FINANCIAL ACCOUNTING MEASUREMENT: INSTRUMENTATION AND CALIBRATION

(**Accounting Enquiries - Volume 7 No. 2 - February 1998**)

Stanley C. W. Salvary

ABSTRACT

In its Conceptual Framework (CF), the Financial Accounting Standards Board (FASB) has not identified the observable phenomena and was not able to identify a single measurement property in financial accounting. While identifying aspects of the observable phenomena in financial accounting, the FASB has indicated that there are five measurement attributes which are used in financial accounting and the result is a mixed-attributes model. Lacking a critical underlying theory, the FASB's Conceptual Framework is feeble at best in providing guidance for accounting measurement. Devoid of the critical theory, the FASB focuses on prediction rather than explanation and, thereby, has adopted an 'information perspective' as opposed to a 'measurement perspective' for financial accounting standards. This condition has induced a very serious concern for legislative action on the part of the US Congress. In this paper, investments constitute the observable phenomena in financial accounting and recoverable cost, which is grounded in measurement and not prediction, is the measurement property. This measurement property, which is linked to investments and explicated by the capital budgeting model, provides the logical explanation of the apparent diverse rules in financial accounting and establishes a single attribute model.

* Professor of Accounting, Canisius College

Acknowledgements: Valuable comments for refining this paper have been provided by Harry I. Wolk, Thomas G. Calderon, and Kenneth S. Most. Also, this paper has benefited from comments provided by discussants of earlier versions of this paper, which have been presented at the following conferences: Economic and Business Historical Society, April 1997; Midwest Accounting Society, March 1997; American Accounting Association, Ohio Region, May 1994; European Accounting Association, April 1993; and Irish Accounting and Finance Association, April 1993.

1. SCIENCE AND SOCIETY

Some propositions (such as: accounting is an empirical science, measurement and not prediction is the main focus of financial accounting, a fair representation of the observable phenomena--not the users' perception of the phenomena--is to be captured in financial accounting information) are not accepted by many accountants. Accordingly, this study attempts to overcome some (if not all) of the obstacles to the recognition of accounting as an empirical science and resolve some of the many issues surrounding financial accounting and financial reporting.

While proof can be established for certain propositions, some propositions defy proof. For instance, there is no proof of the existence of God, only the belief in God. Despite this limitation, society has made great strides in understanding the universe because

of the never ending efforts of many scholars who pursue the truth--something that is very difficult to determine.

Today, some people, unfamiliar with the history of science, would scoff at the thought that there were learned persons in Copernicus' time who did not readily accept his scientific work; likewise, Kepler's views were not easily accepted. According to Willy Hartner [McMullin 1967,20]: "It is not at all clear ... that Galileo was a Copernican in any confirmed sense until he had begun the series of astronomical discoveries that immediately preceded his departure from Padua in 1610. In his letters and . . . lectures up to 1606, the indications seem . . . contra-Copernican."[1]

Aristarchus' idea as "updated by Copernicus was vulnerable to a host of counterarguments and counterevidence. The earth's motion seemed epistemologically absurd because it flatly contradicted direct sensory experience and thus undermined the normal procedure in the search for truth; it seemed empirically untrue because it had astronomical consequences that were not seen to happen; it seemed a physical impossibility because it seemed to have consequences that contradicted the most incontrovertible mechanical phenomena, and because it directly violated many of the most basic principles of the available physics; and it seemed a religious heresy because it conflicted with the words of the Bible and the biblical interpretations of the Church Fathers" [Finocchiario 1989,24-25].

The epistemological objection was the most difficult because it was referred to as the "objection from the deception of the senses." "Since everyone's senses tell them that the earth is at rest, if Copernicus' geokinetic [heliocentric] theory were true then our human senses would not be providing the truth, in fact they would be deceiving us" [Finocchiario 1989,17]. This is the objection that Galileo did help overcome with his new mechanics.

Ptolemy, a 2nd century A.D. Alexandrian astronomer, did not create the geocentric theory; he developed it from earlier works and nurtured it. In his attempt to preserve the geocentric model of planetary motion in view of the new anomalies that presented themselves, Ptolemy grafted a series of epicycles upon the existing model [Moore 1983,24-25,32]. With such patchwork, Ptolemy's model continued to be a good predictor of the positions of the planets; however, it could not explain the motions of the planets [Abbott

1984; Illingworth 1985,298-299; Moore 1983,24-25,32-33]. One of Copernicus' main reasons for rejecting Ptolemy's geocentric model was its inability to explain a planet which performs a slow loop in the sky [Moore 1983,33].

Unfortunately, in the literature on financial accounting and in the financial accounting standards setting process, there is almost strict adherence to the Ptolemaic path, which reworks, rather than re-examines, the existing theory and generates data to conform to the theory. However, some works on financial accounting theory [Salvary 1979;1984;1985;1989] are in line with the Copernican path, which emphasizes the re-examination of antecedents and a construction of theory consistent with the underlying structure of observed phenomena.[2] The Ptolemaic and Copernican struggle involves the basic question: what is being observed?

The recent onslaught by the US Congress on the FASB [JofA 1998a,13;1998b,13-14] is related to the lack of a unifying theory underlying the financial accounting standards, which have been and are being promulgated by the Financial Accounting Standards Board (FASB). In its conceptual framework, specifically *Statement of Financial Accounting Concepts 5: Recognition and Measurement in Financial Statements of Business Enterprises* (SFAC5), the FASB discussed *aspects of the observable phenomena in financial accounting* ("economic resources and obligations and the transactions and events that change those resources and obligations" [SFAC5, para.63], but it has not specified the observable phenomena in financial accounting. Yet, a clear understanding of the phenomena is needed before there can be a proper description/explanation of the phenomena.

The FASB [SFAC5, para.70] characterizes present financial accounting practice as based on five different attributes. It did not select a single attribute for measuring in financial accounting. The Special Committee [1994,95] holds a similar view and maintains that the FASB should adhere to the use of a *mixed* [attributes] *model*, with measurement in financial statements at cost, lower of cost and [market] value and fair [realizable] value. Unfortunately, the views of the FASB and the Special Committee left the Financial Accounting Policy Committee (FAPC) of the Association for Investment Management and Research (AIMR) with no hope but to conclude that: "We are fated always to have a mixed-

attribute accounting model" [Knutson and Napolitano 1998,175]. However, to measure, one must identify a single attribute which corresponds to the structure of the observed phenomena.

Chambers [1966;1996;1998] and Sterling [1970;1979;1991] always emphasized measurement and complained bitterly about the lack of emphasis on measurement in financial accounting standards. Ijiri [1967] is another strong advocate of measurement. 'Exit value' and 'historical cost' have been identified as the single attribute (measurement property) in financial accounting. However, exit value of a firm's assets is merely an option (exit decision) facing the manager of the firm; it does not reflect the cash flow generating capacity as estimated by the capital budgeting model - the basis of the acquisition and use decisions. Non-monetary assets are cash flow generators. They are not acquired for their resale value, they are acquired for use in the generation of future cash flows as mapped out in a plan of action instituted by the firm's management [Salvary 1992;1997]. Likewise, 'historical cost' is not a valid attribute [Salvary 1985;1989; 1992;1997;1998a]; it produces what is called book value.

To some accountants, a capital-market-oriented value, not a transaction-based value, is *the* appropriate approach to measure (a firm's assets and liabilities) in financial accounting, because the market provides the assessment of financiers/investors. In this case, a signaling system (the capital market) is confused with an operating system (the organization). Thus, the epistemological objection by capital market adherents to transaction based accounting is the problem which motivates this research. The pervasive questions are: What to measure? How to measure?

The remainder of the paper is organized as follows. The next section is a discussion of Accounting: Origin and Characteristics. The third section reviews The Measurement Problem, while section four covers Philosophical Issues Affecting Measurement. Concepts And Structures: Features Of The System is area of discussion in the fifth section. Instrumentation and Calibration are presented in section six and seven. Productivity: The General Test Of Performance and Accounting Information And Market Efficiency are the topics discussed in sections eight and nine. The paper concludes with the Closing Comment.

2. ACCOUNTING: ORIGIN AND CHARACTERISTICS

One of the more powerful implications of the historical findings on writing is the universality of accounting. The origin of accounting was the impetus for the emergence of writing [Lambert 1960; McNeill 1963; Schmandt-Besserat 1988]. The evidence has been presented and it is quite conclusive that the written language was a consequence of the need to account and that the progression from tokens to formal writing clearly provides the evidence of the link between accounting and writing.

