



## Discretionary disclosures using a certifier<sup>☆</sup>



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### ARTICLE INFO

#### Article history:

Received 17 December 2012

Received in revised form

25 October 2014

Accepted 3 November 2014

Available online 12 December 2014

#### Keywords:

Voluntary disclosure

Certification

### ABSTRACT

This paper studies two disclosure regimes when a firm with superior private information must rely on a strategic certifier to disclose credibly its prospects. In the ex ante (ex post) disclosure regime, the firm must decide on whether to hire the certifier before (after) observing the certifier's noisy assessment. Endogenously determined certification fees can actually cause the disclosure probability to decrease in disclosure precision. In the ex ante regime, favorable disclosures are more informative than unfavorable disclosures because of additional positive signaling effect. In the ex post (ex ante) regime, the certifier has incentives to increase (decrease) the disclosure precision.

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## 1. Introduction

The disconnect between the full disclosure predictions in the early analytical disclosure literature (Grossman, 1981 and Milgrom, 1981) and the empirically observed phenomenon of firms sometimes withholding information inspired the development of voluntary disclosure literature.<sup>2</sup> In his seminal papers, Verrecchia (1983, 1990) provides perhaps one of the first explanations for the phenomenon of firms concealing some information: the presence of proprietary disclosure costs can lead firms to disclose only relatively favorable information and withhold unfavorable information in equilibrium.<sup>3</sup>

This disclosure literature assumes that if firms choose to disclose, they must only disclose their private information truthfully; the only other choice firms have is not to make any disclosures. In contrast, the trading literature (e.g., Akerlof, 1970) often assumes that sellers cannot communicate their private information credibly. While both these sets of assumptions may be true in a variety of settings, we also empirically observe settings in which the credibility of firms'

<sup>☆</sup> We would like to thank Jeremy Bertomeu, Anne Beyer, Ronald Dye, Michael Fishman, Pepa Kraft, Ilan Guttman, Marco Ottaviani, S.P. Kothari (the editor), seminar participants at the AAA Meeting 2010, Northwestern University, the CMU Theory Conference 2010, the Colorado Summer Accounting Conference 2013, and, in particular, an anonymous referee for many helpful comments.

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<sup>2</sup> The unraveling principle (Grossman, 1981 and Milgrom, 1981) predicts that firms will fully disclose their private information under the following circumstances: (1) the firm always obtains private information, (2) investors know that the firm always has the private information, (3) both the firm and investors are Bayesian, rational players and have common priors, (4) the only disclosure options available to the firm are to disclose its private information truthfully or withhold it, but the firm cannot misreport it, (5) disclosing information is costless, and (6) the firm seeks to maximize its expected stock price.

<sup>3</sup> Jovanovic (1982) also examines disclosure models in which cost of disclosure can support non-disclosure of unfavorable private information by firms. Alternative explanations for the failure of unraveling in real world include Dye (1985) and Jung and Kwon (1988). While Verrecchia (1983, 1990) emphasize the presence of disclosure costs as an explanation for non-disclosures in equilibrium, Dye (1985) and Jung and Kwon (1988) offer investors' uncertainty about the manager's information endowment as another possible explanation for non-disclosures in equilibrium.

disclosures fall in between these two sets of assumptions (Lizzeri, 1999). In particular, we observe firms sometimes relying on independent certifying agencies to make their disclosures credible.<sup>4</sup> In such settings, having firms' disclosures certified by a neutral entity provides firms a credible means of communicating their private information.<sup>5</sup>

Our analysis extends Verrecchia's (1983,1990) results by endogenizing the disclosure cost. We model the disclosure cost as the certification fee charged by a monopoly certifier in exchange for its certification service.<sup>6</sup> The firm is incapable of communicating its superior private information about its future prospects in a credible manner and, therefore, must hire the certifier if it wishes to make any credible disclosures to the market. We examine a setting in which the certifier first announces the fee it will charge the firm in return for disclosing the certifier's noisy assessment of the firm's future prospects. The firm's objective is to maximize its expected stock price net of certification costs. Investors set the firm's stock price as equal to the firm's expected cash flow conditioned on all publicly available information. In such a setting, we examine and contrast two different disclosure regimes: the ex post and ex ante disclosure regimes. In the ex post (ex ante) disclosure regime, the manager decides whether to hire the certifier after (before) observing the certifier's noisy assessment of the firm's prospects.

