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FINANCIAL EXPERTS ON THE AUDIT COMMITTEE: WOLVES IN SHEEP'S CLOTHING?

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ABSTRACT

Research literature in accounting has assumed, and supported, the idea that financial expertise on the audit committee of firms is a positive influence on the quality of earnings reports, as measured by various proxies for earnings quality. In this paper I attempt to model and demonstrate empirically that financial expertise on the audit committee may in fact serve to merely obscure any earnings manipulation performed by managers, rather than prevent or mitigate it. The results provide support for the idea that financial expertise, when put together with certain adverse incentive factors (share ownership, being a current executive in another firm), actually increases the probability of just meeting or beating analyst consensus estimates, a measure of earnings manipulation. This presents an important contribution to the literature on the topic, elucidating the idea that financial expertise on the audit committee is not necessarily a beneficial factor.

JEL: G30, G38

KEYWORDS: Financial Experts, Audit Committee, Earnings Management, Sarbanes-Oxley

INTRODUCTION

In 1999 the BRC (Blue Ribbon Committee, 1999) has issued recommendations for audit committee composition, proposing that audit committee independence and audit committee financial expertise are desirable properties of the audit committee. This has prompted a number of studies on the relationship between audit committee composition and earnings quality. One of the provisions of the Sarbanes-Oxley Act (SOX) requires public companies to disclose the presence or absence of financial experts on the audit committee. The initial SEC proposal (U.S. Securities and Exchange Commission, 2002) only recognized persons with explicit accounting financial expertise as financial experts. However, the final rule (U.S. Securities and Exchange Commission, 2003) relaxed the definition to include persons with supervisory experience of accounting functions as allowed financial experts (see DeFond, Hann, and Hu, 2005, for a more detailed discussion of this background).

To understand the relevance of financial expertise in the context of the audit, we need to look at the actual mechanics of the audit process and the sequence of events surrounding the audit. Prior literature (Antle and Nalebuff, 1991; Gibbins, Salterio, and Webb, 2001; Ng and Tan, 2003; Sanchez, Agoglia, and Hatfield, 2007), as well as direct discussion with a former auditor, suggests that the final audited statements are a result of extensive auditor-client negotiation. The auditor performs the actual work of going through the financial statements in the light of information provided by the management, looking for any inconsistencies with the GAAP. The auditor then takes its findings and suggested adjustments for discussion with the audit committee and management, which may accept some of them, and argue and try to reject some others. At the end of this possibly drawn-out give-and-take negotiation process, the report can be finalized. The key point here is that the audit committee does not actually perform any auditing, but merely reviews the findings of the auditor. While in theory the audit committee should be aligned with the auditor and against the managers, it is not unreasonable to suspect that it can be more aligned with the management

in arguing against whatever adjustments the management doesn't like.

With this understanding, it is clear the proposition that audit committee financial expertise has a "positive" impact on the quality of financial reporting is not to be easily assumed true. It is possible that an audit committee with greater financial expertise will simply be more effective in offering arguments to the auditor against whatever adjustments it wants to reject. Financial expertise would also increase the ability of the committee to pick those items that will maximize the probability of meeting earnings targets, while not raising any "suspicious" discretionary accruals, and thereby minimizing any negative impact those may have on various market-based measures of earnings quality. Audit committee members with financial expertise may also have an impact beyond the audit process by suggesting certain accounting practices to the company that would improve the general appearance of financial statements.

The net effect of financial expertise on the quality of financial statements is thus not an assumption to be made, but a question to investigate empirically. Using financial and board of director data from 2005/2006, which gives several years for companies to start reporting audit committee financial expertise and adjust board membership according to these new incentives, this research analyzes the relationship between audit committee financial expertise and earnings management. While there is prior literature analyzing this question, as detailed in the next section, this paper contributes to the literature in several important ways. First, I use a novel data set of director financial expertise, classifying directors as financial experts based on information extracted directly from proxy statements and auxiliary director biographical data. Second, I focus my analysis only on what I argue is the cleanest metric of earnings management, company earnings relative to analyst forecast consensus. Finally, I introduce a number of controls and interactions dealing specifically with adverse director incentives. The remainder of this paper is organized as follows: The next section examines the related literature and sets the stage for this study. Following, I detail the theoretical model, data sample and methodology, and then discuss the empirical results. I close with concluding comments and suggestions for future research.