Token accounting emerged around 8,000 B.C. [Schmandt-Besserat 1986,36-37]. Accounting originated as a practical art like surveying; while the latter gave rise to geometry, the former evolved from an art to an empirical science [Salvary 1989,1]. Its origination stems from the need for control over resources under command of the party socially responsible for the welfare of the system [McNeill 1963].

In later and modern times, since most economies consist of four basic sectors: business, government, philanthropy and households, *organizational accounting*, as differentiated from *social accounting*, emerged [Salvary 1989,59,60]. From its origin, accounting is dispassionately free from attachment to any economic system, and serves all sectors within any socio-economic system [Salvary 1985,8]. It is through adaptation (to a system's structure and modus operandi) that accounting serves each and every socio-economic system.[3]

Although accounting information is highly informative, it is not a complete description/representation. Financial accounting operates from the perspective of a conceptual framework and organizes perceptions into a closed system. The relationships it identifies are of prime significance, and since all of its parts are articulated, an element of *endogeneity--semantics*--is introduced. Managerial accounting operates from the perspective of cognitive models with an open system approach, focusing on the ability to make change. Since consideration is given to any relevant external factor, an element of *exogeneity* exists. Hence, managerial accounting generates *signals* [Salvary 1998b,323].

Financial accounting is embedded in a static theory; it captures and *describes an entity's state of being*. Managerial accounting is grounded in a dynamic theory; it deduces

from the given state of being *and projects the possibilities of becoming*. The observation by financial accounting and projection by managerial accounting reflect two separate space/time relationships. The firm in time t is captured by financial accounting information--*historical financial reporting*; whereas, the firm in time t+1 is projected by managerial accounting information--*prospective financial reporting* [Salvary 1998b,322]. For evaluation of the firm's historical performance, financial accounting information is the major input in managerial accounting; and the resulting product is evaluated data which constitute the basis for *managerial prediction/projection*.

Historical investigations reveal that organizational activity is the general case and business activity is a special case of the general case [Salvary 1989,59;1984;1979,364-366]. An organization plans (via managerial accounting) for change in the future. Since its past cannot be changed, an organization's financial condition and strategic posture are historical facts. Financial accounting, in accordance with a static theory, measures kinetic financial energy--committed finance. Financial accounting portrays past behavior, but it does not predict/project the future.

Managerial accounting focuses on the effects of changing future conditions, which invariably will differ from those of the past under which the organization had performed. Thus, managerial accounting 'measures' potential financial energy--organizational capability given available resources. Though having an ex post focus in variance analysis, the focus of managerial accounting is primarily ex ante. Thus, in financial reporting, some limitations of the statics inherent in financial accounting can be readily overcome with the inclusion of managerial accounting information (with its dynamics) [Salvary 1998b,322-323].

Invariably, "every attempt (except the most trivial) to understand a theory is bound to open up a historical investigation of this theory and its problems, which thus become part of the object of the investigation [Popper 1972,177]." For instance, Copernicus reverted back to the fifth century B.C. to works on the heliocentric theory of the planetary system which guided him in his effort to correct the erroneous Ptolemaic (geocentric) model [Hurd and Kipling 1964,62,63,97-111; Kuhn 1957,141]. When anomalies present themselves, existing scientific theories must be re-examined from a historical standpoint. Accounting is not exempt from this scientific requirement [Salvary 1989,5]. Yet, the FASB in its conceptual

framework did not use historical investigations or the extensive body of accounting history.

While empirical research is needed to test/demonstrate the validity of a theory, empirical research needs a theoretical base from which to operate. The FASB needs historical investigations to serve as the theoretical foundation for its deliberations on the measurement and disclosure issues. However, it has chosen to inventory the conventional wisdom of the efficient markets literature and draws upon research which stresses *the information needs of investors as opposed to the measurement of the observed phenomena*. The FASB's 'needs' approach is echoed by Smith [1998,164], who maintains that "[i]f the need of users were fully understood, evaluating standards-setting proposals would be easy." This focus on investors needs confuses financial analysis with financial reporting; that is, *evaluation* (of data for decision-oriented models utilized in managerial accounting) is being confused with *measurement* for financial accounting purposes.

Financial reporting is much broader than financial accounting information; and financial accounting information is at the heart of financial reporting. The essence of financial accounting is measurement, thus a measurement perspective for financial accounting standards is inescapable. It is not what are the *perceptions of users* of accounting information, but *what are the measures to be applied* to provide a description/explanation of organizational activities. Yet the FASB pursues an information perspective--to satisfy the information needs of investors--in its standards setting task as opposed to a measurement perspective.[4]

3. THE MEASUREMENT PROBLEM

Four major questions, pertaining to financial accounting, are posed in the literature.[5] What is being measured in financial accounting? Is profit an adequate measure of performance? Should the securities market valuation be mimicked by financial accounting? Is nominal money an adequate measurement scale?

The Basis of Analysis

While Williamson [1981,1565] following Coase [1937] advances transaction costs as the basis of analysis, Chandler [1992,489] maintains that it is the firm (with its physical and

human assets) that constitutes the basis of analysis. To Williamson, the firm is an alternative means of governance to the market; for Chandler the focus is on the predictable form in which economic activities will be undertaken. From this study's perspective, some organized form, be it a firm or the collective efforts of individuals bounded together as a cohesive unit, would constitute the unit of observation; and while a measurement can always be exacted, what exactly is the observable phenomena?

In this treatise, society is seen as being involved in an investment process; the most critical part of which is learning as a trial and error process. Society is an organization and not an organism; it is the highest level of organization. The social investment process is a very broad process, which covers knowledge being acquired and information being disseminated to the members of society to bring about a general awareness to minimize the costs of social exchanges. Many sub-level organizations have emerged in society, and they are continuously undertaking investments. Investments by society (whether undertaken by the municipality, the non-profit hospital, or the business enterprise) constitute the observable phenomena.

The Measurement Property

In financial accounting, after the organization has made its decisions, the observer/measurer is not concerned with whether: (a) the investments are organized or disorganized (rational/ optimal or irrational/suboptimal); (b) the managers are fully informed or uninformed of the optimum path; or (c) the managers should be disinvesting instead of investing. As long as the investment is undertaken, the estimated recoverable cost [Salvary 1985,1989,1992,1997,1998a] has to be measured and reported.

"Production and consumption provide the basis for investment . . . In this setting, recoverable cost becomes reified. Investment becomes crystallized in the form of recoverable cost as an independent structure. The firm is the personified function of investment, and recoverable cost is the reified function of invested resources" [Salvary 1992,239]. The recoverable cost reflects the nominal monetary amount that would have been invested to attain the benefits, expected to be derived from or to be delivered to constituents. Failure to recover entails a loss or budget deficit.

In a work which establishes accounting as an empirical science, the measurement attribute - recoverable cost - is derived from three axioms: society, administration, and periodicity [Salvary 1989,58].[6] "Given the capital budgeting model as the frame of reference, recoverable cost represents a real world function--resources committed to production. It embodies the recovery process. *In the absence of recovery, there is no investment*. Every model of investment can be embedded in a model of recoverable cost, and recoverable cost is model consistent with respect to investment" [Salvary 1992,239].

The foregoing applies to the business organization, which is a conduit that receives cash to implement a plan in order to generate cash. The organization is confronted with three sequential decisions: *entry*--what specific assets are to be acquired, *use*--what are the specific use(s) of the assets, and *exit*--when should the assets be disposed. Survival is the primary concern of the organization; thus, recovery of the money invested is an imperative. After the plan has been implemented, financial accounting begins to measure the cash flow being generated by the firm. In this process, three measurement rules, which correspond to the three sequential decisions, have been identified: (1) present value - entry decision, (2) lower of cost and market value - use decision, and (3) realizable value - exit decision [Salvary 1992,251-264]. These measurement rules correspond to the observed phenomena--the investment undertaken by each and every sub-level of society [Salvary 1992,237].

4. PHILOSOPHICAL ISSUES AFFECTING MEASUREMENT

Society is continually making investments in education—extending the borders of our knowledge and accommodating new forms of organization. Society is welfare maximizing; and one indication, inter alia, is the universal structure of language. Society, by means of various types of organizations, attempts to maximize the social welfare while minimizing transaction costs. The business firm is a maximizing agent that invests in a production and distribution plan. Therefore, the transactions and other events are the means by which investments are undertaken. Investments are shaped by the element of specificity [Aivazian and Berkowitz 1998], which in turn determines the value measure in financial accounting [Salvary 1992,249].

