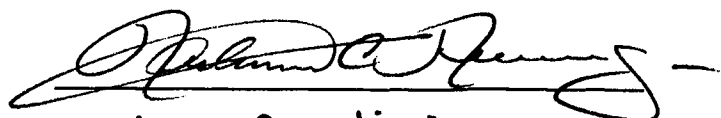


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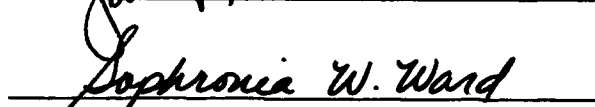
I am submitting herewith a dissertation written by Thomas Eugene McCaslin entitled "An Empirical Investigation of the Alleged Trade-off Between Relevance and Reliability." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Business Administration.


Keith G. Stanga, Major Professor

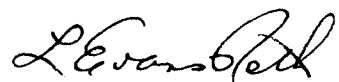
We have read this dissertation
and recommend its acceptance:







Accepted for the Council:


Vice Chancellor
Graduate Studies and Research

AN EMPIRICAL INVESTIGATION OF THE ALLEGED
TRADE-OFF BETWEEN RELEVANCE
AND RELIABILITY

A Dissertation
Presented for the
Doctor of Business Administration
Degree
The University of Tennessee, Knoxville

Thomas Eugene McCaslin
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ABSTRACT

The Financial Accounting Standards Board has designated relevance and reliability as the primary decision-specific qualities of accounting information. The objective of this study is to present empirical evidence concerning whether a trade-off between relevance and reliability exists. This objective is accomplished by analyzing the relevance and reliability of various information items as perceived by several groups associated with accounting information.

A questionnaire was developed to assess the perceived relevance and reliability of accounting information as the accounting measurement basis is changed. Using a matching criterion, thirty information items were selected for the questionnaire. Eleven of the thirty items were presented on the basis of historical cost, eleven were presented on a constant dollar basis, and eight were presented on a current cost basis. These thirty items were used to form thirty-one pairs from which the changes in relevance and reliability could be analyzed.

The survey groups were selected to sample the primary users of financial information (investors and creditors), and the preparers of financial information. Responses were received from 59 chartered financial analysts, 113 chief commercial loan officers, and 112

chief financial officers. The responses received were arranged into ordered contingency tables for each information pair (thirty-one tables for each of the three groups). Each contingency table was analyzed to determine the relationship between relevance and reliability perceived to exist by each group.

The chi-square test on each contingency table revealed that for ninety-one of the ninety-three pairs, a relationship was perceived to exist between relevance and reliability. On each information pair determined to have a relationship, the Kendall's Tau_b was examined to establish the direction of the relationship. In all ninety-one of the cases, a positive Tau_b value was found, which indicates a direct relationship between relevance and reliability. A direct relationship means that an increase or decrease in one characteristic is associated with a similar change in the other characteristic. Therefore, the conclusion of this study is that the groups surveyed do not perceive a trade-off between relevance and reliability when the accounting measurement basis is changed.

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CHAPTER I

INTRODUCTION

In the first pronouncement of its Conceptual Framework Project, the Financial Accounting Standards Board (FASB) delineated the broad objective of financial reporting as follows: "Financial reporting should provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit and similar decisions" [FASB, 1978, para. 34]. In order to determine if an item of financial information will be useful it is necessary to distinguish the characteristics that enhance usefulness.

Identification of the qualitative characteristics of financial information and their relationship to the presentation of external financial reports has been given considerable import by various research groups (see, for example, [APB, 1970], [AAA, 1966], [AAA, 1977], and [FASB, 1980b]). The FASB devoted an entire segment of its Conceptual Framework Project to the examination and definition of qualitative characteristics of accounting information. Focusing on the users and their informational needs to make rational decisions, the FASB developed a hierarchy of qualitative characteristics in which relevance and reliability are designated as the

primary decision-specific qualities of accounting information. The importance of relevance and reliability is so significant that the FASB considers the complete absence of either characteristic tantamount to uselessness.

Background

The various studies to determine qualitative characteristics have generally listed relevance as the foremost quality desirable in accounting information and ". . . although not sufficient as a sole criterion, it represents a necessary characteristic for all accounting information" [AAA, 1966, p. 9]. Relevance is that characteristic of an information item that makes it useful for making decisions regarding the entity represented by the financial information. If information lacks the capacity to make a difference in decision making, then it lacks relevance.

Reliability as a qualitative characteristic has not been singled out in all of the studies. Reliability was implied in these studies by reference to what the FASB terms the components of reliability (i.e. verifiability and representational faithfulness). Reliability is that characteristic of an information item that allows a user to rely on it as actually representing what it alleges to represent.

Although relevance and reliability as characteristics must be present in accounting information, exactly how much of each characteristic should be present has not yet been determined. It has been assumed in the literature that a trade-off between relevance and reliability exists, and therefore, as one characteristic is increased the other must decrease. In reference to the trade-off, the FASB in Statement of Financial Accounting Concepts No. 2 (SFAC No. 2) provided the following example:

Reliability and relevance often impinge on each other. Reliability may suffer when an accounting method is changed to gain relevance, and vice versa. Sometimes it may not be clear whether there has been a loss or gain either of relevance or of reliability. The introduction of current cost accounting will illustrate the point. Proponents of current cost accounting believe that current cost income from continuing operations is a more relevant measure of operating performance than is operating profit computed on the basis of historical costs. . . . The uncertainties surrounding the determination of current costs, however, are considerable and variations among estimates of their magnitude can be expected. Because of those variations, verifiability or representational faithfulness, components of reliability, might diminish [FASB, 1980b, para. 90].

The FASB in September of 1979 issued Statement of Financial Accounting Standards No. 33, "Financial Reporting and Changing Prices" (SFAS No. 33), which requires publicly held corporations of a certain size to display the impact of changing prices (inflation) on their financial condition. This information has been substantially available to users of financial information

for two annual reporting periods; therefore, some familiarity with the information can be assumed. The requirements of SFAS No. 33 allow a comparison of specified financial information presented using three different accounting valuation methods. The three methods as defined in SFAS No. 33 are:

Historical cost/nominal dollar accounting.

The generally accepted method of accounting, used in the primary financial statements, based on measures of historical prices in dollars without restatement into units, each of which has the same general purchasing power.

Historical cost/constant dollar accounting.

A method of accounting based on measures of historical prices in dollars, each of which has the same general purchasing power.

Current cost/nominal dollar accounting.

A method of accounting based on measures of current cost or lower recoverable amount without restatement into units, each of which has the same general purchasing power [FASB, 1979, para. 022].

Therefore, given the requirements of SFAS No. 33 and the availability of the information for two annual periods, a logical basis is provided for analyzing users' perceptions of a trade-off between relevance and reliability.

Research Objective

The accounting literature has frequently referenced a trade-off between relevance and reliability. The typical example cited is financial information presented on a current cost basis in lieu of historical cost

financial information. Empirical evidence has not been provided to substantiate the supposed trade-off.

The primary objective of this study is to present empirical evidence concerning whether a trade-off between relevance and reliability actually exists. This objective is accomplished by analyzing the perceived relevance and reliability of various information items by several groups that are associated with accounting information.

Research Methodology

The methodology for accomplishing this study's objective consists of three major steps. The first step involves an extensive review of the literature. This review provided an evaluation of the qualitative characteristics of financial reporting and their relationships. Relevance and reliability were determined to be the primary characteristics. The review disclosed two major studies (Morton [1974] and Stanga [1980]) that examined relationships between two qualitative characteristics. These two studies are examined in depth.

The second methodological step is the design and administration of a questionnaire. The questionnaire consists of 30 information items. These items were selected from the conventional financial statements prepared on the historical cost basis and the

supplementary information required by SFAS No. 33 in the financial statements of large, publicly-held firms. The design of the questionnaire permits an examination of the changes in perceived relevance and reliability as financial reporting changes from historical cost to constant dollar accounting and current cost accounting.

In establishing its objectives of financial reporting, the FASB has designated investors and creditors as the primary users of financial information. The subjects for this survey were chosen to sample the investor and creditor categories above. Another group included in this study, although not considered primary users of financial information, is the preparers of financial reports. The sample groups are: (1) chartered financial analysts, (2) chief commercial loan officers and (3) chief financial officers. A total of 900 questionnaires were mailed and 284 usable responses were received.

The third and final methodological phase involves the analysis and interpretation of the responses received. The various statistics and interpretations indicate whether or not the presumed trade-off between relevance and reliability exists.

Contributions of the Study

As one facet of the development of a conceptual framework, the FASB, on May 12, 1980, issued an Invitation to Comment [FASB, 1980a] on financial statements and other means of financial reporting. The Invitation to Comment presents some of the issues and alternatives of financial reporting and solicits responses from the constituency of the FASB. One section is concerned with guides for financial reporting and has stated:

Reliability and relevance are inevitably intertwined and must often be traded off against each other. Although some changes in disclosure may result in a higher degree of both qualities, more often a gain in one is obtained only at some sacrifice to the other. The Board must assess whether that which is gained more than offsets that which is lost in deciding who is to disclose what [FASB, 1980a, para. 27].

This study offers empirical evidence regarding the trade-off between relevance and reliability. SFAS No. 33 is experimental in nature and is to be reviewed within five years. This study therefore should also benefit the FASB in its review of SFAS No. 33.

Limitations of the Study

There are two primary limitations of this study. These limitations relate to the survey groups selected and to the use of questionnaire methodology.

First, the groups surveyed do not encompass all

users of financial information. The principal group in each of the categories, investors, creditors and preparers, was chosen for this study. Generalizations of the results of this study should be limited to those groups actually sampled.

Secondly, the time and care committed to the preparation of the questionnaire do not preclude it completely from the limitations inherent in questionnaire methodology. Thus, the data collected through the use of the questionnaire are the perceptions of respondents concerning relevance and reliability. These perceptions may not accurately reflect the actual relevance and the actual reliability of the information items examined.

Organization of the Study

The following plan is set forth to accomplish the study's objective. Following Chapter I, a review of the literature is provided in Chapter II. The review consists of the development of the qualitative characteristics of financial reporting and analysis of the two empirical studies that examine the relationships between qualitative characteristics.

In Chapter III, the methodology is described with emphasis on the development of the questionnaire, selection of the survey samples, the treatment of

nonresponse bias and the statistical procedures applied. The results of the survey are analyzed in Chapter IV and the interpretations of the data are presented.

The final chapter (Chapter V) summarizes and concludes the study. The author's recommendations for further research are included in this chapter.

CHAPTER II

LITERATURE REVIEW

Financial reporting should provide information useful in making economic decisions regarding the reporting entity. This position has been ascribed to by the principal accounting standard-setting groups--the Accounting Principles Board (APB) and the Financial Accounting Standards Board (FASB). The various efforts to establish the objectives of financial reporting have resulted in what is called the "decision-usefulness approach." The focus on decision-usefulness was kindled by the American Accounting Association (AAA) in A Statement of Basic Accounting Theory (ASOBAT) [1966]. The FASB has enhanced this role of financial reporting in its set of objectives. Their Statement of Financial Accounting Concepts No. 1 [FASB, 1978] has set as its broad focus, "information that is useful in investment and credit decisions" [FASB, 1978, para. 32].

As with all previous attempts the FASB is now faced with the task of determining what information should be provided to the users of financial information. Decisions must be made regarding the information items and measurement techniques to be included and also those that should be excluded from financial reporting.

The past efforts have generated considerable discussion regarding the appropriate information for inclusion or exclusion. Typically a set of criteria is presented by which the information is evaluated to ascertain whether or not it is appropriate. The FASB has also prepared a set of criteria to use in selecting its choices of financial information. The set of criteria is called the qualitative characteristics of accounting information.

Qualitative Characteristics

There have been several attempts by various authors and groups to establish a set of qualitative characteristics.

George J. Staubus

In 1961 George Staubus offered a set of criteria in his book, A Theory of Accounting to Investors [Staubus, 1961]. He felt that the "selection of a measurement technique is a selection of the most appropriate type of evidence" [Staubus, 1961, p. 50]. The criteria presented were on two levels: (1) the conceptual level and (2) the applications level. The conceptual level referred to the relevance of information to the user of "the type of evidence utilized, to the problem of predicting future return" [Staubus, 1961, p. 50].

In this case relevance is the criterion by which methods are chosen for application to financial reports.

The applications level included "such variables as the difficulties in making estimates and computations, fees to independent appraisers, and the risk that bias may reduce the reliability of the measurements" [Staubus, 1961, p. 50]. The applications level depends upon the accountant's judgement, applied to each specific case, whereas the relevance criterion is based on a general analysis.

American Accounting Association

In 1966 a committee was formed by the AAA, the Committee to Prepare a Statement of Basic Accounting Theory, to "undertake a new and different kind of effort" [AAA, 1966, p. v]. The charge of this committee was to "develop an integrated statement of basic accounting theory which will serve as a guide to educators, practitioners, and others in accounting" [AAA, 1966, p. v]. Chapter two of the committee's report was devoted to the recommendation of standards of accounting information. These standards include: (1) relevance, (2) verifiability, (3) freedom from bias, and (4) quantifiability. Although relevance was considered to be the primary standard, at least partial adherence to all of the standards was considered necessary. Application of the relevance

standard required knowledge of the needs of potential users of the financial information while verifiability and freedom from bias related directly to the reliability of the information presented. The standard of quantifiability was viewed as a constraint limiting the form of financial information to external users. The issuance of ASOBAT stimulated additional evaluations of qualitative characteristics by researchers.

The AAA published another document on accounting theory, Statement on Accounting Theory and Theory Acceptance [AAA, 1977], in 1977. This document ". . . does not attempt to develop a statement of universally accepted accounting theory; instead . . . is a statement about accounting theory and theory acceptance" [AAA, 1977, p. 1]. In the discussion of the criteria useful in making accounting choices the relevance and reliability criteria are warranted separate analysis while all other possible criteria are simply categorized as "other criteria." Relevance and reliability were each ". . . viewed as a necessary but not a sufficient condition for usefulness" [AAA, 1977, p. 16].

Howard J. Snavely

Howard Snavely [1967] attempted to expand the analysis of criteria established by the AAA Committee. He suggested that a hierarchy of these characteristics

be instituted to facilitate the selection of accounting information. The hierarchy he presented was in the form of levels, with the first being the most important and the fourth being the least important. The first level criterion presented is that of usefulness which is considered to be absolutely necessary in the selection of any information. Although it was not listed as one of the criteria in ASOBAT, usefulness permeated the standards since their purpose was to choose useful information. The second-level criteria consisted of relevance, reliability, understandability, significance, sufficiency and practicality. For information to be useful, Snavelly felt that all six of his second-level criteria must be satisfied. The third and fourth levels are refinements of the second and include such items as quantifiability, consistency, comparability and simplicity.

Snavelly indicated that the existence of second-level criteria was an absolute necessity of all information but the degree of these items may be varied through the amount of third-level criteria. An example of this can be demonstrated by analyzing reliability. The information must be reliable (a second-level criterion) but the verifiability and freedom from bias (third-level criteria) may vary from item to item.