LITERATURE REVIEW

A number of measures for earnings quality have been used in the literature, including discretionary accruals based on variations of Jones (Jones, 1991) model residuals (Dechow and Sloan, 1995, Ashbaugh, LaFond, and Mayhew, 2003, Frankel, Johnson, and Nelson, 2002, Chung and Kallapur, 2003), meet or beat previous earnings (Ashbaugh, LaFond, and Mayhew, 2003, Frankel, Johnson, and Nelson, 2002, Vafeas, 2005), meet or beat analyst consensus forecast estimates (Davis, Soo, and Trompeter, 2006, Ashbaugh, LaFond, and Mayhew, 2003, Frankel, Johnson, and Nelson, 2002, Vafeas, 2005). There have also been a number of market-based measures, such as bid-ask spreads (Affleck-Graves, Callahan, and Chipalkatti, 2002, Coller and Yohn, 1997; for a review of the bid-ask spread literature, see Callahan, Lee, and Yahn, 1997), cost of debt (Anderson, Mansi, and Reeb, 2004, Mansi, Maxwell, and Miller, 2004, Sengupta, 1998), and CAR around director appointments (DeFond, Hann, and Hu, 2005). Of these measures, for a number of reasons I think that meeting or beating prior earnings or analyst forecasts is the least noisy and the most direct way to determine the incidence of earnings management or manipulation. Discretionary accruals measures are sensitive to Jones model specification details (Ashbaugh et al., 2003), and market-based measures are dependent on the market's ability to discern earnings management and react accordingly, which, as numerous SEC investigations show, is not necessarily the case. A notable example would be the W.R. Grace case of earnings smoothing that the market did not detect: between 1991 and 1995, W.R. Grace reported stable growth rates, even though actual growth fluctuated from -8% to +61% (U.S. Securities and Exchange Commission, 1998, CNN, 1999).

Prior literature has also attempted to investigate the impact of the audit committee on various metrics of earnings management. Vafeas (2005) uses "other committee membership" as a proxy for financial expertise, and following Ashbaugh, LaFond, and Mayhew (2003) and Frankel, Johnson, and Nelson (2002)

uses "meeting or beating prior year's earnings" and "meeting or beating analyst forecasts" as measures of earnings quality (the argument being that just meeting or beating these benchmarks is likely due to earnings management). He finds no significant relationship between other committee membership and earnings quality (although the coefficients are negative). His other proxy for financial expertise, being an executive of another company, actually show a positive relationship between his two proxies for earnings management, which he argues is due to executives being sympathetic to management. In the current reporting environment, we do not have to settle for such indirect proxies, since audit committee financial expertise and director backgrounds are reported directly, and we hope that this will provide more conclusive results. DeFond, Hann, and Hu (2005) look at the effect of director's financial expertise on cumulative abnormal returns around director appointments. Their results indicate that firms with no prior accounting or non-accounting financial expertise on the committee that appoint an accounting financial expert experience a negative CAR relative to those who appoint a non-expert.

The effect is somewhat reduced, but is still negative, if the firm has prior accounting financial expertise, prior non-accounting financial expertise, or above-median governance quality (as measured by the Gompers, Ishii, and Metrick (2003) g-index). While the CAR measure is more noisy than the measures used in this study, due to possibility of confounding events and stochastic market behavior, this result is supportive of the hypothesis of the present study. Also telling is that Anderson, Mansi, and Reeb (2004) find no significant relationship between audit committee financial expertise and cost of debt (while they do find such a relationship for board independence). Karamanou and Vafeas (2005) look at a very different, although related, issue of managerial earnings forecasts (forecasts issued by management). The event structure can be described as the opposite of that of the analyst forecast consensus. While analyst forecast is made exogenously, and the manager then has the opportunity to manipulate earnings to try to meet it, in the case of management forecast, the manager has some knowledge of the earnings, and can manipulate the forecast. One might expect that the incentive for issuing an overly optimistic management forecast, one which the manager knows he cannot meet, is rather slim [the truth will come out in short order anyway, plus there is the legal liability issue.] It is more likely that the manager would be expected to undershoot a bit, so that then he can "beat" his own forecast. So, while the problem is different, one of the results of this research is that the presence of financial expertise on the audit committee is significantly associated with a decreased accuracy of managerial earnings forecasts. This is yet another piece of evidence that financial expertise does not necessarily improve the quality of information in the market.

In contrast to the results of DeFond, Hann, and Hu (2005), Davidson, Xie, and Xu (2004) find a positive market reaction to the appointment of audit committee members who have accounting financial expertise. This discrepancy is likely due to the latter group using a simpler econometric model, without interaction terms. Some more evidence in favor of the traditional view is provided by Xie et al. (2003), who find that board and audit committees with higher meeting frequencies and more financial expertise reduce the firm's level of discretionary accruals. However, these studies use earnings management metrics that are fraught with difficulties, as has been noted above. A fairly large body of literature helps me motivate the emphasis on "meet or beat analyst forecast" as the relevant measure of earnings management. Brown and Caylor (2005) find that since the mid-1990s managers have shifted emphasis to beating analysts, rather than beating prior earnings. Thus, if there is any "earnings management" going on, it is going to be targeted at analyst forecasts. Further evidence of the importance of analyst forecasts comes from Bartov, Givoly, and Hayn (2002), who show that meeting/beating earnings estimates results in better stock performance, regardless of how it was achieved. Thus, it is in the personal interest of those who are compensated with equity-based remuneration, which includes managers, executives, as well as the board of directors, to meet or beat analyst earnings estimates. Cohen, Dey, and Lys (2008) have a good summary of literature related to overall patterns in earnings management, where they say "Research documenting the trend in earnings management over time indicates that the tendency to manage earnings has increased over time (Brown, 2001; Bartov et. al., 2002; Lopez and Rees, 2001). This literature also provides evidence that managerial propensity to avoid negative earnings surprises has increased significantly over time (Brown, 2001; Bartov et. al, 2002;

Matsumoto, 2002), although no significant increase has been observed in the tendency to avoid losses or earnings decreases (Burgstahler and Eames, 2003)".

