Accounting and the Contract Model of the Firm

Accounting helps make a firm work. To understand accounting, the firm itself must be understood. What is the nature of the firm? What are its components, and how do they fit together? How does it operate, and what is the role of accounting in making it work? We pursue these questions in this chapter.

Much of the discussion of firms is applicable to organizations in general. Accounting is an essential aspect of the working of government, not-for-profit, and even religious organizations. Some of these organizational forms and the special features of accounting needed to help operate them are discussed in Chapter 13.

There are many ways of looking at the firm, each suited for a different purpose. The neoclassical model of microeconomic textbooks sees the firm as a monolithic profit-maximizer. This model is designed to explain equilibrium in markets for inputs and outputs of the firm, and not its internal workings. It is no more reasonable to expect the neoclassical model to help describe and analyze the accounting system of a firm than it is for microeconomic consumer theory to explain the structure and dynamics of a family. The neoclassical model of the firm with perfect markets has no people, organization, or need for information, and therefore has no role for accounting in operating a firm.

The beginnings of a model of the firm that can help analyze the role of accounting lie in the work of Berle and Means, Coase, Barnard, Simon, and Cyert and March. In 1932, Berle and Means documented the separation of managerial control from stock ownership in major corporations of the United States. They argued that the interests of shareholders and managers diverge significantly, and therefore the behavior of modern corporations differs significantly from the behavior of entrepreneur-run firms of the neoclassical models. Implicit in their critique of the modern corporation (as an efficient device for resource use and allocation in society) is the need for mechanisms that align the diverse interests of stockholders and managers. Accounting helps carry out this function.
In 1937, Coase asked why firms grow beyond the elemental unit of a single person firm, and why they do not grow indefinitely until all economic activity in the society is conducted by a single firm. His answer: It is costly to use markets. Cheung identified four types of these costs: cost of discovering the relevant prices, cost of knowing the characteristics of products, cost of measurement, and cost of identifying the contribution of individuals to collaborative effort. Contracts based on market transactions are internalized by the firm when it is cheaper to do so. In this book we shall see how accounting and control of firms helps reduce the costs of carrying out these contracts.

Barnard thought of organizations as “system(s) of consciously coordinated activities or forces of two or more persons.” Stability of the organization, he argued, depends on its ability to provide sufficient incentives or inducements to individuals so they find it more desirable to participate in the organization than to quit. A mere six years after Berle and Means labored to document the separation of share ownership and control in large publicly held firms, it is interesting to find Barnard, a telephone company executive (apparently unaware of their work), taking it for granted that it is the executive and not the shareholder who plays a critical role in the survival of organizations.

Cooper recognized the inadequacy of the entrepreneurial theories of the firm for the purpose of understanding the organization. Simon refined Barnard’s view of organizations, making it formal and precise. Simon’s representation of an organization as a set of arrangements among various factors of production, each motivated by personal, though not necessarily egoistic, considerations, provides the basic framework on which the accounting theory of this book is erected. Cyert and March saw the firm as a coalition of multiple, conflicting interests using standard rules and procedures. The existence of diverse interests within the firm, and visualization of the firm as a set of contracts among these interests, are the two ideas in the contract model of the firm presented in the next section. The following chapters analyze a variety of accounting phenomena using this model.

In the half-century since publication of these seminal works, much has been done to clarify, refine, revise, and develop the relevant ideas. Alchian and Demsetz, Williamson, Jensen and Meckling, and Fama are some of the important contributors to this literature, reviewed by Cyert and March and Moe.

**The Firm as a Set of Contracts**

To understand accounting, the firm can be seen as a set of contracts among rational agents. Contracts can be explicit or implicit, short-term or long-term. Agents can have different preferences and different endowments of capital, skills, and information. Agents are rational in the sense that, within the constraints of their opportunities and information, they do not knowingly pick less desirable courses of action over the more desirable ones.
Agents enter into contracts to improve their lot. Contracts obligate each agent to contribute resources—capital, skills, or information—to the organization’s pool and, in return, entitle each agent to receive resources from the pool. The form, amount, and timing of resources an agent gives and receives is a matter for bargaining among agents. We use the terms *entitlements*, *incentives*, and *inducements* interchangeably for resources agents receive or expect to receive (see Figure 2.1).

