

Group Think in Financial Analysis? A Multivariate Study

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Abstract

This multivariate behavioral research investigates if financial assessments made by analysts may be affected by the professional employment group or sector in which the analyst works. Professional financial analysts from two separate groups were studied. The two groups were analysts for state public service commissions who regulate the public utilities industry and professional private sector analysts who specifically follow stocks and bonds of public utility companies. Members of both groups were asked by way of a mailed survey to analyze multi-year comparative financial statements of a publicly traded electric utility company using variables related to liquidity, long term debt, cash flow, dividends, profitability, as well as the overall financial condition of the firm. The paper describes the data collection process, statistical analysis, and results of the research.

I. Introduction

Statement of Financial Accounting Concepts No.1 promulgated by the Financial Accounting Standards Board (FASB, 1978) established that the overall purpose of financial reporting is to give external users information that will enhance their ability to analyze financial information and make business and economic decisions. Accordingly, effective financial reporting should meet the following three broad objectives: (1) information must be useful in making investment and credit decisions, (2) information must be useful in assessing cash flow prospects, and (3) useful information concerning the resources of enterprise resources, claims to those resources, and changes in resources must be provided. (FASB, 1978).

The financial reporting objectives are derived from the informational needs of external users. These users lack the authority to prescribe what information they want and what format such desired information must take (SFAC No. 1, 1978); therefore, they must rely on the information communicated by management.

The FASB recognizes that there are many potential groups of financial information users and that financial reporting must attempt to satisfy each group simultaneously. Over the years, a number of studies have questioned whether or not current systems of financial reporting meet the needs of diverse user groups. Abdel-khalik (1971) proposed that the informational needs of users are dynamic and therefore subject to change over time. Hendriksen (1982) pondered how we can be sure that current disclosure rules meet the informational needs of users. Johnson (1992) questioned if informational needs of users might not differ according to user group affiliation.

This research investigates the affects of user group differences when performing financial analysis of a firm using a set of comparative financial statements. The research specifically

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seeks to determine if one's professional employment group affiliation affects the financial statement user's analysis of the financial condition of a business enterprise.

II. Literature Review

In the specific domain of financial analysis, Johnson (1992) postulates that financial informational needs may differ by user class. Elliott and Jacobson (1994) express the belief that financial disclosure will change in the future, most likely, with the amount of disclosure increasing to meet differing user group needs. Wallman (1995) expresses concern that current financial reporting is not keeping pace with changes in business and may not meet the objective needs of users in the future. McEwen and Hunton (1999) catalog that differing sets of analysts focus on different aspects of reported financial information. Hendriksen and Van Breda (1992) postulate that various user groups may hold to differing objectives in financial reporting, and by extension, view the same financial information differently. Johnson (1992) goes so far as to question if differing user groups do not in fact have differing financial information needs.

Different users/user groups may arrive at different interpretations from identical financial information. It seems plausible that differences in analysis, if existent, could reasonably be based upon one's professional employment position or affiliation. Scott (1997) supports this line of logic in his findings that individual analysts and groups are not unanimous in the reaction to financial accounting information. Makhail, Walther, and Willis (1999) detail that analysts following large, intensely watched firms often arrive at varied analytical conclusions concerning the financial condition of a firm. Webster, Ellis and Bryan (2004) found that male and female analysts differ somewhat in their analysis and in their confidence in their analysis.

This research seeks to add to the body of literature by testing if professional employment affiliation is a significant factor in assessing the financial condition of a firm. The research does not attempt to measure if the analysis performed by a specific professional employment group is superior to another, but concentrates on whether or not differences in outcomes of analysis exist between members of separate professional employment groups.

III. Problem Statement

It is not known if the assessment of the financial condition of a firm may be affected by the professional employment group of the analyst. The purpose of this study is to test whether financial analysis differs between professionals employed in different sectors of the profession. In the research, one group of analysts work in the regulatory setting (public service commission analysts) and the other group work in the for profit sector of the economy (securities analysts that follow publicly traded utility companies).

Sources of Data

The data collected for this study consisted of responses to a mailed questionnaire applicable to an actual but disguised set of comparative financial statements of a publicly traded utility company. The financial statements contained comparative balance sheets, income statements and cash flow statements. The financial statements were from a regulated utility

company that had no nuclear exposure and low exposure to any acid rain legislation. A utility was chosen because accounting practices and methods are more standard in this business sector than most any other. Standardization in financial statement preparation was sought in order to reduce the number of variables the participants would encounter. The response instrument provided for an assessment of the financial condition of the company in six categories (detailed later).