Accounting Principles Board

In 1970 the APB issued Statement 4 [APB, 1970], an attempt to describe generally accepted accounting principles as they were currently being practiced. Within this pronouncement was a statement of qualitative objectives which presented the seven qualitative characteristics considered necessary to make financial information useful. With regard to the need for these objectives the Board stated:

The qualitative objectives are related to the broad ethical goals of truth, justice, and fairness that are accepted as desirable goals by society as a whole. To the extent that the objectives are met, progress is made toward achieving the broad ethical goals as well as toward making financial information more useful. The qualitative objectives are less abstract than the ethical goals of truth, justice and fairness and can therefore be applied more directly to financial accounting [APB, 1970, para. 14].

The seven qualitative objectives presented in APB Statement 4 are: (1) relevance, (2) understandability, (3) verifiability, (4) neutrality, (5) timeliness, (6) comparability, and (7) completeness. The Board called relevance the primary objective "because information that does not bear on the decision for which it is used is useless, regardless of the extent to which it satisfies the other objectives" [APB, 1970, para. 16]. With regard to the current practice of the objectives, the Board stressed:

Providing information that has each of these qualities is an objective of financial accounting. These qualitative objectives are at least partially achieved at present, although improvement is probably possible in connection with each of them. Constraints on full achievement of the qualitative objectives are caused by conflicts of objectives, by environmental influences, and by lack of complete understanding of the objectives. . . [APB, 1970, para. 13].

As stated previously, APB Statement 4 was an enumeration of current practices rather than an attempt to establish rules of what "should be" included in financial reporting.

Study Group on the Objectives of Financial Statements

In 1973 the AICPA published the Report of the Study Group on the Objectives of Financial Statements, Objectives of Financial Statements [AICPA, 1973]. This report, commonly called the "Trueblood Report," represented an effort to create a functional framework within which accounting standards could be formulated. By establishing this framework it was hoped that a rational development of accounting would follow. To achieve the basic objective of providing information useful for making economic decisions, the Study Group stated:

Information contained in financial statements and in other reports of enterprise activity should possess certain characteristics to satisfy users' needs. Though these qualities

may appear obvious and are presumed to be implicit in any intelligent reporting of information, nevertheless they are significant [AICPA, 1973, p. 57].

The qualitative characteristics presented by the Study Group are: (1) relevance and materiality, (2) form and substance, (3) reliability, (4) freedom from bias, (5) comparability, (6) consistency and (7) understandability. As was true in previous studies, the Trueblood Report stressed relevance as the primary qualitative characteristic. All of the characteristics were summarized as follows:

The qualitative characteristics of financial statements, like objectives, should be based largely upon the needs of users of the statements. Information is useless unless it is relevant and material to a user's decision. Information should be as free as possible from any biases of the preparer. In making decisions, users should not only understand the information presented, but also should be able to assess its reliability and compare it with information about alternative opportunities and previous experience. In all cases, information is more useful if it stresses economic substance rather than technical form [AICPA, 1973, p. 60].

Financial Accounting Standards Board

The FASB is currently engaged in the major task of developing a conceptual framework for accounting. One segment of this project is the determination of the qualitative characteristics of accounting information. In May, 1980 the FASB issued SFAC No. 2 [FASB, 1980b] to "examine the characteristics of accounting information

that make that information useful. . . . It is those characteristics that distinguish more useful accounting information from less useful information" [FASB, 1980b, p. 1]. This Statement was not issued as a standard or set of rules but rather as a part of the conceptual base to support the further development of accounting standards.

A hierarchy of accounting qualities is presented with usefulness for decision making as the ultimate criterion to apply to the information. "Without usefulness, there would be no benefits from information to set against its costs" [FASB, 1980b, p. 14]. The pervasive constraint of all information is that the benefits derived must exceed the costs incurred. With this in mind the FASB specified relevance and reliability as the primary decision-specific qualities of accounting information. Beneath these two characteristics in the hierarchy are other familiar characteristics called the ingredients of primary qualities, i.e. predictive value, feedback value, timeliness, verifiability and representational faithfulness. Following these are the secondary and interactive qualities which include comparability, consistency and neutrality. Finally there is a threshold of materiality, below which information would be considered to be of little use in

decision making. These characteristics provide the current guidelines for evaluating accounting information with relevance and reliability as the primary considerations.

Relevance

The relevance criterion has generally been considered the primary characteristic of information that must be present for accounting information to be useful. Previous authors believe that at least some degree of relevance is mandatory. This concept has evolved through the focus on users of financial information. As stated by Fertakis, ". . . the relevance of data lies in the needs of the user" [Fertakis, 1969, p. 683]. To understand the relevance concept, it is necessary to examine the definitions of relevance throughout this evolution.

According to The American College Dictionary, relevance is defined as "bearing upon or connected with the matter in hand; to the purpose; pertinent" [Random House, 1964, p. 1023]. Although most authors agree that relevance bears upon the matter at hand, they consider relevance to be a general property that must be further qualified. Chambers [1966, p. 149] deemed timeliness as a major component of relevance such that ". . . its

reference is any and all of the actions available to an actor at a given time." Chambers uses the title "actor" to make reference to a user of financial information.

In ASOBAT the standard of relevance is not specifically defined but rather described as the criterion of information that:

must bear upon or be usefully associated with the action it is designed to facilitate or the result it is desired to produce. This requires that either the information or the act of communicating it exert influence or have the potential for exerting influence on the designated actions [AAA, 1966, p. 9].

In establishing the relevance criterion, other definitions tended to follow the theme of user orientation presented in ASOBAT. According to Snavely, ". . . relevant information is that which will assist in (1) valuing a firm, (2) evaluating management, or (3) evaluating management policies" [Snavely, 1967, p. 228]. Snavely's contention was that these factors make information useful and should therefore guide the relevance determination.

The FASB has continued the emphasis upon the user in SFAC No. 2. The purpose of the Statement is to examine the characteristics of accounting information that make it useful. The definition of relevance presented is:

The capacity of information to make a difference in a decision by helping users to form predictions about the outcomes of past, present, and future expectations [FASB, 1980b, p. xvi].

This definition was used in the questionnaire developed in this study.

The FASB emphasized the capacity of information to "make a difference" to the user. This difference can be in the form of a prediction of future events, the correction of a previous prediction or merely as a confirmation of previous predictions. "Information need not itself be a prediction of future events or outcomes to be useful in forming, confirming, or changing expectations about future events or outcomes" [FASB, 1980b, para. 48]. It is not necessary for a decision to be changed for the information to be relevant to a user.

The amount of information a user has access to may be a determinant of whether or not a particular item is relevant. The item would only be relevant if it were previously unavailable and can make a difference in a user's decision.

Reliability

Reliability has not been specified as a separate qualitative characteristic in all of the efforts to formulate a set of criteria. In those instances where reliability has not been included, references to some of

the components of reliability can be found, i.e. verifiability, representational faithfulness, objectivity and freedom from bias. Additionally, references to reliability may be found in the discussion of the listed characteristics. An example of this treatment is found in APB Statement 4 where it was considered that:

Achievement of the qualitative objectives of financial accounting enhances the reliability of financial statements. Reliability of information is important to users because decisions based on the information may affect their economic well-being [APB, 1970, para. 35].

Reliability was determined to be an important attribute of financial reporting but was not listed as a separate qualitative characteristic.

The FASB, in distinguishing reliability as an independent characteristic, presented two alternative views of reliable information. One view considered the effectiveness of reliable information, i.e. the use of an information item in the prediction of a future event. The second view, which was adopted by the FASB, does not make any reference to the effectiveness of information but only that "information is reliable to the extent that users can depend on it to represent the economic conditions or events that it purports to represent" [FASB, 1980b, para. 62]. The definition of reliability presented by the FASB is:

The quality of information that assures that information is reasonably free from error and bias and faithfully represents what it purports to represent [FASB, 1980b, p. xvi].

This definition was incorporated into the questionnaire used in this study.

Reliability is now classified, along with relevance, as one of the two primary characteristics of financial information. Information must contain some measure of each criterion to be considered useful in making decisions.

Relationships Between Characteristics

The relationship between one characteristic and another may be either inverse or direct. The two characteristics examined in this study, relevance and reliability, would have an inverse relationship if an increase in relevance corresponds with a decrease in reliability and vice versa. If an increase (decrease) in relevance is accompanied by a similar change in reliability, the relationship is deemed to be direct.

Inverse Relationship

It is considered reasonable to have an inverse relationship (trade-offs) between criteria in the reporting of financial information. This presumed trade-off has been discussed repeatedly in the literature

and is again emphasized by the FASB in SFAC No. 2. In its discussion of primary decision-specific qualities, SFAC No. 2 stated: ". . . it may be necessary to sacrifice some of one quality for a gain in another" [FASB, 1980b, p. x]. Additionally, in a section titled "Relative Importance and Trade-Offs," SFAC No. 2 states:

Although financial information must be both relevant and reliable to be useful, information may possess both characteristics to varying degrees. It may be possible to trade relevance for reliability or vice versa, though not to the point of dispensing with one of them altogether [FASB, 1980b, para. 42].

In the choice between two similar information items a user may be willing to accept a lower level of reliability in order to receive a higher level of relevance. Alternatively, the user may accept a lower level of relevance in order to have higher reliability.

The degree of relevance attributed to a particular item depends on the individual user. If a user has access to similar or related information from other sources, the inclusion of the item in the financial statements would not make a significant difference in the decisions of the user. The information would therefore have low relevance. On the other hand, an item relevant to a user may be assigned a higher degree of relevance if related or similar information is not available from another source.

Correspondingly a user may determine the degree of reliability that is associated with an information item by examining its reliability components (i.e., verifiability and representational faithfulness). The use of estimates in lieu of the specific measurement of an information item results in a lower level of reliability. This type of decrease in reliability is generally acceptable in the interest of timely financial reporting. Reliability may also vary with the financial reporting method selected. The use of current cost requires the application of estimates to the valuation of assets and may result in values less reliable than historical cost. Another reporting method, restatement of financial information into constant dollars, inputs some subjectivity into the procedure by the employment of a price index. The particular index selected may increase or decrease the reliability of the measurement. Therefore an item measured at its current cost or restated into constant dollars may have a lower perceived reliability than an item measured at historical cost.

The additional information provided by these alternatives to historical cost financial information may well make them more relevant (capable of making a difference in a decision) to users than the information

derived from historical cost. "Proponents of current cost accounting believe that current cost income from continuing operations is a more relevant measure of operating performance than is operating profit computed on the basis of historical costs" [FASB, 1980b, para. 90].

If these evaluations are accurate, an inverse relationship would exist between relevance and reliability as the measurement basis of the information items is changed from historical cost to current cost or vice versa. One possible diagram of this relationship is shown in Figure 1. For the relationship depicted to exist the specific value of each characteristic cannot depend on the quantity of the other characteristic. Therefore the quantity of relevance of a particular information item does not depend on the amount of reliability that is attributed to the item. The diagramed relationship is a result of changing the measurement basis of the information item and comparing the specific values of relevance and reliability with the values for the same item established using another measurement basis. If the value of one characteristic depends on the value of the other characteristic the relationship would be direct instead of inverse.

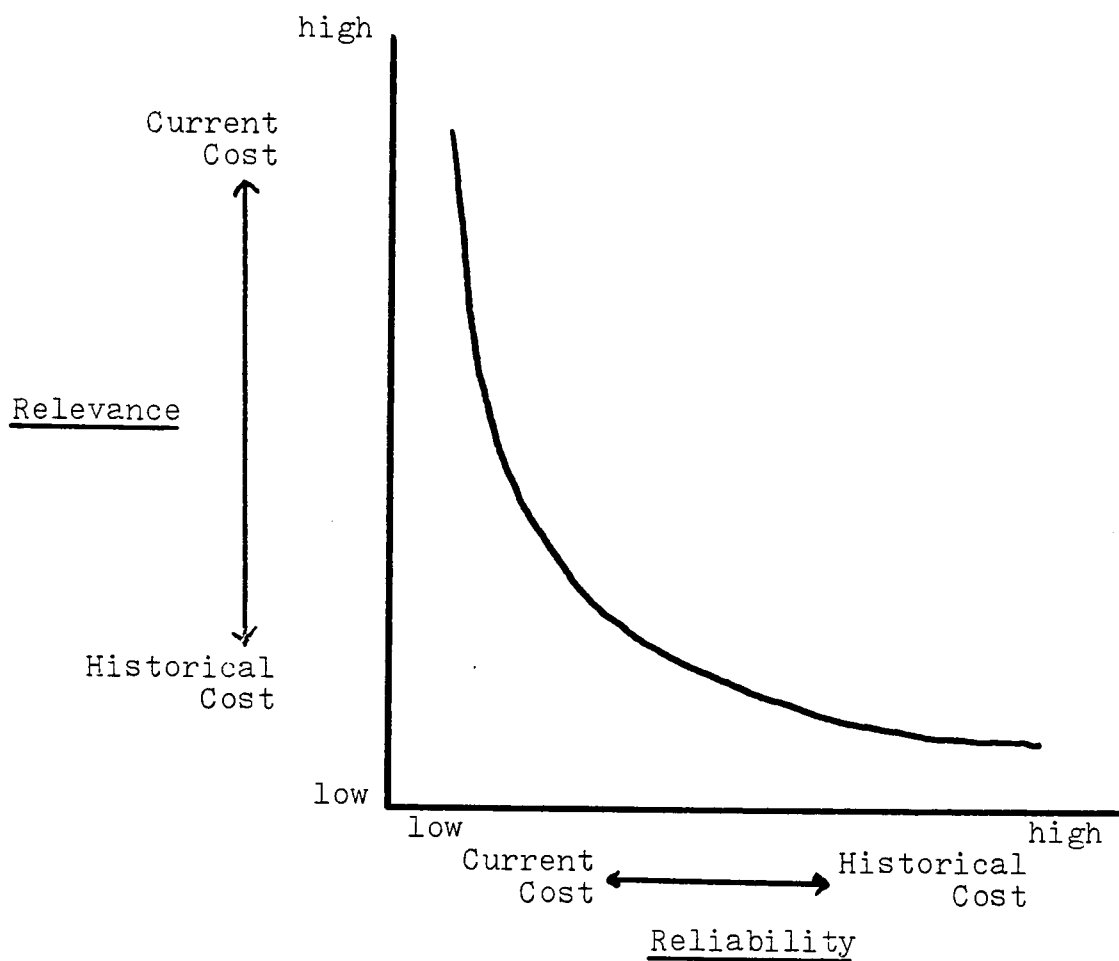


FIGURE 1

Inverse Relationship Between Relevance and Reliability

Direct Relationship

If a direct relationship between relevance and reliability exists then the changes in the characteristics will be in the same direction, either both increases or both decreases. One possible explanation of such a relationship is a dependence between the characteristics. Since relevance is user specific, the factors applied by a particular user are not known. Therefore, reliability may be a major determinant of the level of relevance attributed to an information item. In such a case the relevance of an information item may be considered to be a function of the item's reliability. Reliability would probably be one of several factors that impact upon an item's relevance to the user. One possible diagram of this relationship is shown in Figure 2.

