An Introduction to Accounting Theory

After reading this chapter, you should be able to:

- Understand the meaning of accounting theory and why it is an important topic.
- Understand the relationship between accounting theory and policy making.
- Understand what measurement is and its role in accounting.
- Gain insight into the principal valuation systems in accounting.

Accounting is frequently viewed as a dry, cold, and highly analytical discipline with very precise answers that are either correct or incorrect. Nothing could be further from the truth. To take a simple example, assume two enterprises that are otherwise similar are valuing their inventory and cost of goods sold using different accounting methods. Firm *A* selects LIFO (last-in, first-out) and Firm *B* selects FIFO (first-in, first-out), giving totally different but equally correct answers.

However, one might say that a choice among inventory methods is merely an "accounting construct": the kinds of "games" accountants play that are solely of interest to them but have nothing to do with the "real world." Once again this is totally incorrect. The LIFO versus FIFO argument has important income tax ramifications in the United States, resulting—under LIFO—in a more rapid write-off of current inventory costs against

revenues (assuming rising inventory prices), which generally means lower income taxes. Thus an accounting construct has an important "social reality": how much income tax is paid.[1]

Income tax payments are not the only social reality that accounting numbers affect. Here are some other examples:

1. Income numbers can be instrumental in evaluating the performance of management, which can affect salaries and bonuses and even whether individual management members retain their jobs.

2. Income numbers and various balance sheet ratios can affect dividend payments.

3. Income numbers and balance sheet ratios can affect the firm's credit standing and, therefore, the cost of capital.

4. Different income numbers might affect the price of the firm's stock if the stock is publicly traded and the market cannot "see through" the accounting methods that have been used.

Since accounting numbers can have important social consequences, why is it that we cannot always measure "economic reality" accurately? Different perceptions exist of economic reality. For example, on the one hand, we may say that the value of an asset is equal to the amount paid for it in markets in which the asset is ordinarily acquired, or, on the other hand, some may see an asset's value represented by the amount the firm can acquire by selling the asset. These two values are not the same. The former value is called *replacement cost* or *entry value,* and the latter is called *exit value* (these are not the only possible value choices). Both values are discussed in the appendix to this chapter and in Chapter 14. Exit values are usually lower than entry values because the owning enterprise does not generally have the same access to buyers as firms that regularly sell the asset through ordinary channels. Hence, there is a valuation choice between exit and entry values. Suppose, however, that we take the position that both of these valuations have merit but they are not easy to measure because market quotations are not available and users may not understand what these valuations mean. Hence, a third choice may arise: historical cost. While entry and exit values represent some form of economic reality, the unreliability of the measurements may lead some people to opt for historical cost on the grounds that users understand it better than the other two approaches and measurement of the historical cost number may be more reliable.

The question we have just been examining, the choice among accounting values, including historical cost, falls within the realm of accounting

theory. There are, however, other issues that arise in this example, both implicit and explicit:

1. For what purposes do users need the numbers (e.g., evaluating management's performance, evaluating various aspects of the firm's credit standing, or even using the accounting numbers as an input for predicting how well the enterprise will do in the future)?[2]

2. How costly will it be to generate the desired measurement?

The choice among the different types of values, as well as the related issues, falls within the domain of accounting theory. The term *accounting theory* is actually quite mysterious. There are many definitions throughout the accounting literature of this somewhat elusive term. *Accounting theory* is defined here as the basic assumptions, definitions, principles, and concepts—and how we derive them—that underlie accounting rule making by a legislative body. Accounting theory also includes the reporting of accounting and financial information. There has been and will continue to be extensive discussion and argumentation as to what these basic assumptions, definitions, principles, and concepts should be; thus, accounting theory is never a final and finished product. Dialogue always continues, particularly as new issues and problems arise. As the term is used here, it applies to financial accounting and not to managerial or governmental accounting. *Financial accounting* refers to accounting information that is used by investors, creditors, and other outside parties for analyzing management performance and decision-making purposes.[3]

We interpret the definition of accounting theory broadly. Clearly, the drafting of a conceptual framework that is supposed to provide underlying guidance for the making of accounting rules falls within the coverage of accounting theory. Analyzing accounting rules to see how they conform to a conceptual framework or other guiding principles likewise falls within the accounting theory realm. While the actual practice of accounting is generally of less theoretical interest, questions such as why firms choose particular methods when choice exists (the LIFO versus FIFO question, for example) *are* of theoretical interest because we want to know the reasons underlying the choice. In a pragmatic sense, one can say that accounting theory is concerned with improving financial accounting and statement presentation, although, because their interests are not exactly the same, conflict may exist between managers and investors, and among other groups, relative to the issue of what improves financial stateme.

We can also examine the types of topics, issues, and approaches discussed as part of accounting theory. In addition to conceptual frameworks

and accounting legislation, accounting theory includes concepts (e.g., realization and objectivity), valuation approaches (discussed in Appendix 1-A), and hypotheses and theories. Hypotheses and theories are based on a more formalized method of investigation and analysis of subject matter used in academic disciplines such as economics and other social sciences employing research methods from philosophy, mathematics, and statistics. This newer and more formal approach to the development of accounting theory is a relatively recent innovation in our field and permeates much of the current accounting research. Researchers are attempting to analyze accounting data to explain or predict phenomena related to accounting, such as how users employ accounting information or how preparers choose among accounting methods.[4]

Formalized analyses and investigation of accounting data are discussed in Chapter 2. The results of the research process are published in books and journals (academic and professional) devoted to advancing knowledge of financial accounting as well as other branches of accounting, such as cost and management accounting, auditing, taxes, and systems. Various facets of accounting theory are discussed throughout this book.

We begin by briefly examining the relationship between accounting theory and the institutional structure of accounting. One of the objectives of this book is to assess the influence of accounting theory on the rule-making process. Hence, the approach adopted here is concerned with the linkages (and often the lack thereof) between accounting theory and the institutions charged with promulgating the rules intended to improve accounting practice. Closely related to accounting theory is the process of measurement. Measurement is the assignment of numbers to properties or characteristics of objects. Measurement and how it applies to accounting are introduced in this chapter and appear throughout the text. The appendix to the chapter briefly illustrates the principal valuation approaches to accounting. These valuation methods are concerned with the measurement of economic phenomena. They are discussed in more depth in Chapter 14, but they are also referred to in the intervening chapters on accounting theory.

