

Managerial Ability, Analyst Recommendations, and Price Informativeness

Abstract

This paper examines whether managerial ability convey information about the firm's future earnings to the capital markets. Using the future earnings response coefficient (FERC) methodology, we find that the current stock returns of firms with high-ability CEOs reflect more future earnings than does the stock returns of low-ability firms. Our results are robust to controlling for potential omitted variables, loss versus profit firms, and serial correlation of error terms. We further find that managerial ability has a positive impact on analyst recommendations for the firm. In addition, analyst recommendations at least partially mediate the effects of managerial ability on FERC. That is, analyst recommendations represent a mechanism through which managerial ability affects the extent to which stock returns reflects future earnings. Overall, this study reveals the impact of managerial ability on analyst-based outcomes and current pricing weight on expected earnings and calls attention to the construct of managerial ability as a key intangible asset for the investor community.

Keywords: Managerial Ability; Future Earnings Response Coefficient (FERC); Analyst Recommendations; Mediating Effect

1. Introduction

Managerial ability is clearly an important ingredient in the success of a business. Previous research has focused on how managerial ability “matter” for corporate policies and outcomes. For example, In Milbourn’s (2003) study, he focuses on the managerial ability and measures it in terms of the number of press articles that cited the CEO. He find that compensation contracts given to CEOs with a high ability (i.e., those with more media-counts) exhibited greater equity instruments. Chemmanur and Paeglis (2005) report that better quality management can affect the firm’s IPO characteristics. Some studies have examined whether the reputational motivations of CEOs affect their decision-making behaviors such as investment and reporting decisions (Hirshleifer 1993; Sridar 1994). Very few studies, however, have empirically examined whether managerial ability sustains firm good performance and whether the expectation of superior performance of highly ability CEOs, in fact, is delivered.

My focus on managerial ability is motivated by three considerations. First, managerial ability is one of the most important intangible assets that a firm has (Gaines-Ross, 2003). Second, it captures the dimension of managerial human capital (Francis, Huang, Rajgopal and Zang 2008). Lastly, according to Burson-Marsteller’s survey in 1999, almost half of a firm’s reputation is based upon the image of its management team. Thus this manager’s characteristic potentially can have a palpable impact on corporate economic benefits. In fact, one of the reasons for the small number of empirical studies related to managerial ability is the difficulty of measuring the abilities of managers. To overcome this concern, I measure managerial ability using four proxies which are most often employed by previous studies: Press Citation, CEO awards from business journals, manager-specific efficiency derived from data envelope analysis (DEA), and industry-adjusted firm performance (Milbourn 2003; Francis et al. 2004; Malmendier and Tate 2005).

Empirical investigation of the economic benefits of managerial ability is important because top executives with highly developed management skills often receive high pay. The ability perspective advocates there exists economic benefits of managerial ability. Most of previous studies have focused on the impact of managerial ability on the future operating performance and yielded mixed evidence (Nanda et al. 1996; Malmendier and Tate 2005). In this paper, I think that the important question is persistence of profits.

In fact, Gaines-Ross (2003) find that analysts recommend a company's stock based on CEO reputation because a CEO with a well-established reputation, believed to have high ability, will sustain good performance or turn around poor performance. A board of directors will give a highly regarded CEO more opportunities to make up for his or her mistakes, because they believe that the CEO will reverse current poor performance in the near term (Gaines-Ross 2003). Therefore, I expect that higher ability managers are able to sustain stable performance over the long run (i.e., higher earnings persistence).

It is almost taken as an article of faith that high-ability managers help to firms' information environment, thereby mitigating problems arising from information asymmetry between the firm and the investors. Baik et al. (2011) report that managerial ability is positively related to the likelihood of voluntary management earnings forecasts. This finding is consistent with highly reputed CEOs having incentives to keep the market informed about their firms' economic prospects. Moreover, managers with high abilities may have higher ability to obtain more precise information on investment opportunities, make better investment choices and achieve successful project outcomes with greater likelihood (Chemmanur, Paeglis, and Simonyan 2009). Successful corporate investments enhance firm future profits. Given that managerial ability provides useful information about future profit streams, it helps investors to better predict future earnings. Thus, more information about future earnings should be reflected in current stock prices. Using future earnings response coefficient (FERC) as proxy for price informativeness, we expect that it correlates positively with the level of managerial ability.

This research contributes to the literature in several ways. First, this study contributes to the understanding of the economic benefits of managerial ability. A large body of literature emphasizes the importance of managerial ability (Fama 1980; Gibbons and Murphy 1992) and develops predictions about managerial behaviors (Hirshleifer 1993; Sridar 1994). However, scarce literature empirically investigates whether the ability of a CEO provides economic benefits to the firm. Second, although the value impact of managerial ability is recognized (Agarwal, Taffler, and Brown 2007), the effects of managerial ability on the ability of stock returns to reflect future earnings, however, have been little studied. Our analysis provides fresh evidence about the information content of managerial ability: the market understands and can better anticipate firms' future earnings based on forward-looking information contained in managerial ability. Third, given the scant evidence regarding the determinants of cross-sectional variation in price informativeness with respect to future earnings, the inclusion of managerial ability

as an explanatory variable may improve our understanding of financial market behavior.

The rest of the paper is organized as follows. Section 2 provides a review of the relevant literature and develops the hypotheses. In section 3, we describe our models, variable measurements, sample selection and data sources.

2. Literature Review and Hypotheses

2.1 Importance of Managerial Ability

Managerial ability is viewed as a vital element in the capital market. Managers with better ability can identify changes in their firm's underlying economics. They convey the intrinsic value of their firms more credibly to outsiders, thus reducing the information asymmetry facing in the equity market. In addition, managerial ability is also a factor in determining a firm's financial and investment policies. The firms which have talent manager access the equity market more easily, in turn to affect the firms' financial policies. Managers have force on the corporate decisions, such as investing and financing decision, executive compensation, and earnings quality. Managers with high reputations have incentives to protect their reputations by enhancing their firms' performances.

Several studies have examined the impact of CEO characteristic on corporate decision. Chemmanura and Paeglisb (2005) suggest that IPOs firms with higher management quality will be characterized by lower underpricing, greater institutional interest, more reputable underwriters, and smaller underwriting expenses. Management reputation can reduce agency problems, managers intend to obtain funds and earn rents, and firms must establish a reputation for generating profits and repaying these profits to investors. (Fama 1980, Narayanan 1985, Holmstrom and Ricart-Costa 1986, Holmstrom 1999) Chemmanur et al. (2009) indicate that better and more reputable managers may be able to select better projects, characterized by a larger NPV for any given scale. Taken together, these studies suggest that talent managers are able to cut down financing costs, improve corporate governance and select the better investment project.