Although it seems reasonable to evaluate relevance as a function of the item's reliability, the alternative of reliability as a function of the item's relevance does not seem feasible. The fact that a user changes his opinion of an item's relevance will not have an impact on the item's reliability. Therefore, an increase or decrease in relevance will not change reliability.

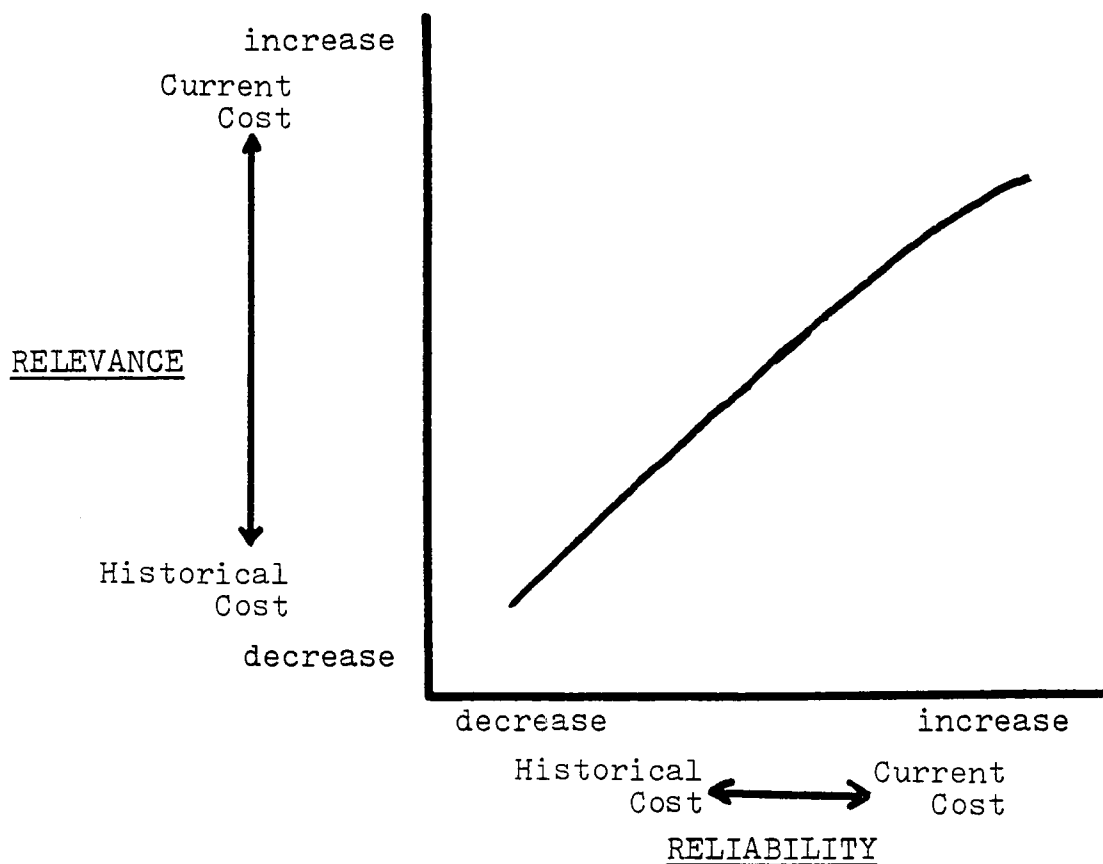


FIGURE 2

Direct Relationship Between Relevance and Reliability

Empirical Examinations of Relationships Between Characteristics

This study specifically examines the presumed trade-off between relevance and reliability as accounting measurements are changed from historical cost to constant dollar or current cost. Only two previous works have examined the relationships between relevance and another characteristic. James R. Morton [1974] and Keith G. Stanga [1980] have each performed an empirical examination of the relationships between qualitative characteristics. Morton looked at the relationship between relevance and understandability while Stanga examined the relationship between relevance and reliability. In reviewing each study, an attempt is made to (1) present the objective or purpose, (2) describe the research methodology, (3) state the results and (4) point out the major weaknesses of the study.

James R. Morton

In 1974, James Morton reported a study of relevance and understandability. The purpose of his study was to "demonstrate the relationship, if any, between the concepts of relevance and understandability, as perceived by four groups of participants in the financial reporting process, in relation to footnote disclosures of financial

data" [Morton, 1974, p. 289]. A questionnaire was administered to each of the four groups to obtain their perceptions about the characteristics.

The four groups surveyed were: (1) financial statement auditors, (2) credit analysts, (3) financial executives and/or management accountants and (4) security analysts. Each subject was asked to rate general footnote disclosures and the specific footnotes of the Engelhard Minerals & Chemicals Corporation as excerpted from their 1971 financial statements. The scales used for the ratings were bipolar, verbally anchored scales of relevance, understandability and bearing on investment decision. Morton hypothesized "there is no significant relationship between perceived relevance of financial statement footnote disclosures and their perceived understandability" [Morton, 1974, p. 290].

Morton applied the contingency coefficient and chi-square to each of the questionnaire items to test for a significant relationship between the characteristics. It was determined from these tests that "as perceived understandability increases, perceived relevance increases, and vice versa. It can be concluded, therefore, that there is a significant positive relationship between the ratings of all groups for overall footnote relevance and understandability" [Morton, 1974, p. 293].

The results in Morton's study did not support the existence of trade-offs between qualitative characteristics and although it was not conclusively established that a causal relationship between relevance and understandability exists, "the analysis does disclose the existence of a significant positive correlation between these two qualitative objectives. . . ." [Morton, 1974, p. 297]. The FASB, in SFAC No. 2, tends to support the positive relationship found by Morton.

Although Morton's study is extremely interesting it is subject to at least one major limitation. This limitation is that his sample groups are restricted to a relatively small geographical area. Also, the absolute number of subjects contacted was small. The limitation of the sample sizes and the geographic restriction does not allow the results to be generalized to the total financial reporting population.

Keith G. Stanga

In 1980, Keith Stanga [1980] reported an empirical study of the relationship between relevance and reliability. The objective of his study was ". . . to provide initial empirical evidence regarding the nature of the relationship, if any, that exists between the financial accounting concepts of relevance and reliability" [Stanga, 1980, p. 30]. The null hypothesis

pursued in the study was that no relationship exists between the two characteristics.

Data were obtained through a questionnaire sent to two groups of users of financial information, chartered financial analysts and chief commercial bank loan officers. These sample groups were selected as representative of typical users of financial information. The questionnaire consisted of thirty information items representing four contemporary financial reporting issues. The four issues represented were: (1) replacement cost reporting as required by Accounting Series Release No. 190 (ASR 190 has since been repealed), (2) segment reporting, (3) financial forecasting and (4) interim reporting. The respondents were asked to evaluate "each item based on the dual criteria of relevance and reliability" [Stanga, 1980, p. 30].

Since ordinal scales were used, Stanga applied the Kendall's Tau Coefficient, a nonparametric statistical test, to each of the questionnaire items. The results of this test indicated a positive relationship between relevance and reliability. Further support for this conclusion was derived by calculating the Kendall's Tau for the mean relevance and mean reliability in each group and the summary for all responses. These also suggested that the correlation was positive.

As the initial effort to examine the relationship between relevance and reliability, Stanga's study was highly interesting and very informative. Nevertheless the study was subject to several limitations. First, Stanga limited his research to only two of the potential user groups involved in the financial reporting process. Although chartered financial analysts and commercial bank loan officers do represent typical users of financial information for making investment and credit decisions, the perceptions of other groups may make significant contributions to this topic.

The second, and possibly most important, limitation is that the information items were evaluated independently. Relevance and reliability were examined in relation to each item. This procedure does not offer any insights as to the perceived changes in relevance or reliability that may occur when one information item is offered in lieu of another. The literature on trade-offs offers the example of a change to current cost from historical cost to demonstrate an increase in relevance associated with a decrease in reliability. This type of situation is not examined in the Stanga study.

Summary

A review of the literature has demonstrated the importance of establishing the qualitative characteristics of accounting information. Significant efforts have been made to define these characteristics and their interrelationships. Several references to the trade-offs between qualitative characteristics are made but only two empirical studies of the relationships of these characteristics have been found.

An objective of this study is to provide additional empirical research into the relationships between qualitative characteristics. The two characteristics of interest are relevance and reliability, which were designated by the FASB as the two primary decision-specific qualities. These two characteristics are typically cited in the examples of trade-offs between characteristics.

This study incorporates two major improvements over the previous efforts to examine the relationships. First, an attempt is made to reach more users of financial information by sampling, in addition to the investor and creditor groups, the preparers of financial reports.

The second improvement is in the design of the survey instrument. A matched pairs format of information

items is used to evaluate the perceived changes in relevance and reliability that occurs as alternative measurement methods are provided. The survey instrument focuses on the reporting of information that has been adjusted for changing prices as required by SFAS No. 33. All of the information items selected for examination deal directly with the presumed trade-off between relevance and reliability in relation to conventional accounting, constant dollar accounting and current cost accounting.

CHAPTER III

RESEARCH METHODOLOGY

The purpose of this chapter is to describe the methods used to accomplish the objectives of the study. The first section presents the questionnaire methodology, including the design of the questionnaire and a description of the information items used. The sample groups surveyed are delineated in the second section. The reasons for choosing these groups are also included in this section.

As with most questionnaires, the possible existence of nonresponse bias is a typical criticism. An explanation of a test for the existence of nonresponse bias is provided in the third section. The fourth section consists of the statistical methodology applied to the data received. Each of the statistical methods is explained along with how it applies to the data at hand. The final section summarizes the chapter.

Questionnaire Methodology

In SFAC No. 2 the FASB suggested that reliability may be traded for relevance when the accounting method is changed, e.g., historical cost to current cost. To examine the existence of such a trade-off, a survey of

users of financial information was performed using a questionnaire. A questionnaire was determined to be the most efficient and most economical means of contacting a large number of users throughout the United States.

The questionnaire is designed to assess the perceived relevance and reliability of information as the accounting measurement basis is changed. Published financial statements were examined to select the information items included in the questionnaire. The primary financial statements provide information items on the basis of historical cost. To analyze a change from one measurement basis to another, corresponding items prepared on a basis other than historical cost were needed.

These information items were initially provided when the FASB, in SFAS No. 33, required companies to present supplementary financial information restated in terms of constant dollars and on the basis of current cost. The financial information items selected for the questionnaire were extracted from the primary financial statements and the supplemental information required by SFAS No. 33. A matching criterion was applied in the selection such that for each item in one category (historical cost, constant dollar or current cost), there is a similar item in one of the other categories

or both. For example, SFAS No. 33 requires companies to report income from continuing operations on both a constant dollar and a current cost basis. The questionnaire includes income from continuing operations reported on a historical cost basis, a constant dollar basis, and a current cost basis. Table 1 depicts all of the pairs selected for analysis.

The items chosen are categorized according to the measurement basis used to generate the information. These categories are: (1) historical cost, (2) constant dollar, and (3) current cost. A total of thirty information items are presented in the questionnaire. The items are divided among the three categories as indicated in Table 2.

The availability of the items was assessed by reviewing annual reports of publicly-held companies selected randomly from the Compustat tapes. Additionally, the special report Examples of the Use of FASB Statement No. 33, Financial Reporting and Changing Prices [FASB, 1980c], was reviewed. Based on these observations it was established that the items included in the questionnaire are readily available to the users of financial information.

The questionnaire is divided into five sections, with the first three sections corresponding to the above

TABLE 1

Matched Pairs of Information Items

INFORMATION ITEMS	PAIR NO.	HISTORICAL CONSTANT CURRENT		
		COST (item #) ^a	DOLLAR (item #) ^b	COST (item #) ^c
Income from continuing operations	[1] [2] [3]	(1)----- (1)----- (1)-----	(1) ----- (1)-----	 (1) (1)
Sales or net revenues	[4]	(2)-----	(2)	
Cost of goods sold	[5]	(3)-----	(3)	
[LIFO pricing method]	[6]	(3)-----	-----	(2)
[FIFO pricing method]	[7]	-----	(3)-----	(2)
[Current cost]	[8] [9] [10]	(4)----- (4)----- (4)-----	(4) ----- (4)-----	 (2) (2)
Depreciation expense	[11]	(5)-----	(5)	
[Straight-line method]	[12] [13]	(5)----- (5)-----	----- (5)-----	(3) (3)
Depletion expense	[14]	(6)-----	(6)	
[Units-of-production method]	[15] [16]	(6)----- (6)-----	----- (6)-----	(4) (4)
Inventory	[17]	(7)-----	(7)	
[LIFO pricing method]	[18]	(7)-----	-----	(5)
[FIFO pricing method]	[19]	-----	(7)-----	(5)
[Current cost]	[20] [21] [22]	(8)----- (8)----- (8)-----	(8) ----- (8)-----	 (5) (5)
Property, plant and equipment	[23] [24] [25]	(9)----- (9)----- (9)-----	(9) ----- (9)-----	 (6) (6)
Net assets at year end	[26] [27] [28]	(10)----- (10)----- (10)-----	(10) ----- (10)-----	 (7) (7)
Earnings per share	[29] [30] [31]	(11)----- (11)----- (11)-----	(11) ----- (11)-----	 (8) (8)

^aItem numbers are from Section I of the questionnaire.

^bItem numbers are from Section II of the questionnaire.

^cItem numbers are from Section III of the questionnaire.

TABLE 2
Number of Items by Questionnaire Category

Category	Number of Information Items
Historical cost (i.e., historical cost/nominal dollar)	11
Constant dollar (i.e., historical cost/constant dollar)	11
Current cost (i.e., current cost/ nominal dollar)	<u>8</u>
Total Items	<u><u>30</u></u>

categories of information items. The fourth section consists of three demographic questions regarding the respondents' familiarity with the measurement methods. The final section provides the respondent with the opportunity to request a summary of the results and to make any comments he or she considered necessary.

Each of the first three sections is introduced with a brief definition of the accounting basis used to report the information items included within that section. The definitions provided are as follows:

1. Section I--Historical cost/nominal dollar--As recently described by the Financial Accounting Standards Board, this is the generally accepted method of accounting used in the conventional financial statements. It is based on measures of historical prices in dollars without restatement into units, each having the same general purchasing power.
2. Section II--Historical cost/constant dollar--As recently described by the Financial Accounting Standards Board, this is a method of accounting based on measures of historical prices in dollars, each having the same general purchasing power. The Consumer Price Index for All Urban Consumers is used to restate the conventional financial statements.

3. Section III--Current cost/nominal dollar--As recently described by the Financial Accounting Standards Board, this is a method of accounting based on measures of current cost, without restatement into units, each having the same general purchasing power.

