section 302 material weaknesses in "disclosure controls and procedures" (DCP) show an increase in cost of equity, but cost of equity decreases when such firms subsequently disclose no Section 404b material weaknesses in ICFR. Ogneva, Subramanyam, and Raghunandan (2007) find no direct association between disclosures of Section 404b material weaknesses in ICFR and cost of equity. Beneish et al. (2008) find stronger negative market reactions to Section 302 material weaknesses in DCP than Section 404b material weaknesses in ICFR. Section 302 (implemented in 2002 which preceded Section 404) required company management to evaluate and disclose the effectiveness of DCP, but DCP is distinct from ICFR. Under Section 302, there is ambiguity over whether disclosure of ICFR material weaknesses is mandatory and no independent ICFR audit is required (Ashbaugh-Skaife, Collins, & Kinney, 2007; Doyle et al., 2007; SEC, 2004). Further, although some ICFR components will be included in DCP, some companies may have DCP that exclude ICFR components that pertain to the accurate recording of transactions and disposition of assets or to the safeguarding of assets (SEC, 2003).

[4] Unlike the U.S. and Canada, many countries do not mandate ICFR disclosures and audits, but instead rely on companies following the principle of "comply-or-explain" with respect to voluntary codes (e.g., the Turnbull Guidance (2005) in the United Kingdom and Dutch Corporate Governance Code (2009) in the Netherlands). Financial Instruments and Exchange Law enacted by Japan Financial Services Agency (2007) mandates both ICFR disclosures and audits.