While deemed by some individuals to be desirable, the internationalization of financial accounting is very problematic, because it presupposes the homogeneity of need and purpose. The U.S. (and to a lesser extent the U.K.) is concerned with accounting standards to satisfy investors' needs. Levitt [1998,81] maintains that: "Any set of accounting standards that seeks global acceptance must be shaped . . . by looking to the needs of the investors and the capital markets." This position ignores the fact that Germany, Japan, and France, with strong bank financing, have built eminently successful economies [Bardhan and Roemer 1992,107] with a broad social emphasis for financial accounting.

The *secondary* capital market is essentially a transfer market; it is not critical to the functioning of a successful economy. The availability of savings for investments and a management philosophy that is conducive to the further development of social exchanges are the main ingredients for the operations of a successful economy. "[A] bank-centric financial system . . . largely mitigates the planner-manager principal-agent problem, and does so in a way potentially superior to that of the stock market-centric system [Bardhan and Roemer 1992,109]."

The Nobel Laureate Simon [1991,29] maintains that the existence of an organizational economy poses the questions of: (1) why the larger part of a modern economy's business is done by organizations, (2) what role markets play in connecting these organizations with each other, and (3) what role markets play in connecting organizations with consumers. Moreover, since, the boundary between markets and organizations varies greatly from one society to another and from one time to another, then what mechanism maintains the highly fluid equilibrium between them? Until these questions are answered, it will be difficult to draw conclusions about the relative efficiencies of different forms of ownership and control of organizations, or the relative efficiency of markets versus central planning.

Organizational Efficiency

Both the firm and the market are merely innovations on the part of society in its never-ending quest for its efficient functioning. While money is a device for measuring social exchange, the firm and the market are the vehicles through which exchange is effected. Apparently, to a certain extent, this point has been recognized by Scott [1931,p.207]:

> [M]ore and more of the responsibility for effecting economic adjustments has come to be shared between accounts and the market. At the same time accounts have developed into a position of importance as an instrument of administrative control. The steadily increasing importance of accounts has been coupled with a declining significance of the market. ... [Y]et, accounts still are dependent upon the market. Is this dependence a necessary and unavoidable relationship? If the market become a subordinate institution, will accounts still be subordinate to it?

In view of the foregoing, the following questions pertaining to social organizations [Simon 1991,29] are quite pertinent: (1) What is the relative efficiency of markets and organizations? (2) What are the consequences of using central planning instead of markets to regulate relations among organizations?

Indubitably, the role of the market has declined in the social adaptive process. This condition has developed since the market is a form of organization and there are limits to organization. The continued search for more efficient ways of social conduct has lead to new forms of organization. In this regard, Williamson [1981] is quite emphatic: "firms and markets are alternative modes of organizing economic activity." As such, the modern corporation is "the product of a series of organizational innovations that have had the purpose and effect of economizing on transaction costs". Accordingly, the position of Simon [1991,42] is quite revealing:

> The economies of modern industrialized society can more appropriately be labeled organizational economies than market economies. Thus, even market driven capitalist economies need a theory of organizations as much as they need a theory of markets.

As per Simon, empirical observations of organizational phenomena supports the theory of organizations. For instance, governmental units are only indirectly and vaguely penetrated by the profit motive, yet they are highly effective systems. Why? Organizational goals replace profit as enforcer of organizational efficiency. Employees are motivated to work toward the organizational goals due to organizational identification, material rewards, and effective supervision. Clearly a re-examination of classical political economy is needed. In particular: when should profit making, nonprofit [not-for-profit], and governmental organizations be expected to operate well, and when is market competition needed to discipline organizations to perform efficiently?

> The reopening of these questions is important for both capitalist and socialist economies. On the one side, capitalist economies are actually mixed economies, faced with a multitude of problems of regulation and deregulation, of socialization and privatization. On the other side, many socialist economies have had mediocre success in maintaining the efficiency of their organizations, and are experimenting with the reintroduction of markets, often while trying to avoid extensive privatization. [Simon 1991,43].

Based upon the foregoing, it is obvious that the significance of financial accounting is not shaped nor eroded by markets. Given the two branches of accounting; financial and managerial, added significance can be attached to Scott's [1931,207] proposition: "[A]ccounts and accounting theory promise to serve respectively as points of origin and organization for a reshaping of economic institutions and the development of a system of theory running consistently or primarily in objective terms."

This treatise interprets 'objective terms' (above) to signify concepts and structures, which have been observed in the evolutionary setting. Some of the major concepts and structures which have emerged are: contracts, the firm, money, monetization of the economy, the socio-economic adaptations to monetization--monetary exchange, the commodity markets and the capital market, and returns to the factors of production.

5. CONCEPTS AND STRUCTURES: FEATURES OF THE SYSTEM

The firm, as a conduit, is enabled by contracts to incorporate part of the market into its structure. A money economy is characterized by the monetization of the economy and the socio-economic adaptations to monetization. Due to the interconnection of all parts of the economic system, by means of the flow of nominal paper money, the economy is monetized. Monetization, which makes possible the storing of services, permits investments in the process of production, and gives rise to the concepts of: money-capital, finance, earnings, and profit [Salvary 1997].

One adaptation to the socio-economic stimulus is the storing of uncertain purchasing power in nominal terms, which is made possible with nominal money. To engage in monetary exchanges to accumulate money is one motivation for the production process; and the firm, in a surplus-oriented money economy, is primarily concerned with the accumulation

of a stock of money [Boulding 1950,106,112; Georgescu-Roegen 1971,216]. Profit/Loss is a consequence of the production process.

A very subtle, but significant, difference exists between investing and saving. Investing consists of production and financing; whereas, saving consists of making money available. Upon the initiation of a production plan, a specific stream of cash flows is set in motion, and the valuation of this cash flow stream is always at the margin. The time perspective and uncertainty facing the production/operating decision serve to differentiate it from the savings decision [Salvary 1998a]. The difference between saving and investing establishes the distinction between and the interdependence of the commodity and capital markets. The capital market is a by-product of the commodity market.

Accounting Measurement versus Stock Market Valuation

Salvary [1998a], by means of two concepts: financial product *costing* and financial product *pricing*, has provided a strong theoretical link between financial accounting measurement and stock price determination. The *costing* process, which is identified with the financial accounting *measurement*, relates to the commodity market. The *pricing* process, which is identified with securities *valuation*, relates to the capital market.

Two distinct processes/models (costing and pricing), which have emerged to serve the two interdependent (commodity and capital) markets [Salvary 1998a], are clearly distinguishable, one from the other. The costing model measures: (1) the resources committed to the production plan (K), and (2) profit/earnings (E_p) generated in the past period. This measurement serves the commodity market. The pricing model places a value (S - stock price) on the future prospects of each firm's production and distribution plan for several years into the future. S in the capital market reflects an aggregate of expected annual earnings (E_f--a proxy for E_p) and a terminal nominal value ($S^{\#}$). This valuation process facilitates interpersonal and intertemporal transfers of current cash for future cash.

Investment: A Field of Attraction. Investment is embodied in the institutional arrangement of the firm; it involves raising money-capital (creation of financial assets) and acquiring the necessary factors of production (real and strategic assets). In Diagram 1, *investment is a manifold of four dimensions* (firm's profit/earnings--E_p, firm's residual value--K, financier's time/ planning horizon--n, and financier's discount rate--i).

