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April 1979

EVALUATING ACCOUNTING ALTERNATIVES

Working Paper No. 175

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Evaluating Accounting Alternatives

A review of the literature which relates to theory and a theoretical framework for accounting reveals that there is considerable agreement about the overall objective of accounting and the desired attributes of accounting information.[1] At the same time, it is very uncommon to find consensus among accounting policy makers when accounting alternatives are being evaluated. Oil and gas accounting is a recent example of this lack of consensus.

The problem in evaluating accounting alternatives lies not in agreeing on which attributes accounting information should reflect, but rather in determining the degree to which the attributes are present in any given accounting alternative. Some accounting research has attempted to demonstrate how the presence of certain accepted accounting attributes might be evaluated [4,8,11]. This paper attempts to extend these previous efforts by developing a model which will facilitate the evaluation of accounting alternatives, using five generally accepted attributes of accounting information.

These attributes themselves have a long history of development by various authoritative accounting bodies such as the American Accounting Association (AAA) and the American Institute of Certified Public Accountants (AICPA). While these attributes have changed to some extent and have been stated in slightly different ways at times, they are all

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[1]The literature referred to here is that which has been published as official pronouncements of the major authoritative bodies in accounting, namely the AICPA, AAA, and FASB.

basically derived from the set of attributes identified by Moonitz [7]. Table 1 lists the attributes identified in some of the major authoritative pronouncements. The number of attributes in common is hard to ignore. The major problem is that these attributes are not identified in any operational form, and there is no known formula for weighting their relative importance.

Table 1

ATTRIBUTES OF ACCOUNTING INFORMATION

A Statement of Basic Accounting Theory (ASOBAT (AAA--1966)	
Relevance	Disclosure
Verifiability	Consistency
Freedom From Bias	Uniformity
Quantifiability	Appropriateness
	Environment
Accounting Principles Board Statement No. 4 (AICPA--1970)	
Relevance	Comparability
Verifiability	Timeliness
Neutrality	Understandability
Completeness	
Study Group on Objectives of Financial Statements (AICPA--1973)	
Relevance	Consistency
Materiality	Comparability
Reliability	Understandability
Freedom From Bias	Form and Substance
Conceptual Framework Study--Discussion Memo (FASB--1976)	
Relevance	Measurability
Reliability	Comparability

The purpose of this paper is to present a model which demonstrates how five of these attributes may be used to provide a framework for evaluating alternative accounting information. The five attributes which the model considers are: (1) relevance, (2) verifiability, (3) freedom from bias, (4) measurability, and (5) comparability. After a brief discussion of the nature of these attributes, a model will be developed which integrates them into an evaluation scheme.

Relevance

Relevance is described in ASOBAT as the "primary standard" for evaluating information. Information is said to be relevant if it satisfies known or assumed information needs of users. The statement implies that knowledge of the exact needs of any one user or users in general is not necessary, but rather that a general understanding of users' needs might suffice for the development of a theoretical framework [1, pp. 20-23].[2] As examples, ASOBAT cited earnings, liquidity, management effectiveness, and stewardship information to be among the items of financial data of relevance to most users.

The identification of relevance as the "primary" evaluation attribute is perhaps the most significant contribution of the statement. In most of the theoretical literature prior to 1966, the concept of objectivity (or verifiability) was implicitly considered the primary attribute for evaluating accounting data.[3] The concept of relevance, however, has been

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[2] The term "theory" is used here in the rather loose sense used by most accountants. Accounting has typically viewed theory as a set of rules or measurement concepts by which accounting information might be judged.

[3] For example, see the "valuation rule" [5, p. 40; 4; 7; 3; 10]

specifically identified as primary in all of the major theoretical pronouncements since 1966. As stated in the study group's discussion of relevance and materiality, "Information that does not bear on the problems for which it is intended simply is not useful, regardless of its other qualities" [2, p. 57]. The framework developed here will assume that relevance should be the dominant attribute in the evaluation of information.

Verifiability

The attributes of verifiability and objectivity are synonymous in their accounting context. Objective information is verifiable and vice versa. The term "reliability" has also been defined to encompass both the verifiability (objectivity) of a measurement process and the bias of the process [4]. Hence, verifiability is one of the two elements of reliability. The most descriptive explanation of verifiability involves the statistical concept of consensus. If a measurement system or rule is objective, it will permit many users of the measurement process to arrive at the same (or very similar) results.

Murphy has decomposed the total variation produced by a system to be the sum of the variation due to rules and the variation due to measures [8, p. 278]. The numerical representations permit the total variation to be separated into variation due to rules, variation due to measures, and joint variation for individual rules and measures as well as rules and measures in total. The major contribution of this separation of the causes of variation is the suggestion that bias is the variation due to rules while objectivity is the sum of the variation due to measurers and the joint variation due to measurers and rules. While an argument is provided in favor of assigning the joint variance to objectivity [8, p. 279], it is not clear that the interaction effect is attributable to one element more than the other. In addition, the definition of bias as the squared difference between the measures of the rules and the grand mean of all measurers and all rules is not consistent with the Ijiri and Jaedicke definition of bias.[4] Although the definition of bias proposed by Murphy has the advantage of being readily measurable, it is not conceptually useful to the model developed here which is based on the more complete framework of Ijiri and Jaedicke. At the same time it should be noted that the identification of the various sources of variation suggested by Murphy is perfectly compatible with the proposed model which does not subdivide the causes of variation but simply refers to overall measurement variation as "objectivity."

Freedom from Bias

Measurement errors in accounting are considered to be differences between the true value and the results obtained by using generally accepted measurement rules or processes. For example, if the true value

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[4]In a comparison of the terminology of Murphy with that of Ijiri and Jaedicke there appears to be very little overlap [8,4]. The latter authors defined reliability as being equal to some weight (β_1) times an objectivity factor plus some weight (β_2) times a bias factor, with all terms defined as they are defined in this paper. Alternatively, Murphy defines objectivity as being the sum of measurers bias, rules bias, and the interaction bias between measurers and rules. Also, Murphy defines relevance bias [p. 281] as the difference between relevant values and observed values. Finally, Murphy defines reliability as the sum of (1) measures bias, (2) rules bias, (3) joint bias, (4) relevance bias, and (5) decision maker bias, with the last term defined as the difference between relevant values and ex post determined desired (true?) values.

of an asset declined evenly over its useful life and the double declining balance measurement rule was used to measure its decline in value over time, the measurement process would be reporting a systematically biased value for that asset.