The survey packet was mailed to 250 professional users of financial statements. There were 125 members targeted in the survey from two different professional groups. The two groups were professional securities analysts (referred to from here on as analysts) and public service commission analysts (referred to as regulators from here on). Survey participants were selected at random from two sources. The regulators were selected from a listing of public service financial analysts compiled from documents of various state publications. The professional securities analysts were selected from the membership of the New York Society of Security Analysts. Of the 250 survey packets mailed, 65 usable responses were returned, for a response rate of 26 percent. Of the 65 responses, 33 were from the securities analysts and 32 were from the regulators. The survey response instrument is presented at the end of the paper.

After compilation of the returned surveys, potential nonresponse bias was investigated. Larson and Catton (1959) demonstrated a now commonly used proxy to test for nonresponse bias. Using their general methodology, models were constructed to test for differences between early and late respondents in each group. No statistically significant differences were found between the early and late responders. Additionally, Berdie (1989) found that even in the event of nonresponse bias in mail surveys, typically the bias did not alter survey findings.

Null Hypothesis

H₀: A statistically significant difference does not exist in the financial analysis between public service commission financial analysts and professional private sector securities analysts who follow the utilities industry in assessing the financial condition of a publicly traded utility firm.

IV. Design of the Study

The design for this study was one in which a categorical independent variable was measured in order to evaluate its effect on six metric (scaled) dependent variables. The independent class variable was the professional employment group of the responder (either financial analyst or utility regulator).

The six scaled dependent variables (described below) were measures of the respondents' assessments of the firm's future abilities or future financial conditions. These measurements were obtained from respondent scores in the six areas using a seven point Likert scale for each of the six variables. On the scale, one indicated a very low ability rating of the firm and seven indicated a very high ability rating.

The dependent variables were chosen after a review of the financial analysis literature which indicated that analysis should, as a minimum, incorporate measurements of liquidity, both short and longer terms, profitability, and cash flow. (Strong, 2001); (Hirt and Block, 2003); (Besley and Brigham, 2005); (Moyer, McGuigan, and Kretlow, 2006). Additionally, Kolb and DeMong (1988), Mayo (2000), as well as Bodie, Kane, and Marcus (2001), indicate that much of the analysis performed on a firm is done by persons external to the firm, and these analysts must make use of existing financial statements. All authors cited immediately above assert that these parties are most interested in liquidity, profitability, and cash flow. These writers also agree that in addition to assessing individual financial areas, a combined assessment of the entity should be made prior to reaching a conclusion concerning the overall well being of the firm. The dependent variables were therefore chosen to incorporate the consensus of thought concerning important aspects of financial analysis utilizing financial statements.

Description and Methodology of Analysis

The data were analyzed by using Multivariate Analysis of Variance (MANOVA). MANOVA is concerned with differences between groups or experimental treatments. MANOVA is termed a multivariate statistical procedure as it is used to assess group differences across multiple dependent metric variables simultaneously (Hair et al, 1998).

MANOVA is deemed particularly useful when employed in conjunction with an experimental design in which the researcher controls and manipulates one or more independent variables to determine the effect on two or more dependent metric variables (Hair et al, 1998). Additionally, MANOVA does away with the problem of a series of individual F-tests (which may lead to increased type 1 errors) by testing the linear combination of all dependent variables simultaneously.

In the study, the six dependent variables are metric variables based upon a scaled input. The use of scale based metric variables is a common practice and is demonstrated and supported by Hebert and Freeman (1992), Hair, Anderson, Tatham, and Black (1998), and Johnson and Wichern (1998). The six dependent variables are listed below along with the independent class variable.

The Research Model

$$Y_{jk} = U + A_j + E_{jk}$$

where:

Y_{jk} = the vector of responses for each rating category item (6 items) from a participant k in group j.

U = overall or grand mean effect.

A_j = effect of level j of factor A (user group) on the six response items for j=1,2.

E_{jk} = random error present in response k in cell j, for i=1,2,...nj.

Practically stated, the model was as follows, with the shortened titles of the variables listed for use in subsequent tables and figures.