Accounting Theory and Policy Making

The relationship between accounting theory and the standard-setting process must be understood within its wider context, as shown in Exhibit 1.1. We caution that Exhibit 1.1 is extremely simplistic. Economic conditions have an impact on both political factors and accounting theory. Political factors, in turn, also have an effect on accounting theory. For example, after the

Statement of Financial Accounting Standards (SFAS) No. 96 on income tax allocation appeared in 1987, several journal articles as well as corporate preparers of financial statements severely criticized it. Eventually, political factors (see the following discussion regarding the costliness and difficulty of implementing SFAS No. 96) led to its replacement by SFAS No. 109. Despite its simplicity, Exhibit 1.1 is a good starting point for bringing out how ideas and conditions eventually coalesce into policy-making decisions that shape financial reporting.

Bodies such as the Financial Accounting Standards Board (FASB) and the Securities and Exchange Commission (SEC), which are charged with making financial accounting rules, perform a policy function. This policy function is also called *standard setting* or *rule making* and specifically refers to the process of arriving at the pronouncements issued by the FASB, the SEC, or the International Accounting Standards Board (IASB). The inputs to the policy-making function come from three main (although not necessarily equal) sources: economic factors, political factors, and accounting theory.

Exhibit 1.1   The Financial Accounting Environment
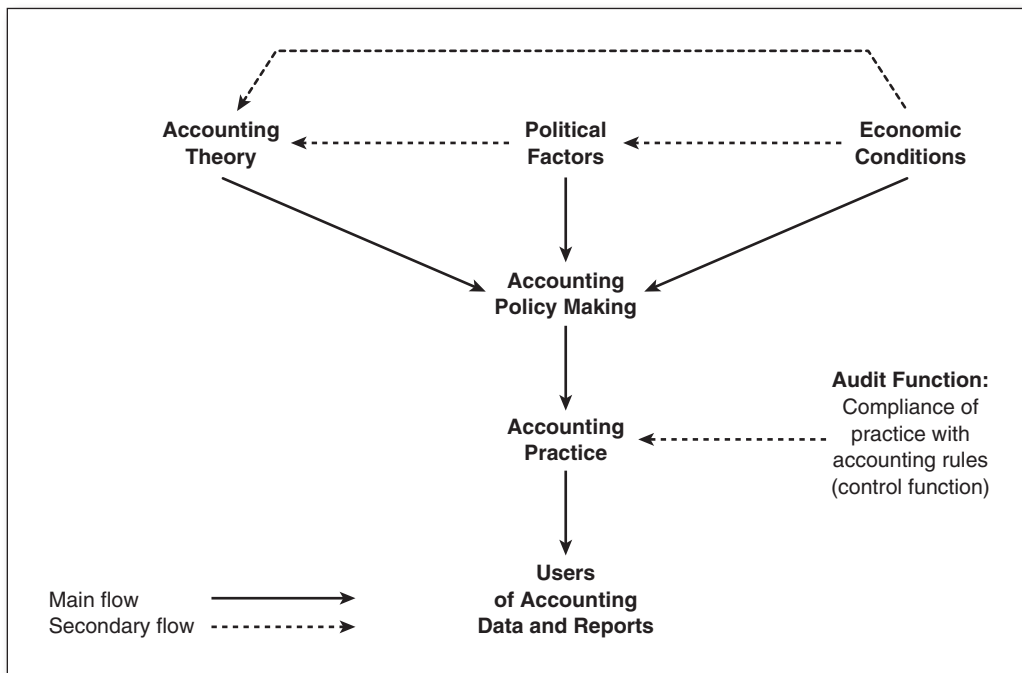
The best example of an economic factor is the steep inflation of the 1970s in the United States, which was undoubtedly the catalyst that led the FASB to force the disclosure of information concerning price changes, and is a classic example of an *economic condition* that impinged on policy making. Another example of an economic factor is the acceleration of mergers and acquisitions.

The term *political factors* refers to the effect on policy making of those who are subject to the resulting rules or regulations. Included in this category are auditors, who are responsible for assessing whether the rules have been followed; preparers of financial statements, represented by organizations such as Financial Executives International (FEI); and investors, represented by organizations such as the CFA Institute and the public itself, who might be represented by governmental groups such as Congress, or by departments or agencies of the executive branch of government, such as the Securities and Exchange Commission (SEC).[5]

In addition, the management of major firms and industry trade associations are important political components of the policy-making process. Although it has been important to give voice to those who are affected by accounting rule making, it should be remembered that political factors can subvert the standard-setting process. One example of this is the *special purpose entity* (SPE). SPEs, as the name implies, are arrangements whereby the firm and an outside equity investor jointly own an entity that basically may be a shell enterprise. SPEs allow firms to "park" liabilities on the SPE's balance sheet if the outside equity investor owns as little as 3% of the SPE. Leaving the liability off its own balance sheet improves the firm's debt–equity ratio and, in general, gives the firm's balance sheet what we might call a "facelift." The FASB's initial attempt to solve the SPE problem failed because of political interference by the then Big Five public accounting firms. However, due to public pressure resulting from the Enron debacle, the FASB began to readdress this problem (see Chapter 18).

Accounting theory is developed and refined by the process of accounting research. Accounting professors are the primary producers of accounting research, but many individuals from policy-making organizations, public accounting firms, and private industry also play an important role in the research process.

Standards and other pronouncements of policy-making organizations are interpreted and put into practice at the organizational level. Hence, the output of the policy level is implemented at the accounting practice level. Of course we have now entered an era when failures of large publicly traded companies (e.g., Enron, WorldCom, Lehman Brothers Holdings) are going to have a significant impact on financial accounting standards, auditing rules, and institutional structures of organizations such as the FASB and the SEC.[6] Many of these issues are discussed in Chapters 3, 12, and 17.

Users consist of many groups and include actual and potential shareholders and creditors as well as the public at large. It is important to remember that users not only employ financial statements and reporting in making decisions, but they are also affected by the policy-making function and its implementation at the accounting practice level.

All facets of the accounting theory and policy environment are important and are considered in this book. Our principal focus is on that part of the track running between accounting theory and the accounting policy function.

The Role of Measurement in Accounting

Measurement is an important aspect of accounting theory. Larson views measurement separately from theory owing to the technicalities and procedures of the measurement process itself.[7] However, the process of measurement is so integral to accounting theory that it cannot easily be separated from it.

Measurement is defined as the assignment of numbers to the attributes or properties of objects being measured, which is exactly what accountants do. Objects themselves have numerous attributes or properties. For example, assume a manufacturing firm owns a lathe. The lathe has properties such as length, width, height, and weight. If we eliminate purely physical attributes (because accounting measures are made in monetary units), there are still several others to which values could be assigned. These would include historical cost, replacement cost of the lathe in its present condition, selling price (exit value) of the lathe in its present condition, and present value of the future cash flows that the lathe helps to generate. Attributes or properties are particular characteristics of objects that we measure. It should be clear that we do not measure objects themselves but rather something that might be termed the dollar "numerosity" or "how-muchness" that relates to a particular attribute of the object.