Thus, I feel comfortable stating that beating analyst forecasts can be taken as the primary target of managerial efforts. Other metrics are merely intermediate steps that may or may not be needed to achieve their goal (such as discretionary accruals), or side effects (bid-ask spread, cost of debt or equity capital), and are not directly relevant to managerial motivation.

Theoretical Model

Under the hypothesis of efficient markets and rational expectations, and with analyst forecast consensus serving as a measure of those expectations, one would expect the forecast consensus to be on average correct - we would see no systematic upward or downward bias in the forecasts, and the probability of a firm's earnings falling above or below the forecast consensus should be equal. However, if managers deliberately target their earnings toward meeting or beating analyst estimates through the application of creative accounting, we should see the distribution of forecast errors that is skewed to the right (where error is the difference between actual reported earnings and analyst consensus). A preliminary analysis suggests that this may indeed be the case. Using IBES quarterly forecast data from year 2000 to 2006, discarding items with unavailable data, items with less than 3 analysts following the company, and items with forecast errors (in absolute value) greater than 30 cents (to exclude the extremely attenuated tails of the distribution which are irrelevant for the purposes), I end up with 202437 forecast-actual pairs. Further excluding all but the most recent pre-announcement forecasts, I have 71079 forecast-actual pairs, on 5635 companies (as identified by the IBES Official Ticker). The resulting density plot of errors is shown in Figure 1.

The forecast error of 0 cents is the peak of the distribution. However, the forecast error of 1, 2, and even 3 cents are all more probable than a forecast error of -1 cent. This is precisely the effect we would have expected from managerial earnings adjustment to meet or beat analyst forecast consensus. Overall, the degree of this adjustment can be measured by the skewness of the distribution, or, by the cumulative probability of meeting or beating the forecast consensus. It is also of note that the "skewness" is not concentrated at 1-3 cents, but persists in a sizable degree all the way out to 10 cents and beyond (e.g., the probability of beating forecast by 10 c. is larger than the symmetric probability of missing the forecast at -10 c.) Thus, one might suspect that the appropriate measure for this accounting manipulation is not to measure just the probability of forecast error falling between 0 and 2-3 cents, as has been used in prior literature, but the cumulative probability of forecast error being positive (or non-negative). I plan on using both the "traditional" measure of "just meet or beat" from prior literature, as well as the cumulative measure I propose here. The jagged shape of the distribution is due to the fact that earnings reports as well as forecast consensus are generally measured in whole cents, so the error also ends up measured in whole cents, resulting in an error distribution with peaks on whole-cent values. The adjustment that is being done is certainly not expected to be homogeneous across companies, but rather dependent on a number of factors. The basic model is the following:

$$\Pr\left(forecast\ error\ postive = f(vector\ of\ variables)\right) \tag{1}$$

The question of particular interest in this study is how the level of financial expertise of the Audit Committee members affects the managerial earnings adjustment. This would depend on whether these directors use their financial expertise to help the auditor make adjustments to managerial earnings statements, or to help the managers state earnings in such a way as to satisfy the auditor while still putting the "best foot forward", and help managers argue/bargain with the auditors to minimize "undesirable" adjustments.

Figure 1: Forecast Error Density
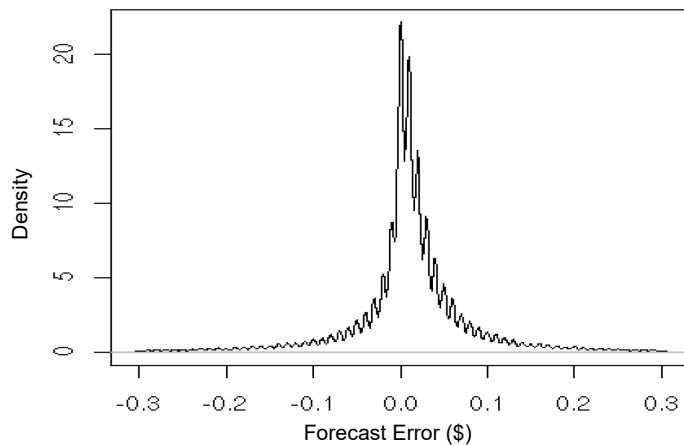
This figure shows the density of forecast error (actual EPS – forecast EPS), using IBES quarterly forecast data for 2000-2006.

