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MARGARET M. BLAIR

To a casual observer, the relationship between a firm and its employees would seem to be a central, perhaps defining, feature of the firm itself. Yet the tendency among economists and legal theorists has been to study the nature of the firm, as well as the property rights and governance structure associated with it, separately from the structure and terms of relationships with and among the employees of firms. The main exception has been work that focuses on one subset of employees—managers—and uses principal-agent analysis to explore the relationship between managers (understood to be the agents) and shareholders (understood to be the principals). This view is premised on an underlying assumption that “the firm”

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is basically a bundle of assets that belongs to shareholders but is managed for them by hired managers.

But an alternative view—in which the relationships among the people who participate in the productive activity of firms are at the heart of the definition of the firm itself—is beginning to take shape in economic theory. This alternative view has not yet fully crystallized and has so far had little influence on the legal debate about corporate governance. These evolving ideas about the nature of the firm and the role played by investments in “human capital,” especially by the people involved in the firm, are the subject of this chapter. Its central thesis is that this new view of the firm should be incorporated into the legal debate on corporate governance.

The legal debate in recent years has relied heavily on a contractarian view, which treats the firm as a “nexus” through which all the various participants in the productive enterprise contract with each other, either explicitly or implicitly. Although the “nexus of contracts” view would seem to focus on the relationships among all the participants in the firm, most legal scholars have emphasized one relationship—that between shareholders and managers—above all others. A somewhat different approach can be seen in what is known as the entity view, which came to prominence during the middle decades of the twentieth century. It holds that, under the law, a new entity, with status as a separate legal “person,” is created when a corporation is formed. But advocates of the nexus approach reject this idea and would analyze firms as devices by which shareholders (as principals) contract with managers (as agents). Drawing on the new economic thinking about the nature of the firm, I argue that the entity view of the firm should be brought back to center stage in the law because the legal device of creating a separate juridical person may be an important mechanism for protecting enterprise-specific investments made by all participants in the firm, including both employees and shareholders.

Some Theoretical Background

A growing body of economic theory suggests that specialized investments—investments whose value in a particular enterprise greatly exceeds their value in alternative uses—play a critical role in determining the boundaries of firms and the allocation of risks, rewards, and control rights within firms. According to the theory, such investments need appropriate incentives and protections, and in particular, there are incentive benefits that flow from assigning control rights over the assets of a firm, or over the firm itself, to

parties who make such investments. Much of the earlier literature on specific investments, however, referred primarily to physical or other alienable capital.

The exception has been in labor theory, which for decades has recognized the importance of firm-specific human capital. Nonetheless, theories of the firm have done little until recently to address the problems raised by such investments. Before considering how firm-specific investments have been treated in the theory of the firm, then, it is useful to review what labor theorists have said about investments in firm-specific “human capital.”

Labor Theory

In 1964 Gary Becker coined the phrase “human capital” to refer to the idea that much of the skill and knowledge required to do a job could only be acquired if some “investment” was made in time and resources. Becker considered the implications of the fact that some of the knowledge and skills acquired by employees have a much higher value in a given employment relationship than they do in other potential relationships. Such specialized knowledge and skills may often be productivity enhancing, he argued, and are therefore likely to be an important part of the employment relationship in practice. But, he noted, they introduce a complication into simple models of wages, investments in training, and other terms of the employment relationship. In particular, the labor services of employees with specialized skills can no longer be modeled as undifferentiated, generic inputs, for which equilibrium price (wages) and quantity (number of employees or number of hours of work) are determined by the intersection of supply and demand curves. Once employees are understood to have specialized skills, it matters which employee does what job for what firm. Furthermore, “if a firm had paid for the specific training of a worker who quit to take another job, its capital expenditure would be partly wasted, for no further return could be collected. Likewise, a worker fired after he had paid for specific training would be unable to collect any further return and would also suffer a capital loss.” Where investments in specific skills are important, Becker reasoned, it is no longer a matter of indifference “whether a firm’s labor force always contained the same persons or a rapidly changing group.”¹

Although Becker’s primary interest was the economic incentives for investments in training and education, along the way he introduced a concept that provides a rationale for long-term relationships between firms and

1. See Becker (1964, p. 21).

their employees. Peter Doeringer and Michael Piore built on this insight to develop their theory of internal labor markets. They argued that investments by firms in specialized training encourage firms to put in place other institutional arrangements designed to stabilize employment and reduce turnover. The organizational stability that results from these practices in turn facilitates further development of specific skills. Doeringer and Piore further argued that the use of mass-production technology, with its detailed division of labor, requires specialized skills and makes stable employment relationships more important.²

Becker also argued that employees and employers would be likely to split both the costs and returns from specialized training, to provide an incentive for both parties to stay in the relationship.³ This means that employees would typically earn less than their opportunity cost during the early stages of their employment relationship (while they were in training, for example), and more than their opportunity cost later in the relationship. An earnings pattern like this would produce an “upward sloping wage-tenure profile,” an empirical regularity that labor economists before Becker had observed, and that work by subsequent scholars has documented extensively.⁴ Consistent with the “firm-specific human capital” hypothesis, labor economists have also observed that long-tenured employees typically earn quite a bit more than their short-run opportunity cost. This empirical pattern is confirmed through studies of layoffs, which show that long-tenured employees laid off through no fault of their own (as a result of plant closings, for example) typically earn 15 to 25 percent less on their next jobs.⁵ These estimates and others in related work suggest that the aggregate

2. See Doeringer and Piore (1971). Jacoby (1990) questions this conclusion. Though he concedes that empirical evidence supports a shift from the late 1800s to at least the mid-1970s toward greater job stability, he argues (p. 323) that “there is little evidence that the shift resulted from a growing reliance on firm-specific techniques or skills. In fact, the evidence suggests that the opposite was true: that technology and job skills became less, rather than more firm-specific over time.”

3. Hashimoto (1981) subsequently provided a formal model suggesting that the division of the costs and returns from training would be split according to a formula that was a function of the relative probabilities of layoffs versus quits, and the costs of evaluating and agreeing on both the worker’s productivity in the firm and his opportunity cost, or potential productivity in an alternative firm.

4. For recent contributions to this literature, see Topel (1990, 1991).

5. These are conservative estimates. Topel (1990) found that the losses of displaced workers ranged from an average of 14 percent for all displaced workers in his study to 28 percent for workers with 10 or more years of service. Jacobson, LaLonde, and Sullivan (1993) found that earnings losses persisted, so that even six years after displacement, workers who had six or more years of service in their previous job were still earning 25 percent less than comparable workers who had not lost their jobs.

returns to investments in firm-specific human capital could represent as much as 10 percent or more of the total wage bill of the corporate sector, a figure that is of the same order of magnitude as all of corporate profits.

