Research for Accounting Policy: An Overview

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A significant amount of accounting research is devoted to questions of accounting (financial reporting) policy. Such research is addressed to the alternative models, measurement rules and disclosure requirements that are or might be applied in current financial reporting by business enterprises. Such research accounts for much of the combined research efforts sponsored or undertaken by institutions such as the AICPA and FASB as well as for much of the independent academic research in accounting.

The purpose of this paper is to offer a model for organizing one's thoughts and efforts directed toward the process of accounting policy making and related research strategies. The motivation for attempting such a task is a conviction that results from individual accounting research studies must be interpreted as interrelated building blocks for accounting policy decisions. As Gonedes and Dopuch [1974] showed, virtually no research strategy used by accounting researchers to date is capable of selecting the most socially desirable accounting alternative. However, because Gonedes and Dopuch applied such a demanding performance criterion to accounting research (i.e., achieving a social ranking of alternatives), they leave an impression of great pessimism. Yet, as will be evident later, the most promising use of any given research strategy (data source) in the area of financial reporting policy is not in selecting optimal alternatives; rather, it is in contributing, along with all other available strategies, to developing theories that then may be used by policymakers to settle specific issues.

The paper begins with a description of accounting policy making as a social choice process. This discussion contains a brief enumeration of certain implications of the social choice dimension of accounting policy making; the second section presents a model for interpretation of research for accounting policy making; and the third section discusses the potential contributions of various research strategies.

Accounting Policy Decisions As Social Choices

For nearly half a century, the accounting profession has been concerned with forming accounting policy, i.e., deciding which measurement and reporting alternatives are acceptable and which are not. From the time the first standard audit report in 1933 referred to "accepted

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principles of accounting” [Rosenfield, 1964], the profession has taken upon itself the task of deciding what is acceptable. The Committee on Accounting Procedure (1939–1959), The Accounting Principles Board (1959–1973) and the Financial Accounting Standards Board (1973–) have had major policy-making responsibility. Yet, after all of these years of policy making, the procedures for policy formulation are not always well understood.

Before proceeding to a detailed discussion of policy decisions, it is necessary to distinguish between accounting theories and accounting policy [Ijiri, 1975, pp. 9–11]. An accounting theory is a descriptive or predictive model whose validity is independent of the acceptance of any goal structure. Though assumed goals may be part of such a model, research relating to a theory or model of accounting does not require acceptance of the assumed goals as necessarily desirable or undesirable. On the other hand, accounting policy requires a commitment to goals and, therefore, requires a policy maker to make value judgments. Policy decisions presumably are based on both an understanding of accounting theories and acceptance of a set of goals. Research relating to accounting policy decisions must recognize and discern the aspect of the policy-making process at issue.

For the moment, we will discuss the unique aspect of accounting policy, namely, goal formulation. Several recent attempts have been made to delineate the goals or objectives of financial accounting [e.g., Arthur Anderson & Co.; 1972; Study Group on the Objectives of Financial Statements, 1973; Defliese, 1973; and Accounting Standards Steering Committee, 1975]. Since the selection of a set of goals is inherently a value judgment, most debate about sets of goals is a debate about whose value judgments are best. This is an insoluble problem, as value judgments are neither right nor wrong, true nor false. The resolution of the problem of selection of goals must be solved by general agreement, not by proof of correctness. Therefore, the first step in a logical process of policy formulation is to obtain general agreement on the goal of financial accounting.

The statements of goals of financial accounting made to date suffer from two major problems: (1) they have not received general acceptance and (2) they do not provide a basis for selecting among alternative policies. For instance, a recent statement of goals asserts that “the basic objective of financial statements is to provide information useful for making economic decisions” [Study Group of the Objectives of Financial Statements, 1973, p. 13]. However, this is not a statement of a goal of financial statements, but merely a delineation of the domain of accounting policy decisions. That is, it states what accounting policy makers are to be concerned with, but it does not state how comparisons among alternative policies are to be made.

We suggest that an objective of maximization of social welfare (which may be implied, though not stated, in the above objective) is a necessary addition to the above goal statement. While this is admittedly our value judgment, such a goal seems to provide a criterion for policy decisions and, to our knowledge, no one has expressed disagreement with it as an objective. In a letter to the AICPA, the SEC has expressed concern that accounting policy decisions be “consistent with the public interest” [Burton, 1973, p. 271]. Indeed, the Securities Acts clearly

were motivated by a desire to prevent recurrence of the socially deleterious events surrounding the crash and ensuing Great Depression. Moreover, the U. S. Congress has intervened in accounting policy decisions at least once, in the investment tax credit decision, when it felt that an accounting policy decision was not in the public interest. Since accounting policy decisions that apparently are not consistent with the public interest can be reversed by a higher authority, it is apparent that either accounting policy makers (the SEC-FASB) at least must appear to pursue a social welfare criterion or have their power consistently preempted by the legislature, which presumably applies such a criterion. Thus, the political environment of accounting policy formulation implies acceptance of a social welfare criterion for accounting policy decisions as social choices.

