Web-based Disclosure Quality and the Effect on Equity Prices in Europe

Bachelor Thesis

in

Corporate Finance

(Banking & Finance)

at the

Department of Banking and Finance

University of Zürich

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Filing Date: July 13, 2011

Executive Summary

Problem

The price of a given good is lower than its actual value, if the buyer does not have the same information as the seller. Akerlof's (1970) famous example of *the market for lemons* proves this statement to be true. Managers are in possession of private information and investors face the problem of information asymmetry, when deciding whether a stock should be bought or not. These asymmetries between managers and investors can be reduced through disclosure. Besides the mandatory disclosure, firms can choose their level of voluntary disclosure.

It is important to weigh the costs and benefits of voluntary disclosure. To provide more information is costly and competitors can also use the additionally published information to their advantage (Healy and Palepu (1995)). Skinner (1997) finds firms with higher disclosure level to pay higher legal costs, but this applies only for the U.S. These are possible downsides of higher disclosure quality, but there are advantages as well: There is a broad research field, which tries to find the effects of voluntary disclosure quality (VDQ) on capital markets. Higher market liquidity for firms with a high level of VDQ can be seen in Healy, Hutton, and Palepu (1999). Botosan (1997) and Hail (2002) find lower costs of capital for companies with high VDQ. And Eugster and Wagner (2011) suggest an investment strategy, buying rather opaque firms with high levels of VDQ (and sell those with low VDQ). They show evidence for *risk adjusted excess returns* for this kind of portfolio and find a positive effect of VDQ on equity prices.

This thesis contributes to this field of research by looking at the effect of a specific form of disclosure: Disclosure quality on corporate websites. The Internet has become a very important source of information this last decade, especially for company related information (Rubin and Rubin (2010)). Bui and Sankaran (2009) have found a negative effect between VDQ on the web and the cost of capital, similar to the work of Botosan (1997) and Hail (2002). As far as I know, the effect of web VDQ on equity prices has never been researched. This thesis tries to measure this effect for a European sample for the years from 2001 to 2009.

Method

Gompers, Ishii, and Metrick (2003) use a portfolio strategy to show the effect of corporate governance on equity prices. Eugster and Wagner (2011) use the same method to measure the effect of an annual report rating on stock returns. The same portfolio strategy is also used in this thesis: The returns of different portfolios (that contain firms with a certain level of web VDQ) are regressed against four risk factors. The CONSTANTS (or *alphas*) of these regression lines are calculated and represent the *risk adjusted excess returns* for the portfolios, regressed before. These CONSTANTS are compared. Higher excess returns are expected for portfolios with a higher disclosure quality level.

This four risk factor model is an expansion of the traditional *capital asset pricing*

model (CAPM) by Sharpe (1964) and Lintner (1965), which contains only the market factor (RMRF). The additional risk factors were later discovered. Fama and French (1993) account for two factors, called HML (high minus low) and SMB (small minus big). One more risk factor is included by Carhart (1997) and captures the momentum effect. This UMD (up minus down) factor is the last to build a broadly accepted model, which explain past stock returns. Schmidt et al. (2011) describe the construction of these factors for the U.S. and Europe. The risk factors for Europe were personally made available to me by Schmidt et al. (2011).

The KWD Webranking, a web ranking by a Swedish consulting company, is used to measure the disclosure quality of corporate websites. After downloading all rank lists for the past decade, I aggregated them and excluded firms, that have no data available on *Thomson Reuters Datastream* or are not primary listed in a European OECD (*Organisation for Economic Co-operation and Development*) country. Returns, market capitalisation, industry, number of analysts and other data are available on *Thomson Reuters Datastream*, *Thomson Reuters Worldscope* and *Wharton Research Data Services* (WRDS).

This wide collection of data is used to build all the portfolios. The returns of these portfolios are later regressed against the four risk factors described above. I built quintile portfolios for the *full sample* and different subsamples. These subsample come from sample splits, using size and number of analysts as split variables (Eugster and Wagner (2011)). The quintile portfolios are called TOP, MIDTOP, MID, MITBOT and BOT. The TOP portfolio contains the 20% of firms that have the best VDQ on the web. The BOT (*bottom*) portfolio includes the 20% of firms with the lowest web VDQ. The three portfolios in between are built accordingly. If VDQ has a positive effect on equity prices, a higher *risk adjusted excess return* (CONSTANT) is supposed to be found in the TOP portfolio than in the BOT portfolio. If the BOT portfolio has negative excess returns, an even better portfolio can be constructed, called the TOP - BOT portfolio. In the TOP - BOT portfolio, the TOP portfolio is bought and the BOT portfolio is sold short. This strategy may lead to even higher returns, if the excess returns of the BOT portfolio is negative.

Results

In the past it has been difficult to measure the effect of VDQ on the capital markets in full samples. The effect on cost of equity, found by Botosan (1997), does only apply for firms with low analyst coverage. However this thesis shows significant positive excess returns for the equally weighted[1] TOP portfolio. A annualised *risk adjusted excess return* of 14.03% is shown in this thesis. But the value weighted[2] TOP portfolio does not support this finding and therefore additional sample splits are made.

Like in Eugster and Wagner (2011), the sample in this thesis is split, to see, if there is a stronger effect for firms with low analyst coverage or small firms. The *full sample* is first

[1] The same amount of money spent on each stock, no matter the market capitalisation.
[2] The money spent on each stock is proportional to its market capitalisation.

divided into groups with low and high analyst coverage and secondly into groups with small and large companies. The returns of the quintile subsample-portfolios are regressed again. For companies with the lowest analyst coverage an excess return of 18.30% per annum is achieved, but only in the equally weighted (EW) setup (TOP - BOT portfolio). The VW TOP - BOT portfolio still does not show any significant *risk adjusted excess return*.

The effect for small firms is much clearer. An annualised *risk adjusted excess return* of 29.99% (17.73%) is found in the equally weighted (value weighted) smallest firm TOP - BOT portfolio. This result shows a positive effect of voluntary disclosure quality on the web, at least for small companies. Several robust tests were done for this thesis to check the above-mentioned result. The effect of web VDQ on equity prices is measured for different starting points, for different periods in time (*before crisis* and *during crisis*) and for corrected returns (returns above 50% and below -50% are corrected). Additionally, the size split is done a second time, not with the *full sample*, but with the *analyst sample*. Some of these tests reduce the effect of web VDQ on stock prices to some extent, but they always fail to erase the effect completely.

Evaluation

Even though the significant regression results show a positive effect of web VDQ on equity prices, no causal relationship is evident. Other (omitted) variables can be present and influence the disclosure quality on the web or the relationship between web VDQ and equity prices.

Additionally, the last decade was a turbulent time for the stock markets. Two crises and two big accounting scandals make it difficult to measure effects on capital markets. Therefore I strongly recommend to do more robust tests on this sample and to research further on this topic. Among other things, the effect of web-based disclosure quality on market liquidity and on *cost of capital* should be tested. But most importantly, web-based disclosure quality shall remain an important topic in research.