Bias can result not only from the rules and their inappropriate selection and application, but also from the persons who apply the rules. If an individual applying measurement rules to assets has an a priori belief that the assets may be overstated (or understated), that person might be "identifying, measuring and communicating" information concerning the assets in a systematically biased manner. Bias, like objectivity, is a relative concept which is discussed in terms of degree versus absolute value because the "true" value in most instances is not known.[5]

Measurability or Quantification

The quantification of the results of operations in money terms has been identified as a necessary attribute of accounting information. While descriptions of measurable phenomena and nonmeasurable information are considered useful and may be included as a part of the notes to the financial statements, they are generally considered to be outside the domain of the formal accounting system. In the strict context of measurement theory, conventional systems would not permit the classification of accounting as a measurement discipline [13,14,6]. The fact that the measurement unit, the dollar, does not represent an extensive property

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[5] It is doubtful that complete agreement would be reached on the true value of any asset. However, many would accept the value of cash on hand and the value of marketable securities at market value as examples of assets where a true value exists. This paper assumes that the true value would represent the economic value of any asset, that is, the discounted present value of the future benefits to be derived from the asset.

because of its changing value over time is the principal measurement problem. Yet accounting has continued to place emphasis on the measurability of the information processed.

Although quantification was not included in APBS #4 or the study group's report, the element of "understandability" might be viewed as representing essentially the same attribute. Both understandability and uniformity of signal interpretation on the part of the user are facilitated by quantified information. The model to be considered here assumes that the inputs are sufficiently measurable and does not explicitly deal with the measurement problem suggested above.

Comparability

Comparability, the only other uniformly identified attribute, suggests that the information should facilitate interfirm (as well as intrafirm) evaluations over time. Information which reflects the other attributes but fails to permit comparison of alternative opportunities will not facilitate resource allocations.

Evaluating Accounting Data

The attributes discussed above have been found to be common to a number of authoritative pronouncements. From this one might conclude that there is some agreement on the attributes which accounting information should possess. The problem lies in making these attributes operational. The following model development is suggested as a means of using these attributes to evaluate accounting information.

Reliability

The reliability of information is said to be made up of objectivity and bias. Objectivity can be defined as the variation of measures of an object for a given measurement system. Figure 1 shows two measurement systems with different degrees of objectivity.

Objectivity may be considered in both a static and a dynamic sense. At a point in time, the objectivity of a given system might be represented by the distribution of measurements obtained by a group of individuals using the measurement rules of that particular system. Alternatively, the repeated measures needed to form the distribution might be viewed as individual measurements of a particular object over time. Still a third way to view the distribution is as a combination of the above: multiple measures at a point in time, summed over time.

System A is said to be more objective than system B since it provides a more consistent measurement. Although the variance is greater in system B, on the average it is no more (or less) biased than system A since the expected values ($\bar{\alpha}_1$ and $\bar{\alpha}_2$) are the same "distance" from the true values (α_1^* and α_2^*). Given that they are equally biased, system A is preferred to B because of its greater objectivity (ceteris paribus).

Figure 2 shows a less clear-cut situation concerning the objectivity-bias tradeoff. While system A still provides information which is more objective, it is somewhat more biased since the distance ($\bar{\alpha}_1 - \alpha_1^*$) is greater than ($\bar{\alpha}_2 - \alpha_2^*$). On the average, system B gives a less biased estimate of the object being measured, but the measurement system is not as objective as system A.