A substantial body of research is dedicated to understanding the determinants of managerial ability and information environment. Trueman (1986) theorizes that managers voluntarily issue earnings forecasts to signal their ability. Based on this theory, Baik et al. (2010) find that firms with highly reputed CEOs are associated with lower opacity, suggesting that CEOs act to protect their reputations by increasing the flow of information to the market. They also views from an investor perspective and find that

firm value is increasing in CEO reputation, suggesting that investors perceive that highly reputed CEOs improve the information environment. Baik et al. (2011) show that a personal characteristic of the CEO is associated with the forecast accuracy increases in CEO ability. The better managers may be able to recognize the firm's quality, thus declining the extent of information asymmetry between firm insiders and outsiders. This means that managerial ability as a signal to help the investor can predict or determine future profit

However, the extent literature focuses on the impact of managerial ability on firm performance. Jensen and Fuller (2002) assert that CEO reputation is a major determinant of the long-term success and survival of a firm. Chemmanura and Paeglisb (2005) find that firms with better management quality have stronger its long-term post-IPO operating performance and greater long-term stock returns. Agarwal et al. (2007) also consider that good management enhances firm value: well managed firms have higher profitability, are able to sustain superior operating performance for longer, and are rewarded by higher market valuations. Switzer and Bourdon (2010) show several proxies for management quality significantly affect operating performance of IPOs in Canada. Above these papers only discuss the relation between managerial ability and current firm's performance. In this paper, we extend the line of research about the information content of Managerial ability: whether better managerial ability help stock prices to reflect more future earnings given they convey forward-looking information.

2.2 Research on Future Earnings Response Coefficients (FERC)

Prior accounting literature has documented that stock prices reflect the expectations of investors about future earnings, because the information can be aggregated with various public signals then reflected in the change in current stock price. Thus, the change in current stock price captures the change in investors' expectation for future earnings. As the investors are better able to understand future earnings, more information about future earnings will be reflected in current period stock returns. We follow the approach of Collins et al. (1994) and measure the extent to which current stock returns reflects future earnings by the future earnings response coefficient (FERC). Extent literature has used this approach to verify that FERCs can be enhanced by the better information environment.

For example, Lundholm and Myers (2002) find that increased disclosure activity "brings the forward" into current stock returns. Gelb and Zarowin (2002) consider that

the informativeness of firm disclosures influence FERCs. Ayers and Freeman (2003), Piotroski, Roulstone (2004) and Choi and Jung (2008) show that the informativeness of stock returns for future earnings, measured as the FERC, increases with the number of information intermediaries such as equity analysts and institutional investors. Choi et al. (2011) find that the association between current returns and future earnings is increasing the frequency and precision of management earnings per share forecasts.

In addition, researchers have begun to find more compelling evidence to verify the association between corporate accounting policies and the future earnings response coefficient. Ettredge et al. (2005) find the firm which adopts the disclosure rule SFAS No.131 on segment reporting contains more information about its future earnings and then reflected in higher FERC. Tucker and Zarowin (2006) find that managers use the discretionary accruals to smooth income and garbles future accounting earnings information. Oswald and Zarowin (2007) show that firms capitalize R&D has higher FERC than expensing. Orpurt and Zang (2009) find that the direct method is valuable to investors with the higher FERCs. Hanlon et al. (2007) consider that firms initiate paying improve the strength of relation between current returns and future earnings. Given that managerial ability is a forward-looking indicator of future profits, this study add to extent literature by investigating how managerial ability affect FERC.

2.3 Empirical Hypothesis

Since management ability has a critical impact on firm performance, this factor is an important consideration in terms of investors' firm valuation. Because managers may have reputations for being skilled operators and cost cutters, the ability of a firm's management can have a certifying effect on future profit streams. With regard to firm development and performance, those firms with high ability management are also better equipped to be more innovative (Staw and Epstein, 2000) and have higher internal governance strength (Karuna 2010). Furthermore, highly ability managers have strong incentives to promote transparency by actively disclosing information about their firms' economic prospects because the market values such information, thus reducing the information asymmetry that investors face when they predict future profits. Given that managerial ability serves a forward-looking indicator of future profit streams, this metric may help investors to better evaluate firm future earnings, which in turn reflected in current stock returns. As a result, the association between current stock returns and future earnings, FERC, should be higher for firms enjoying higher managerial ability. I for-

malize the second hypothesis as:

H1: The extent to which future earnings is reflected in current stock prices increases with managerial ability.

The ability perspective found in the agency literature posits that the future firm performance of more-skilled managers is likely to exceed that of less-skilled managers (Gibbons and Murphy, 1992). Prior literatures have demonstrated that high ability management associated with higher profits next year than lower ranked management (Wade et al. 2006; Nanda et al. 1996). This reasoning suggests that Managerial ability can view as an indicator of more promising future firm profits. In addition, accounting literatures suggest that financial analysts play an important role in providing investment advice for individual and institutional investors. Extant research shows that analyst releases stock recommendations to investors based on the prospects of firms' future performance. The better the prospects of firms' future performance, the greater is the likelihood that analyst will issue more favorable recommendations. Therefore, the better managerial ability results in better prospects of firms' future performance, positive changes in managerial ability should lead analysts to recommend that investors hold or buy a firm's stock. I formalize the second hypothesis as follow:

H2: Analyst recommendations are positively associated with managerial ability.

Thus far, we have offered hypotheses on the impact of managerial ability on analyst recommendations. Managerial ability affects analyst recommendations, which in turn affect the FERC, it is reasonable to expect a "chained" relationship: from managerial ability to the intermediate outcome of analyst recommendations and then to investors' pricing weight on future earnings for equity valuation. It implies analysts are information intermediaries between firms and investors, their recommendations likely act as an informational channel through which the firm with better managerial ability and reach investors. The more the firm enjoys favorable recommendations with highly ability CEOs, the most likely the future earnings information impounded in managerial ability is to pass through analyst recommendations and result in contributing to the FERC. Given that analyst recommendations may convey the impact of managerial ability on the FERC to investors. We suggest analyst recommendations s mechanisms for market re-

actions to the intangible asset of managerial ability. We establish the third testable hypothesis is:

H3: Analyst recommendations at least partially mediate the associations between managerial ability and the FERC.

3. Methodology

3.1 Measures of Managerial Ability

It is difficult to measure the management quality directly and empirically. Consequently, I employ four proxies to estimate the value of managerial ability. The first measure we follow the approach of Milbourn (2003), Rajgopal et al. (2006), and Francis et al. (2008) who use CEO press citations. A CEO who is perceived to be an expert is more likely to be interviewed and cited in the newspaper and magazine. Thus, the press citation measure of managerial ability likely reflects the market's assessment of a CEO's perceived ability (Milbourn 2003). Similar to research employing press citations as a proxy for managerial ability, we hand-collect CEOs' press citations by searching news articles from all publications in the Factiva database. We calculate the number of news articles that mention the name of a CEO and the CEOs' company. We assume that a CEO develops his/her reputation over a number of years, so we sum the number of citations over the prior five years to measure ability.

For the second measure of managerial ability, we count the number of manager awards from business journals as following Malmendier and Tate (2009). Various business journals pick "CEOs of the Year" or "Best Managers" annual. We collected manager award data from highly respected magazines such as Business Week, Financial World, Forbes, Industry Week, Chief Executive, and Electronic Business. The winners of manager awards from these business magazines are considered as a talent manager. We set the dummy variable, equal to 1 if the manager was given any award for the last five years or 0 otherwise.

