

## Chapter 5

# Firms Exist to Solve Problems

It is common to see the firm characterized by the power to settle issues by fiat, by authority, or by disciplinary action superior to that available in the conventional market. This is delusion. The firm does not own all its inputs. It has no power of fiat, no authority, no disciplinary action any different in the slightest degree from ordinary market contracting between any two people. I can “punish” you only by withholding future business or by seeking redress in the courts for any failure to honor our exchange agreement. That is exactly all that any employer can do. He can fire or sue, just as I can fire my grocer by stopping purchases from him or sue him for delivering faulty products.

— Armen A. Alchian and Harold Demsetz (1972), “Production, Information Costs, and Economic Organization.”

Efficient production with heterogeneous resources is a result not of having better resources but of knowing more accurately the relative productive performances of those resources.

— Armen A. Alchian and Harold Demsetz (1972), “Production, Information Costs, and Economic Organization.”

Economists have long been interested in the following issue: why are some types of economic activity carried out within individual organizations, while other types of economic activity are carried out through market exchanges between independent organizations or individuals.<sup>9</sup> The obvious answer is that if it is more efficient to carry out transactions within the boundaries of a single organization it will be done that way, and when it is not, transactions

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<sup>9</sup> Perhaps the seminal article addressing this issue is Coase (1937).

will be carried out between independent economic agents. But *why* are some transactions carried out more efficiently within organizations than between organizations? It also raises a related question: why do organizations take different forms? For example, why are so many law firms and accounting firms organized as partnerships or limited liability companies while others are organized as corporations with publicly traded stocks? And why does organizational form matter?

Alchian and Demsetz (1972) provided critical insights on these questions. They viewed organizations like the corporation as a vehicle to elicit specialized and cooperative production, and they identified two key demands that are placed on economic organizations: metering the productivity of inputs and rewarding those inputs. Metering productivity means measuring the contributions that various inputs make to the organization's output. The ideal way to reward inputs is to make the rewards commensurate with their contribution to output, in other words, their productivity. If the economic organization does these tasks poorly, with rewards and productivity only loosely correlated, the organization's productivity will be lower than otherwise, but if the organization does it well, productivity will be higher. They then went on to describe what makes those two tasks difficult and how organizations evolve to handle these problems.

For Alchian and Demsetz, metering costs are associated with cooperative activity involving individuals working as a team while doing specialized tasks. In such circumstances, identifying the outputs due to each individual is difficult. Imagine that you are working with classmates or colleagues to produce a report on a topic. You divide the writing of the report into chapters and each member of the team is assigned a chapter. So far, so good, because you can judge the quality of each person's chapter and reward accordingly. However, there's a fly in the ointment. You spend several days up front brainstorming about the topics to be covered, the presentation style, the length of the presentation, the intended date of completion, and so forth. While the quality and timeliness of each person's chapter is relatively easy to identify, measuring each individual's contributions to the brainstorming is much more difficult.

As a professor of economics and business, one of us typically assigned research papers to small groups of students. Each group had to brainstorm, and each member of a group received the same grade. That meant that the

team's final output was metered but not the output of each individual team member. The concern that almost immediately arose among the students was the problem of how to prevent individual members from shirking or doing less while counting on other members to do more to compensate. Each group had to figure out on its own how to solve that problem. Most groups appointed a leader who would coordinate the activities of the group's members. Since the students formed a cohort that took classes over a two-year period, they learned about each other's particular skills, including management skills. Part of the leader's responsibility was to monitor shirking. The obvious challenge for the group leader was that shirkers could not be thrown off the team and receive a failing grade. However, leaders (and other team members) compared notes with classmates on other teams about who seemed to be shirking on a particular project. Students who were shirkers on a project tended not to be invited to join teams of non-shirkers on future projects. This meant that shirkers were ultimately penalized for their behaviour by being excluded from the more productive teams on future projects.

