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DISCUSSION OF

Knowing Versus Telling Private Information About a Rival

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ABSTRACT: Bagnoli and Watts (2013) show that a firm will always disclose its private information when this information solely affects its rival's product market decisions. This result is robust to different competitive scenarios (Cournot or Bertrand competition), features (product heterogeneity or private information quantity), and levels of commitment (*ex ante* or *ex post*). I highlight how this result fits in the accounting disclosure literature, describe the intuition behind the theory, and discuss its implications for future work.

Keywords: discretionary disclosure; product market competition; private information.

INTRODUCTION

Over the last three decades, economics, finance, and accounting scholars have produced a large theoretical and empirical literature that examines firms' discretionary disclosure policies. A central premise of the theory is "any entity making a disclosure will disclose information that is favorable to the entity, and not disclose information unfavorable to the entity" (Dye 2001). Bagnoli and Watts (2013) add to this body of work by theoretically examining firms' incentives to disclose information that solely pertains to its rivals' product market prospects. They establish that a firm possessing such information will always disclose it, a result robust to several modeling assumptions.

In this discussion, I first provide a brief summary of the insights gained from the extant discretionary disclosure literature to highlight Bagnoli and Watts' contribution. I then discuss their modeling assumptions to isolate the intuition behind their result. Finally, I conclude with remarks on the model's implications and an area that perhaps provides a setting where one observes the modeled information environment.

DISCRETIONARY DISCLOSURE

Since the early 1980s, scholars have examined the incentives of informed agents revealing their information to uninformed counterparties in an exchange economy (see Grossman 1981; Milgrom 1981).[1] The most parsimonious representation of this exchange is described by a model of an asset seller

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[1] I will refrain from providing a survey of the entire discretionary disclosure literature as it is beyond the scope of this discussion. Verrecchia (2001) and Dye (2001) provide a comprehensive review of the theoretical accounting disclosure literature.

that possesses information about the asset's value that potential buyers for that asset do not. Absent the seller disclosing his/her private information, the buyers rationally suspect that the withheld information adversely reflects on the asset's value. Consequently, the price that sellers are willing to pay for the asset incorporates a discount reflecting their conjecture regarding the amount by which the asset value is lower. In equilibrium, the discount equals the amount that makes it in the seller's best interest to disclose his/her private information about the asset's value. This tradeoff represents the "full disclosure" equilibrium and is often referred to as the "unraveling" result.

What are the modeling assumptions that sustain the unraveling result? First, buyers know that the seller has value-relevant information about the asset offered for sale. Second, buyers are homogeneous in interpreting disclosure (and non-disclosure), i.e., they have identical beliefs about the seller's private information. Third, the seller's disclosure is credible, i.e., it is truthful. Finally, disclosure is costless to the seller and buyers alike. Subsequent work has attempted to overcome the unraveling result of full disclosure in part to explain empirically observed partial disclosure; economic agents do (sometimes) withhold information. Specifically, researchers have shown that firms/managers do withhold information when the assumptions behind the "full disclosure" model are violated. Broadly characterized, these modeling innovations are: (1) the seller may or may not be informed (Dye 1985; Jung and Kwon 1988), (2) buyers have heterogeneous beliefs about the seller's information (Lintner 1969), (3) the seller's disclosure may not be truthful (Milgrom and Roberts 1986), and (4) the seller faces disclosure costs (Verrecchia 1983). In the presence of these disclosure frictions, researchers have shown that the full disclosure equilibrium need not hold.

Bagnoli and Watts build on the disclosure-cost (innovation 4) narrative in the theoretical accounting discretionary disclosure literature. Specifically, prior work has shown that firms facing proprietary costs, i.e., costs only incurred if information is disclosed, will not always disclose information as potential counterparties now interpret non-disclosure as avoiding costs rather than suppressing unfavorable information. The simplest representation of proprietary costs is an exogenous fixed cost only incurred if a firm chooses to disclose its private information (Verrecchia 1983). In this case the disclosure equilibrium is a threshold: only information that is sufficiently favorable (above the threshold) is disclosed. Subsequent work endogenizes the proprietary cost of disclosure by considering firm disclosure policy in an imperfectly competitive product market where the cost of disclosing private information arises from competitors gaining a strategic advantage in their pricing or output choices (Darrough and Stoughton 1990). In this literature, the disclosure equilibrium is affected by modeling choices: cost- or demand-related information, Cournot or Bertrand competition, and whether the firm chooses its disclosure policy before or after observing the information (see Darrough 1993).

KNOWING VERSUS TELLING

Bagnoli and Watts study a firm's disclosure policy in a product-market setting, with two competing firms facing a linear demand curve and constant marginal production costs over a single period. Both firms are solely concerned with maximizing firm profits at the end of the period. Consequently, valuation, agency, and dynamic issues are absent. A firm privately observes information that solely pertains to its rival's operations (demand or cost related) and truthfully discloses it, if at all, pre-production. The information stochastically observed by a firm is fully revealing of either the demand or the cost parameters of its rival. The information structure modeled in Bagnoli and Watts is its novel contribution to the accounting disclosure literature. Specifically, the assumption that a firm's private information is decision-irrelevant to itself but is relevant to its rival's decisions leads to a robust full disclosure equilibrium, enhancing our understanding of the role played by proprietary costs in affecting firm disclosure policy.