We adopt the third measure is data envelope analysis (DEA). Demerjian et al. (2012) use data envelope analysis (DEA) to derive a measure of CEO-specific talent. To regress the firm-level measure on market share, size, the number of firm segments and foreign operations, and firm fixed effects. The residual from this regression is the measure of managerial ability. This measure of managerial efficiency can be considered as managerial ability based on company performance. In validity checks of their meas-

ure, Demerjian et al. (2012) find that it is positively related to returns and CEO pay, and that the persistence of earnings growth and sales growth is increasing in their measure of managerial ability. Prior studies have linked earnings growth and sales growth with managerial ability (e.g. Fee and Hadlock 2003), giving us added comfort that the DEA measure is capturing some dimension of managerial ability.

The last proxy for managerial ability is the industry-adjusted ROA (IndAdjROA) while the CEO has been at the helm of the firm (Milbourn, 2003). Under this industry-adjusted measure, we posit that a positive value of the industry-adjusted measure represents higher managerial ability. This approach provides a more objective estimation, in that the market would not devalue a managerial ability due to poor operating performance if most firms in the same industry also had such problems. Following the approach in Milbourn (2003), IndAdjROA is calculated by using income before extraordinary items scaled by average total assets for each firm and subtracting from it the average ROA for firms with the same two-digit SIC code for each firm-year. Then, we deleted observations if there were less than 10 firms within a two-digit SIC code for a given year.

3.2 Primary Models and Empirical Predictions

The ability of stock prices to reflect future earnings can be measured by the FERC. This paper follows the approach of Collins et al. (1994), Lundholm and Myers (2002), and Tucker and Zarowin (2006). To reduce the measurement error problem in using realized earnings for expected earnings CKSS include future returns. Based on the prior studies, we recognize lag stock returns to measure value creation.

$$R_t = b_0 + b_1 X_{t-1} + b_2 X_t + b_3 X_{t3} + b_4 R_{t3} + \varepsilon_t \quad (1)$$

In regression (1), R_t is current annual returns for Year t . X_{t-1} and X_t are the earnings per share (EPS) for Year $t-1$ and t , respectively, and X_{t3} represents the realized future earnings aggregate over three years with annual compounding. All the EPS variables are the basic EPS excluding extraordinary items, adjusted for stock splits and stock dividends, and according to Christie (1987), deflated by the stock price at the beginning of Year t . R_{t3} is common stock return for three year period starting from three months after t fiscal year-end with annual compounding. In regression (1), the coefficient b_3 is FERC, and is expected to be positive. The coefficient on past earnings (b_1) is predicted

to be negative, the ERC (b_2) is predicted to be positive, and coefficient on future returns (b_4) is predicted to be negative.

The purpose of this paper is to examine whether better managerial ability help stock prices to reflect more future earnings given they convey forward-looking information. Thus, we expand the above regression by adding the managerial ability, denoted as $ABILITY_t$ and we interact $ABILITY_t$ with earnings variables. The empirical model is as follows:

$$R_t = b_0 + b_1 X_{t-1} + b_2 X_t + b_3 X_{t3} + b_4 R_{t3} + b_5 ABILITY_t + b_6 ABILITY_t * X_{t-1} + b_7 ABILITY_t * X_t + b_8 ABILITY_t * X_{t3} + b_9 ABILITY_t * R_{t3} + \varepsilon_t \quad (2)$$

In regression (2), we are interest in b_8 if the managerial ability is to convey information about future earnings, then the coefficient on $ABILITY_t * X_{t3}$ should be positive. If the managerial ability contains less forward-looking information, then the coefficient on $ABILITY_t * X_{t3}$ should be negative. We have no prediction for the coefficients on $ABILITY_t$, $ABILITY_t * X_{t-1}$, $ABILITY_t * X_t$ and $ABILITY_t * R_{t3}$.

In order to prevent some other factors may make the stock price impound more information about future earnings, we control for firm size ($SIZE$), growth opportunities (BM), future earnings variability ($EARNSTD$), and analyst following ($NANAL$). Firm size is measured as the market value of common equity at the beginning of Year t . Growth opportunities are measured by the book-to-market ratio at the beginning of Year t . For future earnings variability, we measure by the standard deviation of EPS from Year $t+1$ to Year $t+3$, and then deflated by the stock price at the beginning of Year t . Analyst following is measured as the average number of analysts' forecasts in the monthly consensus, gather from I/B/E/S during Year t .

Our H2 is to ascertain whether security analysts are influenced by managerial ability. If analysts recognize that managerial ability could indicate better earnings prospectus, we should observe a positive association between consensus recommendations and managerial ability. We test for such an effect using multivariate estimations in which the dependent variable equals the level of consensus recommendation, and the explanatory variables of interest is managerial ability proxies ($ABILITY$). We include several factors that are known to influence recommendations (e.g. Jegadeesh et al., 2004). These factors include the market-adjusted returns over the past twelve months ($RETP$) to capture momentum effects, average daily turnover ($TURN$), sales growth (SG), earnings / price (EP), and book / market

(*BM*) to capture contrarian effects. We additionally include firms size (*SIZE*), analyst forecast revisions (*FREV*), standardized unexpected earnings (*SUE*), total accruals (*TA*), and capital expenditures (*CAPEX*). Specifically, the model is specified as follows:

$$REC_t = b_0 + b_1 ABILITY_t + b_2 RETP_t + b_3 TURN_t + b_4 SIZE_t + b_5 FREV_t + b_6 SUE_t + b_7 SG_t + b_8 TA_t + b_9 CAPE_t + b_{10} BM_t + b_{11} EP_t + \varepsilon_t \quad (3)$$

where analyst recommendations (*REC*) are the expert advice from financial analysts to investors before the actual earnings announcements at the end of the year. The measure of analyst recommendation is a Likert scale which ranges from “1”= sell-recommendation for the stocks to “5”= strong buy-recommendation for the stocks (Bryan and Tiras 2007; Womack 1996). All of independent variables are defined in the Table 1. We focus on the coefficient b_1 . We predict b_1 to be positive indicating that managerial ability improves analyst recommendations.

To test the mediating role of analyst recommendations in managerial ability’s possible impact on the FERC, we use the approach of Baron and Kenny (1986). We extend regression (2) by including Analyst recommendations (*REC*) and its interactions with independent variables as follows:

$$R_t = b_0 + b_1 X_{t-1} + b_2 X_t + b_3 X_{t3} + b_4 R_{t3} + b_5 ABILITY_t + b_6 ABILITY_t * X_{t-1} + b_7 ABILITY_t * X_t + b_8 ABILITY_t * X_{t3} + b_9 ABILITY_t * R_{t3} + b_{10} REC_t + b_{11} REC_t * X_{t3} + \varepsilon_t \quad (4)$$

If the impact of managerial ability on the FERC is decreased after the inclusion of analyst activities, that suggests evidence for the partial mediation role of analyst-based processes.