Contributions and inducements can be economic or noneconomic, and a general theory of organizations must consider both, as Barnard and Simon do. Accounting deals mostly with quantifiable economic resource flows in organizations, such as money and machinery. We therefore limit the discussion here to economic variables. A simple theory of accounting can be based on a simple model of organizations, excluding variables that accounting does not usually handle (such as sincerity and enthusiasm of an employee). The price of simplicity is the incompleteness of the theory, because the control system is influenced by these omitted variables.

Whether an agent joins a firm depends on what the agent has to offer, what he or she wants to get, and what alternative courses of action are available. A rational agent does not enter a contract that promises less than the best alternatives known and available. An agent could consume the resources he or she has, use them to
produce something else, or enter a contract with other agents. The last course of action amounts to "joining" a firm and accepting a package of obligations and entitlements. Rationality means that the agent would do so only if this package is more desirable than the alternatives available. A person looking to buy a suit "joins" the firm of Hart Schaffner & Marx as a customer only if he likes their suits and service and does not know of a place where he can do better.

Who are these agents? Agents are people with personal tastes and economic resources. Homogenous groups of agents with similar tastes and endowments can be thought of as a single agent for our purposes. An industrial firm, for example, could be thought of as a set of contracts among agents who provide equity and debt capital, trade credit, labor, managerial skills, auditing services, raw materials, cash, utilities, infrastructural facilities, and security, and buy products and services from the firm. Self-motivated mutual cooperation of these agents makes the firm possible. Other types of organizations can be similarly defined as contracts among an appropriate set of agents (see Table 2.1).

Defining the exact boundaries of a firm is neither feasible nor necessary. As in any modeling effort, which agents and which contracts are included in the analysis depends on its purpose. The contract model of the firm has the flexibility to help study a rich variety of accounting phenomena. A general model of the firm includes contracts involving all transacting agents. To explain a particular aspect of the behavior of the firm, attention can be focused on the relevant subsets of agents. For example, in examining the separation of ownership and control, Berle and Means and Jensen and Meckling focus on the behavior of two classes of agents—shareholders (the suppliers of equity capital) and managers (the suppliers of managerial skills). In analysis of financial accounting, three classes of agents—investors, managers, and auditors—play the critical roles and receive most of the attention. For tax accounting, government is also an important agent; for payroll and benefits accounting, employees are an important class of agents.

An individual may be an agent in several firms. No single firm might need all the resources the person has to offer, or provide all the person needs. Examples include investors holding diversified equity portfolios; independent auditors; part-
time or moonlighting employees; and a welder who works for one firm, buys a car from a second, and invests savings in shares of a third. Indeed, participation in multiple organizations is a norm, not an exception. This point is well made by Barnard:

I select at random a man who is chiefly identified by his connection with the organization with which I am also ordinarily identified. He is an engineer whose career and living for many years have depended upon that organization. Without special enquiry, I know he has the following organization connections also: He is (1) a citizen of the United States, the State of New Jersey, the County of Essex, and the City of Newark—four organizations to which he has many inescapable obligations; he is a member of (2) the Catholic Church; (3) the Knights of Columbus; (4) the American Legion; (5) the Outanaway Golf Club; (6) the Democratic Party; (7) the Princeton Club of Newark; (8) he is a stockholder in three corporations; (9) he is head of his own family (wife and three children); (10) he is a member of his father’s family; (11) he is a member of his wife’s family; (12) to judge from his behavior he belongs to other less formal organizations (but often seems not be aware of it) which affect what he wears, how he talks, what he eats, what he likes to do, how he thinks about many things; and (13) finally he gives evidence of “belonging” also to himself alone occasionally. Lest it be thought that his “major” connection is predominant, and the others trivial, it may be stated that he devotes to it nominally less than 25 percent of his approximately 8760 hours per annum; and that actually while he thinks he is working, and despite his intentions, he dreams of fishing, reflects on family matters, and replays a part of the previous evening’s bridge, etc."

Therefore, the term agent refers to a particular aspect of a person’s behavior and not to the person himself (see Figure 2.2).

