PART THREE

Macrotheory of Accounting and Control
Conventions and Classification

Accounting has a specialized lexicon. Accountants themselves differ about conventions, postulates, principles, and doctrines. Nonaccountants hardly know what they mean. We have made a few references to these concepts and terms in modeling accounting and control systems as implementation and enforcement mechanisms for the firm's contract set (Part One), and in examining the role of managers, investors, and auditors as economic agents (Part Two). We can now examine the traditional accounting concepts and language in terms of the contract theory of accounting and control.

The contract model of accounting allows us to interpret the traditional, fundamental concepts of accounting by reference to other social science concepts. Specifically, each feature of accounting can be identified either as a convention or an economic choice. Some economic features of accounting have been mistaken as conventions, apparently because of their extraordinary temporal stability. The ability to distinguish conventions from economic features of accounting is important for the process of setting accounting standards.

Like all other bodies of rules and law, the rules and standards governing the preparation of financial statements and disclosures constitute a system of classification. An analysis of the general nature of systems of classification suggests that the oft-used accounting concepts of uniformity and comparability have weak theoretical support. Lacking substantive operational meaning, these accounting terms have become rhetorical devices for accounting debates.

Conventions

A convention is a coordinating device in games among two or more people. When coordination by direct communication is difficult, costly, or impossible, it may be socially advantageous to coordinate through such a convention. Hardin gives a de-
tailed analysis of contracts by convention. Consider, for example, the following two-person coordination game:

<table>
<thead>
<tr>
<th></th>
<th>Column Player</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Left</td>
</tr>
<tr>
<td>Row Player</td>
<td>Top</td>
</tr>
<tr>
<td></td>
<td>Bottom</td>
</tr>
</tbody>
</table>

Each player must choose one out of the two possible moves. In each cell, the first number is the payoff of the row player, the second number is the payoff of the column player. If the row player chooses top, the best thing for the column player is to choose left; if the column player chooses left, the best thing for the row player is to choose top. Since the choice of top row and left column are the best responses to each other, this cell constitutes a Nash equilibrium of this game. By similar argument, bottom right is also a Nash equilibrium; the top right and bottom left are not.

No player can improve his or her payoff by moving out of the Nash equilibrium cells if the opponent is playing that cell. However, in the absence of some implicit or explicit coordination between the players, there can be no assurance that they will achieve the high payoffs associated with the Nash equilibria. Both players would be better off if they adopted some convention to coordinate their moves.

Certain conditions must be satisfied for a pattern of behavior to be a convention. First, it must apply to recurrent situations and not to one-of-a-kind events. Second, a convention has to be common knowledge. Not only does everyone behave in a certain way, but everyone also expects and knows that others will behave in that manner. Third, it is in everyone’s interest for one more person to conform to the convention. Finally, for a convention to be meaningful, there must exist an alternative pattern of behavior that is preferred by everyone, on the condition that everyone else conforms to that alternative. Thus, driving on the right-hand side of the road could be regarded as a convention. The social or economic value of the convention arises not from the particular choice (e.g., driving on the left or right), but from the fewer collisions that coordination yields in this example.

**Accounting Conventions**

Most accounting textbooks and standards enumerate accounting conventions. The sense in which the term is used varies. Statements of fact, statements contrary to fact, conclusions from argument, assumptions, opinions, and wish lists all seem to find shelter under the umbrella of accounting conventions. Chambers provides an illuminating analysis of this and other problems associated with accounting conventions.
Davidson, Stickney, and Weil take a broad view of conventions—as accounting methods without official sanction. The officially sanctioned accounting methods, in turn, are called accounting principles, thus setting up a mutually exclusive relationship between conventions and principles.

The Accounting Principles Board, on the other hand, took a narrower view of conventions. In 1971, they listed items that are frequently cited as conventions by other writers (e.g., accounting entity, going concern, time period, monetary unit, and exchange price) out of a larger set, called “basic features of financial accounting.” The board labeled all generally accepted accounting principles as conventions because “they become generally accepted by agreement (often tacit agreement) rather than formal derivation from a set of postulates or basic concepts. The principles have developed on the basis of experience, reason, custom, usage, and to a significant extent, practical necessity.” They essentially defined all accounting practice as conventional. However, in the list of “pervasive accounting principles,” they included six “measurement principles” and three “modifying conventions”: conservatism, emphasis on income, and application of judgment by the profession as a whole. The large volume of accounting literature on conventions leaves the reader surprisingly unenlightened.

