An Investigation of the Causal Effect of Voluntary Disclosure Quality on Cost of Equity Capital

Master Thesis in Corporate Finance

Department of Banking and Finance
University of Zurich

Advised by

Prof. Dr. Alexander Wagner

Submitted by

Dr. sc. ETH Andreas Zweifel

March 14, 2012

EXECUTIVE SUMMARY

I. Problem

Corporate disclosure is essential for the proper functioning of capital markets. Managers, analysts and market specialists have expert knowledge about their firm, which they can use to deceive potential shareholders about the value of their investment project or expropriate resources provided by investors to the firm. This informational disadvantage creates information asymmetry between the firm and its investors. As a consequence of investors' uncertainty about the quality of investment opportunities and lack of distrust towards management, investors charge an equity premium for providing capital to the firm. This additional equity premium causes firms with a high information asymmetry to have a *ceteris paribus* higher cost of equity capital than firms with a low information asymmetry. To the extent that a higher cost of equity capital is detrimental to the value of a firm, reducing information asymmetry is also in the interest of managers who aim at maximizing firm value. Management can reduce information asymmetry by providing higher quality disclosures of private information to the capital markets. However, increasing disclosure quality involves direct costs associated with the production of quality information and indirect costs arising from reduced incentives, litigation and proprietary costs for the firm (Core, 2001). Management thus faces a trade-off of reduced information asymmetry against direct and indirect costs from increased disclosure quality. As a result, increasing disclosure quality beyond the level of mandatory disclosures required by disclosure regulations may not always be optimal. In particular, information that unfavorably affects firm value is not disclosed to the capital markets (Verrecchia, 2001).

Since disclosure costs and the quality of accounting information are different across firms, the choice of disclosure level is unlikely to be a random event but rather depends on firm performance and governance (Healy & Palepu, 2001). As a result, the association between voluntary disclosure quality and cost of equity capital is most likely affected by self-selection bias. The direction of causality in documented associations using standard OLS regression techniques is therefore unclear, resulting in researchers' attempts to deal with the underlying endogeneity problem (Welker, 1995; Hail, 2002; Brown & Hillegeist, 2003). Recent studies analyzing the impact of corporate disclosure on firm value have increasingly made use of instrumental variables and fixed-effects estimation to mitigate endogeneity problems arising from unobserved firm heterogeneity and omitted variables bias (Nikolaev & Van Lent, 2005; Larcker & Rusticus, 2010). Nevertheless, empirical evidence on the sign and magnitude of the relation between voluntary disclosure quality and cost of capital has produced conflicting results so far, suggesting that these novel techniques are only partially successful in reducing endogeneity problems.

II. Purpose of the study

This study investigates the relation between voluntary disclosure quality and cost of equity capital in a cross-sectional setting. A two-stage least squares approach (2SLS) is adopted to adjust for endogeneity. The study attempts to close the extant research gap by evaluating potential instrument candidates that are exogenous to a firm's disclosure policy. Further, this study aims at identifying the driving force behind the likely variable association of voluntary disclosure quality with cost of equity. In particular, the impact of analyst following and analysts' behavior with respect to their familiarity with firms that have a long stock listing history is explored in this study. Assuming that the relation in question is effectively moderated by a firm’s stock listing history, an interaction between voluntary disclosure quality and stock listing history is included in the empirical disclosure model. Methodologically, the analysis thus also addresses the difficulties related to finding valid instruments in the presence of interaction effects with exogenous control variables. The study makes a substantial contribution to contemporaneous accounting research through justifying the choice of instrumental variables by economic theory and reporting specification tests for instrument weakness and relevance (Angrist & Krueger, 2001; Larcker & Rusticus, 2010).

III. Methods

Following Hail (2002) and Eugster & Wagner (2011), this study uses the annual value reporting rating conducted by the Department of Banking and Finance (DBF) as a measure of voluntary disclosure quality. Moreover, I adopt the mean implied cost of equity method as proposed in Hail & Leuz (2006) to calculate my *ex-ante* cost of equity capital proxy for a well-diversified sample of Swiss firms (Botosan et al., 2011). The study investigates a sample of 130 firms in nine different market sectors controlling for various firm characteristics such as stock listing history, firm size, financial leverage, profitability, and risks associated with growth opportunities and stock price volatility. To test the causality hypothesis, I develop an empirical disclosure model that includes a proxy for stock listing history as a moderator variable, thus analyzing the role of accumulated background information with respect to analysts' information processing activities.

Analysts are assumed to make increased use of accumulated background information about a firm to enhance their production of private information from publicly disclosed quality information with growing stock listing history. Since analysts’ information processing activities exacerbate information asymmetry but are positively associated with voluntary disclosure quality, they increasingly offset the direct negative effect of voluntary disclosure quality on cost of equity capital. As a result of the positive indirect effect of enhanced analysts’ information processing activities on information asymmetry becoming stronger, the net effect of voluntary disclosure quality on cost of equity is reversed at some point in stock listing history.

Apart from the causality hypothesis, I introduce two further hypotheses stating that self-selection likely causes OLS coefficients to be insignificant and biased towards zero (reverse causality hypothesis) and that the 2SLS model should outperform OLS by producing consistent coefficients in the presence of endogeneity (consistency hypothesis). These hypotheses are subsequently tested implementing contemporary model specification tests such as the Cragg-Donald (1993) *F*-statistic for weak instruments, the Stock-Wright (2000) *S*-statistic for instrument relevance and the Durbin-Wu-Hausman endogeneity test.

IV. Results

The multivariate regression results show that a significant relation between voluntary disclosure quality and cost of equity capital exists that strongly varies with my proxy for stock listing history. These findings are consistent with Botosan (1997), who reports a negative association between her voluntary disclosure measure and cost of equity capital only for firms with a low analyst following, and Kristandl & Bontis (2007), who document an unexpected positive relation for firms providing a relatively high level of historical information in their annual reports. Both, analyst following and the proportion of historical information provided in annual reports disclosures are likely to increase with a firm's stock listing history.

Consistent with evidence from prior studies, firms with a relatively long stock listing history, a lower book-to-market ratio, higher capital intensity and lower risks associated with growth opportunities and price volatility have a lower cost of equity capital. Surprisingly, firm size, profitability and market leverage do not show any association with cost of equity capital regardless whether treating voluntary disclosure quality as endogenous or not.

The main conclusions are unchanged when adjusting for endogeneity, suggesting that stock listing history actually moderates the relation between voluntary disclosure quality and cost of equity capital. However, the results should be interpreted with caution since 2SLS does not improve over OLS and the study's findings may not be generalizable to alternative measures of voluntary disclosure quality, different market sectors or investigation periods.