A firm consists of a set of relationships or contracts, explicit or implicit, that link its shareholders, managers, and employees, and so on, into certain patterns of expectations and behavior. The gap between the concept of contract in law and the lay concept of promise and mutual expectations is not as wide as it may appear to be. Texaco paid several billion dollars in damages to Pennzoil because the court found that Texaco had interfered in the verbal promise made to Pennzoil by a third party. However, the willingness of courts to enforce contracts is less than total, and certainly falls short of the popular impressions of such willingness. MacNeil states:

A less than total commitment to the keeping of promises is reflected in countless ways in the legal system. The most striking is the modesty of its remedial commitment; contract remedies are generally among the weakest of those the legal system can deliver. But a host of doctrines and techniques lies in the way even of those remedies: impossibility, frustration, mistake, manipulative interpretation, jury discretion, consideration, illegality, duress,
undue influence, unconscionability, capacity, forfeiture and penalty rules, doctrines of substantial performance, severability, bankruptcy laws, statutes of frauds, to name some; almost any contract doctrine can and does serve to make the commitment of the legal system to promise keeping less than complete.¹²

A firm does not consist of the agents themselves. Molecules that constitute an organism come and go, but the pattern of arrangement of molecules—the organism—persists. Similarly, individuals who participate in an organization come and go, often replaced in their positions by others with similar tastes and endow-
ments; the pattern of contractual arrangements that persists is the firm. Of course, persistence is not permanence; organisms as well as organizations may grow, transform, reproduce or die.

The contract model of the firm differs from the neoclassical model in micro-economic textbooks. In the neoclassical model, the firm is an actor, operated by the entrepreneur--manager who has a well-defined objective, usually profit. From this perspective, all other economic agents are outsiders. In the contract model, the firm itself is not an economic actor, has no objective or motivation of its own, and is not identifiable with any agent. Instead, it is seen as an arena in which self-motivated economic agents play by mutually agreed upon or implied rules to achieve their respective objectives. This arrangement itself is labeled firm for convenience. A firm is not a purposive entity.

Stripping purpose from the concept of firm might appear to be a major departure from Barnard and Simon, who emphasize the purpose of organizations. However, closer scrutiny makes it clear that most of what they call organizational purpose consists of the purposes of some subset of agents participating in the organization, usually shareholders, managers, or customers. Simon recognizes this arbitrariness but discards it altogether in his 1952 article and treats all agents symmetrically.

In the F-theory, a single participant, the entrepreneur, is explicitly treated as a rational individual. The other participants—employees, customers, suppliers—enter into the theory only implicitly and only as passive “conditions” to which the entrepreneur adjusts in finding the solution that is optimal to him. . . . In the O-theory, the participants are generally treated in a more symmetrical fashion. Each participant is offered an inducement for his participation in the organization. Through his participation, he makes a contribution to the organization. The participant’s contributions may be regarded as “factors,” the inducements offered to him as “products.”

Cyert and March state:

Ultimately it makes only slightly more sense to say that the goal of a business organization is to maximize profit than to say that its goal is to maximize the salary of Sam Smith, Assistant to the Janitor.

Most organizations do, however, post a statement of objectives in their charter. It is tempting to argue on the basis of such statements that the objective of Chrysler Corporation, for example, is to manufacture and sell cars to the public. The irrelevance of such statements of objectives for our purpose can immediately be seen by asking: Would the Chrysler Corporation still manufacture cars if all participating agents felt that each of them would be better off if Chrysler produced, say, blue jeans instead?

In the contract model, objectives attach to people, not organizations. When applied to organizations, they are simply a description of the activity that the partic-
participants agree to engage in. For example, operating a blood bank is an activity that agents participating in the Red Cross may agree to for a variety of motivations. The Red Cross’s statement of objectives, which may include operation of a blood bank, has little power to explain the behavior of these agents who may, one day, decide to abandon blood banks in favor of organ banks or ambulance services.

Demsetz writes: “The chief mission of neoclassical economics is to understand how the price system coordinates the use of resources, not to understand the inner working of real firms.” Let us explore the usefulness of the contract model to understand the internal workings of the firm—that is, its accounting and control.

Accounting and the Firm

Accounting helps implement and enforce contracts that constitute the firm. Accounting performs five functions to make the firm work.

1. It measures the input of each agent to the firm’s pool of resources.
2. It determines and disburses the contractual entitlement of each agent.
3. It informs appropriate agents about the extent to which other agents have fulfilled their contractual obligations and received their entitlements.
4. It helps maintain a liquid market for contractual slots and for the factors of production supplied by their occupants so that the resignation or termination of one agent does not threaten the existence of the firm.
5. Since contracts of various agents are periodically renegotiated, it provides a pool of common knowledge of verified information to all participants to facilitate negotiation and contract formation.