The few clear and precise statements in the literature defining an accounting convention are easily lost in the clutter. The earliest statement is also one of the best. Gilman identified two characteristics of accounting propositions that constitute a convention: (1) they are based on general agreement and (2) they are more or less arbitrarily established. Among all generally accepted propositions, only those that are arbitrarily determined qualify. The definition and some of the examples given in Kohler’s Dictionary have a similar flavor: “The adoption of a particular convention may be a historical accident, but once adopted, a convention acquires value as a means of communication and cooperation.” The idea that convention is an arbitrary social choice—whose value lies in the mere fact of its general acceptance rather than in the particular choice made—captures its economic essence.

An accounting convention survives only because it happens to be in current use, is familiar and known to all agents, and change or abandonment imposes new search and adjustment costs on all agents. Once a change in convention has been made, and adjustment completed, no one is better or worse off than if the change had not been made, except for the cost of the adjustment itself. Therefore, agents have a stake in maintaining the status quo on conventions as long as the environment remains stable.

Conventions are differentiated from the “economic features” of accounting (discussed in the following section) only by agent preferences for specific options in the latter case, and not by the presence or absence of economic rationale. Yet the distinction is quite important for those who set the accounting standards. Once an accounting issue has been identified as a matter of convention, the standard
setter can proceed expeditiously to select a standard to minimize the cost of adjustment because otherwise all options are equally desirable for all agents. If, on the other hand, an economic feature of accounting is involved, the standard setter would have to discover the economic consequences of each option for various agents before making a choice.

The bookkeeping practice of writing debits on the left and credits on the right-hand side of a sheet of paper is a convention in this sense. If the convention were reversed (debits on the right and credits on the left, as is the prevalent practice in some countries), the interests of all agents would remain unaffected, except for the cost of adjustment during the transition. If the convention were abandoned, the economic benefits of general agreement by convention would be lost, and the additional cost would be borne by various agents in the form of the extra effort needed to audit, read, and interpret financial statements and accounting books.

Listing the assets and liabilities in order of decreasing rather than increasing liquidity is another example of an accounting convention. Are there any agents whose interests would be affected by a change to increasing the order of liquidity? In introductory accounting, students must memorize these conventions, because they cannot arrive at these features of accounting by application of reason to some basic axioms.

**Economic Features of Accounting**

Features of accounting that are not conventions can be explained in terms of the economic interest of agents. Many of these features have social value (in addition to their private value) that arises from general agreement, and are often referred to as conventions in accounting texts and periodical literature. However, since economic interests drive the choice of these features of accounting, they must be seen as equilibrium outcomes and not as conventions.

The economic features of accounting can be understood on the basis of economic interests of agents; one does not have to memorize them. A persistent feature of accounting in time and space does not justify calling it a convention. Such a persistence suggests that the economic forces that led to the development of that feature are stable and extensive. Whether a feature of accounting is a convention or an economic feature can be determined by asking the following question: Aside from the cost of adjusting to the new system, will substitution of the feature by another affect the interests of any agents in equilibrium? A convention will not.

Conservatism is a good example of an accounting feature that is often called a convention, but does not fit its economic definition. The Accounting Principles Board, in *Statement No. 4*, defined conservatism as preference for “possible errors in measurement in the direction of understatement rather than overstatement of net income and net assets.”[10] *Kohler’s Dictionary* defines it as “a guideline which chooses between acceptable accounting alternatives . . . so that the least favorable immediate effect on assets, income, and owner’s equity is reported.”[11] The pres-
ence of uncertainty and the downward bias of measured current-period income, assets, and owner's equity in the presence of uncertainty seem to be the essential aspects of conservatism.