In order to establish the degree of relevance and reliability associated with each information item, two scales were placed to the right of each information item. Each respondent was asked to evaluate each information item independently and indicate the number on each scale that best represented their personal opinion concerning the relevance and reliability of each information item to them. Each scale ranged from 1 through 7. A response of 1 on the relevance scale indicated that the item is irrelevant and a response of 7 indicated that it is extremely relevant. Similarly, a response of 1 on the reliability scale indicated that the item is unreliable, and a response of 7 indicated that it is extremely reliable. A scale of 1 through 7 was considered sufficient for the respondents to discriminate between the various degrees of relevance and reliability that may exist.

To facilitate the completion of the questionnaire, a carefully-worded sheet of instructions was enclosed

with each questionnaire. These instructions specified the context within which the evaluations of relevance and reliability should be made. For each respondent group the context was designed to represent a typical decision appropriate to that group. The three contexts used, by respondent group, were as follows:

1. Investors--within the context of your making a typical decision to buy, sell or hold a small (noncontrolling) number of common shares in a large, publicly-held industrial company.
2. Creditors--within the context of your making a typical decision to extend a term loan (maturity between 3 and 5 years) of moderate size to a large, publicly-held industrial company.
3. Preparers--within the context of its relevance and reliability to you as a user of financial information provided by a large, publicly-held industrial company.

In addition to the context, the instructions explained the scales used in the questionnaire and the definitions of relevance and reliability that should be applied to each item. The specific definitions, taken from SFAC No. 2 are:

Relevance--The capacity of information to make a difference in a decision by helping users to form predictions about the outcomes of past, present, and future events or to confirm or correct prior expectations.

Reliability--The quality of information that assures that information is reasonably free from error and bias and faithfully represents what it purports to represent [FASB, 1980b, p. xvi].

In designing the questionnaire, every effort was made to insure that the questionnaire was effective and complete. To assist in this endeavor, comments and suggestions were solicited from many informed parties. These parties helped extensively in the design and pretest of the questionnaire. Several suggestions were made with regard to : (1) additional items, (2) improvements of the scales to measure relevance and reliability, and (3) the combination of some items.

As a result of numerous suggestions, the questionnaire was revised and improved many times. When the final form of the questionnaire was determined, the questionnaire was reproduced and prepared for mailing to the respondents. A reproduction of the two-page questionnaire, instructions sheet for each sample group, and the transmittal letter introducing the study to each sample group are presented in Appendixes A, B and C.

Sample Selection

In establishing its objectives of financial reporting, the FASB has designated investors and creditors as the primary users of financial information. The subjects for this survey were chosen to sample the

investor and creditor groups. Another group included in this study, although not considered primary users of financial information, is the preparers of financial reports. The sample groups are: (1) chartered financial analysts, (2) chief commercial bank loan officers, and (3) chief financial officers.

Chartered Financial Analysts

There are vast numbers of investors across the United States with investments as small as one share of stock to thousands of shares. It would be extremely difficult to select a sample of these individual investors. Financial analysts make a significant contribution to investment decisions through the investments they control and the advice they provide to individual investors. Within the ranks of professional financial analysts some have been designated Chartered Financial Analysts (CFAs).

An examination demonstrating ability to interpret financial information must be passed as a part of the requirements to receive the designation of CFA. Chartered Financial Analysts were chosen to sample in this study because they have the necessary expertise to interpret financial information, and their informational needs may be assumed to coincide with those of sophisticated individual investors.

A random sample of 300 CFAs was taken from the 1981 national membership directory of the Financial Analysts Federation (FAF). The FAF directory contains the names and addresses of 14,771 financial analysts in the United States and Canada. Each analyst was assigned a unique number which allowed the selection of the sample using a random number table. As stipulated above, only those analysts with the CFA designation were included in the sample.

Three other restrictions were placed on the sample selection. First, retired members of the FAF were excluded from the sample since this survey is designed to examine the perceptions of individuals currently involved in financial analysis. Second, the members of Canadian chapters of the FAF were excluded because the supplementary information required by SFAS No. 33 does not apply to Canadian companies, and therefore the analysts may have little, if any, involvement with this type of information. The third restriction is the exclusion of those analysts with educational affiliations. These analysts may not be actively involved in financial analysis and therefore may not have the daily experience necessary to meaningfully evaluate the information presented.

Of the 300 CFAs contacted, 75 (25 percent) responded to the questionnaire. Sixteen individuals returned

incomplete questionnaires and were therefore not included in the final data analysis. Ten of the incomplete responses consisted of notes or letters presenting the reasons for not completing the questionnaire. Some examples of the reasons given were: "Sorry, but policy precludes response," "Regrettably, it is the policy of . . . that their officers not take part in polls or questionnaires," "Sorry, I'm no longer in the analytical area," "I do not do financial statement analysis on a routine basis and therefore my opinions are not meaningful to you regarding the above accounting topics," and "I am engaged in the practice of law rather than financial analysis."

A total of 59 of the 300 CFAs returned questionnaires usable in the final analysis. The usable response rate is therefore 19.7 percent.

Chief Commercial Bank Loan Officers

Bankers are a major source of credit to business firms, and they use external financial reports extensively to evaluate credit risks. For this reason, bank loan officers are considered major users of financial information, and they constitute one group of creditors.

The supplementary information currently required by SFAS No. 33 is presented by approximately 1,100 United

States business firms; therefore the banks most likely to make loans to these companies are the larger banks. For this reason the banks selected for the survey are the 300 largest banks in the United States.

The loan officers chosen were restricted to those responsible for commercial or business loans. Since the specific individual occupying the position of chief commercial loan officer of each bank could not be identified, the questionnaires were sent to the attention of the Chief Commercial Loan Officer. The 300 largest banks were selected from the list of the largest 5,000 banks, ranked by deposits, published in the March 31, 1981 issue of American Banker.

Of the 300 chief commercial loan officers contacted, 117 (39 percent) responded to the questionnaire. Four of these individuals returned incomplete questionnaires which included a comment that they were either not familiar with the information or did not use it in their decisions.

A total of 113 usable questionnaires were received. The usable response rate is therefore 37.7 percent.

Chief Financial Officers

Chief Financial Officers (CFOs) were chosen as a group of preparers of financial information. CFOs are not users of financial information in the same sense as

investors or creditors. Instead, CFOs use financial information to prepare external reports for their companies and to evaluate company operations. Since SFAS No. 33 is experimental in nature, companies have been allowed substantial leeway in the determination of numbers used and the explanations given. As a result of the involvement with SFAS No. 33 information, these preparers should be able to assess the relevance and reliability of the information items presented in the questionnaire.

A random sample of 300 CFOs was selected using the list of the Fortune 500 published on May 4, 1981. A random number table was used to select the specific companies.

Of the 300 CFOs contacted, 120 (40 percent) responded to the questionnaire. Eight of these individuals declined to complete the questionnaire. The principal reason given for not completing the questionnaire was the numerous requests these people receive.

A total of 112 usable questionnaires was received, resulting in a usable response rate of 37.3 percent.

Mailing Procedures

On August 17, 1981 each CFA, CLO, and CFO was mailed a copy of the questionnaire, a set of instructions regarding the completion of the questionnaire and a

cover letter introducing the study and requesting their participation. A stamped, self-addressed return envelope was included in each packet to facilitate the return of the questionnaire. The original mailing was followed, on September 11, 1981, with a second request to those not responding within the first four weeks. The second request included another copy of the questionnaire, a set of instructions, a return envelope and a letter emphasizing the need for participation. The follow-up procedure was implemented to improve the response rate of the survey. The final cut-off date for accepting completed questionnaires was set as October 19, 1981, nine weeks after the initial mailing. The final number received by October 19 was 312, which is a total response rate of 34.7 percent. A total of 284 usable responses was received, resulting in a usable response rate of 31.6 percent.

Test for Nonresponse Bias

The response rates of surveys reported in the accounting literature are typically less than 100 percent. A response rate of less than 100 percent could mean the existence of a significant nonresponse bias. Every effort has been made to stimulate the response rate of this study. In his study on mail surveys, Scott [1961] made several suggestions for improving the response rate.

Some of these suggestions, such as follow-up mailings to nonrespondents, were used in this study.

Since nonresponse bias can be damaging to the results obtained from a mail questionnaire, a test for its existence was performed. According to Oppenheim [1966], very late respondents are similar to nonrespondents. He suggests comparing early respondents to late respondents to determine whether or not a bias exists. The mailing of second requests is a sample of the nonrespondents and provides a source for testing nonresponse bias. To test for nonresponse bias, a comparison was made between the responses received to the first mailing and the responses received to the second mailing.

The results of the two subsamples, the first-mailing respondents and the second-mailing respondents, of each group surveyed were tested for similarity using the chi-square test for two independent samples. The chi-square test is appropriate when "the data of research consist of frequencies in discrete categories" [Siegel, 1956, p. 104] and the measurement involved is ordinal scaling. The chi-square test provides a determination of whether the "two samples are from populations which differ in any respect at all, i.e., in location or dispersion or skewness, etc. . ." [Siegel, 1956, p. 157]. If the test indicates that the two

subsamples are from the same population--an insignificant chi-square--there is less reason to suspect that the responses received reflect a material nonresponse bias.

On each questionnaire there are thirty information items with two scales, relevance and reliability, for each item. Thus, sixty variables can be compared between the two subsamples. The chi-square test was performed on each variable within each survey group. The tests were performed using .05 as the critical level of significance. At the .05 level, approximately 3 tests (.05 x 60 items) would be expected to be significant solely by chance. If the number of tests found to be significant were substantially more than three then the existence of a nonresponse bias may be suggested. The tests revealed slightly less than three significant results for the CFAs and the CFOs (only one item significant in each group) whereas the CLOs revealed slightly more than three as significant (five items). The results of these tests do not indicate a material nonresponse bias in the responses received.

Statistical Methodology

The matched pairs design was used to develop the survey instrument so that the degree of relevance and reliability of various accounting disclosures could be compared. The measurement scales applied to the

characteristics, relevance and reliability, are ordinal scales. Therefore, nonparametric statistics should be used to analyze the responses.

Statistical analysis was performed in two separate steps. The first step of the analysis was to determine whether or not a relationship exists between relevance and reliability. The change in relevance (decrease, no change, increase) is compared to the change in reliability (decrease, no change, increase) for each individual, within each respondent group. These individual comparisons are summarized, for each pair, in an ordered contingency table (as shown in Figure 3). For example, if an individual indicated that for a particular pair the relevance decreased and the reliability decreased, this fact would be reported as one of the cases in the upper left corner of the table.

These summaries resulted in thirty-one contingency tables for each respondent group. For each respondent group, eleven tables were developed for the change in measurement basis from historical cost to constant dollar. Ten tables were developed for the change in measurement basis from historical cost to current cost and another ten tables were developed for the change in measurement basis from constant dollar to current cost.

The chi-square test for independence was then applied to these frequencies. The null hypothesis tested

		RELIABILITY		
		DECREASE	NO CHANGE	INCREASE
RELEVANCE	DECREASE	Number of Cases	Number of Cases	Number of Cases
	NO CHANGE	Number of Cases	Number of Cases	Number of Cases
	INCREASE	Number of Cases	Number of Cases	Number of Cases

FIGURE 3
Contingency Table Example

was that relevance and reliability are independent.

"Rejection of the hypothesis of independence lets one say that some statistical association does exist between the two attributes. . . ." [Hays, 1973, p. 731], relevance and reliability, although the form of the association is not specified. In each of the cases where a significant chi-square was found, it was determined that a relationship exists between relevance and reliability.

The second step in the statistical analysis is to establish the form of the relationship found in step one. The form of the relationship can be inverse, indicating a trade-off between characteristics, or direct, indicating that both characteristics are either increasing or decreasing. The use of the Kendall's τ_b provides ". . . a measure of association in a contingency table grouped in rows and columns, provided there are natural orders in these arrays" [Everitt, 1977, p. 46]. This measure is determined by considering every possible pair of cases in the contingency table. "Each pair is checked to see if their relative ordering on the first variable is the same (concordant) as their relative ordering on the second variable or if the ordering is reversed (discordant)" [Nie, et. al., 1975, p. 227]. According to Kendall [1962], to calculate the coefficient there is "a positive contribution" by the concordant pairs and "a negative contribution" by the discordant pairs.

If the value of Tau_b is positive, the relationship is direct such that the characteristics are both increasing or decreasing. If the value of Tau_b is negative, the relationship is inverse such that as one characteristic increases the other decreases.

By examining the Tau_b calculated for each pair, a determination was made of the relationship between relevance and reliability. Where the relationship was determined to be direct, the presumed trade-off between relevance and reliability was not substantiated.

Summary

This chapter has described the methods used to accomplish the objective of the study. A questionnaire was designed and administered to three groups of users of financial information to test for the existence of a trade-off between relevance and reliability when the accounting measurement basis is changed.

The information items used in the questionnaire were selected from the primary financial statements and the supplementary information required by SFAS No. 33. A matched pairs format was used to select the items such that for each item in one category (historical cost, constant dollar or current cost) there is a similar item in one of the other categories or both.

Three financial information user groups were selected for this survey from investors, creditors and preparers of financial information. The sample groups are: (1) chartered financial analysts, (2) chief commercial bank loan officers, and (3) chief financial officers. The questionnaire was sent to a random sample of 300 CFAs. A total of 59 usable responses was received for a usable response rate of 19.7 percent.

The questionnaire was sent to the 300 largest banks in the United States. A total of 113 usable responses was received for a usable response rate of 37.7 percent. A random sample of 300 CFOs was selected from the Fortune 500 and mailed a questionnaire. A total of 112 usable responses was received for a usable response rate of 37.3 percent.

In all survey research with a response rate of less than 100 percent, there is some concern with nonresponse bias. A test was performed, between first-mailing and second-mailing respondents, for each information item using the chi-square test for two independent samples. The results of these tests did not indicate a material nonresponse bias in the responses received.

The statistical analysis for this study was performed in two steps. The first step determined whether or not a relationship between relevance and reliability was perceived to exist for each information

pair. The chi-square test for independence was used to determine the existence of a relationship.

The second step used the Kendall's Tau_b test to determine if the relationship determined in step one was inverse (trade-off) or direct. The existence of a direct relationship indicates that the two characteristics are both increasing or decreasing.

A summary of the results of these procedures is presented in Chapter IV.

CHAPTER IV

QUESTIONNAIRE RESULTS

The purpose of this chapter is to present the results obtained in the survey of investors, creditors and preparers of financial information. The first section analyzes the questionnaire responses of Chartered Financial Analysts (CFAs). First, the chi-square calculation on each information pair is examined to establish whether or not a relationship exists between relevance and reliability. After establishing the existence of a relationship, the Kendall's Tau_b for each information pair is examined to determine whether a trade-off between relevance and reliability is perceived to exist (i.e., whether the relationship is indirect.) Finally, a summary of the results obtained from the questionnaire responses of the CFAs is presented.