I propose a general model of director utility from earnings management to be the following:

$$U() = f1(directwealthimpact) + f2(indirectwealthimpact) + f3(psychologicalfactors) \ (2)$$

Direct wealth impact can be roughly measured by the number of shares beneficially owned by the director. The more shares he owns, the more incentive he has to make the earnings appear as good as possible, since that would drive up the share price. Ideally, the direct wealth impact would be measured as a percentage of total director net worth, but that data is unavailable. Indirect wealth impact represents reputational effects. If the firms at which one is a director are doing well, we would expect one's reputation would rise, thus bringing with it more directorships, or other lucrative positions. On the other hand, if it is discovered that there were accounting irregularities in one of the director's firms, especially one at which he was on the audit committee, the reputation could fall rather precipitously. It is my hypothesis that the negative reputational effects are the stronger driver here. Thus, I would propose that as the number of other directorships increases, we would see less earnings management. The psychological factors are those that increase the director's emotional affiliation with the firm's management and the firm overall. The relevant measures of this that I propose are director's tenure on the board, which is the usual "entrenchment" factor, as well as director being a current executive at another firm, which might increase his sympathy for the management.

DATA AND METHODOLOGY

There are several ways to define "financial expertise". The current SEC rules allow a broader definition of the term, where someone who has served in a supervisory capacity counts as a financial expert. According to Carcello, Hollingsworth, and Neal (2006), firm designations of audit committee financial experts differ dramatically from the "manual" designations as made by researchers in this area. There is both a tendency to designate financial experts who do not have direct accounting financial expertise, as well as a tendency to not designate as experts those who would have been tagged in a manual search. Given the nature of the hypothesis of this paper, where the financial expert must have very thorough knowledge of accounting practice in order to be able to effectively "tweak" the statements, my primary method will use the strictest definition of the term, and count as experts only those who have direct and extensive experience in the accounting discipline. The data is collected manually from early-2006 proxy filings for firms from the main S&P 500 index, and from S&P 500 Small Cap Index. I also use quarterly earnings and analyst forecasts from 2005 from IBES, as well as some firm metrics from Compustat. The time period of 2005/2006 gives

several years for companies to start reporting audit committee financial expertise and adjust board membership according to these new incentives, while still leaving plenty of variation in audit committee composition with regard to financial expertise. The S&P 500 firm sample was chosen as follows. Compustat data on all S&P 500 companies (CPSPIN=1) that have fiscal year end in December (FYR=12) and that are not financial institutions (DNUM<6000 | DNUM > 6999) was retrieved for 2005. Table 1 lists the Compustat and IBES data items extracted from the databases, as well as some constructed variables used for the analysis.

Table 1: Compustat and IBES Variables

Variable Code	Description
Panel 1: Compustat Variables	
TA	Total Assets
OI	Operating Income Before Depreciation
CSHO	Common Shares Outstanding
TE	Total Common Equity
PRC	Price Fiscal Year Close
CSHO	Common shares outstanding
Mktcap	Market cap, in billions [CSHO * PRC / 1000]
MKBK	Market to book ratio, [PRC*CSHO/TE]
ROA	Return on assets, [OI/TA]
Panel 2: IBES Variables	
NUMEST	Number of analyst EPS estimates
MEDEST	Median analyst EPS estimate
MEANEST	Mean analyst EPS estimate
STDEV.EST	Standard deviation of analyst EPS estimates
EPS	Actual reported EPS
ForecastError	Analyst forecast error, [EPS – MEANEST]
ForecastErrorBinary	Binary forecast error variable, 1 if ForecastError is 0 - 3 cents, 0 otherwise

This table lists the Compustat and IBES data items that are used in this analysis. All items are in millions, except for per-share items.

Firms with missing Compustat data and missing proxy statements were eliminated. The selection procedure for the small-firm sample was identical, except that firms that were selected from Compustat were matched on CPSPIN=3 (for S&P 500 Small Cap) instead of CPSPIN=1 for S&P 500 main index. In all, 261 firms were selected from the S&P 500 Small Caps, and 270 firms were selected from the S&P 500, making for a total sample of 531 firms. Once this was done, I extracted analyst forecast data from IBES, using the CUSIP number as the search item. This reduced the sample further to 471 firms. I used quarterly analyst forecasts and actual earnings, using the latest analyst consensus forecast for each quarter. Finally, I eliminated all data items where just one analyst issued a forecast, which further shrunk the sample to 464 firms. Following this, data on the selected companies was manually collected into a data table from proxy statements. The proxy statements selected were ones filed in 2006, such that they reflect information on the status of the company Audit Committees during 2005. The data items collected at the individual director level are detailed in Table 2.