We can identify the economic forces that drive accounting practices toward conservatism. Financial reporting takes place in an environment of state as well as strategic uncertainty. Investors do not know the real state of affairs in the firm, or whether the auditors have done their job conscientiously. Auditors do not know for sure if the managers have misled them. Managers do not know how shareholders will react to what they learn. In the absence of any constraints, bonus-motivated managers would rather not use conservative accounting practices. However, the cost of the gain in their welfare entails a greater risk of being sued by investors in the event their investment turns sour. Auditors would have fewer conflicts with management if financial reporting did not have to be conservative. However, they would have to bear a higher risk of being sued by the investors, and therefore would demand higher fees. The absence of conservatism allows greater discretion to the managers and therefore leads to lower investor confidence in the reports. Economic interests of various agents are not indifferent with respect to the choice of conservatism over neutral or aggressive reporting. Therefore, this feature of accounting is not a convention.

What are the economic forces incident on other features of accounting, variously described as conventions, assumptions, doctrines, and so on? At the risk of some repetition, let us examine a few.

**Entity**

An entity is simply a set of contracts. A subset of contracts (e.g., a subsidiary, a division, a factory, or a department of a firm) is also an entity. Suitable accounting and control is designed for entities at all levels of hierarchy. In a subsidiary of a corporation, for example, the boss of the head of the subsidiary exercises the powers of the sole "owner" of an independent firm and does not have to deal with a diffuse body of shareholders, as the head of a publicly held firm must do. Accordingly, the accounting and control of the subsidiary does not need to include many of the features typical of accounting systems of its own publicly held parent, even though they are both accounting entities in their own right. The definition of an entity determines the accounting and control appropriate for it. Since it has real economic consequences, the choice of entity is not arbitrary, and therefore is not a matter of convention.

**Going Concern or Continuity**

If we could trade any resource at any time at a well-defined price (i.e., if all factor markets were perfect and complete), there would be no need for a going concern assumption in preparing accounts. The valuation of partially used, long-lived assets could be ascertained without resorting to such an assumption. The valuation of the real capital of a firm, in terms of dollars, requires a decision to be made re-
garding resources whose use value and disposal values are uncertain and possibly unequal. The going concern or continuity assumption is the preference for use value over disposal value (use value being determined by the lower of historical cost and replacement cost).

In the absence of the continuity assumption, it would be open to the managers to choose between the use value and the disposal value of assets, carried over from one accounting period to another. Managers may prefer to exercise such choice on the basis of their own interests or whims. However, the auditors would find the managers’ choices difficult to attest to, and this would result in investors having less confidence in financial statements. Another option is to require managers to use disposal values that, in many cases, would imply the immediate write-down of long-lived assets.

The use of the going concern assumption in accounting reduces managerial discretion in valuation and reduces investor uncertainty, or keeps managers from resorting to extreme conservatism. In either case, the assumption has important consequences for the welfare of agents and can be classified as an economic feature of accounting.

Period

The periodicity of many accounting activities arises for two reasons: the use of long-lived resources and the fixed cost of updating, closing, summarizing, and auditing books to prepare periodic reports. Resources that require continual investment and yield continual return over a long period of time came into wide use after the Industrial Revolution. The accounting period is the result of the trade-off between the higher cost of frequently prepared reports and the benefits of access to timely information. With computer technology, the bookkeeping cost of frequent reporting is no longer a major factor. However, the cost of the end-of-the-period adjustments that require managerial attention, and of the periodic audit that accompanies external periodic reports, is still substantial and limits the frequency of reports. Internal reporting has become more frequent with the introduction of computers, because auditing is not applicable to such reporting. When continuous audit technology is developed to keep pace with computerized accounting systems, the audit constraint, too, may be relaxed, and external reports may appear with greater frequency. In any case, the periodicity of accounting reports is an economic feature, and not a convention, because the choice of period affects the interests of various agents.