It is possible for accounting policy decisions to be made by each individual or firm producing a financial statement, in the same way that policy decisions concerning any other economic commodity are made. A demand for accounting information exists because individuals wish to improve their investment decisions. This private demand would lead to production and sale of financial statements.

Although general public policy would apply (e.g., general antitrust policy would apply to the industry structures that evolved in the production and sale of private financial information about business enterprises), no special public accounting policy would be necessary to satisfy demand for financial information on the part of individuals. Research in financial accounting could contribute to such a laissez-faire environment by producing microeconomic information (e.g., predicting individual costs and benefits), similar to cost and market research relevant to the production and distribution of other goods and services.

But accounting information may have public value apart from its private value [Fama and Laffer, 1971; Hirshleifer, 1971; and Demski, 1974a]. Because accounting information may influence individual investor’s assessments and, through these assessments, the structure of security prices, therefore the information may influence the distribution of costs of capital among firms and, through that distribution, the allocation of capital to various uses in the economy. The possibilities of both production and consumption externalities in information generation imply that regulation of accounting information production may lead to an allocation of resources that is pareto superior to that achieved by a free-market equilibrium allocation. Moreover, changes in information production induced by regulation may alter the value of securities portfolios and, through those values, the distribution of wealth among individuals. Either one or both of these potential influences adds a social value dimension to the regulation of financial accounting information.

A necessary (but not sufficient) condition for regulation to create a socially better allocation of resources and/or distribution of wealth is that it at least be capable of producing a different allocation and/or distribution than would be attained in a free market. There are several reasons that this condition may

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2 The social desirability of any piece of regulation will depend on the amount of and ownership of resources used to decide on and enforce the regulation as well as the reallocation of resources and redistribution of wealth brought about by the regulation. Henceforth, we will not be concerned about the desirability of any particular regulation, but we will accept the result that regulation is potentially desirable. The dilemma of comparing the social desirability of alternative allocations is discussed in Demski [1974a, pp. 227-228].
be met. First, regulation can impose production of information on entities with comparative advantages in producing the information (usually perceived to be the business enterprise in the case of financial accounting information). However, these entities do not necessarily have a private incentive to do so. In this way, it may be possible to alter the information set employed privately by investors in forming their preferences for various securities by altering the distribution of costs of information [May and Sundem, 1973]. Such alterations may affect resource allocation and wealth distribution directly by changing the production opportunities of other (external) information suppliers, even though their effect on the security price structure is minimal. Second, since optimal investment strategies imply interfirm comparisons, some external economies in information processing may be achievable through imposition of certain uniformities in financial accounting information produced. This may mean lower costs of acquiring information for investors and other decision makers. Third, to the extent that a policy apparatus lessens the probability of major financial scandals, it may contribute to the general perception of risk over a vast number of risky investments and, therefore, the level of savings and investment in the economy as a whole.

Accounting information is like many other commodities produced in our economy today; the private market for such information is modified by explicit public policy (regulation) decisions. The decisions to produce and consume accounting information are influenced by the FASB, SEC and other regulatory bodies. As noted earlier, in practice as well as in theory, the social welfare impact of accounting reports apparently is recognized. Therefore it is no surprise that the FASB is a political body and, consequently, that the process of selecting acceptable accounting alternative is a political process. If the social welfare impact of accounting policy decisions were ignored, the basis for the existence of a regulatory body would disappear. Therefore, the FASB must consider explicitly political (i.e., social welfare) aspects as well as accounting theory and research in its decisions.

In a democratic-capitalist society, it is virtually unassailable in principle that social policy should be sensitive to individual preferences. However, Demski [1973] has shown that, in general, the characteristics of accounting information per se (e.g., relevance, objectivity) do not reflect the preferences of individuals affected by the use of the information. This implies that policy makers must go beyond comparing alternative policies regarding the degree to which their outputs conform to certain purely technical or aesthetic standards, e.g., "true economic value," "true income," relevance and objectivity. That is, accounting policy makers must employ a decision model that is sensitive to individual preferences. Such a decision model is called a collective choice rule.