A similar analysis of the questionnaire responses of the chief commercial loan officers (CLOs) is performed in the second section of the chapter. The third section presents the analysis of the questionnaire responses of the chief financial officers (CFOs). The implications of the results derived from these analyses is discussed in the fourth section. The final section of the chapter summarizes the results obtained from all three survey groups.

Chartered Financial Analysts

A chi-square value has been calculated from the contingency table generated for each information pair. An example of a contingency table created using the responses of CFAs is shown in Figure 4. A summary of the chi-square values for each information pair examined is presented in Table 3. As indicated by Figure 4, a Kendall's Tau_b value has also been calculated for each information pair. The Kendall's Tau_b values are summarized in Table 4. Each summary of values is divided into three groups of information pairs. Group one consists of the information pairs that represent the change of accounting basis from historical cost to constant dollar. The pairs in group two represent the change of accounting basis from historical cost to current cost. The final group (group three) is the information pairs representing the change in accounting basis from constant dollar to current cost.

Group One--Historical Cost to Constant Dollar

It was found in reviewing the chi-square values of group one (Table 3) that CFAs perceive a relationship to exist between the relevance and reliability of each information pair. The values of chi-square on these pairs range from a low of 13.17974 with a significance of .0104 to a high of 39.96098 with a significance of .0000.

		<u>RELIABILITY</u>			
		DECREASE	NO CHANGE	INCREASE	
RELEVANCE	DECREASE	15	4	3	22
	NO CHANGE	9	8	7	24
	INCREASE	1	4	7	12
		25	16	17	58

PAIR # 14^a

Historical Cost vs Constant Dollar
Depletion Exp Depletion Exp

<u>Statistics</u>	<u>Value</u>	<u>Significance</u>
Chi-Square	13.17974	.0104
Kendall's Tau _b	.41526	.0002

FIGURE 4
Contingency Table

^aPair number taken from Table 1 (page 40)

TABLE 3

Summary of Chi-Square Values,
Chartered Financial Analysts

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Chi-Square Value	Chi-Square Significance
Group I--Historical Cost(Column 1) vs. Constant Dollar(Column 2)				
Income from continuing operations	Income from continuing operations	[1]	31.00766	.0000
Sales or net revenues	Sales or net revenues	[4]	23.07700	.0001
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [LIFO pricing method] [FIFO pricing method]	[5] [8]	39.96098 28.63342	.0000 .0000
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[11]	21.18701	.0003
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[14]	13.17974	.0104
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [LIFO pricing method] [FIFO pricing method]	[17] [20]	26.61580 18.93347	.0000 .0008
Property, plant and equipment	Property, plant and equipment	[23]	18.66374	.0009

TABLE 3 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No.	Chi-Square Value	Significance
Net assets at year end	Net assets at year end	[26]	13.63410	.0086
Earnings per share	Earnings per share	[29]	17.74367	.0014
Group II--Historical Cost(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[2]	37.94794	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[6] [9]	22.60080 11.32862	.0002 .0231
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[12]	15.47348	.0038
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[15]	17.40634	.0016
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [Current cost] [Current cost]	[18] [21]	19.67235 15.81472	.0006 .0033

TABLE 3 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No.	Chi-Square Value	Chi-Square Significance
Property, plant and equipment	Property, plant and equipment	[24]	23.96344	.0001
Net assets at year end	Net assets at year end	[27]	20.21965	.0005
Earnings per share	Earnings per share	[30]	29.37146	.0000
Group III--Constant Dollar(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[3]	50.16179	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[7] [10]	20.40479 25.93355	.0004 .0000
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[13]	7.92526	.0944
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[16]	11.90651	.0181

TABLE 3 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Chi-Square Value	Significance
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [Current cost] [Current cost]	[19] [22]	32.66360 19.23421	.0000 .0007
Property, plant and equipment	Property, plant and equipment	[25]	26.95248	.0000
Net assets at year end	Net assets at year end	[28]	29.38806	.0000
Earnings per share	Earnings per share	[31]	15.63542	.0035

^aPair numbers agree with pair numbers identified in Table 1 (page 40).

TABLE 4

Summary of Kendall's τ_{ab} Values:
Chartered Financial Analysts

Information Item(Column 1)	Information Item(Column 2)	Pair ^a No.	Kendall's τ_{ab} Value	Kendall's τ_{ab} Significance
Group I--Historical Cost(Column 1) vs. Constant Dollar(Column 2)				
Income from continuing operations	Income from continuing operations	[1]	.64521	.0000
Sales or net revenues	Sales or net revenues	[4]	.51432	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [LIFO pricing method] [FIFO pricing method]	[5] [8]	.65439 .58636	.0000 .0000
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[11]	.50931	.0000
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[14]	.41526	.0002
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [LIFO pricing method] [FIFO pricing method]	[17] [20]	.55662 .50269	.0000 .0000
Property, plant and equipment	Property, plant and equipment	[23]	.50391	.0000

TABLE 4 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No.	Kendall's Value	Tau _b Significance
Net assets at year end	Net assets at year end	[26]	.39655	.0005
Earnings per share	Earnings per share	[29]	.48486	.0000
Group II--Historical Cost(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[2]	.68768	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[6] [9]	.45750 .21286	.0001 .0380
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[12]	.43625	.0001
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[15]	.32180	.0038
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [Current cost] [Current cost]	[18] [21]	.46926 .46005	.0001 .0001

TABLE 4 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Kendall's Tau _b Value	Significance
Property, plant and equipment	Property, plant and equipment	[24]	.51635	.0000
Net assets at year end	Net assets at year end	[27]	.45286	.0001
Earnings per share	Earnings per share	[30]	.57802	.0000
Group III--Constant Dollar(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[3]	.69003	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[7] [10]	.43060 .49392	.0002 .0000
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[13]	n/a	n/a
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[16]	.32748	.0034

TABLE 4 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair ^a No.	Kendall's Tau _b Value	Significance
Inventory	Inventory			
[LIFO pricing method]	[Current cost]	[19]	.55025	.0000
[FIFO pricing method]	[Current cost]	[22]	.46870	.0001
Property, plant and equipment	Property, plant and equipment	[25]	.41322	.0003
Net assets at year end	Net assets at year end	[28]	.37436	.0011
Earnings per share	Earnings per share	[31]	.34322	.0024

^aPair numbers agree with pair numbers identified in Table 1 (page 40).

n/a--Kendall's Tau_b was not calculated on unrelated pairs.

Depletion expense under the units-of-production method has the lowest chi-square value and cost of goods sold under the LIFO pricing method has the highest.

The Kendall's Tau_b values of group one (Table 4) for each pair with a significant chi-square (all pairs) are all positive, which indicates a direct relationship between the relevance and reliability of each pair. The values of Tau_b range from a low of .39655 with a significance of .0005 to a high of .65439 with a significance of .0000. The existence of a direct relationship indicates that when the accounting basis is changed from historical cost to constant dollar, the CFAs do not perceive a trade-off between relevance and reliability.

Group Two--Historical Cost to Current Cost

As in group one the CFAs perceive a relationship to exist between relevance and reliability for each information pair. The values of chi-square on these pairs (group two--Table 3) vary from a low of 11.32862 with a significance of .0231 to a high of 37.94794 with a significance of .0000. The information pair for the change from historical cost--cost of goods sold under the FIFO pricing method to current cost--cost of goods sold has the lowest chi-square value and income from continuing operations has the highest value.

The Kendall's Tau_b values of group two (Table 4) for each pair with a significant chi-square (all pairs) are all positive, which indicates a direct relationship between the relevance and reliability of each pair. The lowest Tau_b value is .21286 with a significance of .0380. The remainder of the values range from a low of .32180 with a significance of .0038 to a high of .68768 with a significance of .0000. The direct relationship for all pairs indicates that the CFAs do not perceive a trade-off when the accounting basis is changed from historical cost to current cost.

Group Three--Constant Dollar to Current Cost

The CFAs perceive a relationship between relevance and reliability to exist for each pair except for the comparison of depreciation expense. The chi-square value for depreciation expense is 7.92526 with a significance of .0944. This significance level exceeds the nominal critical level of .05. The values of chi-square on the pairs determined to have a relationship (group three--Table 3) varied from a low of 11.90651 with a significance of .0181 to a high of 50.16179 with a significance of .0000. Depletion expense under the units-of-production method has the lowest chi-square value and income from continuing operations has the highest.

The Kendall's Tau_b values of group three (Table 4) for each pair with a significant chi-square are all

positive, which indicates a direct relationship between the relevance and reliability of each pair. The Tau_b values range from a low of .32748 (significance of .0034) to a high of .69003 (significance of .0000). When the accounting basis is changed from constant dollar to current cost, the direct relationships indicate that the CFAs do not perceive a trade-off to exist.

Summary

The analysis of the contingency tables has revealed that the relationship between relevance and reliability as perceived by the CFAs is direct, with both characteristics either increasing or decreasing. The existence of a trade-off was not established. The results were consistent regardless of the change in accounting basis, i.e., historical cost to constant dollar, historical cost to current cost, or constant dollar to current cost.

Chief Commercial Loan Officers

A chi-square value and a Kendall's Tau_b value were calculated from the contingency table for each information pair. The responses received from the CLOs were used to prepare these contingency tables. The example presented for the CFAs in Figure 4 (page 62) is similar to the tables created from the CLOs responses. Table 5 presents the summary of the chi-square values

TABLE 5

Summary of Chi-Square Values: Chief
Commercial Loan Officers

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Chi-Square Value	Chi-Square Significance
Group I--Historical Cost(Column 1) vs. Constant Dollar(Column 2)				
Income from continuing operations	Income from continuing operations	[1]	36.31306	.0000
Sales or net revenues	Sales or net revenues	[4]	33.31708	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [LIFO pricing method] [FIFO pricing method]	[5] [8]	32.25473 37.44720	.0000 .0000
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[11]	28.37981	.0000
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[14]	28.38609	.0000
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [LIFO pricing method] [FIFO pricing method]	[17] [20]	41.17497 32.43037	.0000 .0000
Property, plant and equipment	Property, plant and equipment	[23]	38.41669	.0000

TABLE 5 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No.	Chi-Square Value	Significance
Net assets at year end	Net assets at year end	[26]	50.69281	.0000
Earnings per share	Earnings per share	[29]	33.90779	.0000
Group II--Historical Cost(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[2]	32.90964	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[6] [9]	39.51161 35.20721	.0000 .0000
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[12]	45.36079	.0000
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[15]	29.84093	.0000
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [Current cost] [Current cost]	[18] [21]	29.57321 41.43687	.0000 .0000

TABLE 5 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Chi-Square Value	Significance
Property, plant and equipment	Property, plant and equipment	[24]	20.80197	.0003
Net assets at year end	Net assets at year end	[27]	40.45363	.0000
Earnings per share	Earnings per share	[30]	22.09464	.0002
Group III--Constant Dollar(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[3]	28.77338	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[7] [10]	24.06453 22.49178	.0001 .0002
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[13]	35.11829	.0000
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[16]	33.60716	.0000

TABLE 5 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Chi-Square Value	Chi-Square Significance
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [Current cost] [Current cost]	[19] [22]	30.01425 26.12021	.0000 .0000
Property, plant and equipment	Property, plant and equipment	[25]	32.00728	.0000
Net assets at year end	Net assets at year end	[28]	40.26518	.0000
Earnings per share	Earnings per share	[31]	27.72684	.0000

^aPair numbers agree with pair numbers identified in Table 1 (page 40).

calculated. Table 6 summarizes the Kendall's Tau_b values calculated for each information pair. Each summary of values is separated into three groups of information pairs. Group one consists of the information pairs that represent the change of accounting basis from historical cost to constant dollar. The pairs in group two represent the change in accounting basis from historical cost to current cost. The information pairs from the change in accounting basis from constant dollar to current cost are presented in group three.

Group One--Historical Cost to Constant Dollar

Each information pair is perceived to have a relationship between relevance and reliability by the CLOs. This relationship was established by a review of the chi-square values of group one (Table 5). The values of chi-square on these pairs range from a low of 28.37981 with a significance of .0000 to a high of 50.69281 with a significance of .0000. Depreciation expense under the straight-line method has the lowest chi-square value and net assets at year end has the highest.

All of the pairs in group one have a significant chi-square, and the Kendall's Tau_b values of group one (Table 6) are all positive, which indicates a direct relationship between the relevance and reliability of each pair. The values of Tau_b range from a low of .32628

TABLE 6

Summary of Kendall's Taub Values:
Chief Commercial Loan Officers

Information Item(Column 1)	Information Item(Column 2)	Paira No.	Kendall's Taub Value	Significance
Group I--Historical Cost(Column 1) vs. Constant Dollar(Column 2)				
Income from continuing operations	Income from continuing operations	[1]	.49828	.0000
Sales or net revenues	Sales or net revenues	[4]	.42014	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [LIFO pricing method] [FIFO pricing method]	[5] [8]	.38551 .45790	.0000 .0000
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[11]	.34483	.0000
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[14]	.32628	.0001
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [LIFO pricing method] [FIFO pricing method]	[17] [20]	.47913 .47361	.0000 .0000
Property, plant and equipment	Property, plant and equipment	[23]	.42067	.0000

TABLE 6 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Kendall's Tau _b Value	Significance
Net assets at year end	Net assets at year end	[26]	.52449	.0000
Earnings per share	Earnings per share	[29]	.37884	.0000
Group II--Historical Cost(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[2]	.47767	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[6] [9]	.46290 .45966	.0000 .0000
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[12]	.45368	.0000
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[15]	.40683	.0000
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [Current cost] [Current cost]	[18] [21]	.44182 .51782	.0000 .0000

TABLE 6 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Kendall's Tau _b Value	Significance
Property, plant and equipment	Property, plant and equipment	[24]	.34360	.0000
Net assets at year end	Net assets at year end	[27]	.50556	.0000
Earnings per share	Earnings per share	[30]	.33333	.0001
Group III--Constant Dollar(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[3]	.41224	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[7] [10]	.35177 .33575	.0000 .0001
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[13]	.45635	.0000
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[16]	.43334	.0000

TABLE 6 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Kendall's Tau _b Value	Significance
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [Current cost] [Current cost]	[19] [22]	.28167 .35572	.0006 .0000
Property, plant and equipment	Property, plant and equipment	[25]	.40428	.0000
Net assets at year end	Net assets at year end	[28]	.46626	.0000
Earnings per share	Earnings per share	[31]	.40090	.0000

^aPair numbers agree with pair numbers identified in Table 1 (page 40).

with a significance of .0001 to a high of .52449 with a significance of .0000. When the accounting basis is changed from historical cost to constant dollar, the existence of a direct relationship between relevance and reliability indicates that the CLOs do not perceive a trade-off between the two characteristics.

Group Two--Historical Cost to Current Cost

A relationship between relevance and reliability is perceived to exist for each information pair. The values of chi-square on these pairs (group two--Table 5) varied from a low of 20.80197 with a significance of .0003 to a high of 45.36079 with a significance of .0000. The information pair, property, plant and equipment has the lowest chi-square value and depreciation expense under the straight-line method has the highest value.