Although wages do seem to rise with tenure, and wages of long-tenured employees often exceed short-run opportunity costs, this evidence does not persuade all labor economists that employees acquire substantial amounts of firm-specific human capital. Perhaps other features of the labor market could account for these empirical regularities. For example, labor market models that emphasize a process of searching for an especially good job “match” also predict low wages at the start, which will rise if the match is a good one. Similarly, in “efficiency wage” models, employees are induced to perform well by making it costly for them if they get laid off, generally by paying them more than their opportunity cost—that is, the wage in their next-best job. In such cases, employees have something of substantial value at risk in the firm that can be expropriated by the employer, or that can be lost altogether if the employees lose their jobs with their current employer. These other explanations for a rising wage-tenure profile also imply that labor markets would exhibit involuntary unemployment; hence they have figured prominently in the debate about the extent to which labor markets clear.⁶ But these alternative theories do not generally rule out the possibility that firm-specific human capital is an important factor in determining the structure of many employment relationships. Indeed, most labor economists believe such investments are important in many situations.

Knowledge and skills that are specialized to a given enterprise, as well as effort that has been put forth toward the goals of the enterprise, are “assets” at risk in much the same way that equity capital is at risk once it has been committed to a given enterprise. As such, they inevitably present a contracting problem for the employee and the firm. If the firm compensates the employee up front and fully for the costs of expending the effort, or developing and using such assets, the employee could, in principle, take the compensation and walk out the door, depriving the firm of a return on its investment.

Suppose, however, that the firm does not fully compensate the employee up front, but instead pays a lower wage at first, with a promise of a higher wage later. That employee would then have a stake in the firm that is unrecoverable except as payments are made to the employee out of the economic

6. For a summary of arguments on the efficiency of nonmarket-clearing wages, see Krueger and Summers (1988); Weiss (1990). For evidence on nonmarket-clearing wages and employment practices, see Katz and Summers (1989); Dickens and Lang (1993).

surplus generated by the relationship in the future. This stake is very difficult to protect by means of explicit contracts. On one side, the firm cannot enforce a contract that requires the employee to stay and utilize those skills in the firm. On the other, because the skills and special effort in question are likely to be hard to define, let alone measure, the employee cannot enforce a contract that requires the firm to pay for the special effort expended, or the development and use of special skills.

In general, the lesson from labor theory has been that employee investments in firm-specific human capital cannot be well protected by explicit and complete contracts. Other institutional arrangements are needed, and those arrangements often have the effect of tying the fortunes of the employee together with those of the firm.

Theories of the Firm

In early thinking about the nature of the firm, Ronald Coase focused on the reason that a hierarchical relationship, with some individuals having the authority to make decisions about how people and resources are used, might be substituted for market transactions. "Outside the firm," Coase wrote, "price movements direct production, which is coordinated through a series of exchange transactions on the market. Within a firm, these market transactions are eliminated and in place of the complicated market structure with exchange transactions is substituted the entrepreneur/coordinator, who directs production."⁷ The general argument is that the central authority figure in the relationship can in some cases coordinate activities more efficiently than individual input providers could if they were all contracting with each other separately.

From Coase's initial insight, economists took the theory of the firm in two different directions. One approach has been to focus on circumstances in which it might be less costly to organize production within a firm. A central question here is what factors might increase the "transactions costs" of organizing activities through market transactions. One answer that has been given particular attention is investments in specialized assets. The second approach stresses the importance of joint production technologies, in which the firm provides a mechanism for measuring and rewarding the productivity of interacting team members.

TRANSACTIONS COSTS THEORY. Oliver Williamson has identified several features of transactions that make it costly to trade in impersonal, arm's-

7. See Coase (1937, p. 19).

length markets. Where these features apply, he suggests, transacting parties might choose to administer such transactions through hierarchical governance arrangements.⁸ One key feature is what he called the “asset-specificity” of investments, which refers to the degree of difficulty in redeploying assets to other uses. Other features that encourage hierarchical administration rather than market transactions, according to Williamson, include the longevity of the asset (to what extent will it generate its return over time?); the uncertainty and complexity of the transaction, a problem which is exacerbated when assets are long-lived; the “bounded rationality” of the transacting parties, which makes it impossible for them to anticipate all possible outcomes and complications and to write “complete” contracts that specify what is to happen under each scenario; and the tendency of transacting parties to be “opportunistic.” Of these reasons, asset specificity can be seen as central, since assets that can be readily redeployed are (by definition) not at risk in a given relationship. It is only when assets are specific that the problems of longevity, uncertainty and complexity, bounded rationality, and opportunism become important.

Williamson’s work spawned a literature on the contracting problems that arise when assets are specific. Benjamin Klein, Robert Crawford, and Armen Alchian, for example, argued that when two contracting parties each make investments that are specific to their relationship, either party can attempt to expropriate the returns from those investments by threatening to “hold up” the other party in the enterprise.⁹ The potential “hold-up” problem, they speculated, would encourage the contracting parties to integrate their operations vertically; that is, the supplier would acquire the customer, or vice versa. Suppose one party owns a coal mine, and the other party owns a power plant built at the mouth of the coal mine and designed to use coal from the mine. Then the two parties would probably find themselves in frequent disputes about the price and terms on which the coal is to be sold to the power plant. But if a single party owns both the mine and the power plant, this owner would maximize the joint return and would not waste resources haggling over the terms of trade between the two units.

Empirical research that has attempted to test the Williamson and Klein, Crawford, and Alchian hypotheses has generally confirmed that firm-specific investments are important in determining ownership structure and degree of vertical integration. But this research has taken an interesting twist, which implies that firm-specific investments in human capital may be a more important reason for corporate integration than firm-specific investments in physical capital.

8. See Williamson (1975, 1985).

9. See Klein, Crawford, and Alchian (1978).

Kirk Monteverde and David Teece have studied parts production in the automobile industry to ask under what circumstances firms might choose to undertake production in-house rather than contracting production out to a supplier.¹⁰ They argue that vertical integration might not be necessary if the specialized assets used in production of the parts include only physical capital, such as tools or dies. The hold-up problem, in this case, can be avoided if the automobile assembly company owns the specialized tools and leases them to the contractor who produces the parts. Such arrangements, which Monteverde and Teece refer to as “quasi integration,” are commonly observed in auto parts production. But where the specialized investment involved in producing the parts is in nonpatentable know-how and skills, Monteverde and Teece argue that quasi integration will no longer solve the hold-up problem. They speculate that full integration will be required to minimize the transactions costs. Similarly, Scott Masten, James Meehan, and Edward Snyder find that, in regressions in which both investments in specialized knowledge and investments in specialized equipment are used to explain vertical integration, investments in specialized knowledge have much more explanatory power.¹¹

However, none of these authors offer much insight into why and how organizing production within a firm solves the hold-up problem associated with firm-specific investments by multiple parties, nor which of several participants in an enterprise should ideally be the “owner” of an integrated enterprise. Sanford Grossman and Oliver Hart address this issue.¹² Grossman and Hart’s model considers a situation in which participants in an enterprise must make firm-specific investments that are very difficult or impossible to define in enforceable contracts. Their model leads to the conclusion that the ownership rights in the firm should go to the party whose firm-specific investments add the most value to the enterprise but are the most difficult or impossible to contract over. Ownership rights over the firm provide some assurance to the party who must make these investments that its claim to a share in the rents generated by the investments will not be expropriated by the other participants.