3.3 Data and Sample Selection

We gather data from CRSP and Compustat databases. The data period is start from 1990 to 2007. The sample ends in 2007 because we require three years subsequent earnings and returns in formation. We exclude regulated utilities (SIC 40-49) and financial institutions (SIC 60-69) from the initial sample. To minimize the effect of outliers, we follow Tucker and Zarowin (2006) and delete observations that are in the top or bottom 0.5 percent of the distributions of past, current, and future three years’ earnings, and of current and future three years’ returns.

4. Empirical Results

4.1 Variables and Descriptive Statistics

Panel A of Table 2 reports descriptive statistics for the variables used in the FERC regressions. Current annual returns (R_t) have a mean (median) of 11.6 percent (7.2 percent), and earnings per share deflated by the beginning stock price have the mean (median) of 4.3 percent (5.0 percent). We use four proxies to measure the managerial ability. The mean number of press citations is 2.5 citations and about 10% of CEOs received an award in the past 5 years. Note that, the ability variable, as measured by the total number of media citations, is highly skewed. We adopt two ways to fix this in later analysis: first, we take the logarithm of the citation plus 1; second, we define the dummy variables for CEOs of low and high ability. Both measures give economically similar results in our tests. So we only report the results using the logarithm of (citation+1). Managerial ability measured by DEA score has a mean and median close to zero, by construction, as this is a residual from firm efficiency model. The standard deviations of future earnings ($EARNSTD$) have a mean (median) of 3.8 percent (1.8 percent).

Unreported correlation analyses show that current stock returns, R_t , are positively correlated with current and future earnings (X_t and X_{t+3}), as expected. Returns are negatively correlated with past earnings, X_{t-1} , in line with the mean-reverting nature of earnings. As expected, the future returns variable, R_{t+3} , are positively correlated with future earnings, X_{t+3} . However, one concern is the statistically significant negative correlation between current returns, R_t , and future returns, R_{t+3} (Pearson correlation=-0.182 and Spearman correlation=-0.093). As a result, future returns may influence our regression results beyond their role as a measurement error proxy. Indeed, Orpurt and Zang (2009) also show a significant correlation between these variables in their Panel D of Table 2. Both Pearson and Spearman correlations show that four proxies of managerial ability, $ABILITY_t$, is positively correlated with future earnings figures. Besides, multicollinearity is not a serious concern as the variance inflation factor (VIF) is under 10 for all our regression specifications (Belsley et al. 1980).

Panel B of Table 2 presents descriptive statistics for the analyst recommendation model. The mean (median) sample firm receives a three-tier consensus recommendation of 2.68 (2.66), which is between sell and hold. The sample is tilted toward large firms as the average company in our sample has market capitalization of \$1.4 billion. The average sample

firm has a book-to-market ratio of 0.449, sales growth of about 1.15% compared to the prior four quarters, capital expenditures equaling about 6.5% of assets, and total accruals equaling about 4.9% of assets.

Unreported correlation analyses show that analyst recommendations have a correlation of 0.28 – 0.09 with the managerial ability measures. Analyst recommendations are also positively correlated with past returns (0.10 – 0.14), standardized unexpected earnings (0.16), and sales growth (0.19). Recommendations are negatively correlated with the firm’s book-to-market ratio (–0.22). All of these results are consistent with Jegadeesh et al. (2004). Our managerial ability measures generally have low correlations with firm characteristics, although CEO award is positively correlated with the natural logarithm of market capitalization (0.39) and the sales growth (0.27).

4.2 The Effect of Managerial Ability on the FERC (H1)

In this section, we use OLS regression analyses to test whether firms with higher managerial ability have greater FERC than firms with lower ability. Standard errors for all regressions are corrected for heteroskedasticity and within-firm clusters. To compare with previous studies, in Panel A of Table 3 we first present the results of the baseline FERC model (Eq. (1)). In the first column, as previously predicted, both the coefficient on X_B (FERC) and the coefficient on X_t , are significantly positive (0.639 and 0.717, respectively), and the coefficient on X_{t-1} is significantly negative (-0.698). The coefficient on R_{t-3} is also significantly negative (-0.086), which confirms the successful role of the instrumental variable. The adjusted R^2 of the baseline model is 12.2 percent, which is higher than that of the traditional ERC model (7.64 percent). The significant improvement in explanatory power is consistent with the findings of Collins et al. (1994).

Our primary objective is to measure the impact of managerial ability on the FERCs. We estimate four separate models, one for each measure of managerial ability. The results of the regression analysis are shown in right four columns of Panel A. After including the interaction between Ability_{*t*} and the other variables in the benchmark FERC model, the coefficients on X_t and X_B are significantly positive and the coefficients on X_{t-1} and R_B are significantly negative. The focus of this table is on the regression coefficient of $ABILITY_t * X_B$, corresponding to b_8 in Eq. (2). The results show that all of four ability interaction variables exhibit positive and significant coefficients (b_8 ranging from 0.008 to 1.048 at the 5% level or even lower); it suggests that the extent to which current returns reflect the future earnings increases with managerial ability. The results strongly support H1 and suggest that managerial ability conveys valuable information about fu-

ture earnings capacity that investors can use to place a greater current pricing weight on future expected earnings.

We then perform analyses to control for potential correlated omitted variables. Based on the work of Lundholm and Myers (2002) and Tucker and Zarowin (2006), firm size, negative earnings, firm growth, earnings volatility, and analyst following have all been shown to be significantly related to the FERC. Thus, we estimate the model similar to Eq. (2) above but with the addition of these explanatory variables, each separately interacted with the future earnings variable as well as included simultaneously.

Panel B of Table 3 shows the estimation results for the models adding the full control variable. After controlling for these factors, the coefficients on $ABILITY_t * X_{\beta}$ remain statistically positive, strongly supporting our hypothesis that managerial ability provides valuable information and thus improves market's ability to impound future earnings into current returns. Besides, the coefficients on $X_{\beta} * SIZE_t$ are positive, suggesting that firm size is associated with an increase in the ability of stock prices to reflect future earnings. In terms of BM_t variable, growth may take time to be materialized and recognized in earnings while the return reflects expectation for future growth immediately. Thus, growth firms have a higher FERC than mature firms. The coefficients on $X_{\beta} * LOSS_t$ and $X_{\beta} * EARNSTD_t$ are statistically negative, suggesting that the extent to which stock returns reflect future earnings are smaller for firms reporting losses and for firms with more volatile earnings stream. Consistent with the findings of Tucker and Zarowin (2006), we find that the association between current returns and future earnings is decreasing in the number of analyst following. Overall, the findings support that managerial ability is associated with stock prices that reflect more information about future earnings, attesting to the important role of management quality in providing relevant information about future earnings.