Production and its financing create a field of attraction in economic space, analogous to a gravitational or magnetic field in physical space, with K_* (accounting measurement - money in use) as the core of the field, and S as the outer region. All the points (e.g., S_1, S_2, etc.) in that field of attraction, which is related to K, are represented by the set of stock prices (S_*). S and K constitute paired symbols--coordinates and momenta. Every coordinate has a momentum paired with it as is revealed by the stock pricing model [Salvary 1998a,41]:

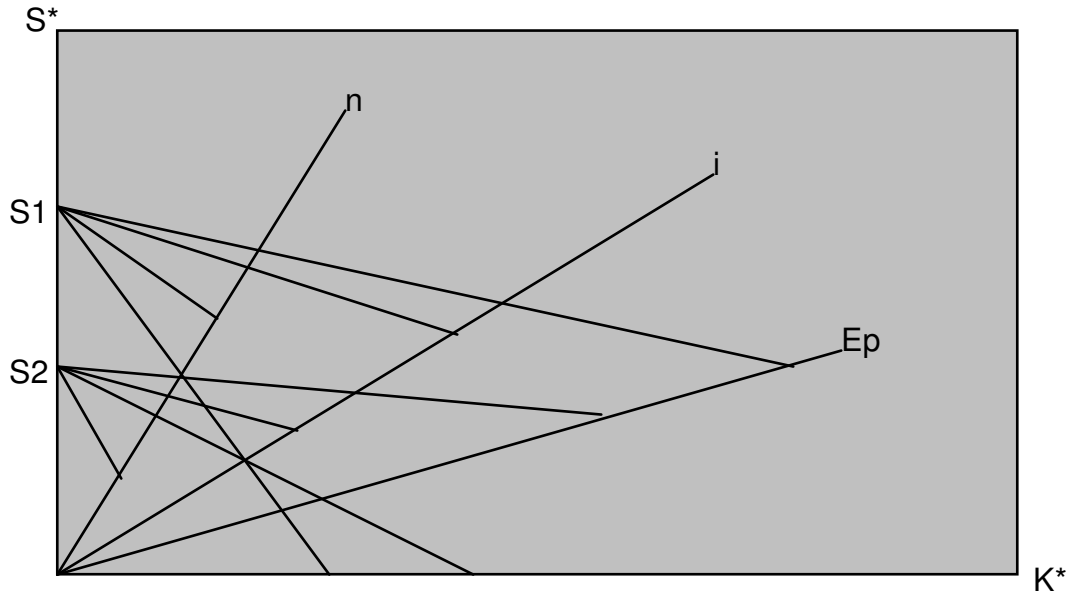
$$S_t = g(K,E_p,i,n)_t. \qquad (1)$$

In the capital market, however, an operating proxy is used:

$$S_t = \sum_{n=1}^{k} E_f(1+i)^{-n} + S''_{t+n}(1+i)^{-n}. \qquad (1.1)$$

For any value of n, when $0 < n < \infty$, E_f will not be equal to E_p.

DIAGRAM 1
Markets And Valuation: Coordinate



6. INSTRUMENTATION

A visitor from outer space, according to Simon [1991,27-28], seeing organizations connected together by market transactions, would be surprised to hear the structure called a

market economy. The visitor might ask: “Would not organizational economy be a more appropriate term?”

The Organizational Economy

In an organizational economy, most producers are observed as employees of firms, not owners. Since they are not owners, then they have no reason to maximize the profits of firms, except to the extent of control exercisable by owners. Furthermore, all types of organizations regardless of whether they are profit-making firms, nonprofit [not-for-profit] organizations, and bureaucratic organizations are faced with exactly the same problem of inducing employees to work toward organizational goals. No reason exists, a priori, why motivation should be easier or harder to produce in organizations aimed at maximizing profits than in organizations with different goals. In addition, the system is almost indifferent between the use of market transactions and authority relations. This indifference can be tipped one way or the other by very small changes. The issue of organizational dynamics surges to the forefront. The organization, which is continually striving to improve its situation, uses purposeful *actions--transactions--to* accomplish its mission.

Selective Information: One Aspect of Instrumentation

In this treatise, *transaction is defined as the transference of a good/service across a technologically separable interface* [Williamson 1981]. Transactions will be organized by markets; however, when market exchange results in serious transaction costs, internal organization will displace markets, and vice versa [Williamson 1981]. Carlton [1986,655] goes even further: "... [A]s firms become large they supplant the market's exclusive reliance on price as an allocation device and resort to other methods. In a world filled with transaction costs, exclusive reliance on a market-generated price to allocate goods could well be inferior to other non-price allocation methods." Transaction costs as a set is much broader than markets, and Arrow [1974;1969] has traced the limits of markets to transaction costs. Generally, markets are impeded by transaction costs [e.g., Bhusan 1994]; and in particular, the formation of markets is blocked by transaction costs. Williamson [1981] has stressed the explanatory power of transactions, in particular those transactions involving asset specificity (e. g., leases), for the economics of organization.

Investments are undertaken by means of transactions. *While all investments need transactions for their existence, only some transactions give rise to investments.* Transactions, as one type of event, and other events determine the nature and amount of the investment; they constitute the selective process/information of financial accounting and establish what to measure.

Alternative to the Transaction

In the literature, accounting is accused of not being sufficiently responsive to dynamic influences of modern society. It is claimed that in some cases the strength and growth of a firm depends as much or even more on the changes in wealth that are excluded from reported income as on those that are included. It seems that the F ASB has adopted this view with its comprehensive income.

An alternative measure to transactions is the current value of resources. The argument is that the transaction approach lacks continuity properties, and it is less relevant that the current value. Given the stock market valuation as the alternative measure, value hinges on the three factors: (1) the amount of the anticipated future cash flows, (2) the timing of the anticipated future cash flows--when and number of periods, and (3) the interest rate.

As stated earlier, the stock market model is a *pricing model,* which arrives at a value for an intertemporal transfer of current cash for future cash. With the pricing model, a change in any of the three factors will affect the value of an asset. Factors # 1 and #2 are asset specific, but factor #3, except for a risk premium, is in no manner related to the asset. The interest rate is subject to change for a variety of reasons, and its revaluation is continuous and instantaneous. A *costing model* measures actual cash flows flowing through investments plans as they have been set in motion. To equate the two models and substitute the pricing model for the costing model obscures the scientific measurement of financial accounting. For instance, governmental units and nonprofit [not-for-profit] organizations have resources under their control; while the *costing model is absolutely necessary* for the monitoring of their activities, the *pricing model is not appropriate.*

Interest, which is the cost of credit--temporal use of nominal money, is a critical factor in the pricing model. For the business firm, which is involved in a money augmenting process, *it is profit and not interest* that is the critical factor. Interest, should not be confused

with profit. In determining the efficiency in the use of nominal money, a monitoring relationship exists between interest and profit; that is, *"[t]he profit rate is compared to the interest rate. If the profit rate is too law, then investment in productive equipment will not be forthcoming"* [Salvary 1997,95].

A firm's cash flow is unimpeded by the market rate of interest and the saver's investment horizon. The amount of cash invested and the asset form which it takes do not determine the cash flow. The rate of fall of an object is not determined by its density and weight but upon the medium through which the object falls; likewise, the rate of return on invested money depends on management's ability to manage effectively. Management's plan is the medium for creating cash flows. Under conditions of certainty there is only one rate of return. Similarly, in physics under conditions of a vacuum there is only one rate of fall for all objects [McMullin 1967,15-17]. However, the real world is not a vacuum and is not one of certainty; there are different rates of fall for objects and different rates of return on investments to reflect varying degrees of risk inherent in the various investment projects.

It is a mistake to conclude that transactions-based accounting does not measure value. There are many types of value, and *transactions indubitably involve an attempt to produce financial value and not physical value.* Below is a discussion of the two (allegedly competing) values--committed finance and current value.

Committed Finance and Current Value

The necessity and interconnectedness of financial accounting measurement and capital market valuation have been demonstrated by Salvary [1998a]. Financial accounting measurement focuses on *the productivity of money in use--the* result of the measurement process is committed finance. Capital market valuation, which focuses on *the intensity in the use of money,* is current value because it reflects marginal conditions (i.e., liquidity and availability of money-capital). These conditions, which are related to the general market but unrelated to the firm, are continually changing.

While accountants may not strictly adhere to the following, nevertheless, committed finance--estimated recoverable cost--is the single attribute identified in financial accounting [Salvary 1985;1989;1992;1996/1997;1997]. The two values, committed finance (related to

the commodity market) and current value (related to the capital market) are complementary and instrumental in the efficient functioning of those two markets [Salvary, 1998a].

Valuation and The Firm. With regard to the firm, two distinct quantifications exist. On one hand, financial accounting is concerned with the *measurement of the actual cash flows (Ep) generated by and estimated residual value of invested resources (**K**) recoverable from a firm's investment plan.* On the other hand, capital market valuation is concerned with arriving at a value (**S**) for risk/return packages (the firm's financial assets-equity securities); it is *a value of expected annual income for n years plus an expected residual claim against the firm.* While financial accounting measurement differs from capital market valuation, they are both products of a money economy. *The former is transaction oriented with continuity properties; the latter is instantaneous valuation without continuity properties.*

Despite the fact that the firm has almost infinite life, titles to claims against the firm are traded for finite periods. The capital market provides for the trading of the rights to future possible benefits, which are to be derived from the nominal money committed to the firm's production plan in the future.

7. CALIBRATION

The money economic system is driven by the forces of Money Capital, Earnings and Profit, which are interacting through the price mechanism. In a money economy, commodities are traded in terms of nominal money prices. Thus, nominal money prices constitute the catalysts for investment decisions in real assets for the production of commodities. In this setting, money fulfills a signaling function because nominal money prices reflect changing conditions. Also, money is a mobilizing agent, and the holders of money impose a cost for its use [Salvary 1997/1998;1993].