Why is it in the best interests of the firm to always disclose its private information about its rival's economic prospects? To describe the intuition behind the result, I begin with the *ex ante* disclosure commitment scenario where a firm chooses its policy before observing the information so it does not know if the information is favorable or unfavorable to its own economic prospects. If the firm chooses not to disclose, its rival is uninformed and acts based solely on the expected value of the demand or cost parameters, which leads to either choosing to produce too much (or price too low) or too little (price too high). Given the assumptions of linear demand and cost, the expected profit of the informed firm is *convex and increasing* in the information's favorability (to itself). Consequently, a firm always prefers disclosing its private information (a gamble) to withholding the information and having its rival choose prices or quantities based on the expected values of the parameters. Thus, the unraveling result of full disclosure occurs when a firm's private information does not have any direct effect on the informed firm's demand or cost functions.[2]

If a firm chooses its disclosure policy after observing the information and knowing whether it is favorable or unfavorable (*ex post* disclosure), a similar full disclosure equilibrium results—the reason being that non-disclosure by the informed firm is rationally perceived by the rival as information that is unfavorable to the informed firm. Consequently, the rival will increase price or quantity, thereby reducing the informed firm's expected profit. Consequently, absent any exogenous disclosure costs, the informed firm always discloses its information. In both cases, *ex ante* and *ex post* disclosure, *private information (solely) about a rival (solely) has proprietary benefits*.

IMPLICATIONS AND EXTENSIONS

Bagnoli and Watts assume that the firm's private information is solely decision-relevant to its rival. This naturally leads to the inquiry: What information can a firm possess about a rival that is decision-irrelevant for itself? The authors provide several examples in the manuscript of firms disclosing information that potentially affects their rival's product markets. For instance, Bagnoli and Watts cite the example of AT&T's disclosure of the effect of smartphones on wireless networks, which is decision-relevant to Verizon which is introducing a new device that would use such networks. However, it seems that this information is decision-relevant for AT&T as well because the company also supports smartphones on its data networks. The other examples in the paper also suggest that the publicly disclosed information is decision-relevant for both the disclosing firm and its rival. So, why is it so difficult to cite examples that fit the modeled information environment?

There are a few potential explanations for the difficulty in citing examples of firms disclosing information that does not affect their own business. First, there are potential costs associated with acquiring information about a rival and disclosing it publicly, which are unmodeled in Bagnoli and Watts. For instance, industrial espionage is prohibited in the U.S. under the Economic Espionage Act of 1996 (18 U.S.C. §§). Because acquiring and disclosing such information has costs, the no-disclosure equilibrium likely prevails with regard to such information. Second, perhaps firms that possess information about their rival choose to disclose it surreptitiously. For instance, blogs and chat rooms provide some anonymity to a person disclosing information and are yet effective in disseminating such information. Another likely reason is that the single-period model is perhaps too restrictive in explaining empirically observed behaviors.

A single-period setting, as modeled in Bagnoli and Watts, is analytically appealing because of its parsimony and ability to provide "clean" comparative static predictions. However, firm

[2] If the information affects the informed firm's demand parameter ($m = 1$ case under Bertrand competition in Bagnoli and Watts), then it prefers to suppress disclosure.

disclosure policy is based on strategic considerations that are multi-period in nature. For instance, a firm may suppress information that is potentially favorable to its rivals to discourage potential entrants into its product market. Similarly, unfavorable information disclosures may create entry barriers or potential exits by rivals. Consequently, multi-period considerations potentially lead to other equilibriums than the full-disclosure equilibrium established in Bagnoli and Watts. Multi-period models also provide the opportunity to explore other firm considerations that affect disclosure policy such as agency issues. For instance, disclosing favorable information about a rival may benefit the disclosing firm but may be personally costly to its manager if it adversely affects his/her short-term performance appraisal. Overall, the Bagnoli and Watts framework provides a starting point for future research to examine dynamic or multi-period considerations in firm disclosures of information about rivals.

The labor market provides a potential setting where a party (firm or agent) often is privy to information about its rival and this information is decision-irrelevant for itself. For instance, firms possess information about an employee's ability that is decision-relevant for a competitor attempting to hire away the employee. Potential recruiters solicit recommendations from past employers in an effort to gather this information. In academia, promotion and tenure decisions are affected by evaluations of a candidate's scholarship by employees of a rival institution. Disclosing information in this setting is inherently strategic, with few proprietary costs, yet we often observe credible full disclosure of private information. In fact, the private information in labor markets has the Bagnoli and Watts feature of *proprietary benefits* that accrue to the disclosing entity. Even though the labor market is not modeled in this paper, the insight that an entity with information about its rival always discloses is applicable.

CONCLUSION

Bagnoli and Watts (2013) demonstrate that firms always disclose their private information about their rival's product market prospects, if this information does not pertain to their own demand or cost characteristics and if disclosure is costless. Consequently, information about a rival has proprietary benefits to a disclosing firm. The full-disclosure equilibrium derived in this paper is robust to several modeling choices and assumptions. As such, this paper complements the existing disclosure literature that has until now focused on proprietary costs of disclosure.

The Bagnoli and Watts paper sets the stage for further research on disclosure of information that is not necessarily decision-relevant to the disclosing party. In my discussion, I identify two potential areas of inquiry that may prove fruitful. First, to explore the strategic nature of disclosures, multi-period models are required where dynamic incentive issues and firm entry-exit decisions can be explored. Second, since we observe the Bagnoli and Watts modeled information structure in labor markets, future extensions of this model should consider exploring disclosure behavior in these settings.

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