4.3 Managerial Ability and Analyst Recommendations (H2)

Panel A of Table 4 presents regression results for test of H2. The dependent variable equals the level of analysts' consensus recommendation. The first through fourth columns provide the estimates from four models, one for each measure of managerial ability. Standard errors are clustered both along the year and firm dimensions. The coefficient estimates of $ABILITY_t$ are positive and highly significant, indicating that higher level of managerial ability is associated with more favorable consensus recommendations, after controlling for the known determinants of recommendations. The

results strongly support H2 and suggest that analysts have a favorable view of managerial ability, possibly because management quality contributes with the most productive and efficient way of enabled resources within the organization, thereby achieving long term corporate value creation. This effect is significant in economic terms. When managerial ability is measured by DEA score, a one standard deviation increase in *ABILITY* increases the consensus recommendation by 0.02, which is similar to the impact of well-known determinants. For example, a one standard deviation increase in *EP* or *SG* increases the consensus recommendation by 0.01 or 0.06, respectively. Given that analyst recommendations tend to concentrate above 2.5, these small incremental effects are potentially large in economic importance.

Analysts issue more favorable recommendations to stocks with positive price momentum, higher sales growth, lower turnover, lower book/market ratios, and higher earnings/price ratios. Firms with higher earnings surprises, more positive analyst earnings forecast revisions, greater total accruals, and more capital expenditures are associated with higher recommendations. These estimates are generally consistent with prior literature.

4.4 The Mediating Role of Managerial ability (H3)

H3 predict that analyst recommendations at least partially mediate the association between managerial ability and the FERC. According to Baron and Kenny (1986), to establish mediation, managerial ability must affect analyst recommendations, and analyst recommendations must affect the FERC. As we found previously, managerial ability affects analyst recommendations. In addition, the results of Table 3 suggest that managerial ability has effect on the FERC. As we report in Table 5, because inclusion of analyst recommendations in the model reduces the strength of the effects of managerial ability on the FERC (from 0.07, $p=0.094$, to 0.563, $p=0.057$), only marginally significant), the results support a partial mediating role of analyst recommendations. In addition, the inclusion of mediating effects of recommendations significantly improves the fit of the FERC models, as Table 5 shows. Specifically, adding the direct and mediating effects of recommendations leads to an incremental R-square ranging from 0.06 to 0.08 in various model specifications, thus explaining significantly more variance of firm stock returns.

Finally, we conduct Sobel's (1982) test for mediation to assess whether the indirect mediation effects are statistically significant. The standard Sobel test model is $z = ab /$

$\sqrt{a^2s_b^2 + b^2s_a^2 + s_a^2 + s_b^2}$, where a and s_a are coefficient and standard error, respectively, for the impact of the independent variable on the mediator and b and s_b are coefficient and standard error, respectively, for the impact of the mediator on the dependent variable. We find that the Sobel test results are consistently significant (smallest z -value = 2.32, $p < 0.05$) for all indirect mediation effects. Thus, managerial ability's indirect effects through the mediating role of recommendations are mostly significant, supporting the prediction of H3.

5. Conclusion

In this paper, we examine whether managerial ability are informative about the firm's future earnings. If information regarding future earnings is revealed by managerial ability, the stock price should reflect more of future earnings news for firms with higher quality management. Our empirical analyses reveal that the current stock returns of firms with higher managerial ability reflect more future earnings than does the returns of lower-ability firms. Our results remain after controlling for potential omitted variables. We conclude that the market attaches value to managerial ability, because the ability enables investors better anticipate a firm's future profitability. We further investigate whether the stock recommendations of security analysts are influenced by firm managerial ability. If security analysts identify managerial ability as a factor that contributes to future earnings streams, they will issue more favorable recommendations to stocks with quality management. We empirically find that managerial ability has a positive impact on analyst recommendations for the firm. In addition, analyst recommendations at least partially mediate the effects of managerial ability on FERC. That is, analyst recommendations represent a conduit through which managerial ability influences investors' pricing weights of future earnings component in current stock returns. Given sophisticated analysts pay attention to management quality, market investors should have good reason to listen and follow. As such, the findings of this study also have practical implications.

References

- Agarwal, V., Taffler, R., & Brown, M. (2007). Is management quality value relevant? *Working paper, University of Edinburgh*.
- Ayers, B. C., & Freeman, R. N. (2003). Evidence that analyst following and institutional ownership accelerate the pricing of future earnings. *Review of Accounting Studies*, 8, 47–67.
- Baik, B., Brockman, P., Farber, D. B., & Lee, S. (2010). CEO reputation and corporate opacity. *Working paper, Seoul National University*.
- Baik, B., Farber, D. B., & Lee, S. S. (2011). CEO ability and management earnings forecasts. *Contemporary Accounting Research*, 28, 1645–1668.
- Baron, R. M., & Kenny, D. A. . (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Belsley, D. A., Kuh, E., & Welsch, R. E. . (1980). Regression diagnostics: Identifying influential data and sources of collinearity. *Wiley, New York*.
- Bryan, D. M., & Tiras, S. L. (2007). The influence of forecast dispersion on the incremental explanatory power of earnings, book value, and analyst forecasts on market prices. *Accounting Review*, 82, 651-677.
- Chemmanur, T. J., Paeglis, I., & Simonyan, K. (2009). Management quality, financial and investment policies, and asymmetric information. *Journal of Financial & Quantitative Analysis*, 44, 1045-1079.
- Chemmanura, T. J., & Paeglis, I. (2005). Management quality, certification, and initial public offering. *Journal of Financial Economics*, 76, 331-368.
- Choi, B., & Jung, K. (2008). Analyst following, institutional investors and pricing of future earnings: Evidence from Korea. *Journal of International Financial Management & Accounting*, 19, 261-286.
- Choi, J.-H., Myers, L. A., Zang, Y., & Ziebart, D. A. (2011). Do management EPS forecasts allow returns to reflect future earnings? Implications for the continuation of management's quarterly earnings guidance. *Review of Accounting Studies*, 16, 143-182.
- Christie, A. (1987). On cross-sectional analysis in accounting research. *Journal of Accounting and Economics*, 9, 231–258.
- Collins, D. W., Kothari, S. P., Shanken, J., & Sloan, R. G. (1994). Lack of timelines

- and noise as explanations for the low contemporaneous return-earnings association. *Journal of Accounting & Economics*, 18, 289-324.
- Demerjian, P., Lev, B., McVay, S. (2012). Quantifying managerial ability: A new measure and validity tests. *Management Science*, *Forthcoming*, 1-20.
- Ettredge, M. L., Kwon, S. Y., Smith, D. B., & Zarowin, P. A. (2005). The impact of SFAS No. 131 business segment data on the market's ability to anticipate future earnings. *Accounting Review*, 80, 773–804.
- Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, 88, 288-307.
- Fee, T., & Hadlock, C. (2003). Raids, rewards, and reputations in the market for managerial talent. *Review of Financial Studies*, 16, 1315-1357.
- Francis, J., Huang, A. H., Rajgopal, S., & Zang, A. Y. (2008). CEO reputation and earnings quality. *Contemporary Accounting Research*, 25, 109-147.
- Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2004). Costs of equity and earnings attributes. *Accounting Review*, 79, 967 – 1010.
- Gaines-Ross, L. (2003). CEO Capital: A Guide to Building CEO Reputation and Company Success, *New York: Wiley*.
- Gelb, D. S., & Zarowin, P. A. (2002). Corporate disclosure policy and the informativeness of stock returns. *Review of Accounting Studies*, 7, 33–52.
- Gibbons, R., & Murphy, K. J. (1992). Optimal incentive contracts in the presence of career concerns: Theory and evidence. *Journal of Political Economy*, 100, 468.
- Hanlon, M., Myers, J., & Shevlin, T. (2007). Are dividends informative about future earnings? *Working paper, University of Arkansas*.
- Hirshleifer, D. (1993). Managerial reputation and corporate investment decisions. *The Journal of the Financial Management Association*, 22, 145.
- Holmström, B. (1999). Managerial incentive problems: A dynamic perspective. *Review of Economic Studies*, 66, 169-182.
- Holmstrom, B., & Costa, J. R. I. (1986). Managerial incentives and capital management. *Quarterly Journal of Economics*, 101, 835-860.
- Jegadeesh, N., Kim, J., Krische, S. D., & Lee, C. M. C. (2004). Analyzing the Analysts: When Do Recommendations Add Value? *Journal of Finance*, 59, 1083-1124.
- Jensen, C. M., & Fuller, J. (2002). What's a director to do? negotiations, organization and markets research papers. *Harvard NOM Research Paper No. 02-38*.
- Karuna, C. (2010). CEO reputation and internal corporate governance. *Working paper, University of Houston*.
- Leverly, J., & Grace, M. (2005). Dupes or incompetents? An examination of