The examination of the Kendall's Tau_b values for each of the pairs in group two (Table 6) reveals that for each pair with a significant chi-square (all pairs) a direct relationship exists between relevance and reliability. The Tau_b values range from a low of .33333 with a significance of .0001 to a high of .51782 with a significance of .0000. A direct relationship between relevance and reliability is determined to exist for each pair as the accounting basis is changed from historical cost to current cost. This relationship

indicates that the CLOs do not perceive a trade-off between relevance and reliability for this change.

Group Three--Constant Dollar to Current Cost

For each information pair in group three, as found in groups one and two, the CLOs perceive the existence of a relationship between relevance and reliability. The values of chi-square on the pairs (group three--Table 5) vary from a low of 22.49178 with a significance of .0002 to a high of 40.26518 with a significance of .0000. The information pair for the change from constant dollar--cost of goods sold under the FIFO pricing method to current cost--cost of goods sold yielded the lowest chi-square value and the pair, net assets at year end has the highest value.

Each pair with a significant chi-square value (all pairs) is shown in Table 6 (group three) to have a positive Kendall's τ_b value. This indicates a direct relationship between the relevance and reliability of each pair. The lowest Kendall's τ_b value is .28167 with a significance of .0006 and the highest value is .46626 with a significance of .0000. The CLOs do not perceive a trade-off to exist between relevance and reliability when the accounting basis is changed from constant dollar to current cost, as indicated by the direct relationships established.

Summary

A direct relationship between relevance and reliability is perceived by the CLOs, as indicated by the positive Kendall's τ_b values. For each information pair examined, both characteristics are determined to be either increasing or decreasing. A trade-off between relevance and reliability was not found to exist. The results of the examination are consistent among the three changes in accounting basis, i.e., historical cost to constant dollar, historical cost to current cost, and constant dollar to current cost.

Chief Financial Officers

A contingency table has been created for each information pair from the responses received from the CFOs. The example presented for the CFAs in Figure 4 (page 62) is similar to the tables for the CFOs. From each contingency table a chi-square and a Kendall's τ_b value has been calculated. The values are summarized in Table 7 and Table 8 respectively. Each summary of values is divided into three groups of information pairs. Group one consists of the information pairs that represent the change of accounting basis from historical cost to constant dollar. The pairs in group two represent the change of accounting basis from historical cost to current cost. Group three is the information

TABLE 7

Summary of Chi-Square Values:
Chief Financial Officers

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Chi-Square Value	Significance
Group I--Historical Cost(Column 1) vs. Constant Dollar(Column 2)				
Income from continuing operations	Income from continuing operations	[1]	20.73822	.0004
Sales or net revenues	Sales or net revenues	[4]	15.41414	.0039
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [LIFO pricing method] [FIFO pricing method]	[5] [8]	31.19540 14.19370	.0000 .0067
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[11]	20.08401	.0005
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[14]	13.01421	.0112
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [LIFO pricing method] [FIFO pricing method]	[17] [20]	27.01382 24.25948	.0000 .0001
Property, plant and equipment	Property, plant and equipment	[23]	13.73633	.0082

TABLE 7 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Chi-Square Value	Significance
Net assets at year end	Net assets at year end	[26]	16.04141	.0030
Earnings per share	Earnings per share	[29]	8.98104	.0616
Group II--Historical Cost(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[2]	18.51045	.0010
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[6] [9]	32.32268 19.11368	.0000 .0007
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[12]	21.11914	.0003
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[15]	18.20532	.0011
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [Current cost] [Current cost]	[18] [21]	37.10939 14.42798	.0000 .0060

TABLE 7 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Chi-Square Value	Significance
Property, plant and equipment	Property, plant and equipment	[24]	21.85904	.0002
Net assets at year end	Net assets at year end	[27]	17.86830	.0013
Earnings per share	Earnings per share	[30]	22.40178	.0002
Group III--Constant Dollar(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[3]	26.43837	.0000
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[7] [10]	38.99536 32.54813	.0000 .0000
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[13]	38.48082	.0000
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[16]	23.03047	.0000

TABLE 7 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No.	Chi-Square Value	Significance
Inventory	Inventory			
[LIFO pricing method]	[Current cost]	[19]	44.07066	.0000
[FIFO pricing method]	[Current cost]	[22]	26.66330	.0000
Property, plant and equipment	Property, plant and equipment	[25]	34.54248	.0000
Net assets at year end	Net assets at year end	[28]	20.57127	.0004
Earnings per share	Earnings per share	[31]	26.68893	.0000

^aPair numbers agree with pair numbers identified in Table 1 (page 40).

TABLE 8

Summary of Kendall's Tau_b Values:
Chief Financial Officers

Information Item(Column 1)	Information Item(Column 2)	Pair a No.	Kendall's Tau _b Value	Significance
Group I--Historical Cost(Column 1) vs. Constant Dollar(Column 2)				
Income from continuing operations	Income from continuing operations	[1]	.37802	.0000
Sales or net revenues	Sales or net revenues	[4]	.23368	.0049
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [LIFO pricing method] [FIFO pricing method]	[5] [8]	.43569 .24034	.0000 .0034
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[11]	.23958	.0035
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[14]	.21943	.0087
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [LIFO pricing method] [FIFO pricing method]	[17] [20]	.39806 .31558	.0000 .0003
Property, plant and equipment	Property, plant and equipment	[23]	.16843	.0300

TABLE 8 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Kendall's Taub Value	Significance
Net assets at year end	Net assets at year end	[26]	.32406	.0002
Earnings per share	Earnings per share	[29]	n/a	n/a
Group II--Historical Cost(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[2]	.33272	.0001
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[6] [9]	.45488 .31008	.0000 .0002
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[12]	.27780	.0008
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[15]	.27645	.0012
Inventory [LIFO pricing method] [FIFO pricing method]	Inventory [Current cost] [Current cost]	[18] [21]	.46205 .25934	.0000 .0017

TABLE 8 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair ^a No.	Kendall's Tau _b Value	Significance
Property, plant and equipment	Property, plant and equipment	[24]	.27899	.0008
Net assets at year end	Net assets at year end	[27]	.30595	.0003
Earnings per share	Earnings per share	[30]	.36259	.0000
Group III--Constant Dollar(Column 1) vs. Current Cost(Column 2)				
Income from continuing operations	Income from continuing operations	[3]	.21020	.0082
Cost of goods sold [LIFO pricing method] [FIFO pricing method]	Cost of goods sold [Current cost] [Current cost]	[7] [10]	.40132 .26034	.0000 .0016
Depreciation expense [Straight-line method]	Depreciation expense [Straight-line method]	[13]	.33114	.0001
Depletion expense [Units-of-production method]	Depletion expense [Units-of-production method]	[16]	.27094	.0015

TABLE 8 (continued)

Information Item(Column 1)	Information Item(Column 2)	Pair No. ^a	Kendall's Tau _b Value	Significance
Inventory	Inventory			
[LIFO pricing method]	[Current cost]	[19]	.45601	.0000
[FIFO pricing method]	[Current cost]	[22]	.33947	.0001
Property, plant and equipment	Property, plant and equipment	[25]	.20361	.0108
Net assets at year end	Net assets at year end	[28]	.24061	.0031
Earnings per share	Earnings per share	[31]	.23284	.0041

^apair numbers agree with pair numbers identified in Table 1 (page 40).

n/a--Kendall's Tau_b was not calculated on unrelated pairs.

pairs representing the change in accounting basis from constant dollar to current cost.

Group One--Historical Cost to Constant Dollar

A review of the chi-square values of group one (Table 7) indicates that the CFOs perceive a relationship to exist between the relevance and reliability of each information pair except earnings per share. The chi-square value for earnings per share was 8.98104 with a significance level of .0616. This significance level exceeds the nominal critical level of .05. The lowest chi-square value of the pairs determined to have a relationship is 13.01421 with a significance of .0112. The highest chi-square value is 31.19540 with a significance of .0000. Depletion expense under the units-of-production method has the lowest chi-square value and the information pair, cost of goods sold under the LIFO pricing method yielded the highest chi-square value.

The Kendall's Tau_b values of group one (Table 8) for each pair with a significant chi-square are all positive, which indicates a direct relationship between the relevance and reliability of each pair. The values of Tau_b range from a low of .16843 with a significance of .0300 to a high of .43569 with a significance of .0000. A trade-off between relevance and reliability is not perceived to exist by the CFOs.

Group Two--Historical Cost to Current Cost

The chi-square values of group two (Table 7) indicate that the CFOs perceive a relationship to exist between relevance and reliability for each information pair. The lowest chi-square value of these pairs is 14.42798 with a significance of .0060. The remainder of the values range to a high of 37.10939 with a significance of .0000. The information pair, historical cost--inventory under the FIFO pricing method to current cost--inventory has the lowest chi-square value and the pair, historical cost--inventory under the LIFO pricing method to current cost--inventory yielded the highest chi-square value.

The Kendall's τ_b values of group two (Table 8) vary from a low of .25934 with a significance of .0017 to a high of .46205 with a significance of .0000. The τ_b values for each pair with a significant chi-square (all pairs) are all positive, which indicates a direct relationship between the relevance and reliability of each pair. The direct relationship for all pairs indicates that the CFOs do not perceive a trade-off when the accounting basis is changed from historical cost to current cost.

Group Three--Constant Dollar to Current Cost

As in group two, the CFOs perceive a relationship to exist between relevance and reliability for each information pair. The values of chi-square on these pairs (group three--Table 7) vary from a low of 20.57127 with a significance of .0004 to a high of 44.07066 with a significance of .0000. The information pair, constant dollar--net assets at year end to current cost--net assets at year end has the lowest chi-square value. The pair with the highest chi-square value is constant dollar--inventory under the LIFO pricing method to current cost--inventory.

For each pair with a significant chi-square, the Kendall's Tau_b values (group three--Table 8) are all positive, which indicates a direct relationship between the relevance and reliability of each pair. The Tau_b values range from a low of .20361 with a significance of .0108 to a high of .45601 with a significance of .0000. The direct relationships indicate that when the accounting basis is changed from constant dollar to current cost, the CFOs do not perceive a trade-off to exist.

Summary

The characteristics, relevance and reliability, are perceived by the CFOs to have a direct relationship, with both characteristics either increasing or decreasing.

The existence of a trade-off was not established. Regardless of the change in accounting basis, i.e., historical cost to constant dollar, historical cost to current cost, or constant dollar to current cost, the results of the analysis were consistent.

Discussion of Results

In 1980 the FASB issued an invitation to comment [FASB, 1980a] soliciting responses by financial information users. These comments were to be used by the FASB to assist in determining what financial information a company should present in its financial statements. In one of the questions presented, the FASB emphasized the possible existence of trade-offs between qualitative characteristics. If a trade-off does exist, a user must consider how much of one characteristic he is willing to forego to achieve an increase in another characteristic when selecting information. Thus, choosing an information item of greater relevance may require sacrificing some reliability. In recommending information items for presentation by companies, the FASB must take into account any trade-offs that exist. Accordingly, if a trade-off does not exist, the efforts of the FASB could be focused on the improvement of a desired characteristic or the selection of an accounting method that demonstrates an improvement in one

characteristic without sacrificing another. In some cases, these efforts may provide improvements in additional characteristics as well.

The results of this study have suggested a complementary (direct) relationship between the qualitative characteristics, relevance and reliability. The direct relationship indicates that as the accounting measurement basis is changed, both characteristics either increase or decrease; there does not appear to be a trade-off between the two.

Stanga [1980] achieved similar results in his study of the relationship between relevance and reliability. Using a different research design, he applied a correlation coefficient to each individual information item in a set of questionnaire responses and found a positive correlation between relevance and reliability. A positive correlation indicates that a change in relevance is associated with a similar change in reliability. Another study of qualitative characteristics, performed by Morton [1974], found a positive correlation between two characteristics. Although the characteristics examined were relevance and understandability and a different methodology was applied, results complementary to the present study and the Stanga study were found. The positive correlations indicated in these studies would suggest that an increase (decrease)

in either relevance or reliability is associated with an increase (decrease) in the other characteristic.

In SFAC No. 2, the FASB stated:

. . . there seems to be considerable support for the view that reliability should be the dominant quality in the information conveyed in financial statements, even at the expense of relevance, while the opposite is true of information conveyed outside the financial statements. . . almost everyone agrees that criteria for formally recognizing elements in financial statements call for a minimum level or threshold of reliability of measurement that should be higher than is usually considered necessary for disclosing information outside financial statements [FASB, 1980b, para. 44].

Under this view, a trade-off between relevance and reliability contributes to the decision of where to report financial information. The choice between the formal financial statements and the supplementary information as the place to report an information item is directly affected by an item's relevance and/or reliability. In this study, no evidence of a trade-off between relevance and reliability was found. Consequently, the results suggest that items reported outside the financial statements will be perceived to have either greater relevance and greater reliability or less relevance and less reliability when compared with information items reported within the financial statements.

Additionally, the relationship found in this study may support the existence of a threshold of reliability

for all information. The theoretical trade-off between relevance and reliability may occur only after a minimum level or threshold of reliability has been achieved. The written comments made by many respondents on their questionnaires indicated clearly a significant concern over the reliability of the constant dollar and current cost measures.

The results of the study suggest that relevance and reliability are not independent qualities. Instead, the results suggest that the capacity of information to make a difference in a decision (i.e., relevance) may in part be determined by how much reliability the information is perceived to have. In other words, a person's perceptions of the relevance of information may tend to be influenced by his perceptions of the reliability of the information. Relatively unreliable information may simply not have the capacity to influence a decision, regardless of how much theoretical relevance the information may possess. Preparers and users may therefore tend to believe that unless information is sufficiently reliable, the information will lack relevance insofar as their actual decisions are concerned.

One of the implications of this study for researchers is a need to focus on improvements of the reliability of the measurement methods applied to financial information. An improvement in reliability would not give rise to a

loss of relevance and may be associated with significant increases in relevance.

Summary of Results

This chapter has presented the results obtained from the survey of investors, creditors and preparers of financial information. The examination of the chi-square values for each of the information pairs for all three survey groups revealed that a relationship exists between relevance and reliability for ninety-one of the ninety-three pairs examined. To determine if the relationship was indirect (trade-off) or direct, an examination of the Kendall's τ_b for each of the ninety-one pairs was made. In every case the relationship was determined to be direct. The existence of a trade-off was not established for any of the information pairs. From these results it appears that none of the three groups surveyed perceive a trade-off to exist between relevance and reliability when the accounting measurement basis is changed.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS FOR ADDITIONAL RESEARCH

Summary and Conclusions

Accounting literature has referred to the existence of a trade-off between qualitative characteristics for many years. Little empirical evidence has been offered to support or refute the existence of a trade-off between qualitative characteristics. The objective of this study was to present empirical evidence regarding the existence of a trade-off. The characteristics selected for examination are the two primary decision-specific characteristics, relevance and reliability, delineated by the FASB in SFAC No. 2.