Unfortunately, selection of a collective choice rule is complicated by two very formidable difficulties. First, it has been proven that it is impossible to construct a collective choice rule that satisfies even a

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3 This notion was expressed most succinctly by Quirk and Saposnik as follows:

"In principle, one could conceive of a whole host of theories of welfare economics, based upon differing sets of value judgments concerning the manner in which the term "desirable" state of the economy or economic system should be defined; in practice, essentially all of modern welfare economics is based upon one fundamental ethical postulate. To borrow Samuelson's phrase: In evaluating states of the economy, individuals' preferences are to count." [1968, p. 104].
minimal set of general conditions. Second, notwithstanding the impossibility of constructing a completely satisfactory collective choice rule, it seems reasonable to assert further that it is extraordinarily costly, if not impossible, to construct a social decision-making system that could assess the consequences for and preferences of every individual who might be affected by a given accounting policy decision.5

Clearly, the above discussion presents a paradox. On the one hand, we would like to have a systematic way for accounting policy makers to choose among alternatives based on individual preferences. At the same time, no such systematic way exists that satisfies even a relatively few desirable properties. Moreover, as a practical matter only limited knowledge of individual preferences is feasible.

One way to face this challenge is to explore applications to accounting of the concepts of social choice that have evolved in welfare economics and decision theory. Some initial efforts in this direction were Demski [1974a and 1974b], Gonedes and Dopuch [1974] and May and Sundem [1976], but the issues are far too formidable to resolve here. Research into the selection of an appropriate collective choice rule for accounting policy decisions is one of the most difficult tasks facing accounting researchers. We will proceed on the assumption that no satisfactory resolution of the issues will abandon completely the ethical judgment that individuals' preferences are to count in accounting policy decisions.

A MODEL FOR ACCOUNTING POLICY DECISIONS

Our model of accounting policy decisions now has a goal—maximization of social welfare—and a social decision process employing some collective choice rule (currently, the FASB with their operating procedures) for selecting among accounting alternatives. This section completes the model by describing the framework for research in accounting theories to support the accounting policy decisions. This framework is shown in Figure 1; this figure provides the basis for the subsequent discussion of potentials for and limitations of accounting research.

Notice that Figure 1 is subdivided (by the dotted lines) into several sectors, including (1) business firms and auditors, (2) individuals, (3) markets and (4) accounting policy makers. These sectors are not meant to be mutually exclusive in the sense that no individual may be represented in more than one. Rather, they are intended to represent individuals in various distinguishable roles relevant to the discussion. Notice that there is a counterclockwise flow in the figure. This represents the general direction of impetus or influence in the accounting policy-making process, at least in principle, and necessarily abstracts from the many potential countercurrents and forces. We will discuss each of the four sectors individually, indicating briefly some of the kinds of research that are appropriate for that part of the policy process. Then we will discuss the overall framework of accounting research for policy decisions.

Sector I represents the formal accounting policy decision system. Accounting

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4 Arrow's original proof, which applies to collective choice rules that represent orderings of social states, first appeared in Arrow [1951]. Arrow's theorem was first cited in the accounting literature by Demski [1974a]. The conditions, the proof and its implications are described in very readable style in the unstarred (non-mathematical) chapters of Sen [1970] and in Quirk and Saposnik [1968, Chapter 4].

5 A social decision-making system, as the term is used here, is intended to include a collective choice rule plus the necessary institutional apparatus to implement the rule.
policy makers are shown explicitly, but there is no implication that they must exert an influence on the choice of accounting practices allowed. They could allow a laissez-faire environment to exist, with financial accounting statements treated as a nonregulated commodity. However, the potential social welfare impacts of these statements and the current institutional structure suggest that some regulation is likely, so the framework is more consistent with the existence of specific accounting policy makers with some power to enforce their policy decisions. It is also consistent with the current political environment within which the FASB and SEC operate—one in which accounting policy decisions must be acceptable to a broad set of individuals and not merely consistent with "accounting theory."

Accounting policy makers must specify the set of acceptable accounting practices, which depends on the collective choice rule and social decision system they use (which were discussed in the previous section). It also depends on the accounting alternatives available; development and refinement of these alternatives is an important area for research. Nonaccounting public policy is also an important input. An often neglected area of research is how accounting policy fits into an overall public policy framework. (See, e.g., Committee on Concepts and Standards: External Financial Reports [1975], p. 43.) Other inputs relate to feedback on the impacts of policy de-
cisions on individuals, which will be discussed in more detail later.

Section II of Figure 1 traces through the effect of policy decisions on financial statements, including auditors' opinions. A first step in predicting ultimate consequences of policy decisions is to predict their affect on financial statements. Therefore a priori research, which predicts the financial statement effects of alternative measurement and reporting rules, can be an important research contribution. And, where possible, empirical research confirming or describing actual financial statement effects is probably even more helpful.

Sector III consists of all individuals in society, each of whom makes consumption and investment decisions. We arbitrarily could divide these individuals into three categories: (1) those who produce and/or audit financial statements or other information, (2) those who use financial statement and other data in their decision making and (3) those who do not use any investment-relevant information. Most accounting research makes these divisions and concentrates only on users of financial statement data. This is a major simplification that is not necessarily desirable. Only if the extra cost of a complete analysis is greater than the benefit achieved is such simplification desirable. So, in our general framework we include all individuals whose welfare can conceivably be affected by accounting policy in this sector. Thus, this sector may include individuals who act in the capacities of enterprise management and independent auditors or, for that matter, public policy makers in the other sectors.