Lurking in the background of these transaction cost arguments for why a firm exists is the assumption that a firm is a fairly well-defined entity whose interests are simply an extension of the interests of its owners. By this assumption, employees are contracting with the firm but are not, them-

10. Monteverde and Teece (1982a, 1982b)

11. See Masten, Meehan, and Snyder (1989).

12. See Grossman and Hart (1986).

selves, part of it. Under the terms of the Grossman and Hart theory, for example, firms are defined as bundles of assets under common ownership, where ownership implies control over the use and disposition of the assets.¹³

The tendency in the transactions cost literature has been to recognize that firm-specific human capital raises similar questions, but then to sidestep the implications of these questions for corporate governance. Williamson identifies some features of organizations, such as team accommodations, informal process innovations, and knowledge of codes and procedures, that tend to make incumbents more valuable to employers than workers hired on spot markets might be. He points out that transactions in which investments in specific human capital are important must include some sort of safeguard for those investments, noting in particular that in such transactions, “continuity between firm and worker are valued.” Firm-specific human capital, he says, must be “embedded in a protective governance structure lest productive values be sacrificed if the employment relation is unwittingly severed.”¹⁴

However, Williamson then devotes little attention to identifying the “protective governance structures” that should exist in relationships between employees and firms that employ them. To be sure, he mentions severance pay and forms of job security as possible mechanisms for encouraging and protecting worker investments in firm-specific skills, and pensions as a mechanism for providing incentives that discourage employees with specialized skills from quitting. He also points out that collective bargaining through unions and “internal governance structures” (such as grievance procedures and pay scales) can help in providing a protective governance structure for idiosyncratic investments in skills by workers, although he notes that unions, with their bent toward egalitarianism, may not be the best institutions for arranging pay structures that will differ across workers according to their degree of firm-specific human capital.¹⁵ These and other mechanisms for encouraging investment in firm-specific human capital will be discussed in more detail later in the chapter. The point here is that it is something of a leap to assume that these protections are fully adequate to

13. Economists have not necessarily agreed on the key economic features of “ownership.” Hart and Moore (1990), for example, emphasize that ownership implies the ability to exclude others from the use of assets. According to Wiggins (1991, p. 615), shared ownership means that the owners are compensated out of a common stream of residual payments that are left over after contractual payments are made.

14. See Williamson (1985, pp. 242–43).

15. See Williamson (1985, pp. 246–47, 254–56, 265). See also Williamson, Wachter, and Harris (1975).

protect employees who make firm-specific investments. This assumption is implicit, for example, in Williamson's analysis of the transactions cost benefits of corporate governance arrangements that give the right to elect board members only to shareholders, rather than (or in addition to) other constituents: "Stockholders as a group bear a unique relation to the firm," he asserts. "They are the only voluntary constituency whose relation with the corporation does not come up for periodic review. . . . Stockholders . . . invest for the life of the firm, and their claims are located at the end of the queue should liquidation occur."¹⁶

This line of thinking follows in the tradition of labor theorists, discussed earlier, that makes a hermetic separation between labor market relationships and corporate governance. But firm-specific investments in human capital cannot be redeployed (by definition), and thus employees too are invested for life. Employees can deprive the firm of their firm-specific skills, but they cannot benefit from doing so, since these skills (by definition) have less value elsewhere. Those who make firm-specific investments in human capital are presumably expecting to be compensated from the future productivity of those investments; that is to say, from a share of the future "residual" income, or economic surpluses, of the firm. Despite their reliance on the continuing relationship with the firm, however, employees have no explicit future claim on the firm—at least not solely by virtue of their employment relationship, though employees may also be shareholders, and in Germany, employees' pension claims may be tied to the long-term success of their firms. Although we do not have precise estimates of the aggregate value of investments in firm-specific human capital, it is surely large, and possibly of the same order of magnitude as the aggregate value of equity capital. This recognition of the potential importance of firm-specific human capital, soon followed by an implicit denial that it should have anything to do with actual corporate governance such as voting for board members, has been echoed by numerous legal scholars, especially advocates of a contractarian theory of the firm.¹⁷

TEAM PRODUCTION. A second main justification for the existence of the firm is to organize team production. Armen Alchian and Harold Demsetz characterize team production as "production in which (1) several types of resources are used and (2) the product is not a sum of separable outputs of

16. Williamson (1985), pp. 304–05.

17. See, for example, Romano (1996, p. 3).

each cooperating resource, . . . [and] (3) not all resources used in team production belong to one person.”¹⁸ The problem raised by team production, according to Alchian and Demsetz, is one of metering output (where the output of any one individual is not separable from the output of teammates), and issuing rewards in ways that will motivate team members to exert effort. Advantages arise from team production if the team members can accomplish more by working together than by working separately. If this extra productivity exceeds the cost of monitoring and motivating team members to exert effort, then team production will be chosen over individual production methods. Alchian and Demsetz go on to argue that, where team production is preferred, the metering and reward problem can be solved by having one team member specialize in monitoring, and by giving that individual both the authority to hire and fire team members, and a claim on the earnings from the enterprise net of payments to providers of other inputs, who are assumed to be paid their opportunity cost.

This story purports to provide an explanation for capitalist ownership and control of firms. Taken by itself, however, it offers no particular reason why the membership of the team could not change from day to day, or hour to hour. In fact, Alchian and Demsetz state that “long-term contracts between employer and employee are not the essence of the organization we call a firm.” They argue, rather, that the relationship between firm and employee is equivalent to a series of short-term contracts: “The employer is continually involved in renegotiation of contracts on terms that must be acceptable to both parties.”¹⁹ But in large corporations, fairly long-term relationships are the norm rather than the exception. So their story seems, at best, incomplete, for explaining the actual way that large corporations typically operate.

The original Alchian and Demsetz story can be improved by allowing for investments in firm-specific human capital, or other factors that might make it advantageous to keep a particular team working together. Demsetz himself has moved in this direction in more recent work. An important aspect of the “nexus of contracts” that make up a firm, he says, “is the expected length of association between the same input owners. . . . Do the contractual agreements entered into contemplate mainly transitory, short-term association, which in the extreme would be characterized by spot market exchanges, or do these agreements contemplate a high probability of

18. See Alchian and Demsetz (1972, p. 779).

19. See Alchian and Demsetz (1972, p. 777).

continuing association among the same parties? The firm viewed as team production exhibits significant reassociation of the same input owners.”²⁰

Demsetz goes on to define a firm as “a bundle of commitments to technology, personnel, and methods, all contained and constrained by an insulating layer of information that is specific to the firm, and this bundle cannot be altered or imitated easily or quickly.”²¹ In team production with specific human capital, then, the human capital is worth more when applied together with the human capital of the other team members than it is when applied alone, and the productivity of a particular individual depends not just on being part of a team, but on being part of a particular team engaged in a particular task. If it matters who is on the team, this complicates the original Alchian and Demsetz story, because it is no longer clear that team members who invest in specialized skills and who know they are especially valuable when deployed with this particular team will be willing to accept only their (short-run) opportunity cost in wages. Hence it is no longer obvious that the monitor will be able to collect all of the economic surplus from the enterprise.