Valuation

Valuation is aggregation. It maps vectors of quantities and prices into a scalar money amount. Accounts and reports are prepared in dollars because prices are usually quoted in dollars, although theoretically, prices could be measured in terms of any other resource or combination of resources. To what extent is valuation an economic feature or convention?
When resources are few and their attributes are well-known to agents, valuation-free accounting systems can serve the needs of the organization. For example, stewardship accounts in medieval England did not use valuation. They were based on real resources, such as four cows, ten sheep, and so on. Even in a modern corporation, accounting operations within certain subunits are confined to quantities and are, therefore, valuation-free. At certain levels, inventory and production control systems and performance evaluation in plants are based on quantities, not on dollar values. Performance at these levels can be reckoned in terms of a small number of resources. As the number of different resource flows in a firm increases, it becomes difficult for agents to remain informed about the relevant attributes of these resources, and a list of the quantity of resources becomes less informative. In the absence of knowledge about the attributes of various resources, an agent can get greater use from aggregated numbers prepared by someone who is knowledgeable about these attributes. Therefore, the use of valuation is an economic feature of accounting systems. It is not a convention, and in simpler settings, even within large corporations, valuation is not used when it is not useful.

**Accrual**

Accrual is the practice of recording cash, as well as noncash resources, and obligations to parties other than the shareholders on the books of the firm. In pure cash-basis accounting, on the other hand, the only recorded resource is cash and the only recorded equity is the owners’. The accrual basis of accounting recognizes that a firm, through its system of contracts, is entitled to receive certain noncash economic resources from various agents. Accrual accounting also recognizes, in the form of liabilities, that under the firm’s contracts resources are owed to agents. Shareholders are not the only claimants on a firm’s resources. One consequence of recognizing these additional resource rights and obligations is that the rights of shareholders in the resource pool can be more than, equal to, or less than the cash resources of the firm. Under cash-basis accounting they are necessarily equal.

Cash-basis accounting is used for personal accounts or simple (proprietorship) business organizations. Modified forms of cash-basis accounting have survived in many governmental and not-for-profit organizations (see Chapter 13). In simple organizations, accounting serves the limited purposes of one agent, and the formal recording of noncash assets and outside obligations adds little information and a lot more bookkeeping if the proprietor is personally familiar with them. The real economic consequences of the choice between accrual and cash accounting make them an economic rather than a conventional feature of accounting.
features of accounting, on the other hand, are determined by interaction among interests of accounting agents, and changes in these interests generate pressure to alter such features. Changes in accounting can be traced back to the pressures generated by changes in the environment in which business operates. For example, an increase in the rate of inflation generates pressure to move away from historical cost accounting toward some form of current valuation. In the energy crisis of the mid-seventies, the U.S. government pressured oil companies to eliminate their differences in accounting for the costs of exploration.

The economic features of accounting may be classified on the basis of their temporal stability. The long-run stability of some features of accounting simply means that the forces that brought them into existence in the first place are relatively stable, and the equilibrium solution has not changed over the years. They should not be mistaken for conventions.

**Double Entry**

The double-entry system of accounting has been used for at least five hundred years, perhaps much longer. Two interpretations of double entry are causal and classificational. Under “causal” interpretation, the “double” part of double-entry accounting arises from simultaneous consideration given to the causes and effects of economic events and actions. The apparent perfection of the double-entry system arises from the match with our two-valued system of logic. It is not a matter of convention. It is possible that one day we may discover more causal links or switch our system of logic, in which case triple- or even quadruple-entry systems would be more appropriate.\[1\]

Under the “classificational” interpretation, the double-entry system classifies all resources of the business entity on the basis of two criteria: first, the form (cash, receivable, inventory, or plant, etc.), and second, the source (trade creditor, bank, preferred, or common stock owner, etc.). The addition of other criteria for classification of the entity’s resources (for example, location, product line, etc.), would lead to a multiple-entry accounting system. Such classification of resources using multiple criteria is common in the internal accounting reports of firms, but not in external reports. The absence of multiple-entry systems of accounting suggests that, on the whole, the double-entry systems have been found to be most desirable in the prevailing environments. Advances in the technology of processing information may, however, change this.