These five functions are key to understanding the nature of accounting. Before analyzing these functions, two caveats must be posted. Accounting is one of several necessary parts of the contract enforcement mechanism of a firm. The other parts are common, civil, and criminal law, along with their enforcement and adjudication systems, and the sociocultural norms. Our analysis is limited to accounting aspects of the enforcement mechanism; analyses of the legal and social systems are available elsewhere. Indeed, the application of methods of economics to analysis of law, organizations, and society by Coase, Posner, Coleman, Hirschmann, and others provided our inspiration for a similar approach to accounting.18

To a certain degree, a firm can choose the accounting as well as the legal regime that applies to it. The legal form of the business organization (proprietorship, partnership, cooperative, or corporation) and the place of business and incorporation determine the applicable laws. Agents have some freedom in selecting the accounting regime under which their contract set operates. This overlap between accounting and law is the subject matter of Chapter 12.

Accounting itself is a part of the set of contracts it helps operate and is subject to bargaining among agents. Like a hand that feeds the body of which it is a part, the functioning of the accounting and control of a firm also is recursive.
Measuring Contributions

Accounting and controls are designed efficiently to measure and record the resources contributed by agents and to compare them against their contractual obligations. All factor inputs are not equally measurable. The cost of measuring them with equal accuracy may differ, and equal cost measurements may have different accuracy for different resources. Some resources, like physical labor, materials, goods, equipment, and cash can be measured reliably and cheaply. Various parts of accounting, such as attendance registers, time clocks, receiving dock procedures, and cash registers, routinely and inexpensively measure such factor inputs.

The input of managers and certain employees is more elusive. Direct measurement is either too costly (e.g., night guard at the bank) or simply impossible (e.g., chief executive officer). Contracts of such agents have to be such that they can be enforced even without precise measurement of their inputs. A self-enforcing contract is one such device. "In a self-enforcing agreement each party decides unilaterally whether he is better off continuing or stopping his relation with the other parties. He stops if and only if the current gain from stopping exceeds the expected present value of his gains from continuing. No outside party intervenes to enforce the agreement, to determine whether there have been violations, to assess damages, and to impose penalties." 19

A self-enforcing contract reduces the agent's incentive to shirk, and thus lessens the need to directly measure the agent's contribution. Top managers and outside auditors are examples of such agents. We discuss their contracts in Chapters 4 and 8, respectively. Contractual involvement of customers, vendors, and labor in the firm and its accounting takes relatively simple forms because their contributions and entitlements are easily measurable. On the other hand, deep involvement of the U.S. Department of Defense in the accounting and control of its cost-plus contractors is an interesting exception, caused by the difficulty of measuring the entitlements. We return to this topic in Chapter 12.

Measuring Entitlements

A firm's contract set entitles each participant to receive resources from the firm. The second major function of accounting is to determine who gets what. For example, the accounting system may determine the wages and benefits of factory workers as a function of their measured contributions in time worked or quantity produced. Receivables, payables, purchasing, inventory, and shipping accounts keep track of the entitlements of customers, vendors, and other agents involved in the firm. Loan accounts measure the entitlements of the creditors.

As just stated, when the input of an agent is not easily measurable, entitlements cannot be determined by a simple function of measured input. Rewarding an agent on the basis of a measurable contribution that is poorly related to the actual but unobserved contribution may induce behavior that is unacceptable to other contracting agents. This is especially true of top managers and auditors. When the direct measure of an agent's input is difficult, entitlements are either fixed in
advance and thus made independent of measured input or are made to depend on surrogate measures, such as some measure of output. The former method is used for auditors; a combination determines the compensation of top managers.

Shareholders contribute capital and bear risk. Cash contributions are easy to measure but the value of in-kind contributions must be estimated before entry into capital accounts. Shareholders invest in the firm without a guarantee that they will receive a return on it.

Shareholders do not bear all the risk, only a relatively large part of it. Risk arises either from acts of nature or when one or more contracting agents behave differently than what others expected of them: customers may fail to return to buy the firm’s products, employees may demand higher wages and go on strike, managers may prove to be extraordinarily shortsighted or incompetent, and the auditors may prove to be negligent or worse in their duties. Such unexpectedly bad performance on the part of any agent drains the pool of wealth represented by the firm from which all agents draw their share, just as unexpectedly good performance increases the wealth. Some agents may be shielded from short-term variations in the size of this pool of wealth, but sooner or later, all are affected to some degree. For example, customers risk not being able to obtain spares, employees may lose jobs, auditors lose clients and reputations, and managers lose both jobs and reputations.