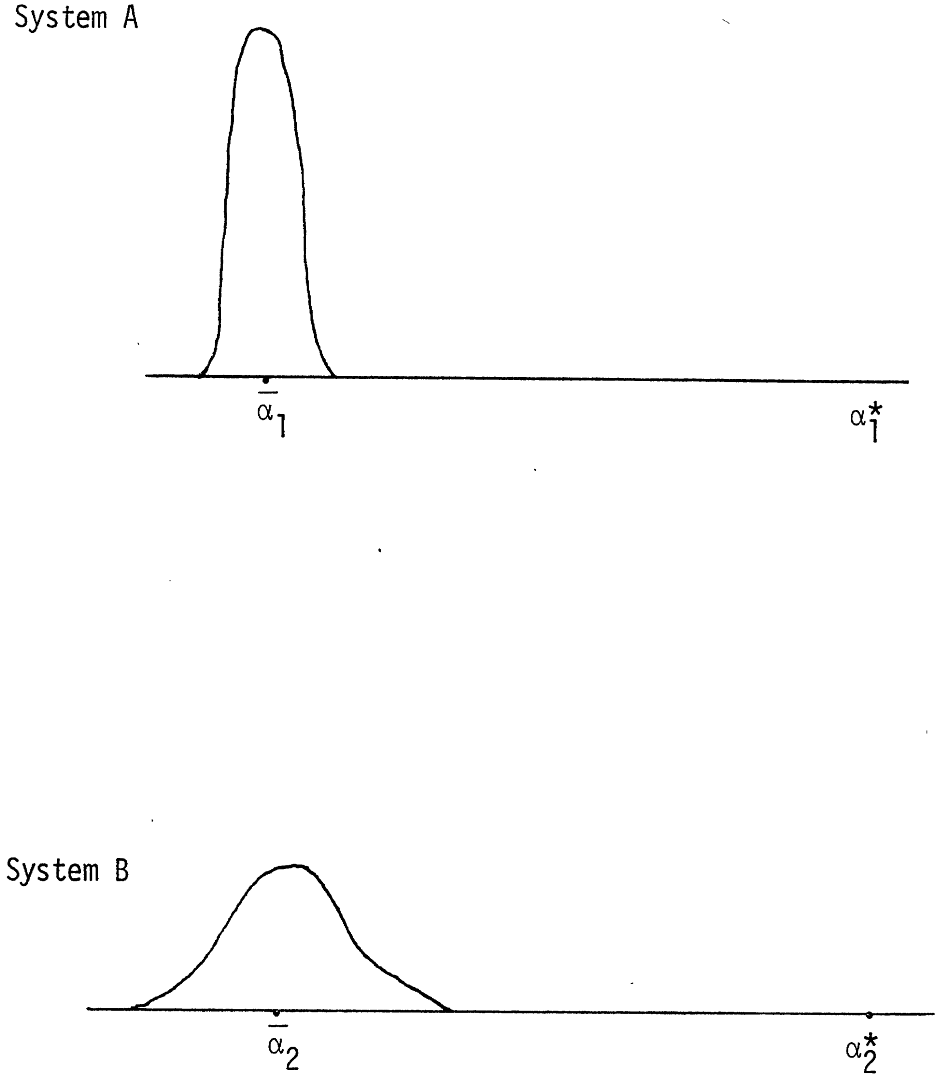

Figure 1. Objectivity and bias.

$\bar{\alpha}_2 = \bar{\alpha}_1$

$\alpha_2^* = \alpha_1^*$

α^* = true value of object being measured

$\bar{\alpha}_1$ = average measurement using system A

$\bar{\alpha}_2$ = average measurement using system B

(α values are dollar values along a horizontal axis which goes from zero dollars to a very high dollar value.)

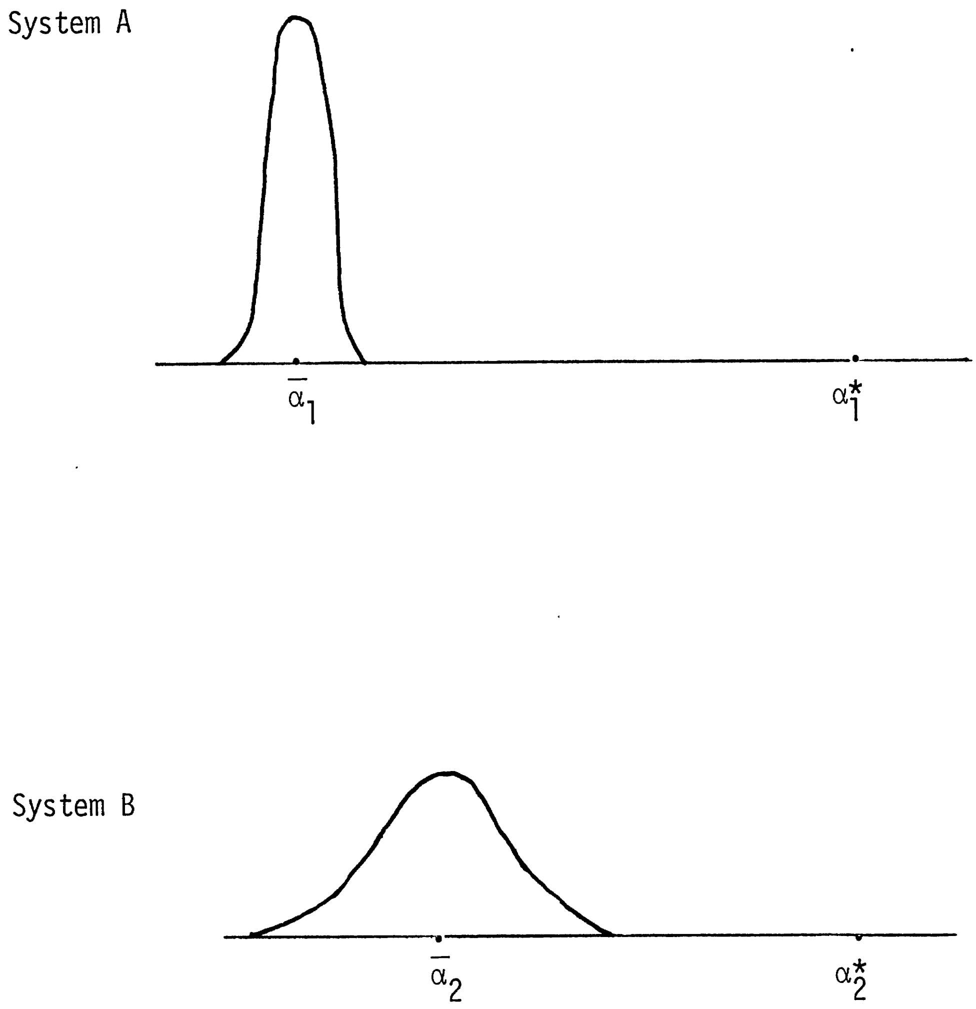

Figure 2. Trade-offs between objectivity and bias.

$$\bar{\alpha}_1 \neq \bar{\alpha}_2$$

$$\alpha_1^* = \alpha_2^*$$

$\bar{\alpha}_1$, $\bar{\alpha}_2$, α^* as before

Without additional information, it would be necessary to weight these two attributes in order to select one of the two alternative measurement systems. In addition, identifying the true value is a significant problem. If the true value were known, there would be no measurement problem. Alternatively, without the true value, consideration of the objectivity-bias tradeoff would seem to be strictly an academic exercise.

A third problem implicit in this proposed scheme derives from the argument that if the bias is known it may be informally considered in the evaluation.[6] This is not unlike arguing that, if everyone wanted to know the effect of changes in purchasing power on a firm and they were told the overall change in purchasing power, there would be no need to provide general purchasing power adjusted financial data. This is a line of thinking which has been used to justify a heavier weighting of objectivity in the historical cost system, but it does not provide the needed support for such a position. First, because the true value is now known, the bias cannot be precisely measured. Second, if there is a rough idea of the true value for a set of objects being measured by any given system, there is no reason to assume that the distance between the true value and the measured value will be consistent among objects. For example, assume a firm owns 100 different machine presses. The bias (distance) between the historical cost of the presses and the true value may vary considerably among the 100 different presses. <u>Without</u> the specific information used

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[6]Indirectly, this is the argument presented by Murphy and is apparently the basis for avoiding any discussion of a true value. Murphy [8] suggests that different users have different decision models and, therefore, need different transformations to convert accounting information into useful information for decision making [8, p. 284]. It is argued here that the closer the accounting information is to the true economic value, the more relevant it will be, regardless of the specific decision models or parameters of individual users.

to formulate the rough estimate, one can not judge the extent of the bias in order to informally compensate for it. And with such specific information, the bias factor might just as well be formally evaluated in the context of a tradeoff model rather than informally evaluated in some less consistent manner.