However, Alchian and Demsetz’s story focuses attention on the contracting relationships among the participants within firms and provides an explanation for hierarchical structures. From that beginning, numerous other authors have addressed the contracting problem between so-called principals—the entrepreneur or central capitalist authority figure in Alchian and Demsetz’s story—and “agents.”

In principal-agent models, employees are viewed as agents of the firm, and the managers of firms are viewed as agents of the shareholders. The contractual problem is to design the terms of a particular relationship in a way that will encourage the agent to make decisions and otherwise behave in ways that benefit the principal. Michael Jensen and William Meckling introduced the principal-agent approach to the theory of the firm in their classic 1976 article in which they proposed that the firm should be viewed as a contracting mechanism between providers of equity capital (the principals) and managers (the agents) designed to minimize the agency costs of this relationship. Jensen and Meckling argued that organizations “are simply legal fictions which serve as a nexus for a set of contracting relationships among individuals.”²²

Jensen and Meckling are thus generally credited as the source of the view of the firm as a “nexus of contracts,” and their notion of firms has been

20. Demsetz (1991, p. 170).

21. Demsetz (1991, p. 165).

22. Jensen and Meckling (1976, p. 310).

taken into the legal literature on corporate governance in support of a contractarian (rather than an entity) theory of firms. More important for the present discussion, it has often been imbued with normative status, as a statement about whose interests managers are supposed to serve. In recent years, principal-agent models have also been influential in research on labor relations in firms. But the corporate governance and labor relations literatures have typically remained rather separate.

The canonical principal-agent problem involves a transaction between two parties, one of whom must take an action that affects the other. For some reason, however, the principal cannot compensate the agent directly for the action itself, perhaps because the action itself is not observable to the principal, or perhaps because the principal does not have the information or knowledge necessary to evaluate the action. It must also be true that the consequences or observable output of the agent's action is not a determinate function of the action taken by the principal; otherwise, it would be possible for the principal to infer the action taken by observing the consequences. Instead, in the principal-agent problem, the output is assumed to be a stochastic function of the agent's action, or it is assumed to be measured with error. Since the principal cannot pay the agent for the action, the problem for the principal is to base the fee schedule on the observable factors in a way that gives the agent incentives to choose actions that benefit the principal.

The typical situation that arises is that the agent is risk averse and thus worried that because of bad luck or bad measurement, output will appear low to the principal, and the result will be a low level of payment. (If the agent is not risk averse, and if the potential losses from bad luck or bad measurement are counterbalanced by potential gains from good luck or good management, then the optimal contract is simply to pay the agent whatever the observed output is.) With a risk-averse agent, the optimal incentive structure will share the risks between the agent and the principal; for example, the principal might agree to pay a minimum wage regardless of the outcome, plus some fraction of realized output. The sharing of risks gives a risk-averse agent higher utility than if the agent bore all of the risks, but because the agent is receiving only a fraction of output, the incentive of a risk-sharing contract is less powerful than would be the case if the agent received all of the output.

Another device that can be used to induce effort by the agent is a flat fee, accompanied by a threat of termination if the agent is caught shirking. Risk-sharing fee schedules have been discussed extensively in the literature on incentive compensation systems for corporate executives, while flat

fees accompanied by a threat of termination are cited in the literature on the market for corporate control as a mechanism for inducing managerial effort as well as in labor theory, where they form the basis of “efficiency wage” theories.

In some ways, the problem raised by investments in firm-specific human capital is analogous to the principal-agent problem. The employee must take some action—for example, acquire some skills, accumulate some special knowledge, exert some special effort, develop some special relationships with co-workers—which the firm cannot directly measure and for which it cannot directly compensate the employee. The firm can only observe (perhaps imperfectly) the outcomes of such investments. As Kenneth Arrow has noted, “The employment relation in general is one in which effort and ability acquired through training and self-improvement are hard to observe.”²³ Steven Wiggins stresses the similarities between the principal-agent problem and the problem of firm-specific investments: whenever “one party performs first, he effectively makes an investment specific to the trading relationship; he invests in a specific asset. After investment, he relies on the other party to perform. The problem is that the second party can only make limited commitments to follow through.”²⁴

But the canonical principal-agent problem is different from the firm-specific investment problem in a critical way: it is asymmetric. In the canonical principal-agent problem, there is an implicit assumption that, once the fee schedule has been determined, the actions of the principal have no further effect on the outcome of the variable to which the fee schedule is tied. The outcome is realized, the fees that were promised to the agent are determined as a function of that outcome, and the agents are promptly paid. Thus some strong assumptions about the credibility of the parties and the enforceability of the arrangement are embodied in the simple principle-agent story.²⁵

In the case of firm-specific investments, however, actions of both parties can affect the payoff from the investment. The employee takes an action that affects the payoff for the firm, but the firm, in turn, can take actions that not only affect the fee that the employee gets, but that affect the stream of rents and quasi rents generated by that action. For example, the firm can decide to close the plant where the employee works, and suddenly there

23. See Arrow (1985, p. 39).

24. Wiggins goes on to suggest that firms, contracts, and government regulations can be alternative mechanisms for solving these problems. See Wiggins (1991, p. 604).

25. Wiggins (1991, pp. 646–47).

is no opportunity for the payoff to be realized. Or the shareholders can sell the firm to someone else who can fire the manager or dismantle the firm.²⁶

Principal-agent models have been useful in delineating certain kinds of contracting problems. If firm-specific human capital is an important input in corporate enterprises, however, the classical principal-agent model may be too one-sided to describe the fundamental features of the employment relationship, or of the nature of the firm itself.

Contracting Problems Raised by Firm-Specific Human Capital

Firm-specific capital is indeed central to theories about the nature of the firm. It has bearing on both transactions costs and team production problems. Although considerable thought has been given to how ownership structures might be arranged to protect investments in firm-specific physical capital, less has been said about how contracts might be drawn up or other institutional arrangements might be made to protect firm-specific human capital.

Much has been made of the idea that the corporate form facilitates a division of labor in which managers specialize in decisionmaking and outside investors specialize in risk-bearing.²⁷ This approach, however, essentially ignores the risks borne by employees with firm-specific human capital. An investment in firm-specific human capital can be risky not only because of potential hold-up problems and the associated risk of expropriation, but also because a particular skill may no longer be as useful in a given firm, or the firm itself may do poorly while the economy does well, or the entire economy may do poorly. Outside shareholders might be able to draw up contracts that can protect employees to some extent from some of these risks, but surely not from all of them. Employees, inevitably, will also bear some of the enterprise risk.