Individuals use information, including, but by no means limited to, financial statements and auditors' opinions, in making consumption and investment decisions. Tracing through the effect of financial reports on individual actions is an important area of accounting research. Such research may examine directly the influence of financial reports on actions. Or, it may assess the influence on predictions of the feasibility and consequences (costs and benefits) of various courses of action, and perhaps to a lesser extent, any influence on preferences. Further, the effects of financial reports cannot be restricted to their influence on only traditional investment decisions. For example, one effect of available financial reports may be to stimulate decision makers to produce other information, either for their own or others' consumption.

Direct effects of financial reports on individual actions may be assessed by examining the decisions of users of the data. But secondary effects, some due possibly to the presence of information or decision alternatives that would not exist in the absence of financial reports, may affect the action of nonusers as well.

Sector IV, markets, highlights even more effects on nonusers of financial reports. Individual consumption and investment decisions in the aggregate generate equilibrium market prices. These, in turn, influence the allocation of resources and distribution of wealth in the economy. While virtually all investment decision makers may act rationally on the assumption that their individual transactions cannot affect prices, in the aggregate many such decision makers, taking similar actions, may change prices. Similarly, a decision by one individual to seek or produce information to supplement or compliment what appears in financial reports supplied by firms may only affect that individual. On the other hand, many decision makers making similar conclusions may create sufficient demand to stimulate the emergence of a new firm or industry specializing in production of such information.

When such aggregate effects take place,
not only are they not necessarily taken into account (predicted) by the many individual decision makers whose collective actions cause them, but also they may touch the lives of many individuals whose actions did not contribute in the least to their occurrence. For example, when the relative price of a security changes, the wealth levels of all holders of that security change, even though some holders chose to hold the security at both the former and the present prices.

Three primary areas of research are relevant in the market sector: (1) determine the method by which individual actions combine to yield equilibrium prices, (2) develop descriptive models of equilibrium prices with accounting numbers among the explanatory variables and (3) determine the effects of different sets of equilibrium prices on resource allocation and wealth distribution. Researchers in finance and economics probably have a competitive advantage over accounting researchers in areas 1 and 3, but it is still necessary for accountants to be aware of research in these areas and to apply that research to accounting problems. Moreover, area 2 may not stimulate much interest among researchers in finance and economics.

Combining the individuals and markets sectors, we can see the ultimate consequences of accounting policy decisions. If a social welfare criterion is accepted, these policy decisions ideally should be judged on (1) their aggregate consequences, (2) the effect on individual costs and benefits implied by these consequences and (3) the preferences of individuals for alternate possible consequences. Prediction of these elements is part of the policy-making process and completes the circle in Figure 1.

An overview of Figure 1 gives several insights into potential directions for accounting research. Most important is the fact that with our current state of knowledge about decision processes, markets and collective choice, it is impossible to derive a definitive social ordering (or partial ordering) of accounting alternatives. No one piece of research can do that, and none should claim to. Gonedes and Dopuch [1974] correctly criticize many studies for making such a claim. Yet, research studies do not have to provide a social ranking to be helpful to policy makers. Any research that increases our understanding of any of the relationships in Figure 1 can provide a benefit. We should not despair because accounting research cannot provide conclusive evidence about the optimal set of allowable accounting practices. Rather, we should focus our research effort on producing information that is useful to policy makers in their decision process, including information that may help them revise their process.

Given the present political and institutional structure (including an implied but not necessarily well-specified collective choice rule and sensitivity to non-accounting public policy), the two primary inputs to policy decisions are: (1) forecasts of the consequences to individuals of policy alternatives and (2) forecasts of individual preferences over those consequences. The role of research in support of actual policy decisions is not one of selecting the best alternatives. Rather, it is one of forecasting or producing information for forecasting consequences for and preferences of individuals. It is generally impossible to construct a social decision-making system that possesses all of even a minimal set of desirable characteristics; therefore, it is also impossible to construct conclusive accounting research strategies (methods) for determining optimum accounting policies—without first assuming away the collective choice dimension. (See Beaver and
To forecast consequences and preferences, researchers must specify the level of analysis. Demski [1974a, pp. 222] has suggested use of a complete general equilibrium analysis of alternative accounting policies, specified in terms of the individual "... consumptions schedules to which they give rise." However, the suggestion would seem to apply only to the general theoretical level rather than the specific policy-decision (operational) level. Under present technology, it is clearly infeasible to consider the consequences and preferences over those consequences of each possible variation on accounting policy for each individual in society who is potentially affected. Moreover, it is doubtful that policy makers could comprehend the full set of tradeoffs of costs and benefits over all affected individuals. Yet, if it is generally accepted that a market (laissez-faire) system for accounting information is inadequate, policy decisions must be made. This implies that although a sensitivity to individual preferences may be desirable, it is one of the things that inevitably will be traded off to some degree in favor of tractability and efficiency in any practicable policy-making process. Most likely, information (research) produced for accounting policy decisions will consist of evidence relevant to predictions of consequences of various policy alternatives for various groups of similarly affected individuals, along with evidence relevant to predictions of the preferences (or at least the direction of preferences) of the same groups for such consequences.

