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Differences in responses to accounting-based and market-based benchmarks – Evidence from Nasdaq

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ABSTRACT

We study how managers of Nasdaq-listed firms respond to the threat of delisting due to quantitative listing deficiencies. We find that managers' responses vary by deficiency type, specifically, whether the deficiency is accounting-based (related to shareholders' equity) or market-based (related to market value or bid price). Firms with accounting-based deficiencies exhibit income-increasing discretionary accruals. In contrast, firms with market-based deficiencies do not. We also find that shareholders' equity-deficient firms respond with equity issuances and bid price-deficient firms initiate reverse stock splits. These findings suggest that firms trade off among methods to meet benchmarks based on costs and constraints. In additional analyses, we find some evidence that firms' delisting avoidance strategies succeed in delaying or avoiding regulatory delistings.

1. Introduction

In this study, we analyze managers' responses to the receipt of accounting- and market-based listing deficiency notices from The Nasdaq Stock Market, Inc. (Nasdaq). We also examine whether managers' responses to such notices delay or prevent regulatory delisting. We define listing deficiency as an accounting-based deficiency when shareholders' equity falls below the regulatory minimum, while market-based deficiencies are caused by either an insufficient bid price or an insufficient total market value of listed shares. We examine three types of delisting avoidance strategy: accruals manipulation, equity issuance, and reverse stock splits.[1]

Nasdaq's enforcement of its listing rules begins with the issuance of a staff deficiency notice. The deficiency notice cites noncompliance with at least one listing requirement and informs management that the company's shares will no longer be eligible for continued listing on the Nasdaq market if the deficiency is not corrected by a specified date. We use this unique institutional setting to provide evidence on possibly different responses to accounting-based versus market-based deficiencies.

Regulatory delistings impose substantial costs on shareholders, as discussed in the next section. However, little if any empirical evidence addresses how managers of U.S.-listed companies respond to the threat of delisting triggered by the issuance of deficiency notices. Such evidence should be of interest to regulators who design stock exchange listing requirements seeking to protect investors and promote market quality. Our research is also motivated by the question of how managers choose among different strategies for meeting benchmarks. Specifically, we examine whether the use of discretionary accruals to meet regulatory benchmarks varies depending on whether the benchmarks are based on earnings or stock prices/market values.

Prior research has documented many regulatory and contractual benchmarks that motivate managers to manage earnings.[2] In contrast, evidence on the use of accruals management to meet stock price- (capital markets-related) thresholds is mixed. Although some researchers conclude that participants fail to understand the valuation implications of unexpected accruals, others argue that it is incorrect to conclude that

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[1] We do not investigate "real activities" management such as abnormal levels of cash flows from operations, production costs, and discretionary expenses (Roychowdhury, 2006). Real activities management is most plausible when firms experiencing normal operating conditions seek to meet analyst or related earnings targets. In contrast (as discussed later), the typical company that receives a Nasdaq deficiency notice is financially stressed and faces a complex mix of financial constraints and incentives that likely preclude "real activities" management as a response. This is consistent with Zang (2012) who addresses the trade-offs between earnings management methods and finds that firms in poor financial health are more likely to engage in accrual-based earnings management than real activities management to meet earnings benchmarks.

[2] Refer to the next section for discussion.

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intentional earnings management (for example, occurring at the time of security issuance) successfully misleads investors.[3]

We hypothesize that firms receiving shareholders' equity deficiency notices exhibit income-increasing discretionary accruals in the deficiency year because such earnings management directly increases shareholders' equity through its positive effect on net income. We also hypothesize that equity-deficient firms are more likely to issue equity in the quantitative deficiency notice year than in pre-deficiency notice years, and that bid price-deficient firms are more likely to implement reverse stock splits in deficiency versus pre-deficiency notice years. In a final analysis, we provide descriptive evidence on the extent to which earnings management, equity issuance, and reverse stock splits are positively associated with the avoidance of delisting.

We restrict analysis to Nasdaq-listed companies, which are the largest group of regulatory delistings among the major U.S. exchanges.[4] Delistings due to quantitative deficiencies comprise the majority of Nasdaq regulatory delistings.[5] Deficiency firms are identified through searches of Forms 8-K for disclosures of noncompliance with stock exchange listing rules, and from deficiency data for 2004 and 2005 shared with the authors by Nasdaq staff. The initial sample is 784 firms that received 2490 quantitative deficiency notices during 2004–2011. The final sample is 482 firms (2351 firm years) that remain after deletion of financial firms and firms for which required Compustat financial data were missing.

The event year (deficiency year) is defined as the earliest year during 2004–2011 in which a quantitative deficiency notice is received; only those event years and firm years preceding the event year are included in the sample.[6] Firms are classified as either equity-deficient, bid price-deficient, or market value-deficient based on the type of deficiency cited by Nasdaq in the deficiency year, or multiple-deficient in cases where the firm is cited for two or more types of deficiency in the deficiency year.

The final sample consists of 63 equity-deficient, 282 bid price-deficient, 35 market value-deficient, and 102 multiple-deficient companies. We test the primary hypothesis by comparing abnormal accruals between event (deficiency) firm years and pre-event (non-deficiency) firm years for the same set of firms. In regression model estimation, abnormal accruals are the dependent variable, and independent variables include an event (deficiency) firm-year indicator variable and control variables. Regression models are estimated for the full sample and for subsamples based on deficiency type. Similar analyses are conducted in which the deflated amount of new equity issued and an indicator variable for implementation of reverse stock splits are regressed on the event firm-year indicator variable.

