An Investigation of Security Analysts' Use of Non-Accounting Data For Decision Making

Leonard G. Weld, Accounting, Auburn University

Abstract

This research evaluates the responses of Chartered Financial Analysts (CFAs) asked what additional information considered useful to make a buy/sell decision regarding equity securities. The information is dichotomized into quantitative/qualitative and internal/external groups. The results show that for the total sample of CFAs, the information requests are not significantly different from a 50/50 split. The inference drawn is that since almost 50% of the information used is external (qualitative), additional mandatory disclosures of accounting information should be carefully reviewed before implementation.

Introduction

The purpose of this research is to evaluate the nature of information analysts would consider useful in making a buy/sell decision regarding equity securities. The subjects of the research are Chartered Financial Analysts. The cases used in the study are cases which relate decisions which might be made by a securities analyst dealing in equity securities. The cases are provided in an appendix to this paper, and are available from the author on request (1). The analyst's tasks involved: (a) estimating the probability of an event related to an investment decision and (b) listing three additional factors the analyst would consider in making an investment decision.

This paper concerns the second task and is organized in the following manner: Research Design, Literature Review, Statistical Method, Results, and Conclusions.

Research Design

From the Institute of Chartered Financial Analysts directory, a mailing list of 250 names was compiled. The names were randomly selected from the directory excluding only educators, Canadian members, retired members, and bond market

analysts. Generalizations should be made only to active CFAs in the United States who trade equity securities.

The research materials were randomly assembled into packets, to prevent any order effects, and mailed to the offices of the subjects. After returned mail (for address changes, no longer employed, etc.), there were 240 possible respondents. The actual number of responses received was 41 for a response rate of 17%. Brown, Foster, and Noreen (1985) provides comparative survey results; three survey research papers were identified and the mean response for CFAs and firms providing responses was 31%. Hence, the expected response rate from this population is low. The number of useable responses in this research was 23. The large discrepancy between responses and useable responses is explained by information gathered with the second request letter. Because of the low response to the first mailing of the questionnaire, when the second request was mailed, an additional segment of information was requested. The CFA was asked to participate fully in the research by completing the cases. If he/she declined to participate fully, he was asked to give some indication of the reason for non-participation by

marking an option at the bottom of the letter, and then to please return this abbreviated response. Eighteen subjects chose this manner of response. The choices given to the respondents to check were as follow:

- 1) I cannot respond because of time constraints,
- 2) I am not interested in the topic, and
- 3) I never respond to surveys because of personal or company policy.

Eight of the eighteen (44%) chose not to respond because of time constraints. Seven (39%) revealed company or personal policy was the reason for their abbreviated response, with two specifically identifying company policy. One showed no interest in the topic, one other had changed jobs and was no longer involved in financial analysis, and one was an original respondent.

The general inference which can be made from these results is that financial analysts are very busy people. Realizing this, some companies have policies which prohibit analysts from taking time from their job to complete surveys, and other analysts have made the same personal decision.

A pilot test was conducted using five analysts who were not included in the later sample. The subjects were given the three cases and the same instructions to be contained in the cover letter in order to ascertain if the directions to be provided the actual subjects were clear. The researcher was present in the office area; however, each analyst completed the three cases in their own office. An exit interview was conducted with the analysts individually, and none voiced any concerns over the cases used, unfamiliar wording, or unrealistic assumptions.

This research deals with the three factors identified by the analysts as being useful in making an investment decision, part (2) of the survey. However, there was no actual buy/sell decision required. The cases were kept intentionally short, therefore, all the pertinent information needed for an actual decision was not available to the analyst. This research is concerned with what type of data

the analysts would request in order to make a decision. Specifically, would they prefer quantitative financial data or non-quantitative information, given the context of the cases; and, are they interested in information which would be considered internal or external to the firm?

Literature Review

Almost 20 years ago, Ball and Brown (1968) established the information content of annual earnings. Beaver (1968) supported the findings of Ball and Brown, and in his research he specifically noted possible effects on market price by outside influences such as earnings announcements, stock splits, or newspaper articles concerning the firm. Grant (1980) studied the information content of interim information. He reviewed the Ball and Brown and Beaver studies and the possible effect of Wall Street Journal news items on information content of accounting numbers. Gonedes (1972) also points out that accounting reports are in a competitive setting with other sources of information.

Beaver (1973) summarized some of the research on event studies and asked the question: "Does the market look behind accounting numbers or is it fooled by them? ... does the market use a broader information set than merely the reported accounting numbers?" In his call for future research, Beaver asked for more evidence on the association between financial statements and security prices and the usefulness of financial statement data to investors, particularly for assessing risk.