In considering the sources and methods of obtaining such data, another important implication of the accounting policy-making process (as depicted in Figure 1) should be emphasized. The introduction of aggregate effects of direct individual actions (sector IV of Figure 1) is a reminder that not all consequences can be predicted at the individual decision-maker level. Aggregate or market effects (e.g., price changes) are spillover effects of direct actions taken by individuals. Such spillover effects may have consequences for other individuals who have not contributed directly to their occurrence. Thus, for instance, the set of relevant expected consequences and preferences for a given accounting policy decision includes the expected consequences for and preferences of nonusers as well as users of accounting information.

RESEARCH STRATEGIES: SOME EXAMPLES

We have used the framework in Figure 1 to point out some potentially fruitful areas for accounting research. In this section we use the framework to examine some specific existing research strategies. The framework will allow us to assess both the potential and limitations of these strategies.

The inability of research strategies generally to provide conclusive evidence for significant policy problems takes us back to Figure 1 with the question: "What avenues are available to help policy makers predict consequences, particularly aggregate consequences, of major policy alternatives?" It is of considerable importance that Figure 1 depicts a linked process from the use of acceptable accounting alternatives in financial reporting (sector II) through the aggregate

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6 Demski seems to agree implicitly with this implication in acknowledging the value of research efforts that may help "... simplify the consequence domain..." in Beaver and Demski [1974, p. 176].

7 In essence, this is a rejection of the approach used, in part, in Study Group on the Objectives of Financial Statements [1973], pp. 17-20, where the objectives of financial statements are referenced to their presumed usefulness to typical investors and creditors.
consequences of the use of the resulting information by individual decision makers (sector IV), finally leading to the individual costs and benefits associated with those aggregate consequences (upper right of sector III).

In principle, policy makers should be able to trace the implications of any given policy alternative through each link in the process. In practice, of course, this is hardly possible to any satisfactory degree because of the lack of a comprehensive and cohesive theory or set of theories descriptive of the behavior of the process in each stage. Of particular significance are: (1) the absence of a theory of individual investment decision making, based, at least in part, on accounting information and (2) the absence of a theory which explains equilibrium market prices, at least in part, in terms of accounting variables and which is consistent with the theory of individual decision behavior. Mutually consistent theories of individual equilibria and market equilibria have been put forth in the finance literature in recent years (i.e., portfolio theory and capital asset pricing theory), but these theories are nonspecific as to how observable forms of information, such as available accounting information, influence individual decisions and the structure of market equilibrium prices.

The challenge of developing such accounting-specific theories of individual and market behavior is formidable. Moreover, the demands of the task probably cannot be met without employment of virtually all research tools and methods presently in use by accounting researchers (and, perhaps, some yet to be developed). This is the basic theme of the remainder of the paper.

Before reviewing several potentially productive research strategies, an additional comment is in order. Some people may argue that the individual investment decision level is irrelevant for accounting policy making since the latter inherently is oriented toward aggregate consequences. For instance, in a recent critique of various research strategies (vis-a-vis accounting policy decisions), Gonedes and Dopuch [1974, p. 106] made the following statement specifically aimed at lab/field research studies:

Specifically, given an efficient capital market, studies of the behavior of particular types of investors (e.g., 'average' investors or 'financial analysts') are not likely to lead to reliable generalizations about the relationship between the production of accounting information and capital market equilibrium. To see this, recall that, within a competitive market, market behavior is a function of the interaction among rivalrous price takers. The attainment of equilibrium in such a market is induced by the workings of the system as a whole, or aggregate market behavior, and not by the actions of particular individuals.

We do not disagree with this description of how market equilibria obtain—which perhaps makes it appear paradoxical that previously we pinpointed as significant the absence of a theory of individual investment decision making incorporating accounting variables. Actually, we see no inherent conflict as long as theories of individual behavior are not themselves taken to be ideal predictors of market behavior. A predictive theory of capital market equilibria could, of course, be constructed without regard to individual decision making, but there is no intrinsic superiority to such an approach. Moreover, although individual actions are not necessarily one-for-one with competitive market phenomena, there is no inherent reason suggesting that theories predicting market phenomena cannot be constructed based on theories of individual "rivalrous price-taking" behavior. Indeed, precisely because market equilibria are established (at least as manifest
by observable exchange prices) by the interactions of individuals, this approach would seem to be very promising a priori. Yet another reason to pursue a theory of individual decision making is that, as Figure 1 depicts, the consequences for individuals of altering accounting policy are jointly a function of individual action and aggregate or market actions.