$Y_1, Y_2, Y_3, Y_4, Y_5, Y_6 = X_1$ where:

- Y_1 = Assessment of the ability of the firm to meet its short-term obligations as they come due.
- Y_2 = Assessment of the ability of the firm to meet its long-term obligations as they come due.
- Y_3 = Assessment of the ability of the firm to continue paying its current cash dividend in the future.
- Y_4 = Assessment of the ability of the firm to increase its common stock cash dividend in the future.
- Y_5 = Assessment of the ability of the firm to increase its profitability in the future.
- Y_6 = Assessment of the over-all future financial condition of the firm.
- X_1 = Employment group. (Financial analyst, Utility regulator)

V. Results

Table I shows the results of the multivariate test of the null hypothesis. The results demonstrate that there is a statistically significant difference between the analysis of the regulators and the private securities analysts. The exact F Value was computed to be 3.453. The significance of the F Value was 0.019, an indication of a distinct difference in the overall analysis of the two groups. The observed power of the F-test was .842.

Table II displays the mean assessment scores reported by the analysts and regulators for each of the six dependent variables. The table also shows the results of the *post hoc* univariate analysis performed. This analysis was undertaken to determine which if any of the individual dependent variables were significant and to determine if only one or two or the variables were instrumental in affecting the outcome of the MANOVA test. As can be seen from the table, the regulators had higher mean scores in each of the six areas of assessment. In four of the six areas, the differences between the mean scores of the two groups were statistically different at the 0.10 level. These *post hoc* results demonstrate that the MANOVA results were not overly influenced by only one or two of the six assessment variables. This adds support to the overall finding of the model. Additionally, it is of particular interest that there is a statistically significant difference at the 0.036 level between the mean scores of the two groups for the variable measuring the over-all future financial condition of the firm. This single variable may well be, in the minds of the respondents, a summary variable that describes the over-all assessment of the firm, as both analysts and regulators would focus on the future conditions of the enterprise.

VI. Summary of Findings and Discussion

The results of the multivariate analysis (MANOVA) showed that there was a statistically significant difference in assessment results of the regulators and the securities analysts. These results are in consonance with the current literature suggesting that differing user groups may draw different conclusions from identical financial information. The separate ANOVA performed on each of the six dependent variables yielded results that showed the regulators had higher mean scores than did the analyst for all six variables. Four of the six variables were significantly different at the 0.10 level. These individual results generally support the multivariate findings and indicate that the multivariate findings were not skewed by only one or two of the six variables. The research indicates that the general purpose financial statements

required by the FASB may convey somewhat different information to the two studied user groups.

Objective analysis should be accomplished without bias. But, is this possible? In the current research it would seem the each group of users brings its own forms and methods of analysis to the task. This is likely to happen as each group may have differing objectives in performing their analysis. Such is not particularly surprising however, as often times in other professions two professionals see the same facts but view them differently. For instance in the court room, the prosecution and the defense are at opposite ends of the opinion spectrum although they are dealing with the same case and the same facts. Securities analysts often vary in their opinions of the value of a stock although presented with the same information. In the current research it may be useful to conclude that analysis is affected by one's professional employment group even when such other variables such as education and experience are taken into account. In other words, "group think" may impact analysis.

The findings are however limited and preclude projection to the larger population due to a relatively small sample. Additionally, correlation between the dependent variables, although the use of such variables is called for in the financial literature, may also limit the findings. Additional research should be undertaken to determine if other variables such as gender, experience, age, and ethnic background may affect financial analysis.

TABLE I
MANOVA RESULTS FOR HYPOTHESIS OF NO DIFFERENCE
IN ASSESSMENTS BETWEEN REGULATORS AND ANALYSTS

Wilks Lambda	Exact F Value	Significance of F
.703	3.453	0.019

TABLE II
MEANS AND *POST HOC* ANOVA RESULTS FOR HYPOTHESIS OF
NO DIFFERENCES IN FINANCIAL ASSESSMENTS
BETWEEN ANALYSTS AND REGULATORS
(7 POINT SCALE)

Variables	Analysts n=33	Regulators n=32	F- test	Significance of F
Ability of the firm to meet its short-term obligations	4.94	5.48	3.341	.073
Ability of the firm to meet its long-term obligations	4.61	4.91	1.050	.310
Ability of the firm to continue paying current cash dividend	4.73	4.74	.001	.972
Ability of the firm to increase cash dividend in the future	4.03	4.54	3.106	.098
Ability of the firm to increase profitability in the future	3.61	4.26	5.278	.035
Overall assessment of the future financial condition of the firm	3.91	4.57	5.306	.036

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