Direct and Indirect Measurements

If the number assigned to an object is an actual measurement of the desired property, it is called a *direct measurement*. However, this does not necessarily mean that it is accurate. An *indirect measurement* of a desired attribute is one that is made by roundabout means. For example, assume that we want to measure the replacement cost of ending inventory for a retail concern. If the inventory is commonly sold, we could determine the replacement cost of the inventory by multiplying the current wholesale price per unit for each inventory type by the quantity held and adding these amounts for all inventory types. This is a direct measurement. Assume that

our retail establishment has a silver fox coat in its inventory, a type of coat no longer commonly fashionable because of societal changes (animal rights activism, for example). Assume the coat originally cost the firm $1,000 when acquired, and we estimate that today it can be sold for only $600. If the normal markup for fur coats is 20% on cost, we can estimate the replacement cost to be $500 ($600 ÷ 1.2 = $500). This is an indirect measurement. Direct measures are usually preferable to indirect measures.

Assessment and Prediction Measures

Another way of categorizing measurements is to classify them as assessment or prediction measures. Assessment measures are concerned with particular attributes of objects. They are either direct or indirect. Prediction measures, on the other hand, are concerned with factors that may be indicative of conditions in the future.[8] Hence, there is a functional relationship between the predictor (prediction measure) and the future condition. For example, income of a present period might be used as a predictor of dividends for the following period. By the same token, income is basically an assessment measure because it indicates how well the firm did during the period. Another example of an assessment measure involves marketable securities carried at market value. The measurement assesses how much cash is generated if the securities are sold.

The Measurement Process

Several elements are brought together in the measurement process. Even when a direct assessment measure is used, that does not mean there is only one absolutely correct measure. A simple measure of this type, such as a count of cash, depends on several factors:

- The object itself
- The attribute being measured
- The measurer
- Counting or enumerating operations
- Instruments available for the measuring task
- Constraints affecting the measurer

Objects themselves and their attributes differ vastly in type and complexity. How much cash does a small retail firm have? What is the size of the grape harvest in the Napa Valley during the current year? How many cubic inches of topsoil did Iowa lose in 2012? The measurers themselves can have different qualifications. An ambitious junior accountant and a clerk who is

somewhat shaky in arithmetic and not overly concerned about the job can bring markedly different talents to a measuring task. Counting and enumerating operations vary from simple arithmetic in a cash count to statistical sampling in inventory valuation. Instruments used by the measurer can include everything from a personal computer to a hand calculator to pencil and paper, and the most obvious constraint is time. Clearly, even a direct assessment measure is not as simple an undertaking as might first be thought.

Types of Measurements

Nominal Scale

The relationship between the measuring system itself and the attributes of the objects being measured determines the type of measurement.[9] The simplest type of measuring system is the nominal scale. A nominal scale is nothing more than a basic classification system, a system of names. Assume that all the students at a university come from Massachusetts, Connecticut, or Rhode Island. If we wish to classify students by state, a one (1) might be assigned to Massachusetts students, a two (2) to those from Connecticut, and a three (3) to Rhode Islanders. In this example, the numbering system serves no other purpose than to classify by state. The same purpose could be achieved by the assignment of a different number for the state of origination—as long as the assignment of numbers to students is done consistently in accordance with the new nominal scale. A chart of accounts provides a good example of nominal classification in accounting.

Ordinal Scale

Next in the order of measurement rigor is the ordinal scale. Numerals assigned in ordinal rankings indicate an order of preference. However, the degree of preference among ranks is not necessarily the same. Assume that three candidates are running for office. A voter's ranking might be Abel first, Baker second, and Charles third. However, the voter may see a virtual toss-up between Abel and Baker, either of whom is vastly preferable to Charles. In accounting, current assets and current liabilities are listed in the order of liquidity in the balance sheet, which is an ordinal ranking.

Interval Scale

In interval scales, unlike ordinal rankings, the change in the attribute measured among assigned numbers must be equal. The Fahrenheit temperature scale is an example. The increase in warmth from 9° to 10° is the same as that from 19° to 20° or any other increase in temperature of 1°.

Ratio Scale

Like the interval scale, the ratio scale assigns equal value to the intervals between assigned numbers, but it also has an additional feature. In the ratio scale, the zero point must have a unique quality. In the Fahrenheit scale, for example, it does *not*. The zero point on a Fahrenheit thermometer does not imply absence of temperature. Therefore, we cannot say that 8° is twice as warm as 4°; furthermore, 8° divided by 4° is not "equal" to 16° divided by 8°. Using a ratio scale type of measurement in accounting is at least possible because the zero point implies nothingness in terms of dollar amounts. Thus, in accounting, both $100,000 of current assets divided by $50,000 of current liabilities and $200,000 of current assets divided by $100,000 of current liabilities indicate twice as much current assets as current liabilities. This is possible only because of the uniqueness of the zero point in accounting.

Quality of Measurements

In attempting to analyze the worth of a measure, several qualities might be considered. Since measurers and their skills, tools, and measuring techniques are so important, we might consider agreement among measurers, in the statistical sense, as one criterion.

Intuitively, it is very appealing to users if they know that the numbers are the same no matter which accountant prepared them. This is exactly the way Ijiri and Jaedicke view *objectivity.* They define it as the degree of consensus among measurers in situations in which a given group of measurers having similar instruments and constraints measure the same attribute of a given object.[10] Objectivity is then defined as

$$V = \frac{1}{N} \sum_{i=1}^{n} (x_i - \bar{x})^2 \tag{1.1}$$

where

n = the number of measurers in the group

x_i = measurement of the ith measurer

$\bar{x}$ = mean of all x_i for all measurers involved

In Equation 1.1, Ijiri and Jaedicke have used the statistical measure of variance as a means of quantifying the degree of agreement among measurers. The closer each x_i is to $\bar{x}$, the more objective is the measure and the smaller V will be. A comparison among competing measures in terms of objectivity could thus be made by comparing the Vs in controlled experiments.[11]

In the case of prediction measures, an obvious criterion is how well the task of prediction is accomplished. Assume that users of accounting data for a particular firm presume that dividends are equal to 50% of the income of the preceding period. This can be stated as

$$D_{j2} = (0.50I_{j1}) \tag{1.2}$$

where

D_{j2} = dividends of firm j for period 2

I_{j1} = income of firm j for period 1

Very often the predictor—the right-hand term in Equation 1.2—cannot be known because users are diverse and make predictions in vastly different ways. In these cases, how well the prediction is accomplished cannot be quantified. Where it can be, a measure of predictive ability—called *bias* by Ijiri and Jaedicke—can be determined by the following equation:

$$B = (\bar{x} - x^*)^2 \tag{1.3}$$

where

x^* = the value the predictor should have been, given the actual value of what was predicted and the predictive model—such as Equation 1.2—of users

While objectivity (verifiability) and bias (usefulness) have been formally demonstrated here, a standard-setting agency such as the Financial Accounting Standards Board (FASB) has to cope with these issues and the related trade-offs between them.[12] For example, in SFAS No. 87 the FASB switched from basing pension expense on current salaries to future salaries. Part of the reasoning underlying the change was that predictions of cash flows would be enhanced (usefulness) by using future salaries even though the previous method of basing pension expense on current salaries is more objective. Trade-offs of this type arise quite frequently for standard setters.