To accomplish this objective, an evaluation of the relevance and reliability of information was performed under conditions anticipated to display a trade-off between characteristics if in fact a trade-off exists. The situation considered appropriate for this examination was suggested in SFAC No. 2 as a part of the discussion of the specific trade-off between relevance and reliability. As pointed out in the discussion, the proponents of current cost stress it as a more relevant measure of financial information and concede that the

nature of the measures may cause current cost to be less reliable than historical cost. This study, therefore, focused on the relationship between relevance and reliability when a change in the measurement basis occurs, i.e., historical cost to constant dollar, historical cost to current cost or constant dollar to current cost.

The FASB has designated investors and creditors as the primary users of financial information. These users, along with the individuals preparing financial information, should perceive the trade-off between qualitative characteristics when an information item is presented using different measurement bases. Within the realm of cost and time, a questionnaire was determined to be the most efficient means of evaluating these users' and preparers' perceptions. A survey group was selected from each of the two user categories above and one from the preparer category. The sample groups chosen are: (1) chartered financial analysts (CFAs), (2) chief commercial loan officers (CLOs), and (3) chief financial officers (CFOs). A sample of 300 was selected from each group and 900 questionnaire packets were mailed. A total of 284 usable responses was received, resulting in a usable response rate of 31.6 percent.

The questionnaire used to survey these groups was designed specifically to assess the relevance and

reliability of information items when the accounting measurement basis is changed. This was accomplished by incorporating information items measured on the historical cost, constant dollar and current cost bases. Each item used in the questionnaire was matched such that for each item in one category (historical cost, constant dollar, or current cost) there is a similar item in one of the other categories or both.

A total of thirty information items was included in the questionnaire, eleven each on the historical cost and constant dollar bases and eight on the current cost basis. The historical cost items were selected from information presented in the primary financial statements of large, publicly-held, industrial corporations. These same corporations have been required, by SFAS No. 33, to present constant dollar and current cost measures as supplementary information since 1979. A review of corporate financial statements and the FASB Special Report, Examples of the Use of FASB Statement No. 33, Financial Reporting and Changing Prices, disclosed the availability of this information to users for over two years.

The individuals surveyed were asked to evaluate the relevance and reliability of each of the thirty information items independently on a scale of one to

seven. A response of seven indicates a high level of the characteristic attributed to the information item and a response of one indicates a low level. To analyze the changes in relevance and reliability, the matching items were paired (see Table 1, page 40). The comparison of the scale values of each pair revealed an increase, a decrease, or no change in each characteristic. These determinations were then organized into ordered contingency tables (see Figure 4, page 62), one table for each pair. Thirty-one contingency tables were created for each of the three respondent groups for a total of ninety-three tables. Each of these contingency tables was then analyzed for the perceived relationship between relevance and reliability.

The measurement scales are ordinal, therefore, nonparametric statistics are appropriate. The statistics applied to each table are chi-square and Kendall's Tau_b . The chi-square test for independence establishes the existence or lack of a relationship between the characteristics. Although the chi-square test will indicate if the two characteristics are related, it will not disclose what the relationship is. If a relationship does exist, the Kendall's Tau_b will determine, for an ordered contingency table, if the relationship is direct or indirect. The calculation of a positive Tau_b

establishes the relationship as direct whereas an indirect relationship results in a negative Tau_b . If the relationship is indirect then a trade-off is deemed to exist between the characteristics. A direct relationship means that a change in one characteristic is associated with a similar change in the other characteristic, i.e., an increase in relevance is accompanied by an increase in reliability.

These analyses were performed on the thirty-one contingency tables derived for each survey group. The CFAs surveyed perceive a relationship between relevance and reliability to exist for thirty of the thirty-one pairs examined. The Kendall's Tau_b values on each of these thirty pairs was determined to be positive, which indicates a direct relationship between relevance and reliability. A trade-off was not perceived to exist.

Every table derived from the CLOs' responses demonstrated the existence of a relationship between relevance and reliability. The examination of the Tau_b values revealed a direct relationship between relevance and reliability. No trade-off was perceived.

The examination of the thirty-one pairs derived from the responses of the CFOs surveyed indicate thirty pairs with a relationship between relevance and reliability. One pair did not reveal a relationship. As in the previous two groups all of the relationships were direct,

which indicates that a trade-off is not perceived to exist.

As indicated above, the samples of the groups surveyed perceive the relationship between relevance and reliability to be direct in the ninety-one cases in which a relationship was found. Therefore, the conclusion of this study is that the groups surveyed do not perceive a trade-off between relevance and reliability when the accounting measurement basis is changed.

The results and conclusion of this study tend to contradict the position taken in most previous accounting literature. This position implies that it is possible for highly relevant information to be highly unreliable, and vice versa. Current cost information, for example, may be highly relevant but highly unreliable, while historical cost information may be highly reliable but highly irrelevant.

The findings in the present study, which are based on the actual perceptions of preparers and users, suggest that relevance and reliability may not be independent qualities. Instead, the results suggest that a person's perception of relevance may be influenced by his perception of reliability. A possible reason for this relationship may be that a reliability threshold exists. Information that has not reached the reliability

threshold may simply not have the capacity to influence a user's decisions; therefore the information is not relevant to the user. The existence of reliability cannot, by itself, make an item of information relevant, but, the attributing of relevance to an item may require that a certain level of reliability has been attained. Under this interpretation, it is not possible for highly unreliable information to be perceived as highly relevant.

Limitations

One of the limitations of this study relates to the samples of the groups surveyed. Not only are there other groups of users that might have been surveyed, but the samples of the groups surveyed were restricted. Since the SFAS No. 33 information is required only of the large, publicly-held corporations, the CLOs surveyed were restricted to the 300 largest banks in the United States and the CFOs were selected from the Fortune 500. The examination of sample groups from smaller and/or closely-held companies may provide different results.

A second limitation relates to the use of questionnaire methodology. To facilitate compatible answers made within the same contexts, an effort was made to standardize the questionnaire. Additionally, as in most surveys in the accounting literature, a response rate of less than 100 percent was achieved (31.6 percent).

This suggests the possible existence of a nonresponse bias. However, an early-late test for nonresponse bias was performed, and the results of the test do not suggest that a nonresponse bias exists.

Finally, another limitation of this study is the impact of other factors on the respondents' perceptions. These factors may have affected the questionnaire responses. Although not feasible in this study, the inclusion of the costs of information might have changed the respondents' perceptions of the relevance and reliability of the survey items. Also, the effect of audited versus unaudited information may influence their perceptions.

Recommendations for Additional Research

Although a trade-off between qualitative characteristics has been contended in the literature, only a limited amount of empirical research has been conducted. As a result, there is a need for continuing research in this area. A few ideas concerning the nature of needed research efforts are presented below.

As indicated earlier, the groups surveyed do not encompass all users of financial information. The principal group in each of the categories, investors, creditors and preparers, was chosen for this study. Future studies could be directed to other groups within

these categories. Institutional investors or directors of mortgage and investment companies could be polled for their perceptions of relevance and reliability. In addition, other groups of preparers, such as those from smaller and/or closely-held companies or from a particular industry could be polled.

The concept of trade-offs is not limited to the primary decision-specific characteristics of financial information. Other characteristics might be considered for examination to determine the existence of a trade-off. Some examples of these characteristics are: (1) timeliness and verifiability, (2) timeliness and reliability, or (3) relevance and verifiability. Another factor to consider within the realm of any trade-off is the limitation of benefits provided and costs incurred.

This study examined trade-offs when there is a change in the accounting measurement basis. Another area in which a trade-off may be suggested is the presentation of audited financial information in lieu of unaudited information. There may also be a trade-off with regard to information presented in the formal financial statements and the supplementary information provided.

Finally, other methodologies may be applied to pursue the question of trade-offs between qualitative characteristics. A case study of the choices actually

made by a company in the preparation of its financial statements might reveal significant trade-offs of qualitative characteristics.

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APPENDIXES

APPENDIX A
REPRODUCTION OF QUESTIONNAIRE PACKET MAILED
TO CHARTERED FINANCIAL ANALYSTS

THE UNIVERSITY OF TENNESSEE
KNOXVILLE 37916
COLLEGE OF BUSINESS ADMINISTRATION

DEPARTMENT OF ACCOUNTING AND BUSINESS LAW

August 17, 1981

Dear Sir:

Should accountants adjust financial statements to reflect the impact of inflation? As you know, preparers and users of financial statements have debated this question for many years. On June 15, 1981 the Financial Accounting Standards Board (FASB) solicited research in this area. The FASB needs the research to undertake a comprehensive review of its Statement No. 33, "Financial Reporting and Changing Prices."

As part of my doctoral dissertation at The University of Tennessee, I am seeking the opinions of a small sample of Chartered Financial Analysts regarding the relevance and reliability of various inflation-adjusted information items that Statement No. 33 currently requires. Your opinions should be very helpful in determining whether the FASB should continue to require companies to report these items.

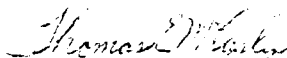
Enclosed is a brief questionnaire. Please complete it and return it to me in the enclosed postage-paid, self-addressed envelope. I will be happy to provide you with a summary of the results of the study. Space has been provided near the end of the questionnaire so that you may indicate if you desire such a summary.

The questionnaire has been carefully pretested, and most people have completed it in about 10 minutes. An important instruction sheet precedes the questionnaire.

Your individual responses will be held in strict confidence and will only be used to develop statistical tables. These tables will in no way identify the views of individual respondents. The number on the return envelope is for follow-up purposes only.

Your participation is vital to the success of this research and will be greatly appreciated.

Sincerely,



Thomas E. McCaslin, CPA

CONFIDENTIAL QUESTIONNAIRE

INSTRUCTIONS

Please detach this page.

The following questionnaire consists of a number of information items that are provided within a company's annual financial statements or as supplementary information as required by FASB Statement of Financial Accounting Standards No. 33, "Financial Reporting and Changing Prices." Next to each item are two scales for you to use in evaluating the item, based on the following criteria:

- (1) Relevance - Information is relevant if it has the capacity to make a difference in a decision by helping you to form predictions about the outcomes of past, present, and future events or to confirm or correct prior expectations.
- (2) Reliability - The quality of information that assumes that information is reasonably free from error and bias and faithfully represents what it purports to represent.

You are requested to evaluate each information item independently and circle the number on each of the two scales that best represents your personal opinion concerning the relevance and reliability to you of each information item. The two scales are constructed as follows:

<u>Relevance</u>							
Irrelevant						Extremely Relevant	
	1	2	3	4	5	6	7
<u>Reliability</u>							
Unreliable						Extremely Reliable	
	1	2	3	4	5	6	7

Please evaluate each information item within the context of your making a typical decision to buy, sell or hold a small (noncontrolling) number of common shares in a large, publicly-held industrial company. Assume that you had obtained knowledge of each item from a typical annual report to shareholders and that each item is material in dollar amount. Finally, assume that each item pertains to the company's most recent fiscal period.

Space is provided at the end of the questionnaire for you to make any comments that you feel should be considered in the study.

SECTION I: Assume that each of the following items (1-11) is reported according to HISTORICAL COST/NOMINAL DOLLAR ACCOUNTING (As recently described by the Financial Accounting Standards Board, this is the generally accepted method of accounting used in the conventional financial statements. It is based on measures of historical prices in dollars without restatement into units, each having the same general purchasing power):

	Relevance			Reliability		
	Irrelevant	Extremely Relevant	Unreliable	Extremely Reliable		
1. Income from continuing operations.	1	2	3	4	5	6
2. Sales or net revenues.	1	2	3	4	5	6
3. Cost of goods sold (LIFO pricing method)	1	2	3	4	5	6
4. Cost of goods sold (FIFO pricing method)	1	2	3	4	5	6
5. Depreciation expense (Straight line method).	1	2	3	4	5	6
6. Depletion expense (Units of production method)	1	2	3	4	5	6
7. Inventory (LIFO pricing method).	1	2	3	4	5	6
8. Inventory (FIFO pricing method).	1	2	3	4	5	6
9. Property, plant and equipment.	1	2	3	4	5	6
10. Net assets at year end	1	2	3	4	5	6
11. Earnings per share	1	2	3	4	5	6

SECTION II: Assume that each of the following items (1-11) is reported according to HISTORICAL COST/CONSTANT DOLLAR ACCOUNTING (As recently described by the Financial Accounting Standards Board, this is a method of accounting based on measures of historical prices in dollars, each having the same general purchasing power. The Consumer Price Index for All Urban Consumers is used to restate the conventional financial statements):

1. Income from continuing operations.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2. Sales or net revenues.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3. Cost of goods sold (LIFO pricing method)	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4. Cost of goods sold (FIFO pricing method)	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5. Depreciation expense (Straight line method).	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6. Depletion expense (Units of production method)	1	2	3	4	5	6	7	1	2	3	4	5	6	7
7. Inventory (LIFO pricing method).	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8. Inventory (FIFO pricing method).	1	2	3	4	5	6	7	1	2	3	4	5	6	7
9. Property, plant and equipment.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
10. Net assets at year end	1	2	3	4	5	6	7	1	2	3	4	5	6	7
11. Earnings per share	1	2	3	4	5	6	7	1	2	3	4	5	6	7

	Relevance			Reliability		
	Irrelevant	Extremely Relevant	Unreliable	Extremely Reliable		
SECTION III: Assume that each of the following items (1-8) is reported according to <u>CURRENT COST/NOMINAL DOLLAR ACCOUNTING</u> (As recently described by the Financial Accounting Standards Board, this is a method of accounting based on measures of current cost, without restatement into units, each having the same general purchasing power):						
1. Income from continuing operations.	1 2 3 4 5 6 7	1	1 2 3 4 5 6 7			
2. Cost of goods sold	1 2 3 4 5 6 7	1	1 2 3 4 5 6 7			
3. Depreciation expense (Straight line method).	1 2 3 4 5 6 7	1	1 2 3 4 5 6 7			
4. Depletion expense (Units of production method)	1 2 3 4 5 6 7	1	1 2 3 4 5 6 7			
5. Inventory.	1 2 3 4 5 6 7	1	1 2 3 4 5 6 7			
6. Property, plant and equipment.	1 2 3 4 5 6 7	1	1 2 3 4 5 6 7			
7. Net assets at year end	1 2 3 4 5 6 7	1	1 2 3 4 5 6 7			
8. Earnings per share	1 2 3 4 5 6 7	1	1 2 3 4 5 6 7			

SECTION IV: Demographic Information:

Using a scale of 1 through 10, please enter an integer that you feel best describes the extent to which you are familiar with each of the types of accounting information listed below. A "1" indicates minimum familiarity; a "10" indicates maximum familiarity.