- management's impact on property-liability insurer distress. *Working paper, Georgia State University*.
- Lundholm, R., & Myers, L. A. (2002). Bringing the future forward: The effect of disclosure on the returns-earnings relation. *Journal of Accounting Research*, 40, 809-839.
- Malmendier, U., & Tate, G. (2005). CEO overconfidence and corporate investment. *Journal of Finance*, 60, 2661-2700.
- Malmendier, U., & Tate, G. (2009). Superstar CEOs. *Quarterly Journal of Economics*, 124, 1593-1638.
- Milbourn, T. T. (2003). CEO reputation and stock-based compensation. *Journal of Financial Economics*, 68, 233.
- Nanda, S., Schneeweis, T., & Eneroth, K. (1996). Corporate performance and firm perception: The British experience. *European Financial Management*, 2, 197-221.
- Narayanan, M. P. (1985). Managerial incentives for short-term results. *Journal of Finance*, 40, 1469-1484.
- Orpurt, S. F., & Zang, Y. (2009). Do direct cash flow disclosures help predict future operating cash flows and earnings? *Accounting Review*, 84, 893-935.
- Oswald, D. R., & Zarowin, P. (2007). Capitalization of R&D and the informativeness of stock prices. *European Accounting Review*, 16, 703-726.
- Piotroski, J. D., & Roulstone, D. T. (2004). The influence of analysts, institutional investors, and insiders on the incorporation of market, industry, and firm-specific information into stock prices. *Accounting Review*, 79, 1119-1151.
- Rajgopal, S., Shevlin, T., & Zamora, V. (2006). CEOs' outside employment opportunities and the lack of relative performance evaluation in compensation contracts. *Journal of Finance*, 61, 1813-1844.
- Sobel, M. E. (1982). Asymptotic Intervals for Indirect Effects in Structural Equations Models. in *Sociological Methodology*, S. Leinhardt, ed. San Francisco: Jossey-Bass, 290-312.
- Sridhar, S. S. (1994). Managerial reputation and internal reporting. *Accounting Review*, 69, 343-363.
- Staw, B. & Epstein, L. (2000). What the bandwagons bring: Effects of management techniques on corporate performance, reputation and CEO pay. *Administrative Science Quarterly*, 45, 523 - 556.
- Switzer, L. N., & Bourdon, J.-F. (2010). Management quality and operating performance: Evidence for Canadian IPOs. *working paper, Concordia*

University.

Trueman, B. (1986). Why do managers voluntarily release earnings forecasts? *Journal of Accounting and Economics*, 8, 53-71.

Tucker, J. W., & Zarowin, P. A. (2006). Does income smoothing improve earnings informativeness? *The Accounting Review*, 81, 251-270.

Wade, J. B., Porac, J. F., Pollock, T. G., & Graffin, S. D. (2006). The burden of celebrity: The impact of CEO certification contests on CEO pay and performance. *Academy of Management Journal*, 49, 643-660.

Womack, K. L. (1996). Do Brokerage Analysts' Recommendations Have Investment Value? *Journal of Finance*, 51, 137-167.

TABLE 1
Variable Measurements

Panel A: FERC model

Variables	Measurements
R_t	The buy-and-hold annual returns during the 12-month period starting three months following the firm's $t-1$ fiscal year-end.
X_{t-1}	Earnings per share for Fiscal Year $t-1$, deflated by the stock price at the beginning of Fiscal Year t .
X_t	Earnings per share for Fiscal Year t , deflated by the stock price at the beginning of Fiscal Year t .
X_{t3}	The sum of earnings per share for Fiscal Years $t+1$ through $t+3$, deflated by the stock price at the beginning of Fiscal Year t .
R_{t3}	The buy-and-hold stock return for Fiscal Years $t+1$ through $t+3$ starting three months following the firm's t fiscal year-end.
$SIZE_t$	Market capitalization (\$millions) at the beginning of Fiscal Year t . We use log transformation in correlation and regression analyses.
BM_t	Book value of equity divided by market value of common shares outstanding at the beginning of Fiscal Year t .
$EARNSTD_t$	The standard deviation of earnings per share for Fiscal Years $t+1$ to $t+3$, deflated by the stock price at the beginning of Fiscal Year t .
$NANAL_t$	The number of analysts following in the latest month prior to earnings announcement for Fiscal Year t . We use log transformation in correlation and regression analyses.

Panel B: Analyst recommendation model

Variables	Measurements
REC_t	The mean of analyst recommendations made or reviewed at least two days but no more than a year prior to the calendar year's end. If an analyst had more than one recommendation in this window, the newest one is taken. The recommendations are coded on a scale from 1 (strong sell) to 5 (strong buy). REC is a continuous variable (1, 5).
$SIZE_t$	Natural logarithm of market capitalization at the end of each calendar year.
$RETP_t$	Market adjusted buy-and-hold return over the month (-1,-12) prior to the calendar year's end. The market return is the value-weighted return from CRSP.
$FREV_t$	The sum of price-scaled mean forecast revisions (taken from the IBES summary statistics) using months (-1, -12) relative to the end of each calendar year.
SUE_t	SUE: Standardized unexpected earnings. $(EPS_q - EPS_{q-4}) / \text{std}_q$, where EPS is earnings per share excluding extraordinary items from the most recent quarterly earnings announcement prior to the end of the calendar year, and the denominator is the standard deviation of unexpected earnings $(EPS_t - EPS_{t-4})$ from quarters $t=q-7$ to $t=q$.
EP_t	Sum of the past four quarters earnings per share divided by the stock price at the end of the most recent fiscal year with an earnings announcement preceding the current calendar year end.