Perhaps the key difference between shareholders and other agents is not that the former bear the residual risk of the firm. The shareholders have little flexibility, having bought the stock, to improve their contractual terms with other agents, and thereby to affect the total size of the pool of wealth. (They can, of course, dump the stock and lower the price, but they themselves end up bearing the brunt of such loss of wealth.) In this sense, the equity holders as a class are almost completely precommitted with respect to this set of contracts and are therefore passive bystanders after the primary issue of the stock is completed. This resource precommitment, or the relinquishment of the right to periodically recontract, is combined with the right to choose managers. These features of the shareholders’ contract distinguish them from all other agents.

The precommitment of capital by shareholders is coupled with their status as residual claimants. Given the size of the total wealth pool of the firm, and $n$ classes of agents, at most $n-1$ entitlements can be determined independently. The $n$th entitlement is determined by the first $n-1$, and is not directly linked to the corresponding input. This lack of a direct link between input and entitlement, necessary because there are only $n-1$ degrees of freedom in allocating wealth to $n$ agents, is accepted by the group of shareholders as a quid pro quo for rights to all residual wealth. Double-entry bookkeeping is designed to measure the entitlement of the shareholders as a residual. Once the entitlement of the shareholders as a group has been determined, the allocation of this entitlement among the individual shareholders is proportional to their contributions.
Distribution of Information About Contract Fulfillment

Agents want to know if they have received what they contracted for. Some agents know their contributions and their entitlements without the help of the firm’s accounting system, especially if their entitlements are independent of others’. Creditors, vendors, and customers are examples of such agents. They are interested in the firm’s accounting and control to help minimize and promptly resolve any disputes through provision of shared information. Preparation of bills, invoices, and other documents helps efficient settlements.

Other agents, such as hourly or weekly workers and many salaried employees, often depend on the accounting and control to measure their input and entitlements, even though their entitlements are largely independent of the inputs and entitlements of others. The payroll accounting system provides enough data to these agents so they can verify if the terms of their contract have been fulfilled. They are interested in the accuracy of accounts. They are also interested in the overall financial performance of the firm because it determines the prospects for continued employment. Financial data become especially important when a labor contract is renegotiated.

It is hardly surprising that shareholders, agents who depend on the inputs and entitlements of other agents for their own entitlements, exhibit keen interest in ensuring that others fulfill their contract. Accounting is designed efficiently to provide shareholders with information about the fulfillment of contracts by other agents. Much of the cost accounting system, which includes job order or process costing, cost allocation, transfer pricing, and budgeting, is designed to enable managers in a decentralized firm to evaluate contract fulfillment by other managers at subordinate levels of the organization. Accounting also enables the top managers to determine if they themselves have received the compensation due to them.

Shareholders are not obligated to contribute more resources. However, creditors use the accounting system to monitor if shareholders withdraw more resources than their contractual due in the form of dividends or stock repurchases. Shareholders themselves, being most vulnerable to excess withdrawals by other agents, use the accounting and control to monitor, through the board of directors and with the help of outside auditors, that the top managers do not take more than their due and are worth what they receive.

Finally, the client’s accounting and control, which is the object of verification by auditors, cannot, in principle, be the instrument to determine whether the auditors have fulfilled their contract. Therefore, the auditors’ fees are set outside the firm’s accounting system and verification of their input is governed by laws on auditors’ responsibility. Critics of the current structure of the audit industry often object when auditors are retained for recruitment of managers and other advisory services. To the extent the information and revenue related to audit and non-audit
services are interdependent, the sale of both types of services from auditor to the client contaminates the incentives of the auditor and diminishes the effectiveness of the independent audit. Chapter 8 includes a more detailed discussion of the audit industry.

**Liquidity of Markets for Contractual Slots**

Individuals or groups who occupy contractual slots in a firm occasionally wish to vacate their positions. If the law and the existing contracts permit, they sell their slots to other agents who might be willing to accept or renegotiate the terms of the contract associated with that slot. Although shareholder and creditor positions in firms are easily capitalized and frequently sold, they are not the only ones. Exclusive contracts to supply goods and services to a firm can sometimes be sold to other suppliers. Exclusive contracts to buy goods and services from a firm, called distributorships, are also sold. Even the top management positions can be "sold"—in a negotiated corporate merger, the top executives of the acquired corporation are sometimes handed "golden parachutes," which are financial bonuses for relinquishing their positions. If the capitalized value of the slot is negative, the agent will have to pay a price. For example, Westinghouse Electric Corporation bought itself out of long-term contracts to supply nuclear fuel to certain electric power utilities by paying hundreds of millions of dollars.