The current question is how often did the financial analysts desire more quantitative versus qualitative information in order to make a buy/sell decision for a specific security; and, is that information considered internal or external to the firm? If the analysts chose other than specific financial statement data, what are the alternative sources which compete with accounting statements as suppliers of information? The results are not only reported as quantitative versus qualitative, but also internal information, which would be reported on

the balance sheet, income statement, or statement of changes, and exogenous information, e.g., industry or market information.

Statistical Method

The statistical test used is the binomial test, since all possible observations from the population will fall into either one of two discrete classifications. Those classifications are quantitative/qualitative or internal/external. The one-sample Chi-Square test was considered, but the observations are not independent, which violates one of the requirements for the Chi-Square test. Since the data is nominal there is no parametric technique applicable. The binomial test is a goodness of fit test which tells us if it is reasonable to believe that the proportions observed in the sample could have been drawn from a population having a specific proportion. If the data is basically dichotomous, even though the variable has an underlying continuous distribution, the binomial test may have no more powerful alternative (Siegel, 1956).

The null hypothesis for this test is that the observed proportions in the sample are equal:

$$H_0: p_1 = p_2 = .5$$

All tests will be two-tailed tests, since there is no theoretical reason to believe one category would be chosen over the other. The alpha level will be set at .05.

Results

Quantitative vs. Qualitative

The first area of research is the use of quantitative as opposed to qualitative data. The raw data are summarized in Table 1. The statistical information is summarized in Table 3 later in the paper. This comparison is between two types of information available to the CFA. The specific company information available can be in two basic formats: quantitative or qualitative. An example of quantitative information is the sales figure from the statement of income, or total liabilities from the

statement of financial position. The qualitative information might come from the president's letter in the annual report outlining plans for expansion in the coming year. Exogenous sources might include quantitative stock market information or qualitative economic projections.

The data for this analysis was taken from the last part of the three cases completed by the analysts. Each of the cases asked for three additional factors or pieces of information the analyst would like to have in order to make a buy/sell decision. Although not explicitly stated, the assumption is the analyst will request non-trivial information. This amounts to a possible 207 data points for the 23 full responses ($23 \times 3 \times 3 = 207$). In reality, there were a total of 188 data points. The discrepancy arising because some analysts responded with multiple answers to some questions, or wrote a short paragraph which did not include three separately identifiable factors.

As might be expected, the results differed by case. The IRS case, which was concerned with the effect of a fixed dollar event, led the analysts to choose more company-specific quantitative information with which to make a decision. Of the total requests ($n = 58$), 29 asked for firm-specific financial statement information. Five additional requests were made for quantitative data, but for market information rather than firm financial data, e.g., "the firm's current market price." The balance (24) of the requests were for qualitative information, e.g., "Does the company have a history of non-compliance?" The final count was 34 quantitative requests and 24 qualitative requests. The proportion of quantitative requests was not significantly different from .5.

For the other two cases (New Business and Raw Material), requests for qualitative information exceeded those for quantitative information, and quantitative information external to the firm was requested more than internal (balance sheet, income statement, or statement of changes) information.

For the New Business case ($n = 64$), there were

35 requests for qualitative information, e.g., "profile of competition" and "experience of marketing people." Fifty-eight percent of the quantitative information requested was from outside the firm, e.g., "ROE of competitors," and "industry growth rate." There were four requests for market information, e.g., "P/E of stock," and "composition of investors." The remainder of the requests (12) were for quantitative information from within the company. The proportion of quantitative requests was not significantly different from .5.

For the third case (Raw Material; $n = 66$), there were 39 requests for qualitative data, e.g., "how quickly can the alternate supply be expanded," and "need of foreign government for revenue." Of the 27 quantitative requests, 59% (16) were for information from outside the company, e.g., "is this risk reflected in the equity price already?" and "existence of other buyers for the raw material besides this company." The rest of the quantitative requests (11) were for company financial information, e.g., "the cost of a substitute raw material." The proportion of quantitative requests was not significantly different from .5.

Scattered throughout all of the non-quantitative requests for information were references to the risk orientation of the investors. Some of the respondents managed company portfolios and so presumably knew the risk limitations of their own company and did not need to request that information.

Another general note: the requests were not clustered by analyst. That is to say, one analyst did not consistently request all qualitative or quantitative information. The requests seemed more affected by the content of the case rather than habit of the respondent.