Two other qualities that are pertinent to both assessment and prediction measures are timeliness and the cost constraint.[13] In terms of financial accounting, timeliness means that financial statement data—which are aggregations of many measurements—should be up-to-date and ready for quarterly announcements of earnings as well as for annual published financial statement purposes and SEC filings if the firm's stock is publicly traded (the 10-K and 10-Q requirements of the SEC). Oftentimes, the need for information on a timely basis may conflict with the cost constraint problem.

It is easy to lose sight of the fact that data are costly to produce. Many costs (e.g., computer information systems and accounting staffs) are fixed. More precise or accurate measurements, as well as more timely measures, involve expending additional resources. Timeliness and costliness must be considered in the policy-setting process, if not in theory formulation.

We will be referring again to problems of measurement throughout this text; however, we must make one immediate observation. Many of the measurements in traditional financial accounting are of neither the assessment nor the prediction variety. Historical cost depreciation and LIFO inventory valuations are numbers that admittedly do not represent any real attributes. Whether these are really measurements is not the primary issue. The important question is whether measurements made by totally arbitrary methods are useful for users.

Sterling refers to methods such as LIFO and FIFO as calculations rather than measurements if they do not correspond—that is, attempt to simulate or come as close as possible—to the measurement of real phenomena or attributes.[14] For example, LIFO and FIFO measures of cost of goods sold and inventories are simply cost flow calculations, which are concerned with dividing or allocating historical costs between asset and expense categories. They are not concerned with the measurement of such real economic phenomena as the replacement cost of the ending inventory and the inventory that has been sold. The distinction between measurements and calculations is important and should be kept in mind throughout this book.

Plan of This Book

After this relatively brief introduction to accounting theory, we view in Chapter 2 the relation between accounting theory and accounting research. As discussed in Chapter 3, the institutional history of the accounting standard-setting bodies in the United States includes current developments. Chapter 4 completes the first part of the text by discussing why standard setting in accounting by an outside body is necessary as opposed to a *laissez-faire* situation in which companies make their own accounting rules subject to the possible policing by the securities and capital markets.

Chapters 5, 6, and 7 are concerned with underlying theoretical approaches to standard setting. Chapter 5 discusses the first real attempt by a standard-setting body to employ a theoretical approach to accounting rule making, an attempt that failed but nevertheless provided an important learning experience for accounting regulation. Chapter 6 discusses the search for the objectives of the standard-setting process. Finally, the culmination of the theoretical search, the conceptual framework of the FASB, is discussed in Chapter 7.

In Chapter 8, we discuss the usefulness of accounting information to investors and creditors. Chapter 9 concentrates on two very important

theoretical considerations: (1) how much uniformity should be applied to booking similar transactions by different enterprises and (2) utilizing disclosure in financial statements. Important issues of international accounting, including convergence between FASB and International Financial Reporting Standards (IFRSs), are discussed in Chapter 10. Thereafter, specific IFRSs are discussed in the appropriate chapters.

Chapters 11, 12, and 13 cover the three major financial statements: balance sheet, income statement, and statement of cash flows. Chapter 14 discusses theoretical approaches to accounting for changing prices, including the new standard on fair value measurement, SFAS No. 157.

Chapters 15 through 18 cover specific transaction areas within accounting. Chapter 15 is concerned with income tax allocation; Chapter 16 with pensions and other postretirement benefits; Chapter 17 with leases; and Chapter 18 with intercorporate equity investments. In these chapters and the preceding three chapters on financial statements, we attempt to apply, wherever possible, theoretical criteria discussed in the first part of the book. Also, we conclude appropriate chapters with a short section called Improving Accounting Standards. These are brief summations of ways to improve transparency and disclosure in financial statements. By *transparency* we mean attempts to apply what have been called *accounting principles* as opposed to *accounting rules.* Accounting principles refer to consistent theoretical approaches in various transaction areas, as opposed to accounting rules, which are often quite involved and are intended to allow enterprises to avoid the real economic substance of these transactions.

Summary

While accounting theory has many definitions, it is defined here as the basic rules, definitions, principles, and concepts that underlie the drafting of accounting standards and how they are derived. We also include appropriate hypotheses and theories. From a pragmatic standpoint, the purpose of accounting theory is to improve financial accounting and reporting.

The relationship between accounting theory and policy making (the establishment of rules and standards) shows accounting theory to be one of the three major inputs into the standard-setting process, the others being political factors and economic conditions. There are numerous and complex interrelationships among these three inputs, but Exhibit 1.1 graphically provides a useful basic understanding of the process.

In our discussion, we view measurement as an integral part of accounting theory. Accounting theory is ultimately concerned with what information users need, whereas measurement is involved with what is being

measured and how it is being measured. The latter obviously has an important effect on the former. As a result, there are often trade-offs between verifiability and the usefulness of the numbers being generated by the measurement process. The costliness and timeliness of the information are other important considerations underlying the measurement process.

There are four types of measurements: nominal, ordinal, interval, and ratio scale. Accounting has the potential to be in the ratio scale category. Meaningful comparisons may thus be made among similar accounting measurements for different firms. However, many so-called measurements in accounting are simply calculations in which no meaningful attempt is made to make them correspond to real economic phenomena.

Appendix 1-A briefly illustrates and discusses the principal valuation approaches to accounting. These include historical costs, general price level, exit- and entry-value models of current value accounting, and discounted cash flows.

APPENDIX 1-A: VALUATION SYSTEMS

Over the years, many debates in accounting have centered on the issue of valuation of accounts appearing in the balance sheet and income statement. We believe that many other theoretical issues should precede any attempt to come to grips with this valuation question. However, a basic familiarity with valuation systems enriches the theoretical discussion in this chapter and lays the groundwork for later chapters. Consequently, an extremely simple example is used to illustrate five valuation systems that have been extensively discussed in the literature. Using a simple example is a way to make clear the assumptions and workings of the valuation methods while holding aside, for the moment, many difficult problems that surface later. The main aspects of each system are discussed and critiqued here.