Owners of salable contractual slots have an interest in creating and maintaining a liquid market for them. Firms distribute information about the rights, obligations, and record of profitability of each slot to the potential buyers. Fear of manipulation or selective release of information can make potential buyers skeptical of the reliability of such information. Arrow suggests that asymmetric distribution of information diminishes the efficiency of market outcomes. To attract new contracting agents, firms release audited accounting information about past performance. They may also include their assessment of future prospects of shareholder and creditor slots in the firm to the potential entrants.

Such information about future prospects can be self-serving. Williamson uses the term *information impactedness* to describe a "derivative condition that arises mainly because of uncertainty and opportunism." He suggests that "the reason why outsiders are not on a parity with insiders is usually because outsiders lack firm-specific, task-specific, or transaction-specific experience. Such experience is a valuable resource and can be used in strategic ways by those who, being awarded initial contracts, have acquired it." Only verifiable information can be effectively communicated to potential buyers.

Even if the current occupants of contractual slots in the firm cannot sell them, they often have an interest in making their contributions to the firm known to other potential buyers of the resources they have to offer. The "free" distribution of accounting information of a firm to nonparticipating agents is particularly important for suppliers of skills that are difficult to measure. Managers, auditors, or consultants carry much of their earning capacity in the form of reputation and are, there-
fore, interested in various aspects of the accounting system that help create a market for their services.

Finally, the agent interested in leaving the firm is not the only one interested in creating a market for these slots. All other participants in the firm are also interested in promptly filling a vacated slot if leaving it vacant reduces their own welfare. Indeed, much of the risk of participation in a firm arises from the unexpected departure of coparticipants. Departure of customers lowers sales, departure of employees lowers production, departure of managers lowers efficiency, and departure of auditors lowers the credibility of the accounting and control. The remaining agents are adversely affected if nonredundant vacated slots are not filled. Corporate restructuring, a popular U.S. practice in the mid-nineties, aims to cut the redundant workforce and plant. In amateur hands, the knife can cut out meat along with fat, killing the patient.

It is in the participants’ interest to create and maintain a liquid market for the inputs the firm needs. The accounting and control is designed, in part, to help create such markets for equity and loan capital, managerial and other human skills, equipment, materials and supplies, and products and services. It helps to create security markets as well as to recruit managers and engineers, and it assures vendors and customers that the firm is a reliable business partner. A substantial part of the print order of annual reports of large publicly held corporations is distributed to nonparticipating agents. W.R. Grace, for example, prints four times as many annual reports as it has shareholders and advertises the report in financial publications. The importance of the role played by financial analysts, the business press, and other information intermediaries in accounting is explained by the help they provide in maintaining the liquidity of markets for the inputs and outputs of the firm.

Common Knowledge for Renegotiation of Contracts

The length of individual contracts in a firm varies in time as well as in the number of transactions covered. A contract to buy or sell could be a one-time deal or a long-term commitment. The same is true of employment and borrowing. The audit contract is usually negotiated each year. With the exception of shareholders, whose commitment is open-ended, all contracts are periodically renegotiated.

The fifth function of accounting is to provide information in the form of common knowledge in order to facilitate contract renegotiation among current participants. Although agents may also use additional private information, availability of a common verified database helps eliminate certain types of strategic bargaining that may make some participants worse off without improving the lot of any.

The practice of negotiated renewal of contracts is an intermediate solution between (1) starting a fresh search for potential participants in the appropriate factor market at the conclusion of each transaction, and (2) entering long-term or permanent, comprehensive contracts. Uncertainty, changing environment, and
boundedness of human foresight rule out rigid, long-term comprehensive contracts. The magnitude of the incremental costs of conducting frequent transactions in many factor markets renders the first option uneconomical. In addition, participants in the firm learn about local conditions, tasks, and techniques from their past experience in their contract slots. Their increased efficiency makes it attractive for other participants to want to retain them in the contract set. However, the special knowledge an agent acquires on the job is not available either to the manager who may negotiate the agent’s contract on behalf of the firm, or to the potential replacements of the agent drawn from the appropriate factor market. Existing participants seek to exploit this special knowledge by demanding a larger share of resources. Competition among many such participants reduces their ability to increase their compensation. But contract renewal negotiation can give rise to prolonged conflicts.

