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Predicting earnings in a poor information environment

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ABSTRACT

Financial intermediaries, such as analysts, play an important role in providing information to investors. However, a large segment of the market (about 39% of CRSP firms between 1992 and 2009) is not served by financial analysts, leaving investors in a poor information environment. In this paper, we examine whether other publicly available information signals, such as insider trades, institutional holdings, and firms' stock repurchases, can be used to predict information about earnings for these firms. We find that CFOs' trading decisions are associated with new information contained in the annual earnings reports for firms with no or scant analyst coverage. In contrast, for firms with multiple analyst coverage, insider trading decisions are not predictive of new information in earnings reports. Our results suggest that some public information signals, such as insider trades, can be used to alleviate the poor information environment faced by investors. However, the market may not have fully priced the information contained in these signals.

1. Introduction

Financial intermediaries, such as analysts, play an important role in providing information to investors. However, a large segment of the market (about 39% of CRSP firms between 1992 and 2009) is not served by financial analysts, leaving investors in a poor information environment. In this paper, we examine whether other publicly available information signals, such as insider trades, institutional holdings, and firms' stock repurchases, can be used to predict information about earnings for these firms.

Information about a firm's earnings is arguably the most important information for equity investors. Earnings are used in many valuation metrics (e.g. P/E ratio and the residual income model *à la* Feltham and Ohlson, 1995) and are a good predictor of future cash flows (Dechow et al., 1998). A firm's periodic earnings release is highly anticipated by the capital market and can cause significant price movements.[2] Given its importance, market participants and intermediaries have invested considerable resources into predicting earnings. Of these market intermediaries, financial analysts play a very prominent part by conducting research on firms, informing the market about earnings expectations, and making buy/sell recommendations.[3]

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[2] Not all reported earnings represent new information. Part of a firm's earnings could already have been priced by the time these numbers are released. Therefore, it is the new information that causes price movements when earnings are reported. The effect of new information in earnings releases on prices is economically significant. Skinner and Sloan (2002) find that firms that miss market expectations by a small margin can experience dramatic price declines. In addition to price changes during earnings announcement windows, researchers have also found that there are economically meaningful prices drifts associated with new earnings information (Ball and Brown, 1968; Bernard and Thomas, 1989, 1990).

[3] For example, CISCO Systems Inc. in 2003 had 42 analysts and Apple in 2009 had 37 analysts following the firm, which indicates a substantial amount of resources spent on equity research.

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The presence of financial analysts has made information economically accessible to the average market participant.[4] It reduces the need for costly private information-gathering and processing by average investors and facilitates more efficient investment decision-making.

However, not all segments of the market are equally served by analysts. Between 1992 and 2009, on average, about 39% of the firm years on CRSP are not covered by financial analysts on I/B/E/S. Even though these are mostly small firms, they serve an important role in the diversified portfolios of investors and constitute a large segment of the investing market. Firms with no analyst coverage consist of about 13% of total market value on CRSP. In addition, a larger proportion of the shares of these firms are held by individual investors as opposed to institutional investors. In our sample period, non-institutional (individual) investors held an average of 80% of the shares for firms with no analyst coverage compared with an average of 46% of shares for firms with analyst coverage. Since individual investors do not have the resources to engage in private information-gathering and often lack the expertise to process information (SEC, 2012), the absence of financial intermediaries makes the information problem even more acute.[5] Following accounting literature that uses properties of analyst coverage to proxy for information environment (e.g. Lang et al., 2003; Gebhardt et al., 2001; Horton et al., 2013; Frankel and Li, 2004), we define firms that lack financial analyst coverage as being in a poor information environment.[6] Although investors can overcome a poor information environment by procuring information privately, individual procurement of information is not economically efficient. For small investors in particular, it is usually not economically feasible.

In this paper, we examine the usefulness of several sources of public information that could be used by investors to predict new information about future earnings in the absence of financial analyst coverage. Specifically, we examine whether insider trades, stock repurchases, and institutional holdings are predictive of abnormal returns during annual earnings report windows, which we use as a measure of new information in earnings.

Following theories in psychology and behavioral finance, we expect that for firms in a poor information environment, public information may not be fully incorporated into prices. The psychology literature finds that attention is a scarce cognitive resource (Kahneman, 1973), and decision makers have limited attention and processing power for information signals. In a limited attention regime, only information that is salient and easily available is processed (Tversky and Kahneman, 1973; Hirshleifer, 2001). Therefore, information signals that are not salient, readily available, or in an easily processed form may not be (completely) processed by investors (Hirshleifer, 2001). In Hirshleifer and Teoh's (2003) model, even highly attentive investors could still fail to absorb non-salient information due to costly time and attention constraints, and the presence of even a portion of investors that have limited attention and processing power will affect firms' accounting choices (method of accounting for employee stock options, *pro forma* earnings disclosure, and segment reporting) and distort stock prices. The finance literature has found empirical evidence of such limited attention in investor behavior. For example, Barber and Odean (2008) find that investors focus on attention-grabbing stocks only and that information may not be incorporated into prices until it attracts investor attention. Peng and Xiong (2006) show that investors with limited attention will use simple decision rules that utilize market and sector information at the expense of firm-specific information.

In this paper, we extend the literature to the context of a poor information environment, where the limited attention problem is exacerbated. In a poor information environment, information signals, even if publicly available, are not salient due to a lack of analyst attention to these firms. Whereas analysts may call attention to insider trades, share repurchases, or institutional trading when following a firm and incorporate such information into their buy/sell recommendations and earnings forecasts, firms that lack analyst coverage do not enjoy such attention. In addition, these information signals are not easily accessible to average investors.[7] Therefore, we expect that the information about future earnings contained in these signals is not fully incorporated into prices.

We focus on trading decisions made by informed investors (insiders and institutional investors) that are publicly disclosed prior to earnings reports. Insider trades can serve an information role in the market (Manne, 1966). Insiders (e.g. executives and directors) likely possess private information about firms' earnings. When they trade, such information is incorporated and thus revealed to the market (Piotroski and Roulstone, 2005; Leland, 1992; Hu and Noe, 2001). However, the market may fail to fully incorporate the information into prices (e.g. Wang et al., 2012). As a result, such information may still surprise the market and generate abnormal returns when earnings are reported, especially in a poor information environment.

The information possessed by insiders may also not be of equal quality. Wang et al. (2012) find that CFOs' trades are more informative than CEO's trades (i.e. CFOs, but not CEOs, earn abnormal returns after trades). This is consistent with CFOs possessing superior information due to their roles in firms' financial policy and financial reporting processes (Jiang et al.,

[4] Brennan et al. (1993) find that stocks with greater analyst coverage react faster to market-wide common information compared with those with less analyst coverage.

[5] Institutional investors also use analyst research. Many small cap portfolios hold so many stocks that investment managers must rely on sell-side analysts for firm-specific information (Punch & Associates Investment Management, 2013).

[6] In addition to analyst coverage, media coverage could also affect a firm's information environment. However, we do not study media coverage in the paper for two reasons. First, the media do not usually specialize in financial coverage. In addition, analyst coverage and media coverage are highly correlated (Frankel and Li, 2004). For example, analyst earnings forecasts or buy/sell recommendations are often followed by increased media coverage of those firms (Anantharaman and Zhang, 2011).

[7] Information about insider and institutional trades are found in various SEC filings that do not arrive in timely or systematic manners. Processing these filings requires considerable cognitive and economic resources. Stice (1991) finds that investors fail to completely price the information in 10-q and 10-k, two of the most prominent filings.

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