While imperfect, the arrangement described above was arguably the least costly method of detecting and discouraging shirking for the team production of research papers. The students knew each other's strengths and weaknesses better than the professor did and, as noted, shirkers could be excluded from future projects. Of course, the group leader received no direct reward for coordinating the group's activities. Nor could the leader dismiss shirkers from the group, as also noted above. This obviously weakened the group leader's incentive to detect and discourage shirking, especially if it meant creating conflict with other students who would be part of an ongoing cohort. The arrangement did not eliminate shirking, but other arrangements were likely to be burdensome and costly beyond any benefits they would provide.

In what Alchian and Demsetz called the "Classical Firm," the monitor (or leader) designated to meter the performance of team members has more authority and stronger incentives than the group leaders for the above professor's student research papers. In particular, the monitor in the classical firm is what Alchian and Demsetz refer to as a "residual claimant." The "residual" is essentially the profit that remains after all members of the team are paid an amount commensurate with what the monitor deems to be each member's contribution. The right to claim the residual provides the incentive for the

monitor to identify and discourage shirking.<sup>10</sup> Team members presumably wish to maximize the team's productivity, thereby increasing the payment they will collectively (and individually) receive. They therefore agree to the monitor's status as a residual claimant, as well as the monitor's right to alter team membership by, for example, dismissing shirkers. At the same time, the monitor has an incentive to reward team members commensurate with their contributions to team output, since such behaviour is consistent with maximizing productivity and the profits of the firm. Imagine, for example, that the monitor was perceived to pay team members on the basis of a criterion that was not closely related to the efforts made by individual members of the team. In this case, non-shirkers would think they were being treated unfairly, while shirkers would feel emboldened to continue or increase their shirking. The result would be a continuous decline in productivity and in the firm's profitability, an outcome that is not in the interests of the monitor.

Alchian and Demsetz's Classical Firm is the quintessential small business in which the senior manager is also the majority or sole owner of the business. In fact, while the majority of business organizations in developed countries are relatively small, the majority of output (as measured by revenues) is produced by large, publicly traded companies that have hundreds, if not thousands, of managers and many thousands of shareholders. This organizational form has come in for much criticism from some economists because of what is known as the "principal-agent" problem. Put succinctly, in a widely held public company, there are many residual claimants, i.e., shareholders. If no shareholder owns a large percent of the company, then no shareholder has a strong incentive to monitor the company's managers. As a consequence, the managers have a strong incentive to shirk. Shirking can mean literally not performing the tasks expected, but it more often refers to managers spending company money on products and activities, such as fancy restaurant meals and first-class travel, that make the manager's work life more pleasant but detract from the company's profits. In this case, the interests and actions of the agents (the managers) conflict with the interests of the principals (the shareholders).

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<sup>10</sup> The right of the residual claimant to sell the business at some point in the future strengthens the claimant's incentive to build a team of non-shirkers that is likely to be increasingly productive over time, thereby increasing the capitalized value of the firm.

Critics of large companies invoke the principal-agent problem when arguing that large companies are inefficient, and that the economy would be better off if governments limited the size of large companies.<sup>11</sup> Demsetz (1983) identified the separation between ownership and managerial control as the key focus for most commentators on the modern corporation. He acknowledged the reality of monitoring costs and the likelihood of shirking in large companies. However, he pointed out that both external and internal forces act to limit the costs of monitoring. Owners that tolerate shirking by their managers effectively accept less efficient production within their companies, which raises the costs of their products to consumers. Conversely, owners that engage in extensive monitoring incur costs that make their investments less profitable. A “happy medium” presumably exists. In this happy medium, the sum of the costs of monitoring plus shirking is minimized. Competition among companies will lead them towards the adoption of the happy medium.

The search for this optimum will lead for-profit firms to adapt their structure. For example, if more monitoring of management promises to lower overall costs and improve the firm’s competitiveness, one should expect to see ownership concentrated in a smaller number of shareholders. As Alchian (1965) argued, shareholders who are passive or indifferent to managerial problems will sell their shares to owners who are willing and able to be more active. This development would reduce shareholders’ incentives to shirk the monitoring duty that falls to owners, since the benefits of closer monitoring are more closely tied to the efforts of owners who do more monitoring. On the other hand, if the opportunities for managers to shirk are less abundant than initially anticipated, less monitoring by owners will improve efficiency. Companies in this situation will be characterized by more dispersed shareholding, which might allow those companies to raise financial capital at a lower cost than would otherwise be the case.