The basic theme that the efficiency of economic relations depends on the ability of agents to renew contracts by adjusting them to the changing environment occurs throughout economics. Commons emphasized the role of organizations in promoting continuity of relationships by reducing actual or potential conflict. Hayek insisted on the importance of rapid adaptation to changes in “particular circumstances of time and place.” Arrow analyzed the importance of minimizing the cost of bargaining among agents in organizations.

Wiggins and Libecap provide a dramatic illustration of how large the deadweight losses to social welfare can be when asymmetric distribution of information prevents economic agents from arriving at mutually beneficial arrangements. Owners of leases that cover a single underground pool can extract oil and gas independently, or can form a partnership and operate the field as a single unit. Unitization of oil fields yields large gains, as much as 100 or 200 percent, in the value of extractable hydrocarbons. Yet, for a majority of oil fields in the United States, lease owners are unable to conclude negotiations for unitization of their leases. Recovery of oil from independently operated leases leads to inefficient utilization of the underground pressure of gas to get the oil out and reduces the extent of secondary recovery. This loss frequently amounts to hundreds of millions of dollars. However, since the lease owners and their engineers have superior information about the value of their own leases rather than of the value of other leases, negotiations often break down because the parties fail to agree on the relative shares of the net profits from the unitized operation of the field. It is interesting to note that the same lease owners apparently have no difficulty in sharing the cost of exploratory drilling on neighboring lease tracts, because there is no information asymmetry at that stage of negotiations. Most of the unitization that does take place in the United States occurs during the secondary recovery phase of oil fields. By that time most of the information about the relevant characteristics of various leases has passed into public domain, and it becomes easier to reach an agreement.

Accounting includes some precommitments to reduce information asymmetries among contracting parties by sharing a common base of information in the
form of public disclosure. Public financial statements, disclosure of accounting policies and significant details in footnotes, management’s analysis of financial statements and results, and even financial forecasts have the effect of reducing surprises at the time of contract renegotiation. The losses to society from such surprises and the confrontational attitudes they engender can be so large and have such significant externalities that securities laws in the United States and in many other countries require public disclosure by publicly held firms. In the later half of the nineteenth century, state regulators in the United States used public disclosure as an instrument to reduce confrontation between railroads and a suspicious public.9

Private disclosure to those who request information is deemed insufficient. If information were only privately available, many agents may have reason to doubt that others have received the information and, therefore, may be tempted to behave strategically.10 Public disclosure laws abate such behavior by making financial statements common knowledge.

**Correspondence Between Organizational and Accounting Forms**

Accounting adapts to the size and form of organization or contract set it serves. To illustrate this point, consider three stylized forms of business organizations and the kind of accounting that serve each form.

**Bookkeeping**

The corner grocery store or fruit stand, operated by its proprietor with little or no outside help, is an elemental business organization. The owner may use personal savings or borrow to finance the operation, may lease the premises, and buy daily or weekly from wholesalers on credit and sell for cash to the customers. Few of these agents, other than the tax collectors and, perhaps, the grocer’s creditors, depend on the grocer’s accounts to carry out exchanges with the firm. Most of the grocer’s accounting effort goes into recording transactions as a memory aid. Much of it could be dispensed with if the grocer’s memory were better. This form of business organization, without managerial hierarchy and with a closely held residual interest, is the oldest and, even today, most numerous. Accounting that serves such an organization, largely as a record to aid memory and convenient organization of data, has long been known as bookkeeping. This is the classical model of accounting.

**Managerial Accounting**

If the grocery store grows until the grocer cannot perform all the managerial work alone, a second organizational form comes into being. The residual interest in such a firm is still closely held, but it is decentralized and has a managerial hierarchy. The problems accounting must solve in such an organization are more complex.
The aid-to-memory role of classical bookkeeping is still necessary, but not sufficient. The contribution of managers cannot be measured directly. A more complex system is designed to evaluate and control the performance of such agents in the firm. Budgets, transfer prices, and interdepartmental and interperiod allocations of costs and revenues are some of the devices used for this purpose in such organizations. Note that these tools of managerial accounting are rarely used or useful in the mom-and-pop grocery store. This more complex form of accounting can be labeled the managerial accounting or stewardship model. It includes bookkeeping as an important component.