Social Exchange, Transactions Cost, and Measurement

While important, the philosophical view of value (e.g., virtue, aesthetics, etc.) is not an issue. In this treatise, the view of value is from the social process of investment, and the focus is upon social well-being within the context of organizational efficiency and effectiveness. Social exchange underlies the concept of value. Monetary exchange has

emerged as an efficient means of social exchange, and the transaction is the embodiment of this social process. Each transaction has a cost and a benefit; the cost is controllable and is subject to social welfare considerations.

In the existing money economy, the demand for capital is determined in money terms, and the rate of return on nominal money is being maximized by the firm. In the social process of exchanges, money provides the value--a financial quantity of the physical exchanges that have taken place in the economy. In a money economy, price formation (via the rate of return on nominal money) guides the physical quantity system so that the price system and the physical quantity system are interdependent. The financial quantity (recoverable cost), which has been identified, dominates; hence in financial accounting, value is expressed not in physical quantity terms, but in nominal money terms [Salvary 1985,23,25;1993,168;1996/1997,78;1998b,310].

In this treatise, financial accounting value is established on the basis of duration of possession (**Dp**) and intention of possession (**Ip**). To isolate measurement questions from the relationships between financial quantities established by the recovery process, the accounting laws (productivity, capitalization, continuity, and bankruptcy) [Salvary 1989,33-36] serve as constraints among financial quantities (i.e., criteria for determining going concern and necessary and sufficient conditions for valuation [Salvary 1996/1997,76-77]). Duration of possession (**Dp**) is classified according to a planning attribute: (1) temporary or transient; (2) long-term or permanent; and (3) indeterminate or contingent. Intention of possession (**Ip**) is classified by transaction attribute: (1) for exchange; (2) for producing exchangeable objects; and (3) for perpetuating the exchangeability of the exchangeable objects.

Duration of Possession. Duration, in this context, is primarily the transformation capability (the period within which the object in question is capable of being transformed), as opposed to the transformation period (the actual time over which it is actually transformed). Temporary (transient) duration would mean that the object (inherent in its nature and accompanied by administrative policy) is capable of being transformed within a relatively short period of time. Therefore, within the context of accounting theory, this temporary duration would imply a period of one year or the normal operating cycle of the organization, whichever is longer. Long-term (permanent) duration would mean, though the

transformation under unusual circumstances can be achieved in one year or within the normal operating cycle of the organization, that transformation is normally achieved over successive years or successive operating cycles. Indeterminate (contingent) duration signifies that the transformation period is not determinable, unlike the case of the other two durations. The transformation is contingent on occurrences which have not yet occurred and on the outcomes of such occurrences.

Intention of Possession. Given purposeful actions, intention implies the rationalization for possession. *Possession for exchange* would be characterized by those situations in which the objects possessed constitute the interfacing attributes of the organization or the raison d'etre of the organization. Those objects, which themselves are not exchanged, but which transform other exchange objects into their exchangeable form(s), would characterize *possession for the reproduction* of exchangeable objects. *Possession for the perpetuation* of the exchangeable objects would be characterized by those situations in which the objects possessed are not exchangeable nor do they transform exchangeable objects, but are objects which attempt to: (1) provide continuity for, (2) enhance the desirability of, and (3) protect the exchangeable object(s) from external infringement.

A heterogeneous collection of goods and services, which are to be homogenized, emerges. A countable collection of sets **A** (**Assets**) exists. The elements of **A** can be enumerated by integers: $\mathbf{A = A_0, A_1..., A_m}$, where m = 0, 1,… k. Each category of $\mathbf{A_m}$ represents a countable set (e.g. current assets, fixed assets); and for each **m**, an enumeration of elements of $\mathbf{A_m}$ exist: $\mathbf{A_m = a_{m0}, a_{m1}, ..., a_{mn},}$ where: n = 0, 1, ..., L [Salvary, 1992,248-249]. Given *spot* and *future* markets arising from investment processes, several enumerations of the set $\mathbf{A_m}$ (asset heterogeneity) exist. The axiom of choice enables the selection of a countable and relevant element to produce homogeneity; and the estimated recoverable cost is the homogenizing property of financial accounting [Salvary, 1985,1989,1992,1997].

Criteria for Value

Intention of possession differs from the duration of possession, not in category, but in its dynamic nature. Intention of possession is the main criterion for valuation in the primary

sense with the duration of possession acting as a valuation modifier. Three value categories emerge based upon the classification scheme:

(1) Transitive (exchange) - primary
(2) Distributive - secondary
(3) Associative - tertiary

Membership in a category bestows upon those resources nothing more than the possession of the objective qualities peculiar to that category, and hence possession of the capacity for usefulness that is peculiar to that category.

The measurement principle is within the context of the organization as a conduit for cash flows. In accounting theory, because of the intermediary role of the organization, value principles as ascribable to individual want satisfaction or wealth criteria are different from those ascribable to the firm committed to a plan as reflected by its choice of assets. Value classifications as described below are applicable to all organizational types.

Transitive value results from the organization's interfacing with the other segments of the socio-economic system. This value relates to an immediate state of *being--the* spot market. *Distributive value* results from the needs of the organization to reduce uncertainty in its interfacing with the other segments of the socio-economic system. This value pertains to a current, but not immediate, state of *readiness--the* forward market. *Associative value* results from the needs of the organization to enable (to protect) it in interfacing in perpetuity with the segments of the socio-economic system. This value is associated with a state of *protectiveness--a* future orientation.

Transitive value is characterized by exchangeability and divisibility, which is *partitioned usefulness;* that is utility derived from discrete units, which are acquired in spot markets for disposal in forward markets. *Distributive value* is characterized by serviceability and indivisibility; its usefulness is derived from a continuum, and partitioning destroys the usefulness. This value, in accord with marginal valuation, is based upon the revenue stream of the continuous output of discrete units in the aggregate. *Associative Value,* which is characterized by holding and waiting, is interrelated but not linked to the other values. Being attachable to the nature of the organization, it is a residual value.

The Measuring Unit

While price level changes are inherent in the price system, advocates of a strong adherence to monetarism argue against using the nominal money as the unit of measure. The monetarist argument loses ground when placed in context of the relativist view. According to the relativist view, in the absence of monetary revaluation or devaluation and absent instances of monetary dislocation--collapse of the monetary system, changes in the general price level are due to a net realignment of prices of individual commodities--some go up, others go down, while others remain the same [Salvary 1997/1998]. Thus to use a price index to adjust financial accounting data only confuses the issue.

> The price level index (a mental construct) is a function which maps one set of empirical observations into the set of real numbers satisfying a system of economically relevant conditions. This index is a derived measure for the transformation of observed prices into fictitious 'constant price values' . .. . Specifically, the price level index is a mapping from a financial flow system into a physical flow system. This mapping is undertaken to compare the physical outputs of two different time periods. While financial flows reflect consumers' behavior, consumer taste is not some physical constant which is invariant over time. Consumer behavior is influenced by psychological factors and not physical quantities. Consequently, in a money economic system, the investment decision is indifferent to the physical quantities, but highly sensitive to the rate of return on nominal money invested. While the two systems (the physical and the financial) are linked; they are not interchangeable. That is, a mapping from the financial flow system to the physical flow system does not permit the same interpretation. [Salvary 1998b,310]

As discussed by Salvary [1997,97;1997/1998,92-99], compelling empirical evidence has been presented in the economics literature which demonstrate that monetarism is lacking at best and devastating at worst. Unfortunately, many accountants, by steadfast loyalty to monetarism, graft unto the existing model and continue the journey along the Ptolemaic path.

By re-examining the situation, the Copernican path, one recognizes that the firm is simply a means by which society attains its objectives. Thus, every business firm is an intermediary in society. In a money economy, accumulation of nominal money (storing of uncertain purchasing power and not storing of physical objects) is the motivation for the production process [Salvary 1996/1997,72- 73]. In this setting, "Banking is warehousing of money instead of real goods [Davisson and Harper 1972,156]." The banking firm is

involved in the intermediation of nominal money which is its stock in trade, and the non-bank business firm is involved with the intermediation of consumable goods or services. Absent a currency revaluation, the nominal value of money, while in the possession of the bank, cannot change. Also, each nonmonetary asset of a non-bank firm is nothing more than a repository of cash with a greater degree of risk than that associated with a bank savings account [Salvary 1997,96].