A Priori Research

Before accounting policy makers can choose among alternatives in accounting, alternatives must exist from which to choose. So, an important precedent to accounting policy decisions is research that specifies alternative measurement and reporting possibilities. Included in this research is the development of accounting models such as price-level-adjusted models, replacement cost models and exit value models. Also included is research into methods of measurement and reporting that are potentially applicable within any of these models. While this research itself cannot provide evidence on the desirability of various models or measurement methods, it can direct empirical investigations into the most promising areas.

A priori research also may be useful in constructing potential models of behavior at all major points in Figure 1. Such a priori models will be especially helpful in developing testable hypotheses regarding the effects of accounting variables on individual decisions and on market equilibria.

Predictive-Ability Research

One specific potentially fruitful avenue for accounting research is investigation into the relationship between accounting signals and the distributional properties of future returns from investments in firms’ securities to which decision makers’ preferences are presumably sensitive. The types of investigations include such things as studies of the time-series properties of accounting numbers and tests of predictive ability.

Early in the history of empirical research in accounting, Beaver, Kennelly and Voss [1968] introduced the predictive ability criterion. Hakansson [1973, p. 160], among others, expressed a belief that the criterion was well suited to research problems in accounting—particularly as a building block in a decision theoretic approach.

However, the predictive-ability criterion is not without its faults. Greenball [1971] pointed out: (1) that studies of predictive ability are really joint tests of the outputs of alternative accounting methods and the particular prediction model(s) selected and (2) that such tests are irrelevant for assessing the potential of various accounting methods to serve nonprediction-oriented decisions (e.g., performance measurement). Similarly, Gonedes and Dopuch [1974, p. 109] observe that there “...remains the question about whether ... predictive ability is a sufficient basis for selecting from alternative accounting techniques.”

However, these limitations should not be taken as fatal flaws, since, as pointed out earlier, no research technique consistently will produce conclusions as to the relative social “desirability” of accounting alternatives. If the predictive-ability criterion and other criteria for examining the time-series properties of accounting alternatives are used and interpreted judiciously, they offer a potential contribution, albeit a limited one, to research for accounting policy making. This potential is present because, as is evident in Figure 1, all consequences of accounting policy (other than the direct production-related consequences of imposing the policy on firms and auditors)
come through the use of the outputs in decisions—some of which inevitably will hinge on predicted values of relevant variables.

**Sensitivity of Accounting Time-Series to Policy Alternatives**

A largely neglected (in recent times), but potentially profitable, avenue of accounting research is investigating the degree to which actual accounting time series may be expected to differ under various accounting alternatives, given observable or even assumed or simulated environmental conditions under which firms operate. Although unappealing as a sole basis of choices among accounting alternatives, such investigations can make a potentially important, though perhaps prosaic, contribution—particularly when integrated with the predictive ability and basic time series approaches mentioned in the preceding section. In the linked sequence leading to predictions of consequences of policy alternatives depicted in Figure 1, every link contributes to the ultimate objective. Moreover, since predictions of the effects of alternatives on accounting outputs is the first substantive step in predicting consequences, it has special implications for the efficiency of the applied policy-making process. That is, considerable savings potentially may be realized if the prediction process stops at this point in those cases where the alternatives being considered show no potentially significant differences in accounting outputs. However, again we must emphasize the importance of a cohesive theory covering the entire chain. “Significance” must be gauged in terms of possible ultimate consequences of the alternatives at the end of the chain in order for a cutoff decision to be appropriate at the accounting output prediction stage.8

**Modeling Individual Decision Making**

Upon reflection, the most serious limitation of studies of time-series properties and/or predictive ability is the lack of criteria within those research strategies for determining (1) what constitutes variables worthy of prediction and (2) what constitutes significantly different predictive ability (or other characteristic) of accounting outputs under different policy alternatives.9 This again emphasizes the importance of employing such strategies within the fuller context depicted in Figure 1. The principal direct source of criteria for time-series and predictive-ability studies is a theory or model of individual investment decision making under uncertainty—specified, at least in part, in terms of accounting variables.

The central method in deriving such a model would be the application of decision theory similar to the way it has been applied in finance in recent years. However, there is an important distinction. Since the investment decision essentially boils down to a tradeoff between present and future consumption (usually in the form of claims to the intermediate good, cash), it is obvious that present and future consumption (cash) streams are the variables of interest to an investor—not historical accounting variables per se. Thus the challenge to accounting in modeling the investment decision is to specify how and which accounting variables that satisfy the constraints of a public reporting environment in which management and investor goals are po-

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8 This is another way of saying that statistical significance and behavioral or economic significance are not the same.