BM_t	Book value of asset scaled by the sum of book value of assets, negative one times long-term debt (including current part), and market value of common stock at the end of the most recent fiscal year with an earnings announcement preceding the current calendar year end.
TA_t	$(\text{total accruals}_t - \text{total accruals}_{t-1}) / (\text{total assets}_t)$, where total accruals is defined as change in current assets minus change in cash, minus change in current liabilities, plus change in long-term debt, minus change in deferred taxes, minus depreciation. Changes are from four quarters earlier. t refers to the year of the most recent fiscal year with an earnings announcement preceding the current calendar year end.
$CAPEX_t$	Sum of capital expenditures from the most recent four quarters scaled by total assets
SG_t	Sales growth, defined as the sum of sales in quarters 0,-3 scaled by the sum of sales in quarters -4,-7, where quarter zero refers to the end of the most recent fiscal quarter with an earnings announcement preceding the current calendar year end.
$TURN_t$	Percentile rank of the daily average turnover per month, averaged over the past six months, percentiles calculated by exchange, where turnover is defined as share volume over shares outstanding.

TABLE 2
Sample Statistics

Panel A : Descriptive Statistics

Variable	N	Mean	Median	Std. Dev.	Q1	Q3
R_t	10,286	0.116	0.072	0.427	-0.142	0.305
X_{t-1}	10,286	0.041	0.048	0.072	0.029	0.066
X_t	10,286	0.043	0.050	0.069	0.028	0.070
X_{t3}	10,286	0.129	0.138	0.197	0.063	0.215
R_{t3}	10,286	0.295	0.111	0.886	-0.240	0.577
$DJHITS_t$	10,286	2.489	0.000	9.919	0.000	2.000
$AWARD_t$	10,286	0.096	0.000	0.295	0.000	0.000
$MGTEFF_t$	7,044	-0.040	-0.033	0.128	-0.111	0.017
$ADJROA_t$	10,226	0.058	0.039	0.091	0.005	0.092
$SIZE_t$	10,286	7.555	7.422	1.446	6.500	8.461
$LOSS_t$	10,286	0.104	0.000	0.305	0.000	0.000
BM_t	10,286	0.449	0.399	0.285	0.254	0.579
$EARNSTD_t$	10,286	0.038	0.018	0.059	0.009	0.041
$NANAL_t$	10,286	2.403	2.398	0.585	1.946	2.833

Panel B : Descriptive Statistics — Consensus Recommendation Level

REC_t	10,286	2.678	2.667	0.567	2.333	3.000
$RETP_t$	10,286	0.116	0.072	0.427	-0.142	0.305
$TURN_t$	10,286	51.702	53.000	28.427	27.000	76.000
$SIZE_t$	10,286	7.555	7.422	1.446	6.499	8.461
$FREV_t$	10,286	0.003	0.004	0.034	-0.002	0.010
SUE_t	10,286	-0.425	0.278	28.783	-0.799	1.187
SG_t	10,286	1.147	1.107	0.219	1.040	1.206
TA_t	10,286	-0.049	-0.046	0.080	-0.081	-0.015
$CAPEX_t$	10,286	0.065	0.047	0.065	0.024	0.083
BM_t	10,286	0.449	0.399	0.285	0.254	0.579
EP_t	10,286	0.040	0.046	0.079	0.028	0.064

TABLE 3
Regressions of FERC Models: Analyzing the Effect of Managerial Ability

Panel A: Main Tests

Variables	Baseline Model	Managerial ability (<i>ABILITY</i>) proxies =			
	Not Included	Press Citation	Award	DEA Score	IndAdjROA
	Coefficient estimate	Coefficient estimate	Coefficient estimate	Coefficient estimate	Coefficient estimate
Intercept	0.053*** (0.000)	0.059*** (0.000)	0.069*** (0.000)	0.058*** (0.000)	0.055*** (0.000)
X_{t-1}	-0.698*** (0.000)	-0.700*** (0.000)	-0.848*** (0.000)	-0.766*** (0.000)	-0.859*** (0.000)
X_t	0.717*** (0.000)	0.691*** (0.000)	0.756*** (0.000)	0.833*** (0.000)	0.754*** (0.000)
X_β	0.639*** (0.000)	0.627*** (0.000)	0.600*** (0.000)	0.725*** (0.000)	0.614*** (0.000)
R_β	-0.086*** (0.000)	-0.088*** (0.000)	-0.094*** (0.000)	-0.087*** (0.000)	-0.097*** (0.000)
$ABILITY_t$		-0.003*** (0.000)	-0.098*** (0.000)	0.006 (0.900)	-0.048 (0.335)
$ABILITY_t * X_{t-1}$		0.007 (0.498)	0.096 (0.780)	-0.906 (0.149)	-0.917*** (0.006)
$ABILITY_t * X_t$		0.004 (0.564)	-0.181 (0.554)	1.158* (0.078)	1.903*** (0.008)
$ABILITY_t * X_\beta$		0.008** (0.013)	0.575*** (0.000)	0.534** (0.028)	1.048*** (0.000)
$ABILITY_t * R_\beta$		0.001** (0.016)	0.038** (0.030)	0.090** (0.033)	0.183*** (0.000)
Adjusted R ²	0.122	0.124	0.123	0.126	0.125
Observations	10,286	10,286	10,286	7,044	10,226

Panel B: Including Potentially Correlated Omitted Variables

Adding a single control variable

Variables	Managerial ability (ABILITY) proxies =			
	Press Citation Coefficient estimate	Award Coefficient estimate	DEAScore Coefficient estimate	IndAdjROA Coefficient estimate
Intercept	0.074** (0.020)	0.132*** (0.000)	-0.010 (0.787)	0.070** (0.026)
X_{t-1}	-0.623*** (0.000)	-0.750*** (0.000)	-0.703*** (0.000)	-0.839*** (0.000)
X_t	0.434*** (0.000)	0.565*** (0.000)	0.551*** (0.000)	0.571*** (0.000)
X_β	1.258*** (0.000)	1.026*** (0.000)	1.060*** (0.000)	0.804*** (0.000)
R_β	-0.103*** (0.000)	-0.112*** (0.000)	-0.102*** (0.000)	-0.113*** (0.000)
$ABILITY_t$	-0.002** (0.015)	-0.055** (0.022)	0.036 (0.434)	0.194*** (0.000)
$ABILITY_t * X_{t-1}$	0.009 (0.354)	0.064 (0.849)	-1.194* (0.051)	-0.686** (0.036)
$ABILITY_t * X_t$	0.007 (0.330)	-0.141 (0.636)	0.746 (0.244)	2.179*** (0.002)
$ABILITY_t * X_\beta$	0.010*** (0.002)	0.420*** (0.002)	0.632*** (0.009)	0.766** (0.010)
$ABILITY_t * R_\beta$	0.001* (0.075)	0.047*** (0.006)	0.084** (0.041)	0.197*** (0.000)
$SIZE_t$	-0.051*** (0.000)	-0.061*** (0.000)	-0.053*** (0.000)	-0.059*** (0.000)
$SIZE_t * X_\beta$	0.002* (0.916)	0.067*** (0.001)	0.058** (0.047)	0.078*** (0.000)
$LOSS_t$	-0.048*** (0.004)	-0.032* (0.064)	-0.067*** (0.001)	-0.043** (0.013)
$LOSS_t * X_\beta$	-0.199*** (0.000)	-0.209*** (0.000)	-0.128* (0.061)	-0.113** (0.036)
BM_t	0.069*** (0.000)	0.081*** (0.000)	0.133*** (0.000)	0.129*** (0.000)
$BM_t * X_\beta$	-0.129** (0.019)	-0.162*** (0.002)	-0.087 (0.241)	-0.140** (0.016)
$EARNSTD_t$	0.700*** (0.000)	0.145*** (0.000)	0.758*** (0.000)	0.707*** (0.000)
$EARNSTD_t * X_\beta$	-0.969*** (0.000)	-0.709*** (0.000)	-1.102*** (0.000)	-0.830*** (0.000)
$NANAL_t$	0.122*** (0.000)	0.128*** (0.000)	0.151*** (0.000)	0.130*** (0.000)
$NANAL_t * X_\beta$	-0.133*** (0.006)	-0.234*** (0.000)	-0.164** (0.012)	-0.185*** (0.000)
Adjusted R ²	0.165	0.168	0.178	0.170
Observations	10,286	10,286	7,044	10,226