Relevance--Reliability

Consider now the representation of relevance in the statistical measurement scheme in Figure 3. System A is shown to be more objective and more biased than system B. However, assume that around the true value is a confidence interval such that $-\alpha^*$ to $+\alpha^*$ represents the relevant range around the true value of the information. Measurement systems which produce information within this relevant range will be useful. Measurements outside of this range represent material deviations from the true value and are not useful, since relevance is the primary attribute which information must possess.

One might ask how this relevant range concept about some unknown true value can be of any use in evaluating information. Consider the situation where an investor who owns an automatic car-wash facility wants to determine its true value in order to decide whether to sell, hold, or perhaps acquire another facility. In theory, value is equal to the discounted present value of the future net cash flows from the facility. The owner accepts the fact that these future cash flows cannot be predicted with certainty, but will seek information which will help to reduce the uncertainty concerning the value of the facility.

In Figure 3, let $\alpha_1^* = \alpha_2^*$ = the net present value of the future cash flows. Also, assume system A represents the set of measurements that could be obtained from a conventional accounting system under various

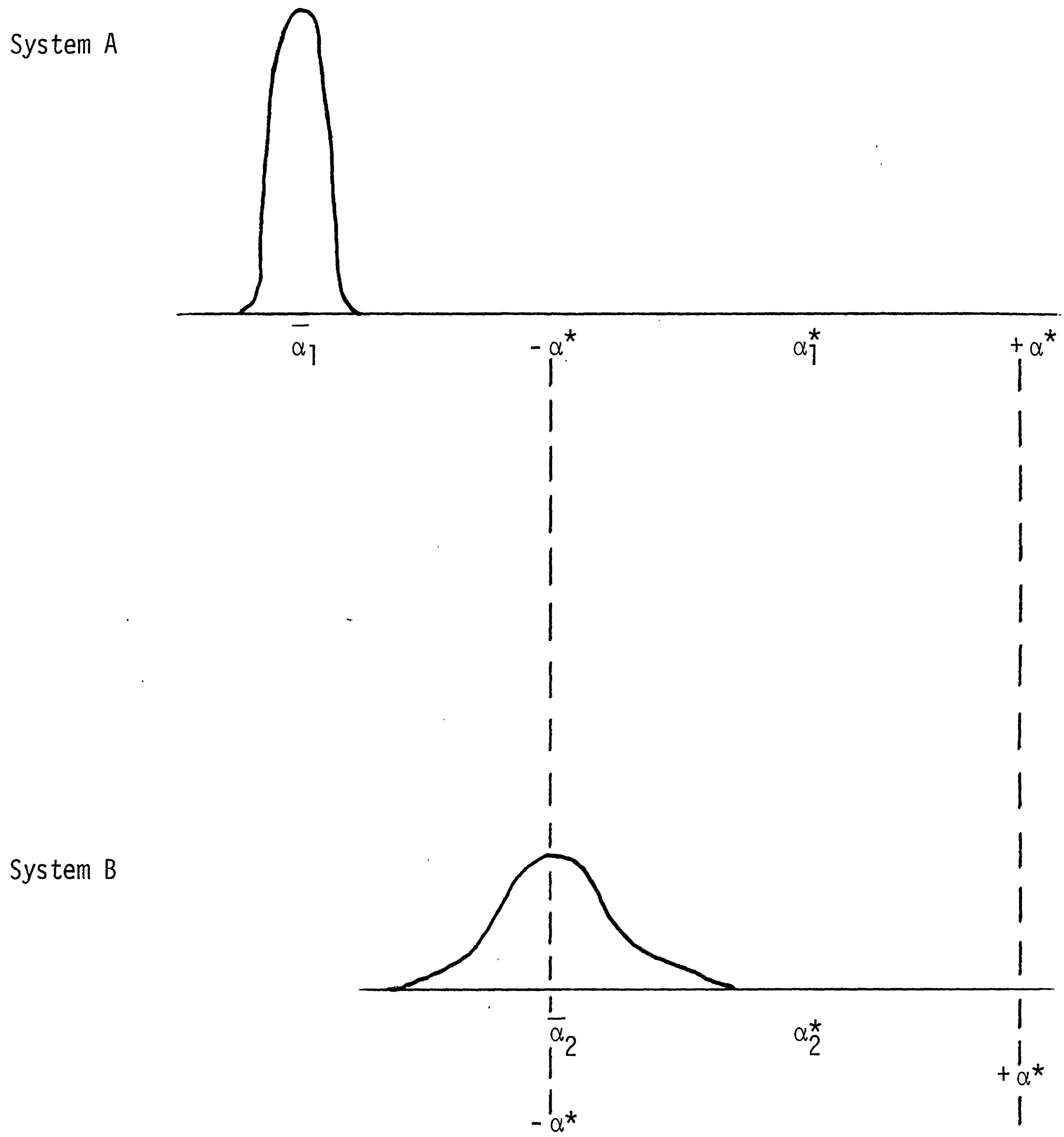

Figure 3. Relevance, objectivity, and bias.

$$\bar{\alpha}_1 \neq \bar{\alpha}_2$$

$$\alpha_1 = \alpha_2$$

($\bar{\alpha}_1$, $\bar{\alpha}_2$, α^* as before) depreciation alternatives. Assume further that system B represents the set of "conservative" measurements prepared by a group of appraisers. The $-\alpha^*$ to $+\alpha^*$ range is an interval around the true value of the asset which represents the tolerance of the user's decision model on the basis of previous experience. In the case illustrated, it appears as if the appraisal values are relevant about half of the time, while the conventional accounting values are never relevant. Given no other information alternatives, the user should rely on the appraisal values alone in decision making.