9 A third major limitation pointed out by Greenball [1971] is the dependence of predictive-ability tests on prediction models selected. However, this limitation can be ameliorated by fairly exhaustive replications over the set of plausible prediction models available under a given state of technology.
tentially incongruent relate to the variables to which investor preferences are sensitive. Of course, this is precisely the problem implied by time-series and predictive-ability research—which brings out a virtually unavoidable interaction between model building and time-series and predictive-ability efforts.

Behavioral Research

To date, most behavioral research aimed at financial accounting has been oriented toward testing the so-called functional fixation hypothesis [Ijiri, Jedicke and Knight, 1966] in lab or field environments controlled to various degrees, i.e., testing subjects' decision sensitivity to alternative accounting measurement rules, e.g., FIFO versus LIFO [see Gonedes and Dopuch, 1974, Exhibit 1, p. 107 for a list of such studies through 1973]. Such studies are in general highly susceptible to criticism, particularly for lack of external validity, i.e., failure to sufficiently simulate conditions under which actual investment decisions are made so that few, if any, valid generalizations can be drawn from the results [Gonedes and Dopuch, 1974, pp. 104–106]. Aside from such methodological problems, there are also the issues of whether the way individuals actually use information should influence financial reporting policy and, therefore, whether actual information processing is a fruitful subject for research aimed at policy making.

Clearly if research for accounting policy making were aimed strictly at constructing normative theory, the relevance of such studies could be questioned quite legitimately. However, if our earlier conclusion is accepted that the purpose of research for accounting policy is aimed at constructing theories enabling policy makers to predict consequences of policy alternatives, then studies concerned with how individuals process information, and, specifically, how they process accounting-type signals, takes on considerable potential relevance. Of course, this potential relevance is also dependent upon acceptance of the relevance of a theory of individual, as opposed to purely aggregate, investment decision making for which we made a case earlier. Its importance is limited by the fact that nonusers as well as users of financial statements are affected by accounting policy decisions.

Modeling Aggregate Market Behavior

Moving to sector IV, the market sector, from sector III, the individual decision sector, in Figure 1 we can observe that general equilibrium analysis, or even more limited theoretical work into equilibrium in the capital markets, has a potential contribution to make. For even if a satisfactory theory of individual decision making based on accounting information can be developed, there remains the problem of predicting the aggregate effects of individual decisions, which are also conditional on accounting information.

Bearing in mind that presumably “individual preferences are to count” in accounting policy choices, general equilibrium analysis, in which aggregate phenomena, e.g., equilibrium prices and quantities traded, are derived from a model in which individuals and their preferences are represented, would seem to be a preferred methodology [Demski, 1974a]. However, due to the dimensionality problem noted earlier associated with representing each individual, firm, etc., in one model, as a practical matter traditional macroeconomic methods, which typically operate only on aggregate variables and, often, in a partial equilibrium mode, may be more promising.
Security Price-Based Research

Recently, much hope was placed in the security price structure as a source of direct evidence for determining optimum accounting policy, based on the apparent fair-game efficiency [Fama, 1970] of the market with respect to publicly available information. The basic objective of this research was to identify the set of accounting practices that would produce financial reports that were most highly associated with the security price structure. Most methods of measuring association may be described in general terms by (1), where $R_{jt}$ is the observed rate of return for security $j$ over time period $t$, $R_{mt}$ is the corresponding rate of return on the market portfolio (usually represented by some broad-gauged index), $A_{jt}$ is the cumulative record of accounting data about firm $j$ as of time $t$ and $g'$ is the selected measure of association (e.g., the now-familiar API) between unexpected increments in firms' accounting records and unexpected changes (not explained by market changes) in firms' securities prices:

$$R_{jt} - E(R_{jt}|R_{mt}) = g'[A_{jt} - E(A_{jt}|A_{jt-1})]. \tag{1}$$

In terms of Figure 1, this measure of association relates the output of sector II, financial reports, with the aggregate consequences of sector IV. But Figure 1 highlights some potential problems with this research strategy.

First, this method can be applied only when the effect of accounting alternatives on financial reports is known (i.e., when $A_{jt}$ is known for each alternative). Research identifying accounting alternatives and predicting the effects of these alternatives on financial reports is a necessary adjunct to security price-based research.

A second concern is the measurement problems caused by "leapfrogging" from accounting outputs to aggregate market consequences; this treats the territory between (i.e., individual decision making and the process or phenomenon of aggregation) as a "black box." Any alleged association is based on a chain of causation: (1) from unanticipated accounting signals (new information) through their impact on individual expectations, (2) from individual expectation changes through individual actions and (3) from individual actions to their impact on aggregate supply and demand for securities which would imply price changes. Confidence in the associations developed, especially predicting continuing associations of the same type, would be much greater if there were a well-developed theory describing at least some of these links. Research into opening up the black box in sector III of Figure 1 seems to be an important supporting factor for security price-based research.