Much more is discussed in Chapter 14 on issues of valuation. Let it be said, however, that even though inflation, at the time of writing, is not particularly excessive—although it is always a concern—we are in the midst of industry ferment in which we are moving from historical costing to more value-oriented approaches.

The Simple Company

1. Simple Company was formed on December 30, 2005, by stockholders who invested a total of $90,000 in cash.

2. The owners operate the company and receive no salary for their services.

3. On December 31, 2005, the owners acquired for $90,000, cash, and a machine that provides a service that customers pay for using cash.

4. The machine has a life of three years with no salvage value.

5. All services provided by this machine occur on the last day of the year.

6. No other assets are needed to run the business, nor are there any other expenses aside from depreciation.

7. Dividends declared equal income for the year.

8. The remaining cash is kept in a checking account that does not earn interest.

9. The general price index stands at 100 on December 31, 2005. It goes up to 105 on January 1, 2007, and 110 on January 1, 2008.

10. Budgeted revenues and actual revenues are the same. They are $33,000 for 2006, $36,302 for 2007, and $39,931 for 2008.

11. Replacement cost for a new asset of the same type increases to $96,000 on January 1, 2007, and $105,000 on January 1, 2008.

12. Net realizable value of the asset is $58,000 on December 31, 2006, and $31,000 on December 31, 2007. It has no value on December 31, 2008.

13. Simple Company is dissolved on December 31, 2008. All cash is distributed among the owners.

14. There are no income taxes.

The balance sheet for Simple Company after acquiring its fixed asset is shown in Exhibit 1.2.

Exhibit 1.2	Simple Company Balance Sheet

Balance Sheet December 31, 2005

Fixed assets	$90,000	Capital stock	$90,000

Valuation Approaches to Accounting for the Simple Company

Historical Cost

Throughout the financial history of the United States, historical costing has been the orthodoxy in published financial statements. But severe inflationary periods in this country as well as in many other nations of the industrial and

third worlds have led to an extensive search for a viable alternative either to replace historical costing or to serve as a supplement to it. In a period of rising prices, attributes measured by historical costing methods generally have limited relevance to economic reality. The major exception to this is accounts that are either receivable or payable in cash during the short run, such as accounts receivable and payable, as well as cash.

The presumed saving graces of historical costing are that its valuation systems are both more objectively determinable and better understood than are competing valuation systems. However, the objectivity issue is by no means to be taken for granted. Even in our simple example, sum-of-the-years'-digits or fixed-percentage-of-declining-balance depreciation (among other methods) might have been selected to create a different balance sheet. In addition, factoring in estimated depreciable life and salvage could also produce different results. The understandability of historical costing is largely a function of familiarity. The introduction of new valuation methods obviously requires familiarizing users with their underlying assumptions and limitations.

Historical costing has also been defended as more suitable as a means for distributing income among capital providers, officers and employees, and taxation agencies because it is not based on hypothetical opportunity cost figures. Hence, the presumption is that there would be less conflict among competing groups over the distribution of income. However, this argument is by no means conclusive. As with depreciation, methods selected for income measurement can be easily disputed. Furthermore, opportunity cost valuations may be hypothetical in one sense, but they are surely far more indicative of economic valuation than are historical costs.

Exhibit 1.3 summarizes income statements and balance sheets under historical costing. Balance sheets on December 31, 2008, in Exhibits 1.3 through 1.7 are prior to final dissolution.

General Price-Level Adjustment

Financial statements based on historical costing combine dollars that were expended or received at different dates. For example, a balance sheet on December 31, 2000, would add together cash that is on hand at that date with the book value of a building that was acquired in, say, 1960. It is, of course, very well known that a 1960 dollar had considerably greater purchasing power than a 2000 dollar. Consequently, there is a very serious additivity problem under historical costing because dollars of different purchasing power are added to or subtracted from each other. The additivity issue is an aspect of measurement theory.

One possible response to this problem is general price-level adjustment. This refers to the purchasing power of the monetary unit relative to all goods and services in the economy. Obviously, the measurement of this

Exhibit 1.3	Simple Company

Income Statements—Historical Costs

	2006	**2007**	**2008**	**Total**
Revenues	$33,000	$36,302	$39,931	$109,233
Depreciation	30,000	30,000	30,000	90,000
Net income	$3,000	$6,302	$9,931	$19,233

Balance Sheet as of December 31

	2006	**2007**	**2008**
Cash	$30,000	$60,000	$90,000
Fixed asset (net)	60,000	30,000	
Total assets	$90,000	$90,000	$90,000
Capital stock	$90,000	$90,000	$90,000
Total equities	$90,000	$90,000	$90,000

phenomenon is a considerable task. Adjustment is accomplished by converting historical cost dollars by an index such as the Consumer Price Index compiled by the Department of Labor. This index is not really broad enough, as its name implies, to be a true general price index, but it has been advocated as a meaningful substitute.

Except for monetary assets and liabilities—every item receivable or payable in a specific and unalterable number of dollars as well as cash itself—all amounts in financial statements adjusted for price levels would be restated in terms of the general purchasing power of the dollar at a given date, either as of the financial statement date itself or the average purchasing power of the dollar during the current year. Assume, for example, that land was purchased on January 1, 1970, for $50,000 when the general price index stood at 120. On December 31, 2000— the balance sheet date—the general price index stands at 240. The transformation to bring forward the historical cost is accomplished in the following manner:

$$\$50,000\left(\frac{240}{120}\right) = \$100,000 \qquad (1.4)$$

Since it takes twice as many dollars to buy the same general group of goods and services in 2000 as in 1970, the general price-level adjusted cost of the land is, likewise, twice the historical cost.

Adjustments of this type restore the additivity of the dollar amounts on the 2000 statements. However, we must stress one very important point: In no way should the $100,000 figure be construed as the value of the land on December 31, 2000. The historical cost of the land has been merely brought forward or adjusted so that it is expressed in terms that are consistent with the purchasing power of 2000 dollars. Consequently, some individuals see price-level adjustment as a natural extension of the historical cost approach rather than as a separate valuation system.

Exhibit 1.4 shows income statements and balance sheets using general price-level adjustments. Footnotes to the income statements show the calculations for general price-level adjusted depreciation. Purchasing power loss on monetary items is an element that arises during inflation when holdings of monetary assets exceed monetary liabilities. Calculating the purchasing power loss is very similar to the adjustment for changing price levels. In the Simple Company case, the cash holding prior to the price-level change is multiplied by a fraction consisting of the general price-level index *after* change in the numerator divided by the general price-level index *before* change in the denominator. The unadjusted amount of cash is then deducted to arrive at the purchasing power loss.