It is important to note that while each year bank depositors add new cash to the old cash, banks do not adjust savers' account balances to compensate for price level changes. While banks make no price level adjustments to savers' accounts, they are not ever considered as improperly adding individual savers' accounts nominal money from an old period to the nominal money of a new period, and thereby violating the rules of addition.

The decision to put money into a savings account reflects a particular risk/return trade-off. Similarly, new acquisitions of assets represent new nominal money additions to the previous stock of invested nominal money. Accordingly, as in the case of the bank savings accounts, adjustment to financial accounting data of non-bank firms is unnecessary/inappropriate. In each case: (a) the return on money committed (interest on nominal money and profit on nonmonetary asset) is added to the total asset balance less any withdrawals, and (b) any return (interest or profit) retained in the particular savings program is reinvested at the obtainable rate of return. Since in both cases, one is looking at the same measurement property - recoverable cost, the additivity of intertemporal bank deposits unequivocally supports the validity of the additivity of intertemporal investments in (additions to) the firm's portfolio of assets [Salvary 1997,94-95].

The validity of nominal money as the measurement unit cannot be disputed. The remaining concern is: what is the criteria for determining the level of success experienced by an organization? The next section sets out to deal with that issue.

8. PRODUCTIVITY: THE GENERAL TEST OF PERFORMANCE

To assess the performance of organizational activities, measures of productivity are applied. Productivity is comprised of efficiency and effectiveness. As stated earlier, the organization

is the general model and business is only a special case. Productivity, as the main organizational objective, has to be measured in a manner corresponding to the nature of the operation: government, nonprofit [not-for-profit], or profit oriented organization.

While the business firm is concerned with the augmentation of the initial sum of money entrusted to it, the government and the nonprofit [not-for-profit] organizations are concerned with obtaining the required funds to underwrite the desired programs for the given period. Since financial accounting is a universal measurement system, then profit can not be a general test of efficiency. Productivity is the general test, with profit being merely a specific case of the general case identified with profit making organizations.

For governmental and nonprofit [not-for-profit] organizations, the concerns are for effectiveness and efficiency--the effective and efficient use of money made available by taxpayers and other fund providers in the delivery of programs and services. The business firm should submit itself to the general test of effectiveness and efficiency, in which case the level of customer and employee satisfaction and the degree of social responsibility exercised by the business firm would be of great importance alongside the net income figure.

Profit: A Special Case of Productivity

For risk-taking enterprises there is a reward--profit. With the advent of the firm in the eighteenth century, profit can be broken down into two elements: a return for risk and a managerial fee. Return for risk represents an additional financing charge; the managerial fee represents the increase in value of the exchangeable commodity in the aggregate output, as a direct result of the synergism produced by managerial skill beyond that which would have been evident if such skill had been excluded.

By making goods available (usable and timely) to those who need them, the entrepreneur essentially provides a service to society. To fulfill this responsibility, the entrepreneur hires the necessary factors to provide the commodities. The entrepreneur arranges contracts with these factors, and guarantees the remuneration for their services. The firm, in attempting to augment its stock of nominal money, brings about the coalition of labor, land, and equipment. This coalition results in a synergism, which far exceeds the productive capability of factor inputs.

The measurement of profit coincides with the proper identification and recognition of all transactions entered into by the firm and the determination of the firm's estimated recoverable cost of the aggregate amount of nominal money invested. To change financial accounting measurement, which constitutes the basis of stock price, to reflect perceived differences by market participants is to misunderstand the role of the capital market. It is like moving the North Star and expecting navigators to use it as a location point. At this time, most accounting research focuses, not on measurement, but on empirical evidence in support of theories of accounting choice [e.g., Evans and Sridar 1996; Bowen, DuCharme, and Shores 1995; Bartov and Bodnar 1996].

9. ACCOUNTING INFORMATION AND MARKET EFFICIENCY

In the social evolutionary process, the firm functions as a highly specialized surrogate market. As a social institution, due cognizance must be given to the details of the firm's structure for making decisions, implementing production plans, and employing resources. As a bargaining and transacting agent, the firm is confronted with the measurement of profit and committed finance, not with instantaneous valuation. *The future actions of the firm are based upon predictions of the future, and the assessment of the firm is based upon measurement of its past performance.*

The efficient market hypothesis (**EMH**) maintains in the semi-strong form that all publicly available information in impounded in the price of a security. The South Sea Bubble (1720) [Melville 1923,50-67] and the Wall Street Crash (1929) revealed that publicly available information and *misinformation* are included in the price of a security. Informational efficiency is noticeable in the stock market, but such efficiency is not allocational efficiency.

The significant difference between the role of financial accounting information and the role of security prices has to be emphasized, because implicitly if not explicitly, the FASB in its standard setting work has been guided by the questionable efficient market hypothesis (**EMH**) [Hubbard 1998,222; Phillips and Ritchie 1983,292]. Relying on the **EMH**, some accounting theorists are inclined to believe that financial standards should be guided by the responses of security prices to the information content of financial statements. This approach views investors "as attempting to predict future returns from their

investments. They seek all relevant information in this regard, not just accounting information. To maximize their competitive position as suppliers of information, accountants. . . seek to use the extent of security market response to various types of accounting information as a guide to its usefulness to investors" [Scott 1997,126].

The EMH is essentially an instrumentalist epistemology, in which case only prediction, and not explanation, is all that is needed for policy prescription. Therefore, the EMH is subject to all the criticisms which have been levelled at instrumentalism [Salvary 1998c,16;1985,16]. While a scientific theory may lack the ability to predict, it must not lack the ability to explain [Leibenstein 1976,13]. Furthermore, there are two very good reasons for objecting to the use of the EMH as a guiding principle: (1) the difference between Discounted Cash Flow (DCF) analysis and Return on Investment (ROI) analysis, and (2) the fallacy of division and the fallacy of composition.[7]

DCF *is not the same as* ***ROI****;* they serve two significant but different purposes. DCF, which is used in the analysis of an investment decision, is ex ante/projectory. ROI, which is used in the analysis of the results of an investment, is ex post/explanatory. The *fallacy of division* assumes that the value of the firm's shares in the aggregate is the basis for the valuation of the firm's assets. The *fallacy of composition* assumes that the value of the firm's assets is the basis for the valuation of the firm's shares in the aggregate. If the individual assets of the firm were valued by the investors, then the value of the firm and the value of the assets would be identical, there would be *no fallacy of composition or division.* However, the capital market value of the firm is independent of the physical assets; it is based upon the expected earnings, the assessed riskiness, and the prevailing interest rate for a particular time horizon. Thus, the value of two firms having the identical type of assets in the same physical condition will differ if the firms experience different earnings/cash flow streams. The price of a firm's securities is related to but not identical with the value of a firm's production plan.[8]

Noteworthy is the fact that several forces/factors are the cause of value changes; and these forces/factors prevent the symmetrical flow between accounting and the market. The forces affecting value changes are discussed below.

Value Changes: Expectations and Uncertainty

Based upon equation (1) a change in market value **(ΔS)** can occur as a result of a change in any of the four variables: **K**, **Ep**, **i**, and **n**. As revealed in Diagram 2, the forces producing **ΔS** are: production technology, consumer taste and income level, liquidity and financial capital intensity, and the level of uncertainty. If **K** is increased, due to borrowing, and there is no change in **Ep**, **i**, and **n**, and if the rate of return (**R**) experienced on **K** is greater than the cost of borrowing (**r**), then the change in market value (**ΔS**) would be positive. If **K**, **i**, and **n** are held constant, and if **Ep** were to increase then a positive (**ΔS**) would occur. If owing to changed conditions, the firm is considered less risky and **i** (the risky discount rate) is lowered, ceteris paribus, then (**ΔS**) would be positive; the same would be true if **n** is increased.

Expectations of savers can and do change for a host of reasons, when they do change the saver/stockholder can instantaneously switch position (the form of saving) at a cost, and this cost reflects itself in a change in either **i** or **n**. As long as the firm's cash flow plan is unfolding in close proximity to that which had been predicted, the firm continues to commit to the planned course. Regardless of the circumstances, the firm cannot change its position instantaneously and the passage of time is irreversible; hence, the decision as made is irreversible [Laidler 1975,83].