Table 2: Data for Individual Directors Collected from Company Proxy Statements

Item	Details
Year director joined the board (which, subtracted from 2005, is director tenure)	When director has served two non-consecutive terms, the first year of the earliest term was selected, as that is more representative of the director's familiarity with the firm, the board, and his possible "entrenchment".
Financial expertise	**0** for no financial expertise (Professor (other than finance or accounting), Consultant (other than financial), Chairman, Vice Chairman, Lawyer, Private Investor, COO, University President, etc.) **1** for non-accounting financial expertise (CEO, President, Partner of Venture Firm or Investment Firm, Investment Banking Director, Finance Professor, Accounting Professor, Financial Consultant, etc.) **2** for direct accounting financial expertise (CPA, CMA, Chief Auditor, CFO, Controller, Chief Accounting Officer, VP-Finance, Treasurer, Audit firm partner, etc.)
Stock ownership of directors	This item includes common stock ownership, stock equivalent units, restricted stock units, phantom shares, and options exercisable within 60 days of proxy filing date. Ideally, I would have liked to include all options owned, not just those exercisable within 60 days, but that information was not available in the proxy statements. Also, it would have been ideal to have this as percentage of total director net worth, but again, that information is not available.
Director age	Age as of the proxy filing date.
Current executive at another firm	Binary variable, set to 1 if director is a current executive at another firm.
Number of other current public company directorships for each director	
Number of directors on the board	
Number of independent (non-insider) directors on the board.	The proxy statements usually contain a discussion of director independence, with a listing of those directors considered independent. When it was not explicitly discussed, the number of outside directors was used.
Number of directors on the Audit Committee	

This table lists the data items collected from company proxy statements, at the level of the individual director, and the associated methodology and designations.

Frequently the proxy statement contained very abridged information about one or more directors' backgrounds. In those cases, I have supplemented that information with three other sources of information, namely http://investing.businessweek.com, which contains more extensive background information for firm directors, http://www.nndb.com, which shows lists of prior positions for directors, and general web searches. Very frequently, these supplementary sources of information have pushed a director up one or two points in the ranking of his financial expertise. Since prior literature has not made any mention of this phenomenon, I am left to presume that they have relied exclusively on proxy statement contents, and thus have misclassified a significant fraction of directors in terms of their level of financial expertise. While I have not kept record of these occurrences, and thus do not provide specific statistics, they are far from rare. From the above, the individual-director-level data were subsequently aggregated to firm-level, as detailed in Table 3.

Table 3: Firm Level Data Collected from Company Proxy Statements

Item	Details
Number of directors on the board	
Number of Audit Committee meetings in 2005.	Separate data items were collected for in-person and telephonic meetings. However, less than 5% of proxy statements separated telephonic and in-person meetings (11 out of 261 S&P 500 Small Cap firms, and 9 out of 270 S&P 500 firms), instead just stating the total number of meetings. So the final data item for audit committee meetings contains the sum of all meetings held.
Number of independent (non-insider) directors on the board.	The proxy statements usually contain a discussion of director independence, with a listing of those directors considered independent. When it was not explicitly discussed, the number of outside directors was used.
Number of directors on the Audit Committee	
Average Tenure	Average for Audit Committee directors
Average Age	Average for Audit Committee directors
Average Stock Ownership	Average for Audit Committee directors, in millions of shares
Financial experts	Number of directors on the Audit Committee designated as "financial expert" (as described in Table 1)
Current executives	Number of directors on the Audit Committee that currently hold executive positions at other firms
Accounting financial experts	Number of directors on the Audit Committee having direct accounting financial expertise (as described in Table 1)
Public company directorships	Average for Audit Committee directors

This table lists the data items collected from company proxy statements, on the firm level, and the associated methodology and designations.

Tables 4, 5 and 6 present summary statistics for the final sample of 464 firms, as well as for the sub-samples of small caps and the main index firms, of 224 and 240 firms, respectively. The large cap firms have mean total assets of $24 billion, $3.2 billion in operating income, and a market cap of $23 billion. The small cap sample has mean total assets of $888 million, $127 million operating income, and market cap of $1 billion. As far as board composition goes, small cap firms on average have a smaller board relative to large caps (8 vs 10.7 directors on average), but about the same number of audit committee meetings (9 vs 9.5), and a larger number of accounting financial experts (1.175 vs 0.92). Large caps have more analysts following them (14.6 vs 6.9), but also a larger average forecast error (2.35 cents vs 1.74 cents).