TABLE 4
Regressions of Consensus Recommendation Level (“REC”)

Panel A: Main Tests

Variables	Managerial ability (ABILITY) proxies =			
	Press Citation	Award	DEA Score	IndAdjROA
	Coefficient estimate	Coefficient estimate	Coefficient estimate	Coefficient estimate
Intercept	2.889 ^{***} (0.000)	2.864 ^{***} (0.000)	2.846 ^{***} (0.000)	2.831 ^{***} (0.000)
<i>ABILITY_t</i>	0.002^{***} (0.001)	0.080^{***} (0.000)	0.145^{***} (0.005)	0.128[*] (0.052)
<i>RETP_t</i>	0.233 ^{***} (0.000)	0.226 ^{***} (0.000)	0.225 ^{***} (0.000)	0.232 ^{***} (0.000)
<i>TURN_t</i>	-0.001 ^{***} (0.000)	-0.001 ^{***} (0.000)	-0.002 ^{***} (0.000)	-0.001 ^{***} (0.000)
<i>SIZE_t</i>	-0.044 ^{***} (0.000)	-0.042 ^{***} (0.000)	-0.040 ^{***} (0.000)	-0.036 ^{***} (0.000)
<i>FREV_t</i>	1.423 ^{***} (0.000)	1.303 ^{***} (0.000)	1.600 ^{***} (0.000)	1.272 ^{***} (0.000)
<i>SUE_t</i>	0.000 [*] (0.079)	0.000 [*] (0.078)	0.000 (0.339)	0.000 [*] (0.089)
<i>SG_t</i>	0.248 ^{***} (0.000)	0.252 ^{***} (0.000)	0.287 ^{***} (0.000)	0.249 ^{***} (0.000)
<i>TA_t</i>	0.181 ^{**} (0.015)	0.189 ^{**} (0.011)	0.211 ^{**} (0.013)	0.237 ^{***} (0.003)
<i>CAPEX_t</i>	0.425 ^{***} (0.000)	0.374 ^{***} (0.000)	0.271 ^{**} (0.014)	0.412 ^{***} (0.000)
<i>BP_t</i>	-0.359 ^{***} (0.000)	-0.361 ^{***} (0.000)	-0.303 ^{***} (0.000)	-0.333 ^{***} (0.000)
<i>EP_t</i>	0.143 [*] (0.087)	0.160 ^{**} (0.035)	0.174 [*] (0.064)	0.074 (0.364)
<i>Adjusted R²</i>	0.086	0.087	0.083	0.084
<i>Observations</i>	10,286	10,286	7,044	10,226

TABLE 5
Regressions of FERC Models

Panel A: Main Tests

Variables	Managerial ability (ABILITY) proxies =			
	Press Citation	Award	DEA Score	IndAdjROA
	Coefficient estimate	Coefficient estimate	Coefficient estimate	Coefficient estimate
Intercept	-0.227*** (0.000)	-0.217*** (0.000)	-0.377*** (0.000)	-0.276*** (0.000)
X_{t-1}	-0.744*** (0.000)	-0.740*** (0.000)	-0.772*** (0.000)	-0.854*** (0.000)
X_t	0.349*** (0.000)	0.530*** (0.000)	0.557*** (0.000)	0.549*** (0.000)
X_{β}	1.032*** (0.000)	1.001*** (0.000)	1.055*** (0.000)	0.757*** (0.000)
R_{β}	-0.104*** (0.000)	-0.107*** (0.000)	-0.095*** (0.000)	-0.106*** (0.000)
$ABILITY_t$	-0.002*** (0.004)	-0.046** (0.043)	0.039 (0.387)	0.201*** (0.000)
$ABILITY_t * X_{t-1}$	0.008 (0.317)	0.144 (0.649)	-0.748 (0.209)	-0.701** (0.030)
$ABILITY_t * X_t$	0.010* (0.162)	-0.035 (0.903)	0.487 (0.434)	1.994*** (0.003)
$ABILITY_t * X_{\beta}$	0.007* (0.094)	0.249** (0.048)	0.470** (0.046)	0.563* (0.057)
$ABILITY_t * R_{\beta}$	0.001*** (0.009)	0.049*** (0.003)	0.095** (0.018)	0.148*** (0.002)
REC_t	0.088*** (0.000)	0.094*** (0.000)	0.097*** (0.000)	0.094*** (0.000)
$REC_t * X_{\beta}$	0.128*** (0.001)	0.096*** (0.006)	0.136*** (0.004)	0.097*** (0.007)
$SIZE_t$	-0.044*** (0.000)	-0.045*** (0.000)	-0.036*** (0.000)	-0.045*** (0.000)
$SIZE_t * X_{\beta}$	0.010 (0.652)	0.005 (0.806)	-0.020 (0.488)	0.043** (0.035)
$LOSS_t$	-0.036** (0.035)	-0.021 (0.202)	-0.047** (0.019)	-0.020 (0.248)
$LOSS_t * X_{\beta}$	-0.253*** (0.000)	-0.276*** (0.000)	-0.115* (0.078)	-0.161*** (0.002)
BM_t	0.099*** (0.000)	0.114*** (0.000)	0.159*** (0.000)	0.153*** (0.000)
$BM_t * X_{\beta}$	-0.112** (0.050)	-0.130** (0.017)	-0.025 (0.688)	-0.102* (0.070)
$EARNSTD_t$	0.630***	0.600***	0.703***	0.650***

	(0.000)	(0.000)	(0.000)	(0.000)
$EARNSTD_t * X_{\beta}$	-0.987***	-0.571***	-0.765***	-0.715***
	(0.000)	(0.000)	(0.000)	(0.000)
$NANAL_t$	0.125***	0.113***	0.140***	0.122***
	(0.000)	(0.000)	(0.000)	(0.000)
$NANAL_t * X_{\beta}$	-0.198***	-0.144***	-0.114*	-0.180***
	(0.000)	(0.002)	(0.068)	(0.000)
Adjusted R ²	0.186	0.195	0.210	0.188
Observations	10,286	10,286	7,044	10,226