DIAGRAM 2
Investment Field: A Four Coordinate System

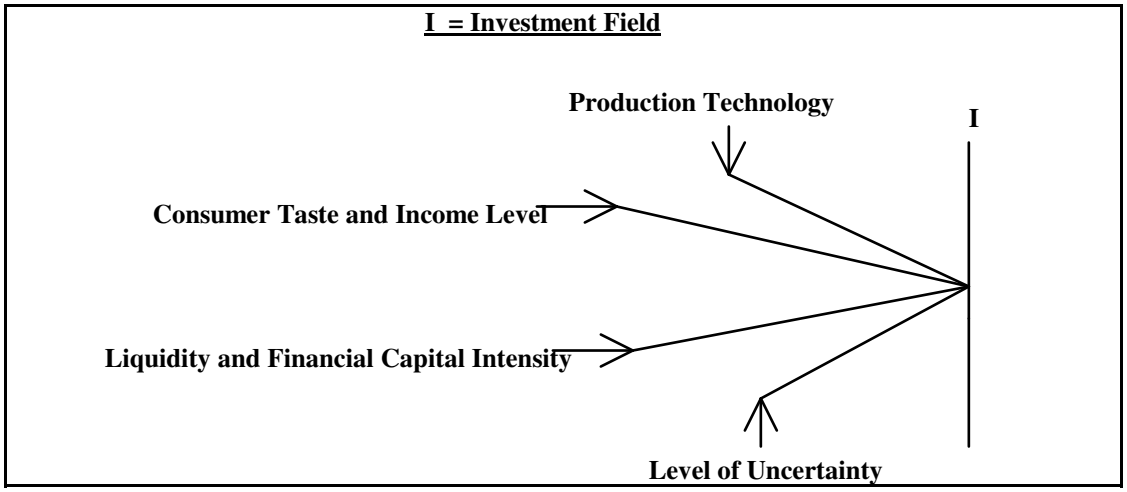


Diagram reproduced from Salvary [1998a,57].

10. CLOSING COMMENT

Severe criticisms of the FASB's Conceptual Framework (**CF**) have come from Anthony [1987] and Chambers [1996]. Anthony [1987,75,76] maintains that: (1) The **CF** "only perpetuates--and at times even regresses from--current practice." (2) "The FASB has. . . created confusion instead of clarity, controversy instead of cohesion." (3) SFAC5 "is seriously flawed and raises more questions than it answers." The onslaught against the FASB will continue for as long as the FASB fails to base financial accounting standards on a sound body of accounting theory.

A science emerges because it is useful to society as a whole, and not because it is useful to a few individuals within society. By providing explanations and enabling society to cope with its welfare maximizing effort, a science establishes its usefulness. Accounting is an empirical science. Explanation/description of observed phenomena is provided by financial accounting. Prediction/prescription of phenomena is accommodated by managerial accounting. However, in Figure 1 [SFAC5,p.14], while decision-makers and decision usefulness are highlighted, the FASB makes no mention of the observable phenomena in financial accounting. Sadly, the FASB does not view accounting as a science, but as a service; hence, usefulness to users--decision makers external to the firm--is paramount [SFAC2,p.ix,x].

Information is knowledge and all sciences generate information. However, while there are many users of information which is generated by a science, the information generated is not determined by what some user group wishes to have. For example, astronomers and physicists do not run around convincing users of the usefulness of the information derived in those fields. Astronomers and physicists undertake their work, and it is up to those who wish to use the information they generate to do so in the manner that is most conducive to their particular needs.

The misplaced emphasis on accounting as a service by the FASB forces it to look for justification with users by providing users with whatever information they need. In so doing, measurement of observed phenomena of financial accounting is relegated to a secondary role, and the art of financial analysis is confused with the science of accounting. Financial reporting is not financial analysis, but it can be turned into financial analysis.

According to Scott [1997,161], by assuming "greater responsibility for incorporating fair values into the financial statements proper. . . accountants are doing some of investors' work for them through increased use of valuations. If the securities market. . . [were] fully efficient, this would not be necessary to the extent that value information was available in supplementary form or elsewhere." Furthermore, the AIMR's FAPC maintains that the accountants should provide only the facts and the analysts will perform the analysis [Knutson and Napolitano 1998,176]. For financial accounting and financial reporting, the FAPC states that: (1) there are many things that should not be forced into the financial statements--they belong in supplementary schedules; (2) financial statements should contain only factual data and should be accompanied by supplemental information for clarification; (3) recognition and measurement standards must focus on what is real and reflect accurately and completely the substance of exchanges and other economic events; and (4) new standards should provide information about the firm that could not have been estimated by outsiders. [Knutson and Napolitano 1998,172-175].

Financial accounting measurement is a *financial product* ***costing*** *process;* whereas, pricing in the capital market of estimates of future earnings and residual value is a *financial product* ***pricing*** *process.* The historical evidence indicates that financial accounting contributes to efficient finance valuation and hence an efficient market. Once the money economy was set in motion, the purpose of financial accounting reports was to provide knowledge "of the state of things . . . , and for raising money" [Lamond 1890,33].

Stock prices are based upon expectations and are set by individual agents; they are not determined by the market. Participants in the capital market need both financial and managerial accounting information to establish security prices [Salvary 1998b,321-323]. Since participants in the capital market merely use accounting information as a point of departure, the Efficient Market Hypothesis cannot contribute to valuation [measurement] theory in financial accounting; however, it does have the potential to contribute, a priori, to disclosure theory.

ENDNOTES

1. This position is contested by Paul Tannery [McMullin 1967,20], but supported by Finocchiario [1989,26-27].

2. Salvary [1979,359] labeled accounting as a "systemic information science", and [1985,8] as an "administrative information science." While accounting is identified as an information science, the descriptor in 1979 is generic; whereas in 1985, it is functional.

3. Current research focuses on micro-level accounting; however, micro-level financial accounting information can contribute significantly to national

4. According to Penman and Stougiannis [1997,20], the "information perspective" (Beaver 1989) views accounting earnings as signals about future payoffs (dividends or cash flows), and is embraced in most capital market research in accounting. The traditional "measurement perspective" views earnings as additions to value and balance sheet values as measures of stocks of values.

5. *"Society attempts at self-perpetuation* (empirical generalization established by induction); *recovery of expended resources, by means of the administrative process within a certain time frame, is necessary* (empirical generalization established by induction); *money is the basic resource organizing factor in a money economy* (given). *Hence, recovery of money invested is imperative* (deduction) [Salvary 1989,58].

6. For example, see Churchman [1961,66;1959,89] who raises some interesting questions on accounting measurement.
7. For a complete philosophical development of the "fallacy of division" and the "fallacy of composition," see Carney and Sheer [1974,52-53].

8. Greenberg, et al. [1978,241] share a similar view that the market value of a firm's equity shares is independent of the firm's money commitment.

REFERENCES

Abbott, David. Ed. *Astronomers.* New York: Peter Bedrick Books, 1984.

Anthony, Robert N. "We don't have the accounting concepts we need." *Harvard Business Review* (Jan.-February 1987): 75-83.

Arrow, Kenneth J. *The Limits of Organization.* New York: W.W. Norton & Co. Inc., 1974.

_____. "The Organization of Economic Activity: Issues Pertinent to the Choice of Market Versus Nonmarket Allocation." *The Analysis and Evaluation of Public Expenditure: The PPB System,* Vol.1. U.S. Joint Economic Committee, 91st Congress, 1st session. Washington, D.C.: U.S. Government Printing Office, 1969.

Aivazian, V.A. and Berkowitz, M. K. "Ex Post Production Flexibility, Asset Specificity, and Financial Structure." *Journal of Accounting Auditing & Finance* 13-1 (Winter 1998): 1-20.

Bardhan, Pranab and Roemer, John E. "Market Socialism: A Case for Rejuvenation." *Journal of Economic Perspectives* 6-3 (Summer 1992):101-116.

Bartov, Eli and Bodnar, G. M. "Alternative Accounting Methods, Information Asymmetry and Liquidity: Theory and Evidence." *Accounting Review* 71-3 (July 1996): 397-418.

Bhusan, Ravi. "An informational efficiency perspective on the post-earnings announcement drift." *Journal of Accounting and Economics* 18-1 (July 1994): 45-65.

Boulding, Kenneth E. *A Reconstruction of Economics.* New York: John Wiley. London: Chapman & Hall, Ltd., 1950.

Bowen, R. M.; DuCharme, L.; and Shores, D. "Stakeholders' implicit claims and accounting method choice." *Journal of Accounting and Economics* 20 (December 1995): 255-295.

Carlton, D. W. "The Rigidity of Prices," *American Economic Review* 76-4 (1986): 637-658.

Carney, James D. and Sheer, Richard K. *Fundamentals of Logic.* Second Edition New York: Macmillan Publishing Co., 1974.