The method of determining how to develop relevant range is difficult for some to accept but is actually quite simple to develop in the single user-single decision case. In the past, while attempting to evaluate similar situations, the user has obtained valuations from various sources. Once the events being predicted became reality (i.e., cash flows), the user could look back and make an <u>ex post</u> assessment of the various alternative sources of information. While none of the data available <u>ex ante</u> may have predicted perfectly, some data might have been more useful than others. By reviewing a number of past decisions, a user will generally be able to sort previously used information into a useful—not useful dichotomy. Evaluating the amount of prediction error in these variables might then identify a materiality threshold for any given user. This threshold, stated as a percentage of the <u>ex post</u> outcome ("true value"), might be used to develop the relevant range $-\alpha^*$ to $+\alpha^*$ in any given situation.[7]

The Evaluation Process

The above discussion demonstrated how to conceptually "measure" the attributes of relevance, objectivity, and bias. In order to implement such a model, it is necessary to overcome the fact that, ex ante, the true value of the object being measured is unknown. The following example will demonstrate how this problem might be circumvented.

Assume that in Figure 4, system A is a historical cost system and system B is a market value system being used to evaluate plant assets. Further, assume top management is considering these systems as possible input to a capital expenditure decision involving the possible replacement of plant assets. In system B let $\bar{\alpha}_2$ = \$11,000, the expected value. The maximum and minimum values under B can equal \$12,000 and \$10,000, respectively. In system A, $\bar{\alpha}_1$ = \$5,000, with the maximum and minimum equal to \$5,500 and \$4,500, respectively. This information can generally be obtained from competing measurement systems. Assume that an agreement cannot be reached as to whether or not the true value is: (1) to the right of the values from system B (> \$12,000); or (2) to the left of B (< \$10,000) or (3) within the limits of B (\$10,000-\$12,000). The true

[7]It is the overall application of relevance (and other attributes) for evaluation and policy-making purposes which is of primary concern here. On an individual basis, the relevance of any set or subset of information might be readily evaluated simply by specifying the user's decision model. To the extent that policy decisions influence many users with varying needs and decision models, a more general evaluation is desired. It should be emphasized, however, that assuming a bit of information is desired and that the true value is the most appropriate for all those desiring it, the evaluation of relevance on a relative basis is sensitive to the relevance of information to individuals collectively.

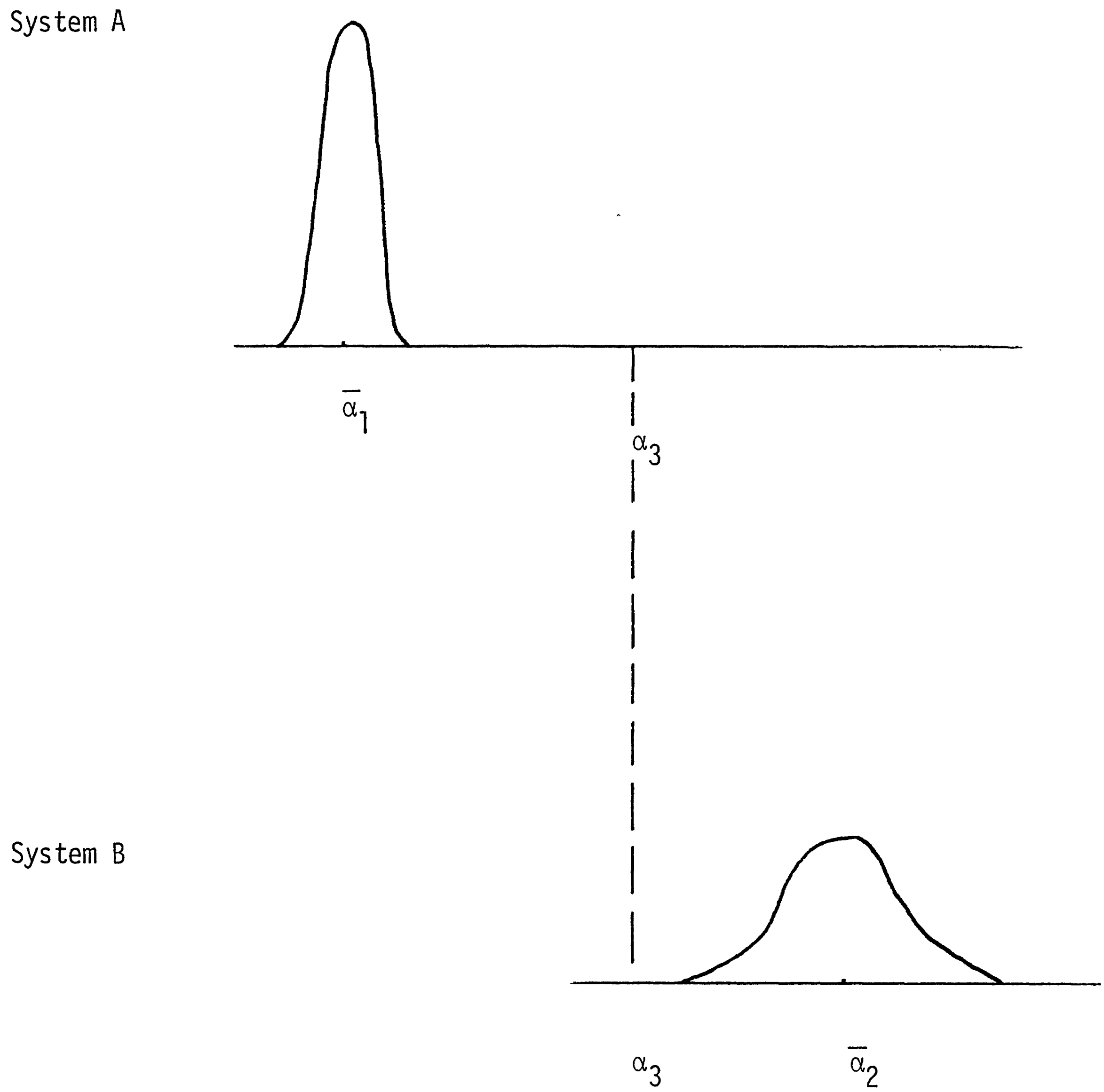

Figure 4. Comparing two systems.