Numerous scholars have argued that employees are protected from the risks of expropriation by the fact that the firm must be concerned about its reputation for fairness. A good reputation enables it to contract on favorable terms with other employees in the future. Oliver Williamson writes:

26. Becker (1964, p. 21) was clearly aware of this problem. The point is also close to that made by Shleifer and Summers (1988) in their critique of hostile takeovers, arguing that such takeovers may create value for the new owners by breaching the implicit contracts with employees and other stakeholders put in place by previous management. Although Shleifer and Summers do not appeal explicitly to investments in firm-specific human capital, such investments would be one explanation of the quasi rents that are supposedly up for grabs in their story.

27. For the classic article that makes this argument, see Fama and Jensen (1983).

Employers who have a reputation for exploiting incumbent employees will not thereafter be able to induce new employees to accept employment on the same terms. A wage premium may have to be paid; or tasks may have to be redefined to eliminate the transaction-specific features; or contractual guarantees against future abuses may have to be granted. In consideration of those possibilities, the strategy of exploiting the specific investments of incumbent employees is effectively restricted to circumstances where (1) firms are of a fly-by-night kind, (2) firms are playing end games, and (3) intergenerational learning is negligible.²⁸

In practice, employees are also not given significant protections against the risks of decline in the value of their firm-specific skills. It is difficult to imagine how such protection could be provided in any company over an extended period of time, as long as the company retains ultimate power to deny wage raises or to terminate employment altogether. Indeed, it is much harder to enforce “fairness” in an employment agreement whose terms can be renegotiated as business conditions facing the firm vary. As Paul Milgrom and John Roberts note: “The firm’s management may be tempted to exaggerate financial difficulties in order to justify paying lower wages to workers.”²⁹ On the other hand, totally insulating employees against risks might discourage them from doing the things that are under their control to pull resources out of lower-value investments and move them to higher-value investments, by retraining, for example.

Some of the disincentive effects of mechanisms that shelter employees from the risks inherent in making specialized investments could possibly be counteracted with intensive monitoring. But the monitor must focus on the measurable dimensions of performance, which might lead employees to focus on those “monitored” dimensions to the exclusion of nonmeasurable dimensions that may also be important to productivity.³⁰ Ultimately, attempting to monitor investments in firm-specific human capital would present such severe problems of measurement, verification, and evaluation that it would probably be ineffective.

Yet another contracting problem raised by investments in human capital is how to understand and quantify all the forms that the returns to those investments can take. Whereas the returns to physical capital investments can generally be measured in monetary terms, some of the returns to invest-

28. Williamson (1985, p. 261). For another example, see Milgrom and Roberts (1992, p. 331). For a general discussion of the role of norms, reputation, and corporate culture, see Kreps (1990).

29. See Milgrom and Roberts (1992, p. 334). For a good summary of risk-sharing issues in implicit employment contracts, see also Rosen (1985).

30. See Holmstrom and Milgrom (1991).

ments in human capital may take other forms. For example, human capital may not depreciate with use, but may, instead, appreciate. Knowledge and skills that are used may build on themselves and become more valuable. If so, the returns to tenure may go well beyond just the returns from skills accumulated up to a particular point in time, and by extension, the losses from premature job separations may be even larger than that implied by immediate losses in workers' incomes. An employment relationship may include a component that is like an option. If the employee stays with the present employer, the employee will have an opportunity to acquire skills tomorrow that build on the skills acquired through today. Those skills would generate an additional stream of returns on top of the stream of returns from the skills accumulated through today. If the employment relationship is prematurely severed, that option value is lost.

The complex nature of the returns to human capital may make it impossible, Milgrom and Roberts note, "to identify any individual or group that is the unique residual claimant [in a firm], or, indeed, to identify the benefits and costs accruing to any decision and so compute the residuals."³¹ The difficulty of computing and assigning residuals complicates the problem of bargaining between any employee and the firm over the allocation of residual claims, or over any scheme of payments that might be devised to encourage both parties to the relationship to take into account the impact of decisions by one on the other. In sum, work on theories of the firm also tends to imply that explicit contracting cannot be used effectively to protect firm-specific investments in human capital by employees.

Institutional Arrangements That Address Contracting Problems

Since the contracting problems surrounding investments in firm-specific human capital are so pervasive, it should not be surprising to find that providers of human and financial capital have developed noncontractual mechanisms for encouraging and protecting firm-specific investments. Some of these mechanisms have been studied by labor economists and versions of them are found in most large corporations. In general, however,

31. See Milgrom and Roberts (1992, p. 315). For a general discussion of a related problem with team production, the problem of allocating returns from team efforts in ways that discourage "free riding" by individual members of the team, see also Holmstrom (1982).

they have not been linked with the institutional nature of the firm itself, or with corporate governance.

Customs and practices that encourage long-term employment relationships have a variety of benefits that support, or are perhaps complementary to, investments in firm-specific human capital. According to Milgrom and Roberts, some of these benefits include “an increased opportunity to invest profitably in firm-specific human capital, the greater efficacy of efficiency wage incentive contracts in long-term relationships, and the enhanced ability to make an accurate assessment of an employee’s contributions to long-term objectives by monitoring performance over a longer period of time.”³² Long-term relationships also encourage the development of reputations. After all, good reputations are more valuable the longer the time-horizons of the contracting parties, so that in a longer-term relationship, both sides to any given transaction within that relationship will have stronger incentives to perform fully.

Job Ladders, Career Paths, and Seniority Rules

Career paths and job ladders are said to be important mechanisms for encouraging employees to make investments in firm-specific human capital and for ensuring that the firm shares the rents generated by those investments with employees.³³ Seniority rules are a related mechanism that provides some protection for employees from the possibility that the firm will renege on its implicit agreement to compensate the employee for his or her firm-specific investments by paying them a higher wage during their later years, perhaps even a wage that exceeds their productivity during those years. Seniority rules protect the high-tenured worker by requiring the firm to lay off low-tenured workers first.

Both seniority rules and job ladders help ensure that the employee will be appropriately compensated for making firm-specific investments over time. Of course, such promises would have no incentive benefit if employees did not believe that the employing organization would continue to exist over the relevant period. So these mechanisms are not useful by themselves but must be embedded in a relationship that is understood to be for the long term, with an entity that is long-lived.

32. See Milgrom and Roberts (1992, p. 363). The classic discussion of the role played by long-term employment relationships is Doeringer and Piore (1971).

33. For example, Koike (1990); Prendergast (1993).

Unionization

One effect of unions is to protect employees from actions such as dismissal (except “for cause”). Other terms in the typical collective bargaining agreement in turn help prevent firms from driving out unwanted employees without actually dismissing them. These take the form of rules designed to safeguard wages, benefits, and job assignments, as well as to protect against layoffs. However, these sorts of protections impose rigidities that can have negative implications for efficient adaptation to changed circumstances.³⁴ But these costs must be weighed against incentives for long-term investment in firm-specific capital (and other benefits) that union agreements may provide.