Chambers, Raymond J. "Wanted: Foundations of Accounting Measurement." *Abacus* 34-1 (March 1998): 36-47.

_____. "Ends, Ways, Means and Conceptual Frameworks." *Abacus* 32-2 (September 1996): 119-132.

_____. *Accounting, Evaluation and Economic Behavior.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966.

Chandler, Alfred D. Jr. "What is a Firm? A Historical Perspective," *European Economic Review* (April 1992).

Churchman, C. West. *Prediction and Optimal Decision: Philosophical Issues of a Science of Values.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1961.

_____. "Why Measure." *Measurement: Definitions and Theories.* Edited by C. W. Churchman and P. Ratoosh. New York: John Wiley & Sons, Inc., 1959.

Coase, R. H. "The Nature of the Firm." *Economica* (Nov. 1937).

Evans, John H. III and Sridhar, Sri S. "Multiple Control Systems, Accrual Accounting, Earnings Management." *Journal of Accounting Research* 34-1 (Spring 1996).

Financial Accounting Standards Board. *Statement of Financial Accounting Concepts* 5: *Recognition and Measurement in Financial Statements of Business Enterprises* Stamford, Connecticut: Financial Accounting Standards Board, 1984.

_____. *Statement of Financial Accounting Concepts No. 2: Qualitative Characteristics of Accounting Information.* Stamford: FASB, May 1980.

Finocchiario, Maurice A. *The Galileo Affair: A Documentary History.* Berkeley; London: University of California Press, 1989.

Georgescu-Roegen, Nicholas. *The Entropy Law and the Economic Process.* Cambridge, Mass.: Harvard University Press, 1971.

Greenberg, E.; Marshall, W. 1.; and Yawitz, 1. "The Technology of Risk and Return," *American Economic Review* (June 1978):241.

Hubbard, R. G. "Capital-Market Imperfections and Investment." *Journal of Economic Literature* (March 1998): 193-225.

Hurd, D. L. and Kipling, J. J. Eds. *The Origins and Growth of Physical Science.* Vol.!. Middlesex, England: Penguin, 1964.

Ijiri, Yuji. *The Foundations of Accounting Measurement: A Mathematical, Economic and Behavioral Enquiry.* Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1967.

Illingworth, Valerie. Editor. *The Facts on File Dictionary of Astronomy.* Second Edition. New York; Oxford, England: Facts on File Publications, 1985.

JofA. "Derivatives: Time to Take Sides." Journal of Accountancy (April, 1998a): 13.

_____. "Senate Takes Steps to Rein in FASB." Journal of Accountancy (February 1998b): 13-15.

Knutson, Peter H. and Napolitano, Gabrielle U. "Criteria Employed by the AIMR Financial Accounting Policy Committee in Evaluating Financial Accounting Standards." *Accounting Horizons* 12-2 (June 1998): 170-176

Kuhn, Thomas S. *The Copernican Revolution: Planetary Astronomy in the Development of Western Thought.* Cambridge: Harvard University Press, 1957.

Laidler, D. E. W. *Essays on Money and Inflation.* Chicago: University of Chicago Press. Manchester: Manchester University Press, 1975.

Lambert, Maurice. "La naissance de la bureaucratie," *Revue Historique* CCXXIV (1960).

Lamond, Elizabeth. *Walter of Henley's Husbandry Together with An Anonymous Husbandry, Seneschaucie and Robert Grosseteste's Rules.* London: Longmans, Green, 1890.

Leibenstein, Harvey. *Beyond Economic Man: A New Foundation for Microeconomics.* Cambridge, Massachussetts; London, England: Harvard University Press, 1976.

Levitt, Arthur. "The Importance of High Quality Standards," *Accounting Horizons* 12-1 (March 1998): 79-82.

McMullin, Ernan. *Galileo: Man of Science.* New York: Basic Books, Inc., 1967.

McNeill, William H. *The Rise of the West: A History of the Human Community.* Chicago: University of Chicago Press, 1963.

Melville, Lewis. *The South Sea Bubble.* Boston: Small Maynard & Co. Publishers, 1923.

Moore, Patrick. *Patrick Moore's History of Astronomy.* Sixth Revised Edition. London; Sydney: Macdonald & Co., 1983.

Penman, Stephen H. and Sougiannis, Theodore. "The Dividend Displacement Property and the Substitution of Anticipated Earnings for Dividends in Equity Valuation." *Accounting Review* 72-1 (January 1997): pp. 1-21

Phillips, Herbert E. and Ritchie, John C. *Investment Analysis and Portfolio Selection.* New York: South-Western, 1983.

Popper, K.R. *Objective Knowledge: An Evolutionary Approach.* Oxford: Clarendon Press, 1972.

Salvary, Stanley C. W. "The Accounting Variable and Stock Price Determination." *Studies in Economics and Finance 18-2* (Spring 1998a): 1-26.

_____. "Accounting and Financial Reporting in A Changing Environment: Historical and Theoretical Perspectives." *Essays in Economic and Business History* XVI (1998b): 307-329.

_____. "Science, Economics, and Society: The Issue of Epistemological Relevance, Ideological Dominance, and the Concept of Fairness." *Contemporary Political Economy 1-1* (January 1998c).

_____. "Monetary Policy and Not Monetary Control: A Rethinking. " *Journal of Applied Business Research 14-1* (Winter 1997/1998): 91-106.

_____. "On Financial Accounting Measurement: A Reconsideration of SFAC 5 by the FASB is Needed." *Journal of Applied Business Research* 13-3 (Summer 1997): 89-103.

_____. "Some Conceptions and Mis-conceptions On Reality and Assumptions In Financial Accounting." *Journal of Applied Business Research* 13-1 (Winter 1996/1997): 69-81.

_____. "On the Historical Validity of Nominal Money as a Measure of Organizational Performance: Some Evidence and Logical Analysis." *Essays in Economic and Business History* XI (1993): 153-177.

_____. "Recoverable Cost: The Basis of a Descriptive Theory of Financial Accounting Measurement," *Accounting Enquiries* 1-2 (February 1992): 233-273.

_____. "Business Fluctuations and Financial Accounting Measurement: Historical Comments," *Essays in Business and Economic History* VIII (1990): 217-

_____. *An Analytical Framework for Accounting Theory.* McQueen Accounting Monograph Series, Volume 5. Fayetteville, Arkansas: University of Arkansas, 1989.

_____. *Accounting: A Library of Quantifications.* McQueen Accounting Monograph Series, Volume 1. Fayetteville, Arkansas: University of Arkansas, 1985.

_____. "An Historical Perspective of the Accounting Environment: A General Outline of a Western European and North American Linkage." *Academy of Accounting Historians Working Paper #50 (1981).*

_____. "Tracing the Development of a Conceptual Framework of Accounting - A Western European and North American Linkage: A Partial Examination. " *Academy of Accounting Historians Working Paper #40 (1979).*

Schmandt-Besserat, D. "From Accounting to Written Language: The Role of Abstract Counting in the Invention of Writing," *The Social Construction of Written Communication.* Ed. B.A. Rafoth & D.L. Rubin. Norwood, N.J.: Ablex Publishing, 1988.

_____. "The Origins of Writing - An Archaeologist's Perspective." *Written Communication* 3-1, (January 1986).

Scott, DR *The Cultural Significance of Accounts.* New York: H. Holt, 1931. Reprint. Lawrence, Kansas: Scholars Book, 1973.

Scott, W.R. *Financial Accounting Theory.* Upper Saddle River, New Jersey:Prentice-Hall, 1997.

Simon, Herbert A. "Organizations and Markets," *Journal of Economic Perspectives* 5-2 (Spring 1991): 25-44.

Smith, John T. "Responding to F ASB Standard-Setting Proposals." *Accounting Horizons* 12-2 (June 1998): 163-169.

Special Committee. *Improving Business Reporting - A Customer Focus: Meeting the Information Needs of Investors and Creditors.* American Institute of Certified Public Accountants, 1994.

Sterling, Robert R. "On Common Sense and Uncommon Nonsense." *Accounting Enquiries* 1-1 (August 1991): 36-67.

_____. *Toward A Science of Accounting.* Houston, Texas. Scholars Book Co., 1979.

_____. *Theory of the Measurement of Enterprise Income.* Lawrence; Manhattan; Wichita; London: University of Kansas Press, 1970.

Williamson, Oliver E. "The Modern Corporation: Origins, Evolution, Attributes, " *Journal of Economic Literature* (December 1981).