$\bar{\alpha}_1$ = \$5,000

$\bar{\alpha}_2$ = \$11,000

α_3 = estimated true value between system A and B

= \$9,500

value and bias might still be determinable to the point of being useful. Suppose the true value is to the right of measures from system B. System B would provide less bias data and be closer to the true value (i.e., more relevant). If the measures from B include the true value, system B would again be preferred.

Now suppose the true value is to the left of B. Assume the manager of system A contends that system B is too "liberal" a measurement system, that it overstates true values, and that the true value is less than $10,000. The manager of system A suggests that a relevant value is $9,500. This information can be used to measure the expected differences in the bias of the two original systems. The expected bias differential is $3,000 in favor of system B ([$11,000 - $9,500 = $1,500] versus [$9,500 - $5,000 = $4,500]). Only as this differential approaches zero will there be a problem in determining the least biased system. Furthermore, if manager A's revised measurement system (= $9,500) is worth general consideration, its validity and objectivity might be compared to that of system B. To the extent that manager A can improve upon the excessively "liberal" output from system B, a new information system might be obtained.

The "discount bid" system is an example of this sort of intervening information system that is commonly used by decision makers in practice. It is not uncommon in purchasing an asset to have information regarding (1) the assets cost to the seller and (2) the "suggested retail price". Such information is commonly available on automobiles, for example. The cost information is unrealistically low as a basis for a bid, and the retail price is usually higher than the price necessary to acquire the asset. But the two pieces of information provide a basis for the purchasers' "discount bid" of, X percent above cost or Y percent below retail. Hence, while neither cost nor retail values are reasonable, they are, in combination, useful in developing a basis for valuation.

The selection of A or B above as the superior measurement system is not the primary concern. What is important is whether the attributes mentioned can be used to evaluate alternative accounting information without perfect knowledge of the true value of the information. The example above suggests that if a consensus can be reached on the approximate location of the true value relative to two or more competing information system alternatives, then it would be possible to select that system which would most frequently encompass or include relevant values. This should effectively eliminate the need to weight the objectivity-bias attributes, given the primacy of relevance, unless two or more systems consistently produce information that is within the relevant range for the object or group of objects being measured. In the event that two or more systems are relevant, the weighting problem becomes a three-variable problem. The only advantage here is that the weight of the relevance attribute (assumed to be the primary attribute) must be greater than the weights of all other variables combined.

Addition of Comparability

Comparability is said to be present when similar (dissimilar) events are measured and reported such that information users may understand their similarity (dissimilarity). The following situation attempts to demonstrate how comparability can be added to the other attributes already considered and evaluated in the context of a model. Consider cost of goods sold based on a FIFO cost-flow measurement system for firm A compared to the LIFO perpetual cost-flow system used by firm B. Assume that in Figure 5 ratios have been used to eliminate the scale problem for comparison purposes.[8] It is now possible to determine the degree of comparability between the two measurement system alternatives (within GAAP) of the two firms. The measure δ_1 (Figure 5), represents the differential which results when two firms with essentially similar unit flows use different cost-flows to measure cost of sales. As a policy-making objective in selecting from among accounting alternatives, δ_1 should be minimized to facilitate comparability.

Now consider an alternative information system for both firms, such as a "current cash equivalent" measurement of inventory. The current cash equivalent measure (right-hand side of Figure 5) results in a similar differential measure, δ_2, which can be compared to δ_1 to determine which systems result in more comparable measures across firms.[9] Thus, a "measurable" comparability feature of alternative systems across firms emerges.

If this concept of comparability is applied to long-lived assets, the differences may become more obvious, so that experimentation with outputs from alternative systems is not necessary to the formulation of a conclusion concerning the comparability of systems. Land is an obvious example, where firm A purchased in 1930 and firm B acquired in 1970 similar plots of land for similar purposes. The comparability of market-based measurement systems would dominate.

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[8]Any number of denominators may be used to deflate the raw data to a more relative value. One possible deflator would be net sales. Cost of goods sold expressed as a percentage of net sales, while not necessarily the only relative value or the most appropriate one, will suffice for illustration purposes.

[9]Actually, the δ_1 represents the sum of the difference between firms and the difference due to measurement errors, while δ_2 should be the difference between measurement errors alone and will tend to be zero, assuming unbiased estimation.