“Hostages” or Performance Bonds

A “hostage” is something of value that is pledged by one party to a transaction and that will be forfeited to the other party if the first party fails to perform according to the contract. One version of the efficiency wage argument, for example, is based on a hostage argument: that is, workers accept wages that are lower than their opportunity cost in the early years of their employment relationship, and this serves as a commitment by the worker to stay with the firm and to be repaid later with wages that are higher. Another version of the hostage argument is the “performance bond,” in which an employee posts a bond upon being hired that must be forfeited if the employee were to leave or to underperform. The administration and enforcement of performance bond agreements, however, requires that third parties be able to observe and verify certain measures of performance and certain triggering events. Hence performance bonds by themselves seem to be poor candidates for solving the contracting problems presented by the accumulation of specialized human capital unless they are embedded in institutional arrangements that also foster trust or that make reputations valuable.

Hostages provided by the employer include severance pay commitments and their gilt-edged cousins, golden parachutes; these make it costly for the employer to sever the employment relationship. Penalties for certain kinds of changes in the contract terms may perform a similar function. Milgrom and Roberts argue, for example, that employment contracts might be designed to impose a penalty of some sort on the employer for invoking

34. See Epstein (1985, p. 147); Klein, Crawford, and Alchian (1978).

a claim of hard times in an effort to negotiate lower wages, so that the employer will not be tempted to use this claim frivolously in negotiations.³⁵

Corporate Culture, Norms, and Goals

“Workable principles and routines . . . create shared expectations for group members,” as Milgrom and Roberts note. The advantages of such principles are that they “help guide managers in making decisions,” provide “a set of clear expectations for everyone in the organization,” and “provide a set of principles and procedures for judging right behavior and resolving inevitable disputes.”³⁶ According to David Kreps, these aspects of corporate culture may serve as “focal points” around which participants in the firm can arrive at stable patterns of interacting that are Pareto superior to patterns they might lapse into without the benefit of the common norms.³⁷ Hence corporate culture can help support investments in firm-specific human capital by fostering trust.

Corporate culture, itself, can also be seen as part of the firm-specific capital of the firm, the organizational capital, as it were. Richard Nelson and Sidney Winter argue that the knowledge of how to do things is often implicit in the routines that make up the daily activities of the people in the firm.³⁸ As such, this knowledge is neither articulable nor alienable but is embodied in the people and in their relationships to each other. Another similar mechanism, Sanford Jacoby writes, is the “socialization at the workplace itself, which relies on consensual methods of inculcating norms and goals, such as ideologies or authority that must be seen as legitimate if they are to be persuasive.”³⁹

Ownership and Control Rights

Yet another noncontractual mechanism for protecting specific investments is “ownership,” or “property rights.” Oliver Hart and others remind us that “ownership” involves possession of “residual” control rights, the rights to make all decisions (at least those that have not been delegated to others by contract) and receive whatever is left over after all payments specified by

35. Milgrom and Roberts (1992, p. 334).

36. Milgrom and Roberts (1992, p. 265).

37. Kreps (1990) provides an extensive analysis of the role of corporate culture using game-theoretic arguments.

38. Nelson and Winter (1982).

39. Jacoby (1990, p. 332).

contract have been paid. In particular, Hart has noted, “ex post residual rights of control will be important because, through their influence on asset usage, they will affect ex post bargaining power and the division of ex post surplus in a relationship. This division in turn will affect the incentives of actors to invest in that relationship.” On these grounds, Hart has argued that “cospecialized” assets should be owned in common. If they are not, then the separate parties who own each asset will have reason to fear that the other parties will expropriate an unduly large share of the rents earned by the assets and will tend to underinvest.⁴⁰

But, of course, neither the firm, nor any other participant in the enterprise that the firm directs, can “own” the human capital that may be cospecialized with the other assets of the firm. Where firm-specific human capital is important, then, arguments about the role played by property rights might in some cases point toward employee control of the enterprise, or at least participation in management, rather than capitalist ownership and control. In noting the advantages of the partnership form of organization, for example, Milgrom and Roberts point out that “human capital is not easily tradable, and if the residual returns on that capital belong to the humans who embody it, then the usual arguments about ownership rights suggest that the residual control should be assigned to them too.”⁴¹ There are several possibilities for assigning a share of ownership and control rights to labor, ranging from equity ownership by employees to labor participation in management to direct labor ownership of firms.

Compensating employees with equity stakes in corporations might foster and protect investments in firm-specific human capital. Equity ownership by employees serves as a kind of hostage, helping to make the firm’s promise to share in the rents credible. It also gives employees some control rights (by virtue of their equity holdings rather than by virtue of their status as employees), while at the same time helping to align their interests with those of outside equity holders. And if equity claims are substituted for the wage premium that firm-specific human capital supposedly earns, the wages will come closer to reflecting opportunity cost and thereby send the correct economic signals to decisionmakers within the firm to guide hiring and firing decisions. There is substantial evidence that the use of equity-based compensation systems is growing in U.S. corporations, although no

40. See Hart (1989, pp. 1757–74, longer quotation from p. 1767).

41. See Milgrom and Roberts (1992, p. 523). For discussions of employee ownership as a mechanism for protecting investments in firm-specific human capital, see also Putterman and Kroszner (1996, p. 20); Blair (1995).

definitive empirical studies have linked employee ownership in publicly traded firms to investments in firm-specific human capital.⁴²

Direct labor participation in management is more common in Japan and Europe, where corporate governance systems seem to feature institutional arrangements that provide mechanisms by which employees are given a direct voice in management. Japanese scholars, especially, have credited these arrangements with providing incentives and protection for employee investments in firm-specific human capital.⁴³ Germany's codetermination system has also attracted attention in this regard.

As an empirical matter, employee-controlled industrial firms remain rare.⁴⁴ However, a number of scholars were inspired by the Yugoslavian experiment with labor-managed firms in the 1960s to consider the advantages and disadvantages of organizing production in this way. This produced a lively academic debate in which some neoclassical economists argued that employee-controlled firms would be inefficient for a variety of reasons: for example, such firms would supposedly maximize net revenues per worker rather than profits, would not have the right incentives to maintain their physical capital adequately, or would be inefficient because hierarchies are needed for efficient processing of large amounts of information.⁴⁵ Other scholars have answered these criticisms by pointing out that, in each case, the supposed inefficiencies are a product of peculiar modeling assumptions made by the critics.⁴⁶ But absent obvious legal restrictions against such firms, economists generally take their rareness or absence to mean that this form is not economically viable for a variety of reasons. For example, Henry Hansmann has argued that the disadvantages of collective decisionmaking by heterogeneous employees might easily outweigh the advantages of common ownership of the capital and labor inputs.⁴⁷ According to others, the fact that capitalists have more wealth and

42. For the most comprehensive evidence of the growth of employee ownership in publicly traded firms, see Blasi and Kruse (1991). See also Blair and Kruse (1999).

43. See, for example, Aoki (1988).

44. One could argue that partnerships, which are a common organizational form in law, accounting, consulting, advertising, and other professional services, are a type of employee-controlled firm. An interesting question for corporate governance scholars is why firms in such fields are typically organized as partnerships, whereas industrial firms are typically organized as corporations.