Although a purchasing power loss is certainly real, it is totally different from other losses and expenses, which represent actual diminutions in the firm's assets of either an unproductive or productive nature. Purchasing power losses do not result in a decrease in monetary assets themselves but rather in a decline in their purchasing power when the general price-level index increases. Consistent with the will-o'-the-wisp nature of the loss, if an entry were booked, it would take the following form:

Purchasing Power Loss	XXX	
Retained Earnings		XXX

The direct effect in the accounts is thus negligible even though a very real type of loss has occurred. Calculations for purchasing power losses on monetary assets are shown below the income statements in Exhibit 1.4.

Current Value Systems

Current value, as the term implies, refers to attempts to assign to financial statement components numbers that correspond to some existing attribute of the elements being measured. There are two valuation systems that fall into the current value category: exit value (very similar to *net realizable value*) and replacement cost (also called *entry value*). As we shall see, entirely different purposes and philosophies underlie each system.

Exhibit 1.4	Simple Company

Income Statements–General Price-Level Adjustment

	2006	2007	2008	Total
Revenues	$33,000	$36,302	$39,931	$109,233
Depreciation[a, b]	30,000	31,500	33,000	94,500
Operating income	$3,000	$4,802	$6,931	$14,733
Purchasing power loss[c, d]	–	**1,500**	**3,000**	**4,500**
Net income	$3,000	$3,302	$3,931	$10,233

Balance Sheet as of December 31

	2006	2007	2008
Cash	$30,000	$63,000	$99,000
Fixed asset (net)	60,000	31,500	
Total assets	$90,000	$94,500	$99,000
Capital stock[e, f]	$90,000	$94,500	$99,000
Total equities	$90,000	$94,500	$99,000

a $\text{Depreciation}_{2007} = \$30,000 \times \dfrac{105}{100} = \$31,500$

b $\text{Depreciation}_{2008} = \$30,000 \times \dfrac{110}{100} = \$33,000$

c $\text{Purchasing power loss}_{2007} = \left(\$30,000 \times \dfrac{105}{100} \right) - \$30,000 = \$1,500$

d $\text{Purchasing power loss}_{2008} = \left(\$63,000 \times \dfrac{110}{105} \right) - \$63,000 = \$3,000$

e $\text{Capital stock}_{2007} = \$90,000 \times \dfrac{105}{100} = \$94,500$

f $\text{Capital stock}_{2008} = \$90,000 \times \dfrac{100}{100} = \$99,000$

Exit Valuation.

This approach is primarily oriented toward the balance sheet. Assets are valued at the net realizable amounts that the enterprise would expect to

obtain for them if they were disposed of in the normal course of operations rather than in a *bona fide* liquidation. Hence, the method is frequently referred to as a process of *orderly liquidation.*[15] Liabilities are similarly valued at the amounts it would take to pay them off as of the statement date. The income statement for the period is equal to the change in the net realizable value of the firm's net assets occurring during the period, excluding the effect of capital transactions. Expenses for such elements as depreciation represent the decline in net realizable value of fixed assets during the period.

The benefit of this system, as proponents of exit-value accounting see it, is the relevance of the information it provides. With this approach, the balance sheet becomes a huge statement of the net liquidity available to the enterprise in the ordinary course of operations. It thus portrays the firm's adaptability, or the ability to shift its presently existing resources into new opportunities. A point in the system's favor is that all of the measurements are additive because valuations are at the same time point for the balance sheet (and for the same period of time on the income statement) and measure the same attribute. But the principal criticism of exit valuation also involves the same question of relevance: How useful are net realizable value measurements for fixed assets if the firm intends to keep and utilize the great bulk of them for revenue production purposes in the foreseeable future? As will be seen in Chapter 14, a variant of the exit-value approach is used for fair value measurement purposes in SFAS No. 157.

Exhibit 1.5 shows exit-value income statements and balance sheets. As previously noted, depreciation amounts represent the decline in net realizable value of the fixed asset occurring during each period.

Replacement Cost, or Entry Value

As the name implies, this system uses current replacement cost valuations in financial statements. Both replacement cost and exit values are current market values. Replacement cost will usually be higher for two reasons: First, selling an asset that a firm does not ordinarily market usually results in a lower price than a regular dealer is able to obtain. The automobile market provides a good example. If a person buys a new car and immediately decides to sell it, he or she usually cannot recover full cost because of limited access to the buying side of the market. Second, disposal costs are deducted from selling price in determining net realizable values. Hence, the two different markets can result in significantly different current values.

Exhibit 1.5	Simple Company

Income Statements–Exit Valuation

	2006	2007	2008	Total
Revenues	$33,000	$36,302	$39,931	$109,233
Depreciation	32,000	27,000	31,000	90,000
Net income	$ 1,000	$ 9,302	$ 8,931	$ 19,233

Balance Sheet as of December 31

	2006	2007	2008
Cash	$32,000	$59,000	$90,000
Fixed asset (net)	58,000	31,000	
Total assets	$90,000	$90,000	$90,000
Capital stock	$90,000	$90,000	$90,000
Total equities	$90,000	$90,000	$90,000

Replacement cost is ideally measured where market values are available for similar assets. This is often the case for acquired merchandise inventories and stocks of raw materials that are used in the production process. However, market values are often unavailable for such unique fixed assets as land, buildings, and heavy equipment specially designed for a particular firm. The same is true even for used fixed assets that are not unique, although secondhand markets often exist for these assets. These same considerations of measurement difficulty, however, also apply to the exit valuation system.

In the absence of firm market prices, either appraisal or specific index adjustment can estimate replacement cost. Cost constraints may inhibit the use of appraisals, but there are specific indexes applicable to particular segments of the economy—for example, machinery and equipment used in the steel industry. Indexes are essentially averages, and if calculated for too wide a segment of the economy, they may not be good representations of replacement cost.

Replacement cost income statements and balance sheets appear in Exhibit 1.6. When replacement costs changed, depreciation was calculated by taking one-third of the new cost. Current value depreciation is a much more complex phenomenon to measure in practice. The holding gain adjustment on the balance sheet offsets the excess depreciation above historical cost.

The principal argument used to justify the replacement cost system over exit values is that if the great majority of the firm's assets were not already owned, it would be economically justifiable to acquire them. On the other hand, fixed assets are sold mainly when they become obsolete or their output is no longer needed. But advocates of the replacement cost school of thought disagree on some important points. The main disagreement concerns interpretation of holding gains and losses, the differences between replacement cost of assets and their historical costs. The point at issue is whether these gains and losses should be run through income or closed directly to capital. We should also note that replacement cost and exit valuation can be combined with general price-level adjustment to provide a more complete analysis of inflationary effects on the firm.