**Economic Resources**

A precise definition of a firm’s resource pool can exist only in concept, because this pool depends on expectations in its contract set. There is no guarantee that these expectations are identical across agents or that they will be realized. Among agents who manage the firm, expectations of individuals may diverge, even without deception or misrepresentation. The expectations of each agent about future events depend on the agent’s current beliefs and information.
Many accounting controversies (for example, accounting for leases, research and development, goodwill, cost exploration for oil and gas, and pension costs) are rooted in this basic difficulty. Solving the problem of recognition of revenue, expenses, assets, and liabilities requires answers to: (1) Whose expectations are to form the basis of accounting? (2) What is to be the cutoff point in the indefinitely long series of future expected transactions? and (3) How uncertain the expectation of a transaction has to be to justify its exclusion from accounting?

A general theoretical answer to these questions is unlikely. Instead of trying to define the “true” economic resources of the firm, it is more fruitful to explore the consequences of various operationally definable accounting procedures. For example, it is easier to find how efficiently the firm's system of contracts can operate if all leases are capitalized (or expensed, for that matter) than to try to find the “true value” of the lease arrangement to the firm. In a similar vein, it would be more fruitful to discover and learn what would be the equilibrium consequences for a system of contracts if accounting were based on managers' versus investors' expectations.

**Uniformity and Classification**

Uniformity is the holy grail of rule-making in accounting. Diversity of accounting practices invites criticism. It is an intuitively appealing idea that if only the accountants could be persuaded to treat like things alike and different things differently in their books, financial statements would accurately reflect the economic reality. Unfortunately, it is not that simple.

The problem is that no two events or transactions are exactly identical, nor totally different. If you look hard enough, you can find some similarity as well as some differences between virtually any two transactions. Transactions come in infinite variety, and the accountant must classify and aggregate them into a manageable small number of categories. Categorization of multi-attribute objects into a small number of categories could be based on one of two principles:

1. Treat any two transactions that have any differences differently.
2. Treat any two transactions that have any similarity to each other alike.

If we follow one of these principles, the other will necessarily be violated. This gives rise to a fundamental problem in defining and attaining uniformity and comparability in financial statements.

Applying the first criterion, if each transaction is different from others, it is treated differently. This will yield a thick accounting rule book, and each rule will be used but once. In effect, there will be no categorization and no aggregation. Some may call this a system without rules and uniformity, because no two transactions are treated alike. Others can, with equal justification, refer to the system as the ultimate in uniformity in the sense that two transactions must be exactly identical in order to qualify for the same treatment. The pursuance of uniformity carried far enough leads to complete diversity.
Paradoxically, applying the second criterion does not improve things. If any two transactions that have anything in common must be treated alike, all transactions will end up in a few, or even a single, category. This is not of much use either. This problem is common to all systems of rules and laws, as well as to other schemes of classification.

Consider the accounting treatment of leases before the FASB issued Statement No. 13. The accounting classification of leases in that period was sufficiently coarse to permit both short- and long-term leases to be treated as operating leases. Proponents of change thought that the differences among various lease transactions were sufficiently important to warrant the creation of two or more separate classes. Accounting for leases could be made more uniform, they argued, by refining the classification scheme so that each transaction is in a class by itself.

But such a proposal could not satisfy the second criterion: treating two transactions that have any similarity alike. For example, critics observed certain similarities between long-term buy-lease-back and borrow-and-buy transactions, and argued that these two types of transactions should be given identical accounting treatment. If we examined all possible features of a transaction, we would find some similarities in almost any pair. The identical treatment of all transactions is just as susceptible to criticism as a unique treatment of each transaction.

Now we can return to the term uniformity and try to examine what, if any, useful meaning can be assigned to it. If there is no way of making an accounting system more uniform, without making it less uniform at the same time, the term uniform does not help choose among accounting methods.

At a higher level of abstraction, uniformity has been a useful vehicle for conveying certain ideas. The term "liberty," for instance, has been a powerful moving force in history. It helped lay the foundations of many of the constitutional and legal rights we cherish in the modern democratic state. Yet the term is little used in legal proceedings because it does not help determine the guilt or innocence of a person. The law itself may be based on the concept of liberty, but legal proceedings are not. Perhaps it is best to use the concept of uniformity at higher levels of abstraction and to avoid using it at the operational level of accounting.