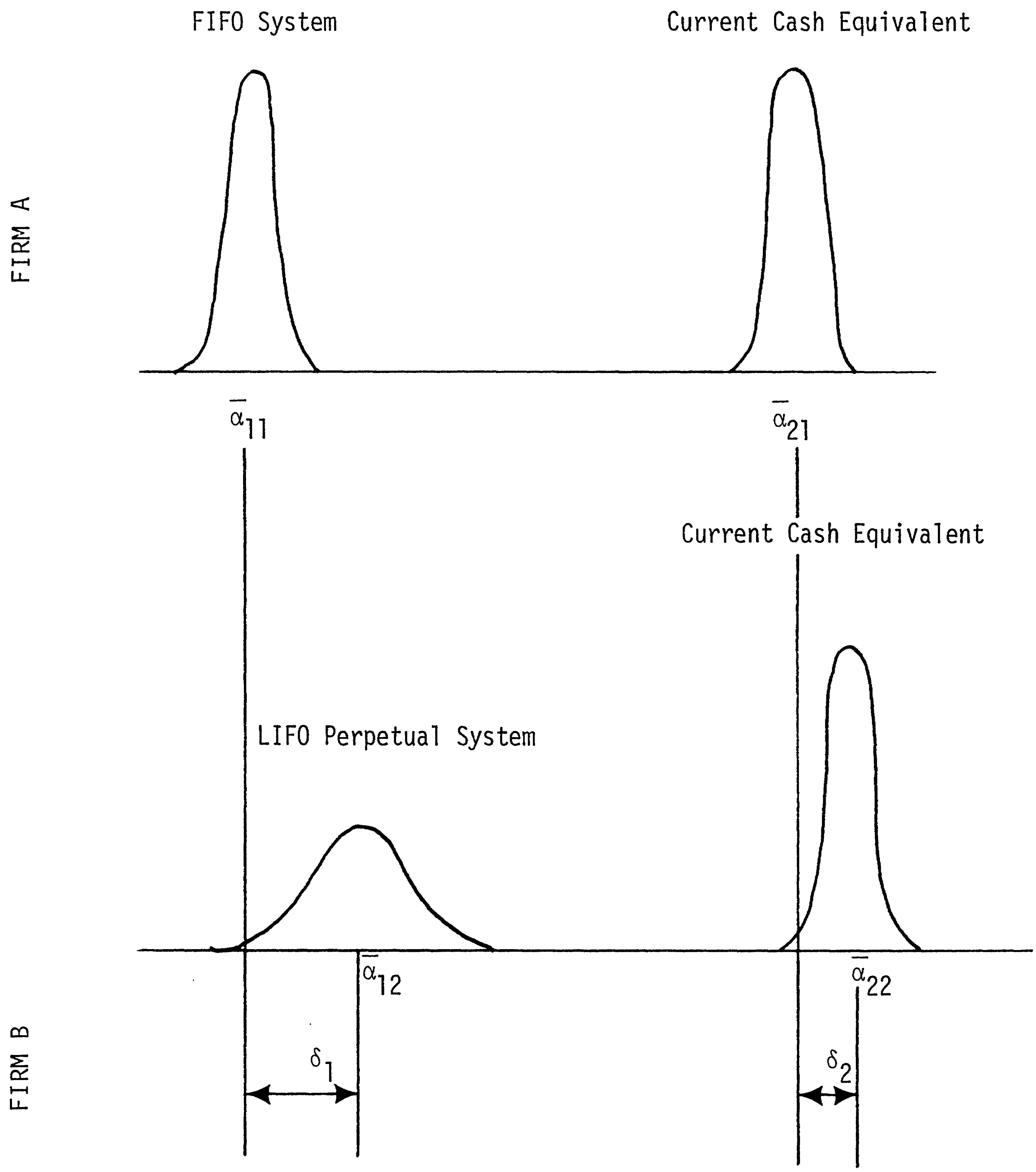

Figure 5. Comparability of cost of sales.

An Integrated Example

The integration of comparability into the relevance--reliability framework is illustrated in Figure 6. The shaded area of the measurement systems for the two firms which are within $\pm\alpha^*$ of the true value are those measures which provide relevant information. For firm A, system 2 provides the most relevant information. For firm B, both systems provide relevant information, but system 2 information is relevant more often than system 1. Even without perfect knowledge of the true value (α^*), it may be concluded that system 2 provides more comparable information. Using approximations of true value discussed earlier, agreement might be reached that system 2 is less biased, although this is more obvious in firm A than it is in firm B. Finally, a comparison of the distributions of the measurements in this case shows that system 1 is more objective than system 2 in both firms. Given the primacy of relevance, system 2 is preferable to system 1.

Limitations and Conclusions

The model presented here was designed to provide a systematic method of evaluating the degree to which generally agreed upon information attributes are present in alternative accounting information systems and procedures. Without such a model these attributes will remain nothing more than abstract concepts to practitioners and policy makers alike.

The major contribution of this model lies in its ability to provide a formal, integrated, and meaningful framework for evaluating accounting alternatives. Instead of treating the objectivity or the relevance of