Discounted Cash Flows

Of the systems discussed, only the discounted cash flow approach is a purely theoretical method with virtually no operable practicability on a

Exhibit 1.6 Simple Company

Income Statements–Replacement Cost

	2006	2007	2008	Total
Revenues	$33,000	$36,302	$39,931	$109,233
Depreciation	30,000	32,000	35,000	97,000
Net income	$3,000	$4,302	$4,931	$12,233

Balance Sheet as of December 31

	2006	2007	2008
Cash	$30,000	$62,000	$97,000
Fixed asset (net)	60,000	32,000	
Total assets	$90,000	$94,000	$97,000
Capital stock	$90,000	$90,000	$90,000
Holding gain adjustment		4,000	7,000
Total equities	$90,000	$94,000	$97,000

statement-wide basis.[16] In this system, valuation of assets is a function of discounted cash flows and income is measured by the change in the present value of cash flows arising from operations during the period. Thus, both asset valuation and income measurement are anchored to future expectations.

In Exhibit 1.7, the internal rate of return of the asset is found by discounting the future cash flows at the rate that makes them just equal the

| **Exhibit 1.7** | Simple Company | | | | |

Income Statements and Discounted Cash Flows					
Income statement	**2006**	**2007**	**2008**	**Total**	**Change**
Revenue	$33,000	$36,302	$39,931	$109,233	
Depreciation	24,000	29,702	36,298	90,000	
Net income (10% of beginning of-period asset value)	$9,000	$6,600	$3,633	$19,233	
Beginning-of-period asset value	$90,000	$66,000	$36,298		
Calculation of present values (PV)					
Revenue	$33,000	$36,302	$39,931		
Discount factor	×0.9091	×0.8264	×0.7513		
PV as of Dec. 31, 2005	$30,000	$30,002	$30,001	$90,002	
Revenue	$33,000	$36,302	$39,931		
Discount factor	×1.0000	×0.9091	×0.8264		
PV as of Dec. 31, 2006[a]	$33,000	$33,002	$33,001	$99,003	$9,000
Revenue	$33,000	$36,302	$39,931		
Discount factor	×1.0000	×1.0000	×0.9091		
PV as of Dec. 31, 2007	$33,000	$36,302	$36,301	$105,603	$6,600
Revenue	$33,000	$36,302	$39,931		
Discount factor	×1.0000	×1.0000	×1.0000		
PV as of Dec. 31, 2008	$33,000	$36,302	$39,931	$109,233	$3,630

[a] $1 rounding error for the change in total present values.

cost of the asset (10% in this case). Thereafter, income is equal to 10% of the beginning-of-period asset valuation and depreciation is "plugged" into the equation to bring about this result. Income is also equal to the change in the present value of the cash flows measured at the beginning and end of the period.

In a real situation, this method is virtually impossible to apply because many assets contribute jointly to the production of cash flows, so individual asset valuation cannot be determined. Also, the future orientation of asset valuation and income determination leads to very formidable estimation problems, which undoubtedly reduce objectivity in terms of the degree of consensus among measurers.

Because of the insuperable measurement problems, the discounted cash flow approach can be implemented only for a very restricted group of assets and liabilities: those whose interest and principal payments are directly stipulated or can be imputed. An alternative approach for other assets, whereby assets of the firm are valued in terms of those attributes assumed to approximate most closely their discounted cash flow in terms of their expected usage, has been advocated.[17] A mixed bag of discounted cash flows, net realizable values, and replacement costs results.

QUESTIONS

1. What does the term "social reality" mean and why are accounting and accounting theory important examples of it?

2. Why do the value choices (entry value, exit value, and historical cost) fall within the domain of accounting theory?

3. Of the three inputs to the accounting policy-making function, which do you think is the most important?

4. How can political factors be an input into accounting policy making if the latter is concerned with governing and making the rules for financial accounting?

5. Is accounting theory, as the term is defined in this text, exclusively developed and refined through the research process?

6. What type of measurement is the measurement of objectivity in Equation 1.1: nominal, ordinal, interval, or ratio scale?

7. The measurement process itself is quite ordinary and routine in virtually all situations. Comment on this statement.

8. Can assessment measures be used for predictive purposes?

9. A great deal of interest is generated each week during the college football and college basketball seasons by the ratings of the teams by the Associated Press and United Press International. Sports writers or coaches are polled on what they believe are the top 25 teams in the country. Weightings are assigned (25 points for each first place vote, 24 for each second place vote, . . . one for each 25th place vote) and the results are tabulated. The results appear as a weekly listing of the top 25 teams in the nation. Do you think that these polls illustrate the process of measurement? Discuss.

10. Accounting practitioners have criticized some proposed accounting standards on the grounds that they are difficult to implement because of measurement problems. They, therefore, conclude that the underlying theory is inappropriate. Assuming that the critics are correct about the implementational difficulties, do you agree with their thinking? Discuss.

11. Some individuals believe that valuation methods proposed by a standard-setting body such as the FASB should be based on those measurement procedures having the highest degree of objectivity, as defined by Equation 1.1. Thus, some assets might be valued on the basis of replacement cost and others on net realizable value. Do you see any problems with this proposal? Discuss.

12. What type of measurement scale (nominal, ordinal, interval, or ratio scale) is being used in the following situations?
    Musical scales
    Insurance risk classes for automobile insurance
    Numbering of pages in a book
    A grocery scale
    A grocery scale deliberately set 10 pounds too high
    Assignment of students to advisers, based on major

13. If general price-level adjustment is concerned with the change over time of the purchasing power of the monetary unit, why is it not considered a current-value approach?

14. How do entry- and exit-value approaches differ?

15. Why is discounted cash flow extremely difficult to implement in the accounts?

16. How do measurement and calculation in accounting differ from each other? Give three examples of each.

17. Are issues of costliness and timeliness as they pertain to accounting standards part of accounting theory?

18. Do you think that changes brought about in accounting standards by failures of publicly traded companies such as Enron should be classified under political factors or economic decisions? Support your position.

19. Political factors are an adverse influence on the accounting standard-setting function. Discuss this statement.

20. Did the 21st century begin on January 1, 2000?

21. Do you think that the color-coded terrorist threat system instituted by the Department of Homeland Security involves a measurement system? Explain.

22. Since the FASB makes the standards that are used by business and industry, they make accounting theory. Comment on this statement.