The uniformity of accounting also suggests reduction in the level of discretion available to individual managers or their auditors in determining how an event is recorded. If such discretion is taken away from managers, the argument goes, the application of accounting rules across firms will be more comparable. How detailed should the criteria be to determine the classification of transactions, and how much discretion to classify should managers and auditors have? No criteria can be detailed enough to eliminate all management discretion. The presence of discretion affects interfirm comparability of data, but not always adversely.14 The cost and volume of accounting rules and regulations grows with their volume. The increased volume and complexity of regulations have their own consequences.

The greater the length and complexity of accounting rules, the greater the diversity in their interpretation by different managers and accountants, the larger the
number of questions that arise about their meaning and intent, and the faster is the growth of written interpretations, clarifications, and guides for application of these rules. This happened to financial accounting rules in the sixties and the seventies, as a running count of the number of pages in the Financial Accounting Standards will confirm.

A more popular analogy is to the U.S. Internal Revenue Code. Whether the increased complexity of the code, with all its rules and interpretations, leads to a more uniform application of tax laws across individual and corporate taxpayers is a matter of serious debate. A case can be made that a less detailed specification of tax laws might actually be more equitable than the current tax code. Simplification of the tax code, using a flat tax, and elimination of various deductions is a recurrent theme in U.S. political campaigns. A more complex specification of rules allows for the discovery of more loopholes to avoid taxation. It also makes it more difficult to discover whether rules have been violated, and even if they are discovered, it is more difficult to prove tax evasion. It is not obvious if a more detailed specification of rules can narrow the discretion of management in the classification of accounts.

The accounting treatment of research and development (R & D) outlays is a case in point. Until the FASB issued Statement No. 2 in 1974, capitalization of these outlays was left largely to the discretion of management. Practices varied across firms. Demands for uniformity led the FASB to search for rules that would reduce management discretion in capitalization decisions and closely approximate the economic nature of these events. It soon became evident that there was no way of satisfying both these requirements. The nature and circumstances of research and development outlays, and their results, vary so greatly that it is not feasible to lay down rules that will remove management discretion, without also weakening the link between the economic consequences of R & D outlays and their accounting treatment.

The FASB removed managers' discretion by requiring that these outlays be expensed. It achieved uniformity of form, but not substance. The underlying event that is supposed to be recorded is not the R & D expenditure alone, but also its economic consequences. Compulsory expensing of R & D outlays, irrespective of its results, creates a greater divergence between the underlying event and its accounting treatment than might be the case under a discretionary system. Two firms, each having spent $10 million on research, will have identical financial statements, irrespective of the development of a hot-selling product by one of the firms. Whether Statement No. 2 has led to greater uniformity of financial statements in this fundamental sense is open to question.

Summary

The fundamental concepts of accounting can be interpreted in the language of social sciences. Specifically, the contract model of the firm and the classification
theory provide a useful framework for examining the force and meaning of traditional accounting concepts, such as entity, valuation, accrual, and uniformity. This framework also helps us reduce the multiple and frequently overlapping and confusing categories, such as postulates, principles, doctrines, and features of accounting, into a simpler classification of conventions and economic features. Concepts such as uniformity and comparability are operationally vacuous for accountants’ work.

Notes

3David K. Lewis, *Convention: A Philosophical Study* (Cambridge, Mass.: Harvard University Press, 1969), p. 78, formally defines conventions as follows: A regularity R in the behavior of members of a population P when they are agents in a recurrent situation S is a convention if and only if it is true that, and it is common knowledge in P that, in almost any instance of S among members of P, (1) almost everyone conforms to R; (2) almost everyone expects almost everyone else to conform to R; (3) almost everyone has approximately the same preferences regarding all possible combinations of actions; (4) almost everyone prefers that any one more (person) conform to R, on the condition that almost everyone conform to R; (5) almost everyone would prefer that any one more (person) conform to R’, on condition that almost everyone conform to R’. Where R is some possible regularity in the behavior of members of P in S, such that almost no one in almost any instance of S among members of P could conform both to R and to R.
7Ibid., Paragraph 139.
10Accounting Principles Board, op. cit. Paragraph 171.
11Cooper and Ijiri, op. cit.

Additional Reading