A third class of problems, closely related to the black-box aspects of security price research to date, relates to the treatment and effects of "other information." The effect of nonaccounting information on prices is surrogated by $R_{mt}$, so that the effects of the data in individual firms' financial reports can be isolated. This creates two potential problems: (1) other information may have an impact not adequately reflected by $R_{mt}$ and (2) market-wide effects of accounting reporting practice may be reflected in $R_{mt}$ and thus not identified as an effect of the accounting policy. In addition, accounting policy may affect the economic availability of other information; thus, the full impact of accounting policy cannot be reflected in the association between accounting outputs and security prices [May and Sundem, 1973]. This is especially true if data from a nonextant
accounting policy is being associated with extant prices.

The fourth major problem with security price-based research is that it stops at aggregate consequences, not relating these consequences to individual costs and benefits or preferences. Gonedes and Dopuch [1974, pp. 48–75] show that only under various combinations of very limiting assumptions do the prices of firms’ securities reflect the ex ante values to investors of information production decisions of management. Since it is hard to conceive of any real situations where these assumptions hold, security price-based research has little potential for assessing the desirability of accounting alternatives.

Despite these limitations, security price-based research does have some potential value by providing a measure of the relative effects on prices of alternative accounting policies (see Gonedes and Dopuch [1974, p. 76]). However, even to provide this benefit, security price-based research must overcome the several measurement problems mentioned earlier. Most important is the bias present in association measures when accounting policy decisions involve choices between the status quo and potentially costly alternatives [May and Sundem, 1973]. Unfortunately, the majority of nontrivial accounting policy decisions involve such choices. In those cases, the only way presently available to divine information about the potential relative effects on security prices of heretofore undisclosed costly alternatives is to experiment—a strategy most policy makers would be loathe to attempt.

On a more positive note, not all accounting policy decisions involve highly costly but previously unreported alternatives. For instance, there may be questions of whether the status quo policy of requiring costly reporting under multiple alternatives by certain firms should be continued, e.g., whether firms should continue to be required to report fully diluted earnings per share as well as primary earnings per share figures. The apparent marginal contribution to market estimates of securities’ expected returns and risks of one such alternative, given that extant reporting policy requires reporting of both alternatives, conceivably can be tested using security price data (see Sundem, Felix and Ramanathan [1975]). Similar strategies apply to alternatives that are not all included in current mandatory reporting requirements—provided excluded alternatives are known to be available to market participants at virtually zero acquisition costs (as in Beaver and Dukes [1972]).

On an additional positive note, it should be pointed out that measures of the effects of accounting changes have potential value in ex post evaluation of actual policy decisions. Since accounting policy decisions, like other decisions, involve uncertain future consequences, knowledge of errors in prediction in one case may lead to refinements of predictions in other cases. That is, if an alteration in accounting policy is adopted based on policy maker’s predictions of expected changes in relative securities’ prices, confirmation of whether such changes take place subsequently as expected is potentially valuable in refining policy makers’ models for predicting consequences of policy alternatives. In effect, what holds for policy makers’ predictions holds as well for theory verification, i.e., the security price structure is a potentially valuable source of data for verification of proposed theories of equilibrium prices, specified in terms of accounting variables.

In conclusion, security price-based research encompasses only part of the policy-making process. As such, it can-
not provide a social ranking of alternatives. But it does make an important link in the process. If measurement problems can be overcome so that confidence can be placed in that link, this type of research potentially has a contribution to make.

CONCLUSION

We could continue with additional examples of research methods that by themselves will not yield results that directly bear on the desirability of accounting alternatives but can serve as building blocks in a complete view of accounting policy decisions. However, by now our main point should be clear. With our present state of technology in accounting research, there is no research method that will identify the most desirable accounting policy alternative. Nor is there any great likelihood that such a method will emerge, given the social choice dimension of accounting policy making. But there are many research methods that can provide data useful to accounting policy makers who must predict consequences of accounting alternatives and preferences over those consequences. The results of such research should not be put forth as conclusive support for any accounting alternative; neither should it be rejected because it is not able to provide such conclusive support.

This paper does not support the usefulness of any piece of accounting research that might be attempted. Such research still must be carefully designed and carried out. We do not propose any methods of judging the internal validity of research designs. But, given that a research study has internal validity, we propose a framework in which its external validity can be examined. By identifying the aspects of the accounting policy-making process in Figure 1 that are being examined, both the potential contributions and the limitations of research projects readily can be identified. We hope this provides an interpretative framework for accounting research, such that: (1) contributions are not ignored, (2) unwarranted generalizations are minimized because they are no longer perceived as necessary to justify the research effort and (3) accounting research will be more productive in general due to greater complimentarity among individual research efforts.

REFERENCES


May and Sundem