45. The first of these arguments is made by Vanek (1970, 1977) and Meade (1972); the second by Jensen and Meckling (1979), and Furobotn and Pejovich (1974); and the third by Williamson (1975, 1985).

46. For example, see Putterman (1984); Wolfstetter, Brown, and Meran (1984); Ellerman (1986); Dow (1993).

47. Hansmann (1996). For further discussion of possible problems of employee-owned firms, see chapter 1 in this volume.

better access to credit markets than workers do, and the fact that capitalists can diversify risks better than workers can, also argue against employees having a sizable share of their personal wealth in equity stakes in the firms where they work.

New Thinking about the Theory of the Firm

The idea that the firm is a nexus of contracts was a significant insight that helped get scholars thinking about the terms of the relationships among the various participants in firms. But in probing the nature of corporations and corporate governance it is not enough to look only at relationships between shareholders and managers and to assume that employment relationships are a separable topic. The role played by investments in firm-specific human capital and the problems raised by that role suggest that the nature of the employment relationship is central to the nature of the institutional arrangements that are the essence of modern, large corporations.

Economic theorists are now beginning to acknowledge the complex nature of the way employees participate in firms. Hence a few have even defined firms as institutional arrangements developed to elicit contributions by employees to the joint productive effort of the enterprise. If the full range of contributions needed could be adequately elicited through market relationships or explicit contracts, perhaps they would be. But the very fact that they cannot is what calls forth complex organizational forms such as modern corporations. Current theory offers several suggestions for dealing with this complexity.

The Firm as a System of Incentives

Holmstrom and Milgrom view firms as systems of incentives. They propose a multitask principal-agent model to address the problems that arise when the tasks the worker is supposed to do are multidimensional, and performance is difficult to measure in some or all of those dimensions. When agents must perform a number of tasks, and their choices about effort and allocation of their time can affect many dimensions of the firm's performance, high-powered incentive structures that reward performance in some dimensions, but neglect performance in other dimensions, can greatly distort the behavior of the agent.⁴⁸

48. See Holmstrom and Milgrom (1991).

Of course, a key feature that distinguishes agents who are “in” the firm from agents who are on the outside and merely contracting with the firm is the structure of the compensation agreement. Their model explores why “the attributes of an employment relationship differ in so many ways from the attributes of a contractor relationship.” Compensation for contractors generally provides for task-specific payments, with all risks of nonperformance borne by the agent, whereas with employees, such risks are generally pooled and borne collectively by the firm itself, so that the agent is paid a regular wage or salary for the duration of employment, regardless of the actual tasks performed. The Holmstrom and Milgrom model implies that, under certain conditions, an optimal incentive structure “may require the elimination or muting of incentives which in a market relationship would be too strong.” Thus, they conclude, “the use of low-powered incentives within the firm, although sometimes lamented as one of the major disadvantages of internal organization, is also an important vehicle for inspiring cooperation and coordination.”⁴⁹

In comparing the terms on which in-house insurance sales agents typically operate to the terms on which independent sales agents typically operate, for instance, Holmstrom and Milgrom note that employment relationships typically involve lower-powered incentives (such as a fixed base salary and lower commissions), ownership of key assets by the employer (rather than by the employee), and more restrictions on the mode of operation of the employee. They find that the choice between structuring the relationship as an employment one, versus structuring it as one of an independent contractor type, appears to be driven by the relative ease or difficulty of measuring key aspects of performance, more than by the extent of investments in firm-specific human capital.

But it seems unlikely that this factor drives this choice in all occupations. Consider production line workers. Assembly line workers who work on large, highly capital-intensive automated assembly lines are typically paid hourly wages, and a variety of other institutional arrangements are used (such as pension funds and collective bargaining) to discourage turnover. By contrast, workers in garment factories are more likely to be paid piece rates, turnover rates are often high, and there are fewer institutional arrangements designed to reduce turnover. In other words, apparel workers are often compensated and treated more like subcontractors than employees. In both cases, the activities of the worker should be very easy to measure. But in the garment factory, individual workers can set their own

49. Holmstrom and Milgrom (1994, pp. 988–89).

pace at separate sewing machines, whereas in large automated factories, individual workers must learn to function at a pace set for them by the machines and by the other members of the team. Holmstrom and Milgrom's model might be used to test the hypothesis that the differences in compensation systems and institutional arrangements between, say, auto factory workers and garment factory workers, are accounted for by the fact that workers on automated assembly lines must make a higher level of investment (that is, exert more "effort") in learning to work with the particular equipment in the factory and with the particular teammates on the assembly line.

Holmstrom and Milgrom show the importance of considering the whole mix of incentives facing employees. Instead of seeing firms as "bundles of assets," they look at them as constellations of institutional arrangements designed to provide appropriate incentives where cooperation and coordination are especially important.

Their modeling approach falls within the principal-agent paradigm, however, and, as is generally the case with principal-agent models, it does not take into account the incentives facing the principal to renege on the promised payment scheme, or to alter the job design in ways that reduce the payoff to the agent after firm-specific investments have been made. The model also does not explain two other features that distinguish the employment relationship from the independent contractor relationship, features that have been cited as evidence that investments in firm-specific human capital are important. These are the longevities typically observed in the employment relationship in relation to independent contracting relationships and the wage premia associated with tenure.

The Firm as a Nexus of Specific Investments

According to Raghuram Rajan and Luigi Zingales, a firm should be defined not as a nexus of contracts, but as a "nexus of specific investments." Rajan and Zingales use an optimal-contract model that is similar to, and builds on, the approach used by Grossman and Hart discussed earlier.⁵⁰ Their approach is reminiscent of that used by Aoki, who defined the firm as "an enduring combination of firm-specific resources" and argued that firms

50. Rajan and Zingales (1996). A version of this paper has been published as "Power in the Theory of the Firm," *Quarterly Journal of Economics* (1998), pp. 387–32. In the published version, the authors define a firm as "a collection of commonly owned critical resources, talents, and ideas, and also the people who have access to those resources" (p. 405). The published version compresses some important arguments that I want to emphasize in this discussion.

should be regarded as combinations of specific labor and capital, and that management should be viewed as mediating between these two interests in making decisions about output levels, investments, and the sharing of firm-level rents.⁵¹

In the Rajan and Zingales model, the enterprise requires a physical asset that is specific to the enterprise and two individuals. The total productivity of the enterprise will be maximized if both individuals make specific investments in human capital. But each individual must have access to the physical asset in order to “specialize.” If either individual fails to specialize, an unspecialized outsider can be substituted for that individual without loss of total productivity.

Rajan and Zingales distinguish between “ownership” and “power.” In their model, “ownership” of the enterprise gives the owner the right to exclude other individuals from access to the physical asset and the right to sell the physical asset to some third party. These rights give the “owner” significant “power” in bargaining over the eventual distribution of rents. But participants can also acquire “power” in another way. Investment by either individual in firm-specific human capital also gives that individual bargaining power in the relationship, because his investment in human capital means that there will be more total rents to share if he stays in the coalition and uses his human capital in the enterprise.