Internal Information vs. External Information

The second area of research within the paper is the comparison of the use of internal information vs. external information. The results of these comparisons of raw data are summarized in Table 2 and the statistical data is summarized in Table 3. A major premise of the Beaver (1973) article was that there are alternative sources of information available to the investor. The evaluation of securities does not take place within a vacuum but within the framework of the general marketplace, and in particular the industry in which the company operates. The emphasis in this section is on alternative sources of information, rather than the quantitative/qualitative comparison. In this section, the same information from the CFA responses was dichotomized between internal or external.

In the New Business case, the responses were evenly split. Exactly 32 of the requests were for internal and external information.

For the IRS case, which related to the possible fine, 83% of the requests were for internal information. This was not an unexpected result

Table 1
Information Request Results

Case	QUANTITATIVE			QUALITATIVE
	Internal Firm	External Industry	External Market	Ext/Int
New Business ($n=64$)	12	13	4	35
IRS ($n=58$)	29	0	5	24
Raw Material ($n=66$)	11	7	9	39

Table 2
Information Request Results

Case	INTERNAL		EXTERNAL	
	Qual.	Quant.	Qual.	Quant.
New Business (n=64)	20	12	15	17
IRS (n=58)	19	29	5	5
Raw Material (n=66)	7	11	32	16

Table 3
Statistical Results Summary

Case	INTERNAL	vs.	EXTERNAL	p
	Raw Data		Observed Proportion	
New Business (n=64)	32/32		.5	1.0
IRS (n=58)	48/10		.1724	.0001
Raw Material (n=66)	18/48		.2727	.0004
Total Sample (n=188)	98/90		.5213	.6097

QUANTITATIVE vs. QUALITATIVE

Case	Raw Data	Observed Proportion	p
New Business (n=64)	29/35	.5469	.5320
IRS (n=58)	34/24	.4138	.2373
Raw Material (n=66)	27/39	.5909	.1757
Total Sample (n=188)	90/98	.5213	.6097

since the case dealt with a specific dollar amount which could be judged material only in relationship to information about the specific firm. This proportion was significantly different from .5 at the .0001 level.

The final case, Raw Materials, gave just the opposite results. Seventy-three percent of the requests were for external information. Again, this result is intuitively appealing. This case involves the interruption of a supply source outside the company. The most relevant questions would most likely be about alternative sources of raw materials or about the duration of events causing the interruption. Here the observed proportion was significantly different from .5 at the .0004 level.

Conclusions

The CFAs made use of a great deal of non-financial data in a buy/sell decision for these cases. For two of the three cases, CFAs requested more qualitative data than quantitative data. Of the quantitative data requested, for two of the three cases more of the data was industry or market data rather than firm-specific financial data.

The analysts were also interested in information from external sources. This supports Beaver (1973): accounting data is not the only important source of information for investors, and therefore, the imposition of regulatory requirements for accounting information should be tempered with the knowledge of the existence of alternative sources. The alternative sources may provide valuable information for less cost than the accountant.

In most research, failure to reject the null hypothesis is regarded as a bad sign. However, in this research failure to reject the null has a very

positive interpretation. In the cases presented, as summarized in Table 3, the only significant statistical results are in cases where they would logically be expected. The IRS case deals with a specific amount possibly to be assessed against the firm. The fact that the CFAs wanted internal information rather than external information indicates the amount of the fine is important only relative to that particular firm. On the other hand, for the Raw Material case, external information is more important. Information about alternative sources is probably more important than any internal firm information. All other statistical case tests and overall sample tests were non-significant. The interpretation of this non-significance is that, except in certain specific instances, there are alternative sources of information which can supply needed information to the analyst/investor. Financial statements are not all important, nor are they the only source of information used by CFAs. There seems to be no reason to mandate additional information to be supplied by the accountant in the financial statements, because of the alternative sources available. In fact, the results of this research show, given a choice of information sources, CFAs choose external or qualitative information almost equally as much as internal quantitative information (see Table 3).

The major limitation of this research is obviously the small number of respondents. While some indication of the reason is given, there is a possibility of a non-response bias. The second limitation is that while the analysts were asked what additional information or factors would you want to know to make a decision, the analysts did not actually make a decision. Third, there was no cost associated with the information requested. The information would, however, be generally available.

Endnotes

Short summaries of the three cases used in the research.

IRS Case: The CFA holds stock in a company which failed to file information documents with the IRS, resulting in a possible fine of \$250,000. However, there are extenuating circumstances.

Raw Materials Case: The CFA holds stock in company with a very favorable long-term contract for raw material. The foreign government with which the contract was made is in danger of being overthrown.

New Business Case: The CFA is to consider purchasing stock in a new business with a cost cutting production idea.

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