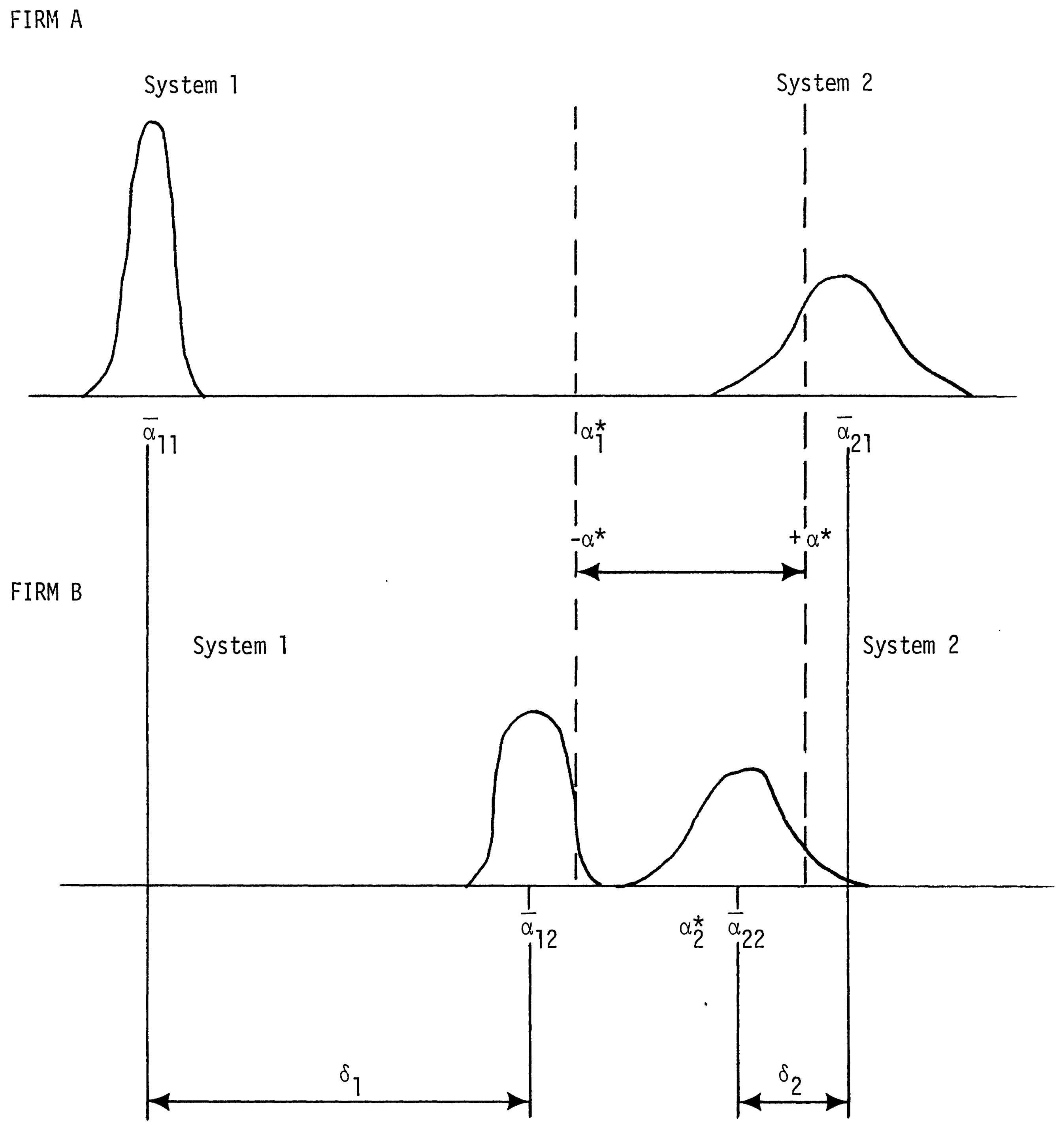

Figure 6. Relevance, reliability, comparability.

information in the abstract, it places these concepts into a framework within which alternatives might be considered according to their relative degree of objectivity, relevance, etc. This idea is not new. For example, several research papers have reported empirical results of comparing accounting alternatives for their relative degree of objectivity [9,12]. What is new is the model's integration of five attributes so that they can be considered simultaneously.

The model is not without its limitations. For example, the concept of repeated measurements as a basis for formulating the objectivity of a measurement system is conceptually appealing but not feasible in practice. However, such pragmatic limitations need not detract from the conceptual strength of the integrated framework represented by the model. Application of the model to various situations where accounting alternatives are available will tend to result in the selection of different valuation methods for different assets. For example, the model tends to strongly support the use of market value for marketable securities (given that the market is efficient and that the price represents the true economic value of the asset). However, this does not mean that other valuation methods are not more relevant for other assets. Since current GAAP permits the use of such valuations as market value, replacement value, and price level-adjusted values in certain situations, an eclectic approach seems both feasible and defensible. The model is also useful, of course, for evaluating accounting alternatives within the historical cost-based conventional accounting system.

Finally, despite its limitations, the model has the virtue of stimula-ing a systematic and critical evaluation of accounting as it is practiced today, on the basis of information attributes which have long been supported by both practitioners and academics. If the profession is serious in its contention that accounting information should possess these (and other) attributes in order to fulfill its objective, then efforts to evaluate their presence in current and proposed accounting alternatives should be recognized as an important goal.

References

1. American Accounting Association, Committee to Prepare a Statement of Basic Accounting Theory, A Statement of Basic Accounting Theory (1966).

2. American Institute of Certified Public Accountants, Report of the Study Group on the Objectives of Financial Statements, Objectives of Financial Statements (1973).

3. Fertig, Paul E., "Current Values and Index Numbers, The Problem of Objectivity" Research in Accounting Measurement, ed. by R.K. Jaedicke, Yuji Ijiri, and O. Nielson (American Accounting Association, 1966).

4. Ijiri, Yuji and Jaedicke, Robert K., "Reliability and Objectivity of Accounting Measurements," The Accounting Review (July 1966), pp. 474-83.

5. Lemke, Kenneth W., "Asset Valuation and Income Theory," The Accounting Review (Jan. 1966), pp. 32-41.

6. Mock, Theodore J., "Measurement and Accounting Information Criteria," Studies in Accounting Research #13 (American Accounting Association, 1976).

7. Moonitz, Maurice, "The Basic Postulates of Accounting," Accounting Research Study #1 (American Institute of Certified Public Accountants, 1961).

8. Murphy, George J., "A Numerical Representation of Some Accounting Conventions," The Accounting Review (April 1976), pp. 277-86.

9. Parker, James A., "Testing Comparability and Objectivity of Exit Value Accounting," The Accounting Review (July 1975), pp. 512-24.

10. Paton, William A. and Littleton, A.C., "An Introduction to Corporate Accounting Standards," Monograph No. 3 (American Accounting Association, 1940).

11. Staubus, George J., "The Multiple-Criteria Approach to Making Accounting Decisions," Accounting and Business Research (Autumn 1976), pp. 276-88.

12. Sterling, Robert R. and Radosevich, Raymond, "A Valuation Experiment," Journal of Accounting Research (Spring 1969), pp. 90-95.

13. Vickrey, Don W., "General-Price-Level-Adjusted Historical-Cost Statements and the Ratio-Scale View," The Accounting Review (January 1976), pp. 31-40.

14. Vickrey, Don W., "Is Accounting a Measurement Discipline?" The Accounting Review (October 1970), pp. 731-42.

BIBLIOGRAPHY

American Institute of Certified Public Accountants, Accounting Principles Board, "Basic Concepts and Accounting Principles Underlying Financial Statement of Business Enterprises," Accounting Principles Board Statement No. 4 (1970).

American Institute of Certified Public Accountants, Financial Accounting Standards Board, "Criteria for Determining Materiality," FASB Discussion Memorandum (21 March 1975).

American Institute of Certified Public Accountants, Financial Accounting Standards Board, "Conceptual Framework for Financial Accounting and Reporting: Elements of Financial Statements and Their Measurement," FASB Discussion Memorandum (2 December 1976).

Driver, Michael J. and Theodore J. Mark, "Human Information Processing, Decision Style Theory, and Accounting Information Systems," The Accounting Review (July 1975) pp. 490-508.

Hendriksen, E. S., Accounting Theory (Irwin, 1970).

Ijiri, Yuji, "A Defense of Historical Cost," Working Paper 83-69-7, Carnegie-Mellon University (April, 1970).

Ijiri, Yuji, "Theory of Accounting Measurement," Studies in Accounting Research #10 (American Accounting Association, 1975).

Moonitz, Maurice, "The Basic Postulates of Accounting," Accounting Research Study No. 1 (American Institute of Certified Public Accountants, 1961).

Sterling, Robert R., "A Test of the Uniformity Hypothesis," Abacus (September 1969), pp. 37-47.