**Financial Reporting**

Finally, consider a third firm that is internally decentralized and in which the number of shareholders has become so large that they can no longer exercise direct control over the activities of the managers. At this stage, the firm’s system expands to the financial reporting model. Either because of the diffusion of ownership, or because of heterogeneity of interests among the nonmanagement agents, agents find it worthwhile to pay for the services of an independent auditor to verify the information provided by management. The demand for audited reports by banks and other creditors is an example of this latter phenomenon. The presence of a third party to attest to the veracity of the information produced by management characterizes the financial reporting model. Financial accounting always includes bookkeeping and almost always includes managerial accounting, depending on the degree of internal decentralization.

Distinctions between bookkeeping and accounting, and between financial and managerial accounting, have long been a matter of discussion among accountants. Bookkeeping is said to be procedural or mechanical, while accounting is judgmental or discretionary. Managerial and financial accounting are differentiated on the basis of internal and external use of the data provided by them. Such distinctions have become deeply ingrained in the organization of accounting curricula and textbooks.

In contrast, the correspondence between forms of accounting and organizations does not divide the accounting of a firm into several parts. Instead, it relates the entire system of accounting to the organizational form. Accounting scholars have long recognized and analyzed this connection. Hatfield recognized the separation of ownership and control and the diffusion of ownership as the two important breakpoints in organizational forms that drive accounting. Yamey traced the historical evolution of organizational and accounting forms. Skinner also identified a similar correspondence between accounting and organizational forms. Littleton described this relationship as follows:

Accounting has always been primarily a service tool of enterprise management. Morality is clearly involved here. As long as an owner–operator was the only person concerned, accounting could only be operative in a very pri-
vate and personal way. If deception was involved, it was self-deception, except, of course, where an embezzling bookkeeper would try to falsify the records. Wherever partners operated a business, there was need for a factual record to which certain differences of opinion could be referred. Accounting, however, was still a personal service, although it must be said that a partner had more opportunity than a bookkeeper to falsify the facts into a deceptive picture. When we think of limited liability corporations of today, with hired managers and large numbers of absentee stockholders, it becomes evident that the moral scope of accounting has been vastly expanded. Many people, wholly out of touch with the physical aspects of enterprise operation, depend upon future representations of managerial actions, of results of actions, and of potentialities for future actions. As the size of enterprises increases and the distance between the owner-lenders and the operating managers grows wider, the opportunities expand for the practice of deceit by people of authority.35

Summary

Each organization develops accounting suitable to its own unique characteristics so that it may serve as an effective instrument of control. In small business firms, the control function is best served by bookkeeping; in decentralized firms with tight ownership, by managerial accounting; and in decentralized firms with diffuse ownership, by financial accounting. The contract theory of accounting and control helps us integrate this variety of organizational and accounting forms into a unified framework.

Accounting makes contracts work. Accounting affects agents, and is a matter of negotiation and bargaining among them. The choice of accounting is a part of the contracts it helps to implement. The contractual form that ties each agent to the firm depends on the characteristics of the resource the agent contributes and receives. The contractual form, in turn, determines the agent’s interest in various aspects of the firm’s accounting. In the six chapters of Part Two, we focus attention on the differences among three important types of agents—managers, investors, and auditors. Attention shifts to systemwide issues in the five chapters of Part Three.

Notes

1 Although this idea can be traced back to Ripley, Veblen, and even to Adam Smith, Berle and Means made the most effective argument. George J. Stigler and Claire Friedland discuss the earlier literature in “The Literature of Economics: The Case of Berle and Means,” Journal of Law and Economics, Vol. 26 (June 1983), pp. 237–268. See also William Z. Ripley, Main Street and Wall Street (Boston: Little Brown & Co., 1927); Thorstein Veblen, Absence Ownership and Business Enterprise in Recent Times (New York: B.W. Huebsch, Inc., 1923), and Adam Smith, An Inquiry
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See Barnard; see Simon.


Barnard, and Simon.

Simon, p. 113.

Ibid., p. 41.

Cyert and March, p. 34.


Ibid.


John R. Commons, Institutional Economics (Madison: University of Wisconsin Press, 1934).


Amin Amershi and Shyam Sunder, “Failure of an Efficient Market to Discipline Managers in a Rational Expectations Economy,” Journal of Accounting Research (Autumn 1987), pp. 177–195, provide an example of suboptimal resource allocations when the common knowledge assumption is weakened. Strategic behavior implies acting in one’s
Additional Reading


