The economic benefits of FASB's recommended disclosures: Evidence from the pharmaceutical industry

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ABSTRACT

Prior research has documented an association between disclosure quality and various economic benefits, most notably between the cost of equity capital and market liquidity. We extend this literature by investigating whether pharmaceutical firms that comply with recommended voluntary disclosures of the Financial Accounting Standards Board (FASB) exhibit lower bid–ask spreads, greater market depth, and lower cost of equity capital. Cross-sectional analysis using pharmaceutical firms reveals a negative association between disclosure quality and bid–ask spreads (both the total spread and its adverse-selection component), but no association between disclosure quality and either market depth or the ex ante cost of capital. Overall, our findings provide some evidence of benefits accruing to pharmaceutical firms that comply with the FASB's recommended voluntary disclosures under the assumption that lower bid–ask spreads reduce the cost of capital and strong evidence that complying with FASB's recommended disclosures provide a direct benefit to small investors, those who bear the entire weight of bid–ask spreads.

1. Introduction

In 2001 the Financial Accounting Standards Board (FASB) published “Improved Business Reporting: Insights into Enhancing Voluntary Disclosure” as part of their broader Business Reporting Research Project, hereafter the “EVD Report” (FASB, 2001). The EVD Report was intended to identify “best practices” in non-financial disclosure for firms operating in eight different industries (including the pharmaceutical industry) with the objective of helping “... companies (the preparer community) improve their business reporting by providing evidence that many leading companies are making extensive voluntary disclosures and by listing examples of these disclosures...” (FASB, 2001, v). The report was explicitly premised on the assumption that “...improving disclosures reduces the average cost of capital” (FASB, 2001, v). To date, it is an unsettled issue as to whether greater compliance with the FASB’s recommended disclosures (EVD Compliance) is rewarded with economic benefits, including a lower average cost of capital.

We lend insight into this issue by investigating whether greater EVD Compliance by pharmaceutical firms is associated with a lower cost of equity capital, lower bid–ask spreads and greater market depth as was assumed by the FASB. We focus on pharmaceuticals because the heightened information asymmetry arising from their significant investment in intangible assets suggests potentially strong effects arising from expanded voluntary disclosure (Core, 2001) and thus the pharmaceutical industry emerges from the set of eight industries (examined in the EVD Report) as the most favorable setting to test for these assumed benefits.

Our cost of capital tests are based on ex ante cost of equity capital measures. The ex ante tests have the virtue of providing comparability with prior studies (e.g., Botosan, 1997; Botosan & Plumlee, 2002), yet are limited because the ex ante cost of equity capital cannot be observed and must be empirically estimated. We measure the ex ante cost of equity capital using the PEG metric (Easton, 2004) and analyze it using pooled cross-sectional regressions.

We follow our cost of capital tests with market liquidity tests intended to determine whether greater EVD Compliance is associated with greater market liquidity as measured by narrower bid–ask spreads (both total and adverse-selection component) and greater market depth. We focus on both spreads and depth to provide a more complete analysis because market makers can adjust either or both to protect against the risk of informed trading (Lee, Mucklow, & Ready, 1993).

We find that EVD Compliance is negatively associated with bid–ask spreads (both the total spread and its adverse-selection component). We find no evidence that EVD Compliance is associated with market depth or the ex ante cost of capital. Interpreted in light of existing theory, these findings suggest that EVD Compliance appears to...
improve capital markets by reducing information asymmetry among investors and thus investors’ transaction costs, but does not appear to induce market makers to increase market depth or induce investors to use lower equity discount rates.3

These findings contribute to the literature in at least two ways. First, our results provide feedback information to the FASB by documenting that EVD Compliance in the pharmaceutical industry is associated with one type of economic benefit they assumed would follow (i.e., greater market liquidity). Second, our results provide evidence that greater EVD Compliance in the pharmaceutical industry benefits one of the FASB’s constituents, small investors who incur the full cost of bid–ask spreads. Third, we document in yet another setting the economic benefits associated with high quality financial reporting using an industry-specific metric of disclosure quality that is independent of the reporting quality metric commonly used in prior studies (i.e., the ranking of financial reporting published by the Association for Investment Management and Research [AIMR]). The AIMR measure of financial reporting is available only for the very largest firms within each industry (typically 10 to 20 firms), which has the effect of introducing a size-related selection bias and necessitating an interindustry design (due to the limited number of firms within any one industry). Our intraindustry research design arguably has greater internal validity as compared to interindustry tests with much less size-related selection bias. Thus, our study also contributes by probing the sensitivity of prior research to size-related selection bias and uncontrolled interindustry effects.

The remainder of this paper is divided into five sections. Section 2 reviews the prior literature, develops our motivation, and presents our research hypotheses. Section 3 presents a discussion of FASB’s recommended disclosures, Section 4 describes the sample and variables used in the tests of ex ante cost of capital and market liquidity. Section 5 describes these research methods and findings. Section 6 reports several robustness checks and Section 7 summarizes and concludes our paper.