In the ex post disclosure regime, our analysis predicts that when the owners of the firm enjoy limited liability (and, hence, equity prices are always non-negative), the likelihood of the firm making a disclosure is non-monotonic in the disclosure precision.<sup>7</sup> There are two effects that contribute to this non-monotonic result. First, as Verrecchia (1983, 1990) points out, holding the disclosure cost fixed, the disclosure likelihood increases in the precision of disclosure. When disclosure costs are exogenous, an increase in disclosure precision leads to more skeptical market beliefs in the absence of disclosure, which in turn increases the firm's disclosure incentives. We refer to this first effect as the direct effect. However, when disclosure costs are endogenous, a second (indirect) effect arises. This second indirect effect that we identify is that, in the ex post disclosure regime, the monopolist certifier seeking to maximize his expected profits increases his certification fees as the disclosure precision goes up.

Our analysis establishes that for low values of precision, the indirect effect dominates the direct effect identified by Verrecchia (1990), causing the disclosure likelihood to decrease in disclosure precision. However, for higher values of precision, the direct effect identified by Verrecchia dominates the indirect effect, thus causing the disclosure likelihood to increase in disclosure precision.

Further, if the owners of the firm were not protected by limited liability, our analysis predicts that the certifier's expected profit maximizing behavior would lead to the probability of disclosure being independent of its operating risks and the quality of its disclosure. This independence result would follow because the certifier's optimal fee choice would also vary in disclosure precision. Thus, in the absence of limited liability for the owners of the firm, if the disclosure precision went up (down) the certifier would increase (decrease) his fees in such a manner that the disclosure likelihood would remain unaffected.

These results again contrast with Verrecchia (1983, 1990) who establishes that when the firm is capable of communicating its private information credibly on its own but at a given cost, the likelihood of disclosure increases in the quality of its disclosure.

We next examine the ex ante disclosure regime in which, as explained before, the firm first privately observes a perfect signal about its prospective cash flow, but must decide whether to hire the certifier before observing the noisy assessment that the certifier will obtain (and disclose) if hired by the firm.<sup>8</sup>

In this ex ante disclosure regime, we find that the firm's disclosure probability actually decreases in disclosure precision. A disclosure conveys two types of information: first, it reveals the noisy assessment of the certifier (the literal effect). Second, a disclosure signals that the firm's own private information must have been favorable enough to warrant incurring

<sup>4</sup> The role of verification in enhancing credibility of firms' voluntary disclosures is well recognized in several streams of empirical literature as well. For instance, Ball et al. (2012) document how "independent verification of outcomes disciplines and hence enhances disclosure credibility." They also find that incurring higher audit fees is associated with more credible, voluntary management forecasts.

Further, Minnis (2011) examine the behavior of private unlisted firms who get their financial statements voluntarily audited, particularly on the eve of borrowing funds. Though auditing is not mandatory for such private firms, Minnis shows that such firms' disclosures become more informative with auditing and, as a consequence, lenders gain greater confidence in such private firms' voluntarily audited disclosures.

<sup>5</sup> The list of certifiers in various fields is long and includes auditors and rating agencies in financial services industries, national and international certification agencies such as International Organization for Standardization (issuing certification standards such as ISO 9000, ISO 14000, ISO 27000, and ISO 22000) and laboratories such as Underwriters Laboratory for manufacturing firms, ISO standard ISO 9126 for software testing, appraisers, engineering and architect firms engaged in certification services, etc.

<sup>6</sup> Certification fees are an important source of disclosure cost in capital markets. Butler and Rodgers (2012) analyze a sample of 360 bonds issued during 1997 in the U.S. In their sample, rating agencies' fees average \$157,687 (\$150,000 median), which represents about 65 basis points of the principal sum, but can range much higher (99th percentile is \$750,000). The average cost is of similar magnitude to the gross spread charged by investment banks for bringing the bonds to market, though medians suggest that underwriters charge greater fees – gross spreads average 83 basis points (median 66 basis points).

<sup>7</sup> We use the expressions "the firm makes a disclosure" ("no disclosure") to mean that "the firm hires the certifier to issue a certified report" ("the firm does not hire the certifier"). Further, the expression "the firm's disclosure" (and variants of this expression) is used as a short hand to mean that the firm hires the certifier to make a credible disclosure. Also, we use the term "the firm" to refer to the first generation/current owners of the firm.

Finally, we use the term "disclosure cost" to refer to the certifier's fee that the firm must incur if it wishes to make any credible disclosures.

<sup>8</sup> This sequence of events in which the firm must make its disclosure decision (i.e., whether to hire the certifier decision) before observing the certifier's signal is representative of a variety of settings. For instance, when the firm, with superior private information about its own operating environment, hires a rating agency, the firm is unlikely to be able to predict precisely the assessment that the rating agency will eventually form after the latter's own analysis. In other words, relative to the firm's own private information, the actual rating the market observes is noisy.

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