Other economists have argued that ownership of the physical asset increases the incentive for the owner to make the optimal investments in human capital.⁵² But, Rajan and Zingales point out, ownership of the physical asset also enables the owner to sell the asset, or to share in the rents from the enterprise even if he fails to make firm-specific investments. Hence ownership rights over the physical asset have a doubled-edged effect in this model. They increase the owner’s bargaining power and therefore increase his incentive to “specialize” by assuring him that his share of the rents generated by the enterprise will not be expropriated. But they also raise the owner’s opportunity cost of specializing, since the owner can extract rents even without specializing.

If the negative effects of ownership by either individual dominate the positive incentive effects, Rajan and Zingales show that the optimal investment decisions and production levels cannot be achieved if either of the two potential “specializers” owns the physical asset. But remarkably, if the physical asset is owned by an otherwise passive third party, optimal investment

51. Aoki (1984, p. 119).

52. For example, this argument is made by Grossman and Hart (1986); and Hart and Moore (1990).

decisions and production levels can still be achieved. In this situation, the two individuals who want to participate in the firm would form a coalition and bid collectively for access to the asset, and the right to use the asset in production. Third-party control over the physical asset helps encourage both individuals to make the optimal firm-specific investments, because it, in effect, enables the two individuals to make binding commitments not to use control over the asset strategically to extract rents from the other individual.

Rajan and Zingales have thus come full circle to the importance of team production, as stressed by Alchian and Demsetz, and the need for a third party to monitor the inputs of the team members. But because they assume that the individual members of the team are not generic inputs, but, rather, specialists who make decisions to invest in learning things that only have value when used by this particular team, they reach a very different conclusion about the division of rents from team production, as well as about the role played by the third-party “monitor.”

Rajan and Zingales’s third party has no special knowledge or insights about how the work is divided up between the two individuals in the coalition, nor how they divide up the rents. Their third party is assumed to get an arbitrarily small fraction of the total rents, and the party’s only task is to select from among multiple coalitions bidding for access rights to the physical assets. The third party naturally selects the coalition that will produce the highest total rents, the bulk of which go not to the third party monitor (as in Alchian and Demsetz), but to the coalition members who have invested in specialized human capital. “Before investment [in specialized human capital] takes place, the firm is defined by who holds the ownership rights to the physical assets that are required for production and by who is given access to the physical assets,” Rajan and Zingales argue. “After specific investment has been undertaken, the firm is defined by the ownership of the physical assets and the power that accrues to those who have made specific investments.”

Rajan and Zingales interpret their “third-party owner” as providing an explanation for “ownership” of firms by passive outside investors, or shareholders. But this is a highly implausible interpretation. The third-party “owner” in their story is restricted to receiving an arbitrarily small return because that party does not provide anything critical to production. That role could be played by anyone except, notably, any of the active participants in the enterprise, or any participant who contributes something critical. Instead, the role of the third party is to keep control of the assets out of the hands of any of the active participants in the firm, precisely so that those

active parties will not use control over the assets to gain strategic advantage for themselves at the expense of the other participants and thereby cause the coalition to fall apart. An alternative, and more plausible, interpretation of Rajan and Zingales's work might be that it provides insight into the role played by creating a separate legal entity under the law (the corporation), which acts as the repository of all the property rights over assets used in production, and over output, and assigning decision rights over this legal entity to an independent board of directors with fiduciary obligations to their firms.⁵³

Future Directions

Rajan and Zingales have taken a significant step toward integrating models of the employment relationship and the associated incentive issues raised by investments in firm-specific human capital into a theory of the firm. But their model is still limited by the fact that it follows the two-period structure of most bargaining models.⁵⁴ In such models, contracts are written, investment decisions are made, production proceeds, and rents are realized and divided up. There is no second round, let alone third or fourth or more rounds, so that there is no place in the model for reputations to be built up, or for learning from experience, or for investments made in previous rounds to expand the options for the participants in subsequent rounds.

Models that have such features can become intractable very quickly. They are plagued by multiple equilibria and are often very sensitive to assumptions about who has what information when.⁵⁵ Nonetheless, the basic insight from infinitely repeated game models is that the chance to benefit from a relationship in the future can mitigate tendencies that parties to the relationship might have in the present to attempt to expropriate short-run returns.

From the perspective of repeated games, each act of self-restraint on the part of participants in the firm can be seen as a "firm-specific investment" whose value can be realized if the coalition stays together, but not if it falls apart. The cumulative result of a large number of such acts of self-restraint

53. Blair and Stout (1999) develop this idea in further detail.

54. Technically, there are three periods in the Rajan and Zingales (1996) model, but that is because they have made the decisions by the two individuals to specialize sequential instead of simultaneous.

55. For an interesting discussion of these issues, see Kreps (1996).

could represent a sizable investment in a type of firm-specific human capital that one might call “trust” or “culture.” The firm can be viewed as a nexus of these investments, and for the full value of the investments to be realized, key participants in the firm must be kept involved. Moreover, it may be necessary for the “firm” that comprises this coalition of individuals and specific investments to have a permanent legal status separate from any of the participants, to be the repository of the reputational capital and the key property rights.

Implications

Scholarly work on the theory of the firm, both in law and in economics, has perhaps fixed too long on one particular relationship (between shareholders and managers) and on one approach to modeling corporate relationships (the principal-agent approach). The implicit assumption behind this approach has been that a firm is a bundle of assets that belongs to shareholders, so that the only relationship that matters is that between the owners of the assets and the managers hired to manage them. More sophisticated analyses have acknowledged the importance of other relationships but have overlooked their significance for corporate governance questions by assuming that they are all governed by nice, neat, complete contracts, contracts that effectively motivate participants to contribute their ideas, or skills, or effort, and either protect them from risks in the enterprise or completely compensate them for the risks that they bear.

Interest is now turning to actual contracting difficulties and alternative models that address more directly the complexities of the human input into corporations. These models have provided rich insights into many noncontractual institutional arrangements used to govern the relationships among a variety of participants in firms. Although these models have had little influence on legal scholarship to date, arrangements for governing the relationships among employees, and between employees and the firm, can no longer be treated as something separate from corporate governance.

In particular, contractarian legal scholars need to recognize that certain kinds of multilateral and multidimensional relationships and agreements among individuals may only be possible in a legal environment that grants separate legal status to the entity that serves as the repository of the specific investment involved in the relationship. It may be necessary for the law to assign fiduciary responsibilities to the individuals whose job is to govern this entity, whether as directors or as managers.

In other words, contractarians should reconsider the merits of an older school of legal scholarship that emphasizes that a corporation is a separate entity, and more than the sum of its parts. Under the entity view of the firm, a corporation is something apart from each of its participants, something that cannot protect itself through contract, but that needs to be protected by fiduciary duties and corporation law from possible predatory behavior by any of the parties. With a better understanding of the full and complex dimensions of the contracting problem involved in organizing production, it should be possible to develop a renewed appreciation of the “entity” view of firms in the law.

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