As with all empirical research, this study is subject to limitations because our research design decisions are the result of choosing between imperfect options. First, we cannot determine the extent to which managers use delisting avoidance strategies before the event year in anticipation of possible listing rule noncompliance.[7] Second, there are difficulties involved in shortening the event window to periods of less than one year. Many frequently used remedial actions (such as reverse stock splits) require shareholder approval, and/or involve significant lead times. Another problem is that the issuance of a deficiency notice often is followed by private communications between deficiency companies and Nasdaq staff. As a result of these communications, companies might be granted extra time to remedy their deficiencies, and this possibility may influence their actions. In addition, firms receiving deficiency notices are often under severe financial stress, with managers facing many competing demands in determining possible survival responses.

This study uses a within sample design (comparing event firm years to pre-event firm years for the same group of firms). In our setting, within sample design is preferable to use of a "control group" of different firms, because of the challenges in controlling for the time-series pattern of increasing financial stress that precedes firms' receipt of deficiency notices as shown, for example, in Table 3C.

As hypothesized, we find evidence consistent with equity-deficient firms manipulating accruals after receiving deficiency notices. Additionally, we do not find evidence for the other three subsamples that deficiency notice firm years exhibit significantly more positive abnormal accruals than do the pre-deficiency firm years. Our results are robust to various accruals models and other research design choices. Thus, in the setting we examine, managers' responses differ according to whether regulatory benchmarks are accounting-based or market-based.

An important incremental contribution of our discretionary accruals analysis is that prior literature on earnings management and stock market requirements primarily focuses on Chinese stock exchanges (Chen & Yuan, 2004; Cheng, Aerts, & Jorissen, 2010; Fan, Thomas, & Wang, 2015; Jiang & Wang, 2008) and/or examines indirect measures of delisting risk (Li & Zhou, 2010). In contrast, our study analyzes a U.S. setting, using a direct measure of quantitative listing deficiency.

Also consistent with our predictions, we find a positive association between deficiency notice firm years and the amount of equity raised for the subsample of equity-deficient firms but not the other subsamples. As expected, we find that bid price-deficient firms are more likely to implement reverse splits in the deficiency year than in pre-deficiency years. However, only 25 of the 282 bid price firms effect reverse splits during the deficiency year, leaving open the question of why abnormal accruals are not observed in this subsample.

Together, results of this study suggest that managers use different approaches to respond to different types of deficiency notice, based on these approaches' expected effectiveness and inherent limitations. The evidence in this study adds to research that investigates the extent to which managers use income-increasing discretionary accruals to meet market-based benchmarks. Many studies indicate that investors are not "fooled" by managers' use of accruals manipulation to increase firm value (Baber, Chen, & Kang, 2006; Bartov, Givoly, & Hayn, 2002; Das, Shroff, & Zhang, 2009; DeFond & Park, 2001; Gleason & Mills, 2008; Shivakumar, 2000). Given that investors should know that deficiency firms might attempt to benefit from accrual-based earnings management, many might assert that such earnings management will be ineffective (and therefore not used) in response to the receipt of bid price and market value deficiency notices. Evidence in this study is consistent with such an assertion.

Analysis of involuntary delistings provides some support for the view that managers' delisting avoidance strategies are effective. For the equity deficiency subsample, delisting avoidance is positively associated with the magnitude of abnormal accruals, but not with the amount of new equity issued. In the bid price subsample, reverse splits are associated with delisting avoidance. These results hold for both short-term delisting (delisting that occurs during years $t = 0$ and $t = +1$ relative to the event year) and medium-term delisting (delisting during years $t = 0$ through $t = +2$).

As noted above, our setting is unique because we examine managers' responses to the actual receipt of stock exchange deficiency notices, unlike

[3] Refer to Gerakos, Lang, and Maffett (2013), Ball and Shivakumar (2008), Teoh, Wong and Rao (1998), Teoh, Welch and Wong (1998a, 1998b), Beneish (1998), Li and Zhou (2010) and Brav, Geczy, and Gompers (2000) for evidence and contrasting views.

[4] Macey, O'Hara, and Pompilio (2008, Table 2) report that during 1999–2004, Nasdaq firms comprised 85% of total number of Nasdaq and NYSE firms that were delisted for regulatory reasons.

[5] Macey et al. (2008, Table 3) report that during 1999–2004, 1720 (67%) of the 2584 regulatory delists on Nasdaq were related to quantitative deficiencies. (Also refer to Harris, Panchapagesan, & Werner, 2008). Frost, Racca, and Stanford (2017) find that only three of 699 Nasdaq-listed sample firms facing corporate governance-deficiencies were unable to regain compliance after receiving deficiency notices.

[6] We made the research design choice to exclude fiscal years for each firm *following* the deficiency year in order to avoid loss of statistical power caused by subsequent deficiencies. Results are not affected if these post-deficiency firm years are included in the analysis.

[7] Use of delisting avoidance strategies by managers prior to deficiency years would result in a bias against finding support for our hypotheses.