CASES, PROBLEMS, AND WRITING ASSIGNMENTS

1. Assume that three accountants have been selected to measure the income of a firm under two different income measurement systems. The results for the first income system (M1) were incomes of $3,000, $2,600, and $2,200. Under the second system (M2), results were $5,000, $4,000, and $3,000. Assume that users of accounting data believe that dividends of a year are equal to 75% of income determined by M1 for the previous year. Users also believe that dividends of a year are equal to 60% of income determined by M2 for the previous year. Actual dividends for the year following the income measurements were $3,000. Determine the objectivity and bias of each of the two measurement systems for the year under consideration. On the basis of your examination, which of the two systems do you prefer?

2. J & J Enterprises is formed on December 31, 2000. At that point, it buys one asset costing $2,487. The asset has a three-year life with no salvage value and is expected to generate cash flows of $1,000 on December 31 in the years 2001, 2002, and 2003. Actual results are exactly the same as plan. Depreciation is the firm's only expense. All income is to be distributed as dividends on the three dates mentioned. Other information:

   • The price index stands at 100 on December 31, 2000. It goes up to 104 and 108 on January 1, 2002, and 2003, respectively.
   • Net realizable value of the asset on December 31 in the years 2001, 2002, and 2003 is $1,500, $600, and $0, respectively.
   • Replacement cost for a new asset of the same type is $2,700, $3,000, and $3,300 on the last day of the year in 2001, 2002, and 2003, respectively.
   • Revenue is $1,000 per year, the internal rate of return is 10%, and all cash flows are received (and distributed) on December 31.

Required:

Income statements for the years 2001, 2002, and 2003 under:

Historical costing
General price-level adjustment
Exit valuation
Replacement cost
Discounted cash flows

3. Objectivity (also called "verifiability") and bias (usefulness) are two extremely important characteristics of accounting. Discuss each of the following situations in terms of how you believe they affect objectivity and bias.

   a. The latest standard on troubled debt restructuring, SFAS No. 114, calls for newly restructured receivables to be discounted at the original or historical discount rate. Two board members disagreed with the majority position because they thought the discount rate should be the current discount rate, given the terms of the note and the borrower's credit standing.

   b. SFAS No. 115 requires marketable equity securities to be carried at fair value (market value). Its predecessor, SFAS No. 12, required marketable equity securities to be carried at lower-of-cost-or-market.

   c. Assume that a new standard allows only FIFO in inventory and cost-of-goods-sold accounting with weighted average and LIFO being eliminated (you may ignore income tax effects).

4. Accounting theory has several different definitions and approaches. Using Hendriksen and van Breda (1992, Chapter 1), and Belkaoui (1993, Chapter 3), list and briefly discuss these definitions and approaches. From the perspective of a professional accountant, evaluate these approaches in terms of their usefulness.

5. What theoretical issues are involved in Statement of Financial Accounting Standards No. 2, which calls for expensing research and development costs?

6. Read "The Margins of Accounting" by Peter Miller in *The European Accounting Review* (Vol. 7, No. 4, 1998). What is Miller's main point? Discuss the examples he uses to illustrate his main point, including those pertaining to management accounting. What do you think the significance of his article is for understanding accounting?

CRITICAL THINKING AND ANALYSIS

1. Is accounting theory really necessary for the making of accounting rules? Discuss.

2. Every fall, *U.S. News and World Report* comes out with a much awaited ranking of American colleges and universities (you may have even used it yourself). Although there has been much criticism of the methodology that the magazine employs as well as some "fudging" of the numbers by universities in their response to the questionnaire, this report represents what the chapter calls a "social reality." What is meant by "social reality" and why does this college and university ranking provide a good analogy for accounting?

3. Accounting rule making should only be concerned with information for investors and creditors. Discuss this statement.

NOTES

1. For a brilliant discussion of accounting constructs and their relation to social reality, see Mattessich (1991); (1995, pp. 41–58).

2. Potter (2005) discusses a fairly sizable segment of the accounting literature that is concerned with the effects of accounting standards on society as a whole but that generally has been outside the considerations of standard-setting bodies. This literature involves accounting as a sociological phenomenon.

3. Richardson (2002) discusses the dominance of financial accounting over managerial accounting within a Canadian context. We simply say that cost accounting (costs of products and services appearing within published financial statements) must be subject to financial accounting standards. It comes under the scope of accounting theory. Managerial accounting (the use of data by management for planning and control purposes) need not be subject to financial accounting rules. Hence, it is not under the domain of accounting theory.

4. Although many new ideas are coming into accounting, its roots are ancient. Pacioli, a 15th-century Italian monk, is generally credited with documenting the double-entry bookkeeping system. However, archeological evidence indicates that the roots of accounting may go as far back as 8000 B.C. in the form of clay tokens tracking quantities of grain or cattle, which may have marked transactions between individuals. Indeed this crude accounting may well have not only preceded both written language and abstract counting systems but may also have been an impetus that triggered their development. For further details, see Mattessich (1995, pp. 15–40).

5. CFA Institute awards the Chartered Financial Analyst® charter (CFA®), which is a globally recognized designation for individual investment professionals.

6. Time magazine in 2002 gave three women, two of whom were trained in accounting, its Persons of the Year Award (which frequently goes to heads-of-state). Cynthia Cooper, a

Mississippi State University accounting major, was the head of internal auditing at WorldCom who reported to the audit committee that several billion dollars of expense were improperly capitalized. Sherron Watkins, a vice president at Enron and a University of Texas accounting major, reported on Enron's accounting shenanigans to the late Kenneth Lay, Enron's board chairman, who did nothing.

7. Larson (1969).

8. Chambers (1968, p. 246) does not believe that prediction measures should fall within the scope of measurement theory.

9. Excellent coverage of this topic is given by Mattessich (1964, pp. 57–74).

10. Ijiri and Jaedicke (1966). Objectivity, prior to the Ijiri and Jaedicke paper, referred to the quality of evidence underlying a measurement. In the statistical sense developed by Ijiri and Jaedicke, the word *verifiability* has tended to supplant *objectivity*.

11. Objectivity tests have been applied by McDonald (1968) and Sterling and Radosevich (1969). Both studies used standard deviation of alternative measurements rather than the variance of Equation 1.1.

12. Ijiri and Jaedicke (1966, p. 481) combine the objectivity and bias measures into one formula. Objectivity and bias together add up to the reliability of the measure ($R = V + B$).

13. McDonald (1967, pp. 676–677).

14. Sterling (1989, p. 85).

15. Chambers (1991) provides an excellent summary and defense of exit valuation.

16. See Devine (1999, p. 219) for a discussion of replacement cost as a proxy or substitute for discounted cash flows.

17. For more detail, see Staubus (1967). Rosenfield (2003) does not believe that present value of future cash flows are a viable measurement for assets. Instead, he sees them as future events that do not yet exist, in contrast to presently existing costs and values.

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