Table 4: Summary Statistics, Full Sample

Variable Name	Min	Q1	Median	Q3	Max	Mean
TA	73.708	680.62	2,618.2	10,621	673,342	13,292
OI	-106.70	97.488	370.9	1,504.9	59,255	1,733.1
CSHO	5.628	32.048	85.653	278	10,484	331.69
TE	-3,217	328.87	914.27	4,194.2	111,186	4270.4
PRC	2.51	20.86	33.715	50.22	702	39.414
Mktcap	0.0825	0.9536	3.065	11.413	367.47	12.712
MKBK	-61.197	1.837	2.609	3.669	88.388	3.421
ROA	-0.268	0.0951	0.1346	0.1916	0.8719	0.1518
Num.indep.dirs	2	6	8	9	17	7.818
Inperson.meetings	2	7	9	11	30	9.111
Phone.meetings	0	0	0	0	9	0.1880
Directors.total	5	8	9	11	18	9.437
Committee.meetings	2	7	9	11	30	9.299
Committee.financial.experts	0	1	1	3	7	1.877
Accounting.financial.experts	0	0	1	2	4	1.039
Other.exec	0	1	1	2	5	1.453
Dir.age	45.5	57.75	61	64	74.667	60.728
Dir.multiple	0	1.5	2.2	3	8.333	2.313
Dir.shares.reported	0.0007	0.0179	0.0388	0.0847	50.039	0.2630
Dir.tenure	0.6667	4.75	6.75	9.333	25.333	7.506
Dir.audit.total	2	3	4	5	9	4.116
NUMEST	2	6	10	15	39	10.963
MEDEST	-1.5	0.2	0.38	0.65	28.29	0.5219
MEANEST	-1.49	0.2	0.38	0.64	28.19	0.5224
STDEV.EST	0	0.01	0.02	0.03	2.43	0.0353
Forecast.error	-2.23	0	0.015	0.05	3.12	0.0206
Forecast.error.binary	0	0	0	1	1	0.3927

This table shows the summary statistics for the full data sample, of 464 firms, including both the S&P500 and S&P Small Cap Index.

Table 5: Summary Statistics, S&P 500 Small Cap Firms

Variable Name	Min	Q1	Median	Q3	Max	Mean
TA	73.708	400.01	643.40	1,101.0	5,836.8	887.91
OI	-106.70	51.674	97.014	158.96	1,170.7	126.97
CSHO	5.628	24.779	31.08	43.468	111.48	36.165
TE	45.738	217.84	331.07	536.12	2,595.5	412.81
PRC	2.55	17.34	26.555	36.81	702	32.130
Mktcap	0.0825	0.5458	0.9361	1.308	3.951	0.9999
MKBK	0.7326	1.665	2.415	3.223	15.384	2.903
ROA	-0.2677	0.0912	0.1308	0.1965	0.8719	0.1490
Num.indep.dirs	2	5	6	8	13	6.568
Inperson.meetings	2	6	8	11	30	8.794
Phone.meetings	0	0	0	0	9	0.2565
Directors.total	5	7	8	9	15	8.021
Committee.meetings	4	7	9	11	30	9.051
Committee.financial.experts	0	1	1	2	5	1.544
Accounting.financial.experts	0	0	1	2	4	1.175
Other.exec	0	1	1	2	4	1.393
Dir.age	46.667	56.5	60	63.667	74.667	59.855
Dir.multiple	1	1.75	2.333	3.25	8.333	2.552
Dir.shares.reported	0.0007	0.0170	0.0391	0.0807	1.692	0.0874
Dir.tenure	2	5	7	9.75	25.333	7.756
Dir.audit.total	2	3	4	4	7	3.755
NUMEST	2	4	6	9	28	6.922
MEDEST	-0.69	0.15	0.27	0.44	28.29	0.4351
MEANEST	-0.65	0.15	0.26	0.44	28.19	0.4367
STDEV.EST	0	0.01	0.01	0.03	2.43	0.0345
Forecast.error	-2.23	-0.01	0.01	0.04	3.12	0.0174
Forecast.error.binary	0	0	0	1	1	0.3871

This table shows the summary statistics for the small cap data sample, of 224 firms, from the S&P Small Cap Index.

Table 6: Summary Statistics, S and P 500 Main Index

Variable Name	Min	Q1	Median	Q3	Max	Mean
TA	732.95	4,577.0	10,218	24,232	673,342	24,414
OI	-41.7	663.28	1,446.2	2,729.8	59,255	3,173.2
CSHO	44.18	147.43	259.26	461.5	10,484	596.66
TE	-3,217	1,745	3,901.1	7,954	111,186	7,729.2
PRC	2.51	25.92	42.895	59.08	414.86	45.945
Mktcap	0.9367	5.229	10.933	20.880	367.47	23.214
MKBK	-61.197	1.973	2.812	4.045	88.388	3.886
ROA	-0.0104	0.0981	0.1389	0.1864	0.6780	0.1543
Num.indep.dirs	3	8	9	10	17	8.939
Inperson.meetings	2	7	9	11	19	9.396
Phone.meetings	0	0	0	0	6	0.1266
Directors.total	5	9	11	12	18	10.706
Committee.meetings	2	8	9	11	19	9.522
Committee.financial.experts	0	1	2	3	7	2.176
Accounting.financial.experts	0	0	1	1	4	0.9167
Other.exec	0	1	1	2	5	1.507
Dir.age	45.5	59.2	61.5	64.333	74.333	61.511
Dir.multiple	0	1.333	2	2.667	7	2.099
Dir.shares.reported	0.0014	0.0182	0.0386	0.0881	50.039	0.4205
Dir.tenure	0.6667	4.75	6.633	9.25	22	7.282
Dir.audit.total	2	4	4	5	9	4.439
NUMEST	2	10	14	18	39	14.587
MEDEST	-1.5	0.3	0.51	0.8	3.1	0.5997
MEANEST	-1.49	0.3075	0.51	0.8	3.11	0.5991
STDEV.EST	0	0.01	0.02	0.04	0.69	0.0360
Forecast.error	-1.94	0	0.02	0.05	0.72	0.0235
Forecast.error.binary	0	0	0	1	1	0.3977