1. Historical cost/Nominal dollar accounting information (as defined in SECTION I) _____
2. Historical cost/Constant dollar accounting information (as defined in SECTION II) _____
3. Current cost/Nominal dollar accounting information (as defined in SECTION III) _____

SECTION V:

Check here _____ if you desire a summary of the results of the study. Please feel free to use the space below to make any comments that you feel should be considered in the study. Please make sure that you have answered all of the questions. THANK YOU VERY MUCH.

APPENDIX B

REPRODUCTION OF QUESTIONNAIRE PACKET MAILED
TO CHIEF COMMERCIAL LOAN OFFICERS

THE UNIVERSITY OF TENNESSEE
KNOXVILLE 37916
COLLEGE OF BUSINESS ADMINISTRATION

DEPARTMENT OF ACCOUNTING AND BUSINESS LAW

August 17, 1981

Dear Sir:

Should accountants adjust financial statements to reflect the impact of inflation? As you know, preparers and users of financial statements have debated this question for many years. On June 15, 1981 the Financial Accounting Standards Board (FASB) solicited research in this area. The FASB needs the research to undertake a comprehensive review of its Statement No. 33, "Financial Reporting and Changing Prices."

As part of my doctoral dissertation at The University of Tennessee, I am seeking the opinions of a small sample of Chief Commercial Loan Officers regarding the relevance and reliability of various inflation-adjusted information items that Statement No. 33 currently requires. Your opinions should be very helpful in determining whether the FASB should continue to require companies to report these items.

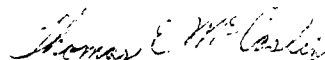
Enclosed is a brief questionnaire. Please complete it and return it to me in the enclosed postage-paid, self-addressed envelope. I will be happy to provide you with a summary of the results of the study. Space has been provided near the end of the questionnaire so that you may indicate if you desire such a summary.

The questionnaire has been carefully pretested, and most people have completed it in about 10 minutes. An important instruction sheet precedes the questionnaire.

Your individual responses will be held in strict confidence and will only be used to develop statistical tables. These tables will in no way identify the views of individual respondents. The number on the return envelope is for follow-up purposes only.

Your participation is vital to the success of this research and will be greatly appreciated.

Sincerely,



Thomas E. McCaslin, CPA

CONFIDENTIAL QUESTIONNAIRE
for the
CHIEF COMMERCIAL LOAN OFFICER

INSTRUCTIONS

Please detach this page.

The following questionnaire consists of a number of information items that are provided within a company's annual financial statements or as supplementary information as required by FASB Statement of Financial Accounting Standards No. 32, "Financial Reporting and Changing Prices." Next to each item are two scales for you to use in evaluating the item, based on the following criteria:

- (1) Relevance - Information is relevant if it has the capacity to make a difference in a decision by helping you to form predictions about the outcomes of past, present, and future events or to confirm or correct prior expectations.
- (2) Reliability - The quality of information that assumes that information is reasonably free from error and bias and faithfully represents what it purports to represent.

You are requested to evaluate each information item independently and circle the number on each of the two scales that best represents your personal opinion concerning the relevance and reliability to you of each information item. The two scales are constructed as follows:

<u>Relevance</u>						
Irrelevant	1	2	3	4	5	Extremely Relevant
<u>Reliability</u>						
Unreliable	1	2	3	4	5	Extremely Reliable

Please evaluate each information item within the context of your making a typical decision to extend a term loan (maturity between 3 and 5 years) of moderate size to a large, publicly-held industrial company. Assume that you had obtained knowledge of each item from a typical annual report to shareholders and that each item is material in dollar amount. Finally, assume that each item pertains to the company's most recent fiscal period.

Space is provided at the end of the questionnaire for you to make any comments that you feel should be considered in the study.

	Relevance							Reliability						
	Irrelevant							Unreliable						
	Extremely Relevant	6	5	4	3	2	1	Extremely Relevant	6	5	4	3	2	1
SECTION I: Assume that each of the following items (1-11) is reported according to HISTORICAL COST/NOMINAL DOLLAR ACCOUNTING (As recently described by the Financial Accounting Standards Board, this is the generally accepted method of accounting used in the conventional financial statements. It is based on measures of historical prices in dollars without restatement into units, each having the same general purchasing power):														
1. Income from continuing operations.	7	6	5	4	3	2	1	7	6	5	4	3	2	1
2. Sales or net revenues.	7	6	5	4	3	2	1	7	6	5	4	3	2	1
3. Cost of goods sold (LIFO pricing method)	7	6	5	4	3	2	1	7	6	5	4	3	2	1
4. Cost of goods sold (FIFO pricing method)	7	6	5	4	3	2	1	7	6	5	4	3	2	1
5. Depreciation expense (Straight line method).	7	6	5	4	3	2	1	7	6	5	4	3	2	1
6. Depletion expense (Units of production method)	7	6	5	4	3	2	1	7	6	5	4	3	2	1
7. Inventory (LIFO pricing method).	7	6	5	4	3	2	1	7	6	5	4	3	2	1
8. Inventory (FIFO pricing method).	7	6	5	4	3	2	1	7	6	5	4	3	2	1
9. Property, plant and equipment.	7	6	5	4	3	2	1	7	6	5	4	3	2	1
10. Net assets at year end	7	6	5	4	3	2	1	7	6	5	4	3	2	1
11. Earnings per share	7	6	5	4	3	2	1	7	6	5	4	3	2	1

SECTION II: Assume that each of the following items (1-11) is reported according to HISTORICAL COST/CONSTANT DOLLAR ACCOUNTING (As recently described by the Financial Accounting Standards Board, this is a method of accounting based on measures of historical prices in dollars, each having the same general purchasing power. The Consumer Price Index for All Urban Consumers is used to restate the conventional financial statements):

1. Income from continuing operations.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2. Sales or net revenues.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3. Cost of goods sold (LIFO pricing method)	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4. Cost of goods sold (FIFO pricing method)	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5. Depreciation expense (Straight line method).	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6. Depletion expense (Units of production method)	1	2	3	4	5	6	7	1	2	3	4	5	6	7
7. Inventory (LIFO pricing method).	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8. Inventory (FIFO pricing method).	1	2	3	4	5	6	7	1	2	3	4	5	6	7
9. Property, plant and equipment.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
10. Net assets at year end	1	2	3	4	5	6	7	1	2	3	4	5	6	7
11. Earnings per share	1	2	3	4	5	6	7	1	2	3	4	5	6	7

		Relevance							Reliability							
		Irrelevant							Unreliable							
		Extremely Relevant							Extremely Reliable							
SECTION III. Assume that each of the following items (1-8) is reported according to <u>CURRENT COST/NOMINAL DOLLAR ACCOUNTING</u> (As recently described by the Financial Accounting Standards Board, this is a method of accounting based on measures of <u>current cost</u> , <u>without restatement into units</u> , each having the same <u>general purchasing power</u>):																
1.	Income from continuing operations.	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
2.	Cost of goods sold	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
3.	Depreciation expense (Straight line method).	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
4.	Depletion expense (Units of production method)	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
5.	Inventory.	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
6.	Property, plant and equipment.	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
7.	Net assets at year end	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
8.	Earnings per share	1	2	3	4	5	6	7	1	2	3	4	5	6	7	

SECTION IV: Demographic Information:

Using a scale of 1 through 10, please enter an integer that you feel best describes the extent to which you are familiar with each of the types of accounting information listed below. A "1" indicates minimum familiarity; a "10" indicates maximum familiarity.

1. Historical cost/Nominal dollar accounting information (as defined in SECTION I) _____
2. Historical cost/Constant dollar accounting information (as defined in SECTION II) _____
3. Current cost/Nominal dollar accounting information (as defined in SECTION III) _____

SECTION V:

Check here _____ if you desire a summary of the results of the study. Please feel free to use the space below to make any comments that you feel should be considered in the study. Please make sure that you have answered all of the questions. THANK YOU VERY MUCH.

APPENDIX C
REPRODUCTION OF QUESTIONNAIRE PACKET MAILED
TO CHIEF FINANCIAL OFFICERS

THE UNIVERSITY OF TENNESSEE
KNOXVILLE 37916
COLLEGE OF BUSINESS ADMINISTRATION

DEPARTMENT OF ACCOUNTING AND BUSINESS LAW

August 17, 1981

Dear Sir:

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As part of my doctoral dissertation at The University of Tennessee, I am seeking the opinions of a small sample of Chief Financial Officers regarding the relevance and reliability of various inflation-adjusted information items that Statement No. 33 currently requires. Your opinions should be very helpful in determining whether the FASB should continue to require companies to report these items.

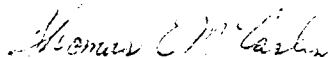
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Your participation is vital to the success of this research and will be greatly appreciated.

Sincerely,



Thomas E. McCaslin, CPA

CONFIDENTIAL QUESTIONNAIRE

INSTRUCTIONSPlease detach this page.

The following questionnaire consists of a number of information items that are provided within a company's annual financial statements or as supplementary information as required by FASB Statement of Financial Accounting Standards No. 33, "Financial Reporting and Changing Prices." Next to each item are two scales for you to use in evaluating the item, based on the following criteria:

- (1) Relevance - Information is relevant if it has the capacity to make a difference in a decision by helping you to form predictions about the outcomes of past, present, and future events or to confirm or correct prior expectations.
- (2) Reliability - The quality of information that assumes that information is reasonably free from error and bias and faithfully represents what it purports to represent.

You are requested to evaluate each information item independently and circle the number on each of the two scales that best represents your personal opinion concerning the relevance and reliability to you of each information item. The two scales are constructed as follows:

<u>Relevance</u>						
Irrelevant						Extremely Relevant
1	2	3	4	5	6	7
<u>Reliability</u>						
Unreliable						Extremely Reliable
1	2	3	4	5	6	7

Please evaluate each information item within the context of its relevance and reliability to you as a user of financial information provided by a large, publicly-held industrial company. Assume that you had obtained knowledge of each item from a typical annual report to shareholders and that each item is material in dollar amount. Finally, assume that each item pertains to the company's most recent fiscal period.

Space is provided at the end of the questionnaire for you to make any comments that you feel should be considered in the study.

SECTION I: Assume that each of the following items (1-11) is reported according to HISTORICAL COST/NOMINAL DOLLAR ACCOUNTING (As recently described by the Financial Accounting Standards Board, this is the generally accepted method of accounting used in the conventional financial statements. It is based on measures of historical prices in dollars without restatement into units, each having the same general purchasing power):

	Relevance			Reliability		
	Irrelevant	Extremely Relevant		Unreliable	Extremely Reliable	
1. Income from continuing operations.	1	2	3	4	5	6
2. Sales or net revenues.	1	2	3	4	5	6
3. Cost of goods sold (LIFO pricing method)	1	2	3	4	5	6
4. Cost of goods sold (FIFO pricing method)	1	2	3	4	5	6
5. Depreciation expense (Straight line method).	1	2	3	4	5	6
6. Depletion expense (Units of production method)	1	2	3	4	5	6
7. Inventory (LIFO pricing method).	1	2	3	4	5	6
8. Inventory (FIFO pricing method).	1	2	3	4	5	6
9. Property, plant and equipment.	1	2	3	4	5	6
10. Net assets at year end	1	2	3	4	5	6
11. Earnings per share	1	2	3	4	5	6

SECTION II: Assume that each of the following items (1-11) is reported according to HISTORICAL COST/CONSTANT DOLLAR ACCOUNTING (As recently described by the Financial Accounting Standards Board, this is a method of accounting based on measures of historical prices in dollars, each having the same general purchasing power. The Consumer Price Index for All Urban Consumers is used to restate the conventional financial statements):

1. Income from continuing operations.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2. Sales or net revenues.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3. Cost of goods sold (LIFO pricing method)	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4. Cost of goods sold (FIFO pricing method)	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5. Depreciation expense (Straight line method).	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6. Depletion expense (Units of production method)	1	2	3	4	5	6	7	1	2	3	4	5	6	7
7. Inventory (LIFO pricing method).	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8. Inventory (FIFO pricing method).	1	2	3	4	5	6	7	1	2	3	4	5	6	7
9. Property, plant and equipment.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
10. Net assets at year end	1	2	3	4	5	6	7	1	2	3	4	5	6	7
11. Earnings per share	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Relevance		Reliability	
Irrelevant	Extremely Relevant	Unreliable	Extremely Reliable
SECTION III: Assume that each of the following items (1-8) is reported according to <u>CURRENT COST/NOMINAL DOLLAR ACCOUNTING</u> (As recently described by the Financial Accounting Standards Board, this is a method of accounting based on measures of current cost, without restatement into units, each having the same general purchasing power):			
1. Income from continuing operations.	1 2 3 4 5 6 7	1 2 3 4 5 6 7	
2. Cost of goods sold	1 2 3 4 5 6 7	1 2 3 4 5 6 7	
3. Depreciation expense (Straight line method).	1 2 3 4 5 6 7	1 2 3 4 5 6 7	
4. Depletion expense (Units of production method)	1 2 3 4 5 6 7	1 2 3 4 5 6 7	
5. Inventory.	1 2 3 4 5 6 7	1 2 3 4 5 6 7	
6. Property, plant and equipment.	1 2 3 4 5 6 7	1 2 3 4 5 6 7	
7. Net assets at year end	1 2 3 4 5 6 7	1 2 3 4 5 6 7	
8. Earnings per share	1 2 3 4 5 6 7	1 2 3 4 5 6 7	

SECTION IV: Demographic Information:

Using a scale of 1 through 10, please enter an integer that you feel best describes the extent to which you are familiar with each of the types of accounting information listed below. A "1" indicates minimum familiarity; a "10" indicates maximum familiarity.

1. Historical cost/Nominal dollar accounting information (as defined in SECTION I) _____
2. Historical cost/Constant dollar accounting information (as defined in SECTION II) _____
3. Current cost/Nominal dollar accounting information (as defined in SECTION III) _____

SECTION V:

Check here _____ if you desire a summary of the results of the study. Please feel free to use the space below to make any comments that you feel should be considered in the study. Please make sure that you have answered all of the questions. THANK YOU VERY MUCH.

VITA

Thomas Eugene McCaslin was born in Evansville, Indiana on October 30, 1946. He attended public elementary schools and graduated from S.P. Waltrip Senior High School in Houston, Texas in June, 1964. In September, 1964 he enrolled at the University of Houston in Houston, Texas. He received a Bachelor of Business Administration degree with a major in accounting in June, 1969.

In January, 1969 he joined the firm of Fitts, Roberts and Company, CPAs where he remained until June, 1976. He received the designation of Certified Public Accountant in January, 1973. He took the position of financial manager and operations supervisor with McCulloch Manufacturing Company in Jacksonville, Texas in June, 1976. He also served six years in the United States Army Reserve.

In September, 1978 he entered the doctoral program of The University of Tennessee. While enrolled at The University of Tennessee, he was elected to Beta Alpha Psi and Phi Kappa Phi. In March, 1981 he received a Master of Accountancy degree. He is now a candidate for the degree of Doctor of Business Administration.

Currently he is employed as an Assistant Professor of Accounting at Texas Tech University in Lubbock, Texas.