2. Prior research, motivation, and hypotheses development

Prior research documents an association between financial reporting quality and both the ex ante cost of equity capital (e.g., Botosan, 1997; Botosan & Plumlee, 2002; Francis, LaFond, Olsson, & Schipper, 2004) and the ex post cost of equity capital (Francis et al., 2004).4 Financial reporting quality also has also been linked to market liquidity (Greenstein & Sami, 1994; Welker, 1995; Coller & Yohn, 1997; Healy, Hutton, & Palepu, 1999; Leuz & Verrecchia, 2000) which represents an indirect link with the cost of capital because investors appear to demand compensation for holding illiquid securities (Amihud & Mendelson, 1986; Brennan & Subrahmanyam, 1996). In these prior studies, financial reporting quality has been measured in various ways including: (1) researcher-constructed indices (Botosan, 1997), (2) the consensus judgment of financial analysts as reported in rankings of financial reporting quality issued by AIMR (e.g., Botosan & Plumlee, 2002; Welker, 1995; Healy et al., 1999; Hefflin, Shaw, & Wild, 2005), and (3) events marking improved reporting regimes (Greenstein & Sami, 1994; Coller & Yohn, 1997; Leuz & Verrecchia, 2000). We extend this literature by providing evidence that speaks to the efficacy of EVD Compliance in reducing cost of equity capital and increasing market liquidity.

Financial reporting quality can be directly linked to the cost of equity capital through the theories of incomplete information, estimation risk, information asymmetry, and impacts on future cash flows. Incomplete information (Merton, 1987) arises when investors are unaware of all investment opportunities, which results in a smaller investor base and lower stock price. Estimation risk (e.g., Barry & Brown, 1984) arises when investors are uncertain about the return distribution parameters, which leads investors to demand higher required rates of return. Information asymmetry risk (Easley & O’Hara, 2004) arises when informed investors exploit their informational advantage to earn trading gains at the expense of less informed investors. Holding more stocks does not diversify this risk because informed investors, relative to uninformed investors, are always better able to shift their portfolio weights in response to new information. Thus, this is a source of non-diversifiable risk for which investors require compensation. While the notion that information asymmetry risk cannot be diversified is somewhat controversial (Hughes, Liu, & Liu, 2007), Leuz and Verrecchia (2005) show that even if this risk is fully diversifiable, information quality has an effect on the cost of capital to the extent that it impacts expected cash flows.

Financial reporting quality can be indirectly linked to the cost of equity capital if it affects market liquidity. Black (1971) defines a liquid market as one with narrow bid–ask spreads in which large trades can be absorbed without significantly moving market prices. The latter (i.e., price impact of a trade) is described as market depth. The former (i.e., bid–ask spread) is the transaction cost incurred by investors because market makers charge investors more to buy a stock (ask price) than the investor will receive when selling the stock (bid price). The spread between bid and ask prices is the market maker’s source of gross profit, and must be wide enough to cover the market maker’s operating costs including adverse-selection costs (Stoll, 1978a).

Adverse-selection costs are the losses the market maker sustains in trading with those who possess private information about the true worth of the security, which is a condition known as “information asymmetry.” The market maker responds to information asymmetry and the related adverse-selection costs by widening spreads (Glosten & Milgrom, 1985) and reducing market depth (Kyle, 1985) with the combined effect of reducing market liquidity. Lower market liquidity impacts cost of equity capital because investors appear to demand an “illiquidity premium” for holding illiquid stocks. Specifically, Amihud and Mendelson (1986) find a positive association between bid–ask spreads and stock returns while Brennan and Subrahmanyam (1996) show a positive relation between stock returns and inverse market depth. Financial reporting quality is thus indirectly linked to the cost of capital (via its effects on spreads and depth) to the extent that higher reporting quality reduces information asymmetry.

In summary, theory predicts that greater compliance with the FASB’s recommended disclosures, discussed below, should directly reduce the cost of equity capital if the disclosures (1) reduce incomplete information, (2) reduce estimation risk, (3) reduce information asymmetry, and/or (4) impact expected future cash flows. EVD Compliance also should improve market liquidity (narrow spreads or increase depth) if the disclosures reduce information asymmetry. Based on the preceding discussion, we propose the following research hypotheses specified in alternative form:

H1. There is a negative association between EVD Compliance and the cost of equity capital.

H2a. There is a negative association between EVD Compliance and the bid–ask spread.

H2b. There is a negative association between EVD Compliance and (inverse) market depth.

3. FASB’s recommend disclosures

The EVD Report was prepared based on the FASB’s assumption that compliance with the EVD-recommended disclosures would provide

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3 The latter statement must be interpreted with caution because failure to reject the null does not confirm the null.

4 Financial reporting quality is a multidimensional construct that encompasses such dimensions as earnings quality, shareholder relations, financial disclosures, and non-financial disclosures. Our focus on EVD Compliance relates to the quality of non-financial disclosure. Throughout the paper, references to “financial reporting quality” relate to the multidimensional construct while references to “disclosure quality” relate to the quality of nonfinancial disclosure.
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