This table shows the summary statistics for the large cap data sample, of 240 firms, from the S&P Main Index.

RESULTS

As per discussion above, the main target of this investigation is to examine the relationship of financial expertise and the probability of just meeting or beating the EPS forecast. The main model specification is

$$Forecast.error.binary = Accounting.financial.experts + Dir.shares.reported +$$
$$+Dir.tenure + Committee.meetings + Other.exec + Mktcap + ROA + MKBK +$$
$$Num.indep.dirs + Directors.total + Dir.age + Dir.multiple + Dir.audit.total + error \text{ (3)}$$

where the dependent binary variable is coded as '1' if the actual earnings met or beat the forecast consensus by no more than 3 cents, and '0' otherwise, and the main independent variable is the number of direct accounting financial experts on the audit committee, as defined in the previous section. In addition to the main model specification, several different alternatives with various interactions were attempted, with the results shown in Table 7.

Table 7: Probit Regression Results

Variable Name	Model 1	Model 2	Model 3	Model 4
(Intercept)	0.9265	0.8896	0.9455	1.129
	(0.0404) **	(0.0548) *	(0.0526) *	(0.0893) *
Accounting.financial.experts	-0.0713	-0.0554	-0.1513	-0.1101
	(0.0526) *	(0.5889)	(0.4385)	(0.5127)
Dir.shares.reported	-0.0054	-0.101	-0.1012	0.1317
	(0.6691)	(0.0584) *	(0.0583) *	(0.7997)
Dir.tenure	0.0084	0.0196	0.0181	0.0035
	(0.3378)	(0.1024)	(0.1368)	(0.8452)
Committee.meetings	-0.0064	-0.0065	-0.0203	-0.0065
	(0.4976)	(0.4985)	(0.193)	(0.6311)
Other.exec	0.0227	-0.0387	-0.0418	-0.0825
	(0.4713)	(0.4270)	(0.3934)	(0.3342)
Mktcap	0.0024	0.0024	0.0023	-0.0128
	(0.02345) **	(0.025) **	(0.0261) **	(0.86963)
ROA	0.4129	0.5067	0.5023	0.73
	(0.2452)	(0.1560)	(0.1599)	(0.1848)
MKBK	0.0049	0.0043	0.0044	-0.0009
	(0.2915)	(0.3687)	(0.35)	(0.9729)
Num.indep.dirs	-0.1206	-0.1215	-0.1169	-0.1511
	(0.0012) ***	(0.0011) ***	(0.003) ***	(0.0364) **
Directors.total	0.0717	0.0755	0.0758	0.1
	(0.0449) **	(0.0358) **	(0.0354) **	(0.1590)
Dir.age	-0.0164	-0.0157	-0.0148	-0.0155
	(0.0258) **	(0.0334) **	(0.0473) **	(0.1262)
Dir.multiple	0.06702	0.07039	0.074	0.1349
	(0.0196) **	(0.0145) **	(0.0109) **	(0.0021) ***
Dir.audit.total	-0.0405	-0.0517	-0.057	-0.1332
	(0.2357)	(0.1337)	(0.1014)	(0.0377) **
Accounting.financial.experts:Dir.shares.reported		0.0904	0.0901	-0.6336
		(0.0666) *	(0.0677) *	(0.1312)
Accounting.financial.experts:Dir.tenure		-0.0141	-0.0126	-0.0075
		(0.1526)	(0.2106)	(0.6018)
Accounting.financial.experts:			0.0114	
			(0.2613)	
Accounting.financial.experts:Other.exec		0.0501	0.0576	0.0419
		(0.1365)	(0.0972) *	(0.4602)
Accounting.financial.experts:Num.indep.dirs			-0.0042	
			(0.7931)	
Accounting.financial.experts:Dir.shares.reported				0.0582
				(0.0687) *
Number of observations	464	464	464	224
AIC	2386.4	2382.4	2385	1123
R2	0.0280	0.0335	0.0341	0.0540
Adjusted R2	0.0209	0.0248	0.0243	0.0347

*This table shows the regression results for several model specifications. Model 1 is the base model specification as defined in Equation 3 without interaction terms: Forecast.error.binary ~ Accounting.financial.experts + controls + error Model 2 adds interaction terms between financial experts and a number of variables which may affect the director's emotional affiliation, namely: tenure, being an executive at another firm, and share ownership. Model 3 adds interactions with number of meetings and number of independent directors. Model 4 includes the combined interaction term between financial expertise, being a current executive at another firm, director tenure, and beneficial share ownership. Two-tailed p-values in parentheses. Significance codes: '***'0.01 '**'0.05 '*'0.1.*

The first column of Table 7 (Model 1) shows the base model results with no interaction terms. The main coefficient of interest, that on *Accounting.financial.experts,* is actually negative and significant (p=0.052), suggesting that more accounting financial experts on the audit committee reduces the likelihood of meeting or just beating the analyst earnings forecast. Other significant coefficients in the model suggest that the probability of meeting or just beating analyst earnings forecast goes up with firm market cap (*Mktcap*), directors serving on multiple boards (*Dir.multiple*), and total number of directors (*Directors.total*), and goes down with director age (*Dir.age*) and number of independent directors (*Num.indep.dirs*). In the second column of Table 7 (Model 2), financial expertise is interacted with a number of variables which may affect the director's emotional affiliation, namely: tenure, being an executive at another firm, and share ownership. The results show that while the number of accounting financial experts by itself is not significant (p = 0.59), the interaction term with share ownership (*Dir.shares.reported*) is significant and positive (p = 0.066), indicating that at the average number of shares owned by the audit committee members (263,000), an increase in accounting financial experts by one increases the probability of meeting or just beating the analyst estimate by 0.9%. When I include other logical interactions (Model 3), with number of meetings (the more meetings, the more active the committee may be in interacting with the auditor), and number of independent directors (the more independent directors there are, the less likely the board overall is to have incentive to manipulate earnings), the *Other.exec* interaction term also breaks into significance at p = 0.09. This shows that at the average number of directors with current executive positions in other companies (1.45), an increase in the number of accounting financial experts by 1 increases the probability of meeting or just beating analyst forecast consensus by 3.2%.

Running these models separately for the two sub-samples (SP500 and SP500 Small Cap) produced no significance for the variables of interest, which I ascribe to the resulting much smaller sample size for the individual regressions. It was also instructive to run some regressions with higher-order interaction terms. Specifically, one might suspect that it is the combined effect of having financial expertise (ability), being a current executive (emotional affiliation), having long tenure (comfort/entrenchment), and having beneficial ownership of a lot of shares (monetary incentive), that would be expected to push our financial experts to tweak the accounting statements. The result for the Small Caps (Model 4) showed that at the average, this fourth-order interaction term shows that an extra accounting financial expert results in an increase of 1.9% in the probability of meeting or just beating analyst estimates. (These results are insignificant for the large firms and for the combined sample).

CONCLUSIONS

Though current regulations encourage the inclusion of financial experts on a company's audit committee, it is not a foregone conclusion that these financial experts improve earnings quality. It is possible that an audit committee with greater financial expertise will be more effective in offering arguments to the auditor against whatever adjustments it wants to reject. Financial expertise would also increase the ability of the committee to pick those items that will maximize the probability of meeting earnings targets, while not raising any "suspicious" discretionary accruals, and thereby minimizing any negative impact those may have on various market-based measures of earnings quality. Audit committee members with financial expertise may also have an impact beyond the audit process by suggesting certain accounting practices to the company that would improve the general appearance of financial statements. This paper analyzes this question empirically by collecting and analyzing detailed firm-level data on company board composition and director financial expertise, analyst EPS forecasts and actual earnings reports, as well as general company financials. Using the incidence of a company meeting or just beating analyst earnings forecasts as a metric of earnings management, I examine the relationship between that and measures of director financial expertise and director incentives. The empirical results of this paper suggest that financial expertise on the audit committee is not unequivocally a good thing. When combined with certain factors that can affect director incentives in a detrimental (for the shareholders) way, financial expertise may actually enable the director to manipulate the firm's earnings more effectively than a non-financial expert

would be able to. If that is, indeed, the case, one might question the efficacy of the post-SOX requirement to disclose the presence of financial experts on the audit committee, which effectively encourages firms to get financial experts on their audit committee. The results indicate that if such encouragement takes place, it might be prudent to also discourage the presence of current executives on the audit committee, and reduce the amount of beneficial ownership of company stock by the audit committee members. A number of questions remain for future research. A larger sample, over several years, might give better insight into these relationships. Some data on director net worth would prove beneficial in teasing out the monetary incentive problem with share ownership. A longitudinal study, looking at what happens within a firm as it acquires more financial experts on its audit committee, might produce stronger results as it avoids the large amount of cross-firm variation.

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