Concentrated ownership has also emerged as a relatively efficient organizational form in service activities such as law firms and engineering firms primarily because the arrangement minimizes the combined costs of monitoring and shirking. Alchian and Demsetz pointed out that in certain types of activities where specialized expertise is the main input to the production

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<sup>11</sup> An early and seminal critique of large companies on the basis of the principal-agent problem is found in Berle and Means (1932).

process, as is arguably the case for legal services, monitoring costs can be prohibitively high for owners who do not have the specialized expertise in question. In these cases, organizations are frequently structured as limited partnerships, whereby a substantial proportion of the professionals who work in the organization are also owners of the organization. As owners, the limited partners have an incentive to monitor shirking by the professionals working for the organization. They also have the expertise to identify shirking better than would be done by outside shareholders.

Other variations on the principal-agent problem also influence how firms are organized, and the UCLA School has made important contributions to our understanding of these as well. Two important concepts here are moral hazard and opportunistic behaviour. Moral hazard refers to a condition whereby changes in circumstances create incentives for people to act in antisocial ways. For example, if the government increases unemployment insurance benefits relative to wages, or increases the duration of unemployment benefits, some recipients will get pickier about the jobs they accept and, therefore, will remain unemployed longer. The increased benefits and/or duration of benefits make unemployment a more attractive option than it was before, so that taking a longer time to accept new employment is obviously in the best interests of those receiving the unemployment benefits but not in the best interests of the rest of society. Opportunistic behaviour can be seen as a corollary to moral hazard. If circumstances change so that specific parties to an agreement can enjoy certain opportunities that they did not have under prior circumstances, they might have an incentive to formally or informally renege on the original agreement.

Imagine, for example, that a group of investors agrees to construct an oil refinery near a pipeline that is owned by a third party. The pipeline promises the investors very attractive rates to transport refined oil products to the markets for those products. Once the refinery is built, however, it is effectively a hostage to the owners of the pipeline if the only other options to bring their product to market, such as trucks or rail, cost much more. The owners of the pipeline, therefore, have an incentive to renege on the earlier agreement and charge the refinery owners a higher price for transporting the refinery's products.

To be sure, the original investors in the refinery would be aware of the risk that the pipeline owners will act opportunistically once the refinery

is built. Moreover, the owners of the pipeline have an incentive to advance a credible commitment to the potential refinery owners that they will not act opportunistically once the refinery is built. Put simply, both parties stand to benefit from the refinery being built and, therefore, both parties have an incentive to address the moral hazard and the resulting potential for opportunistic behaviour that each party should anticipate prior to any commitment being made to construct the refinery.

Alchian and Woodward (1987) considered situations similar to the refinery-pipeline scenario as examples of problems that organizations face in assembling productive teams where there is long-run value in keeping the team together in the presence of moral hazard and opportunistic behaviour. In this context, the refinery and the pipeline can be thought of as a team to produce and deliver refined petroleum products. Alchian and Woodward sensibly argued that any owner of capital, whether that capital is a physical asset or human knowledge, that foresees its capital asset becoming dependent on the services of other members of a team will seek protection against expropriation, their term for opportunism. One form of protection is common ownership of the dependent assets. In our example, the refinery and the pipeline would agree to merge into a single company or, alternatively, the pipeline company could build and own the refinery as part of a vertically integrated company.

The UCLA School was not unique in recognizing the risks that asset-specific interdependence poses to the formation and sustainability of productive teams and how the range of activities carried out by any organization will partly reflect those risks. Nevertheless, it made a number of unique and important contributions to the theory and practice of antitrust policy.<sup>12</sup> The relevance of ownership integration to address the risks of asset-specific integration is one notable example. The use of restrictive long-term contracts to protect long-lived resources that rely on the continuing service of a unique resource is another. These and other initiatives, which can promote improved efficiency, have been occasionally challenged by government officials charged with protecting the competitiveness of markets.

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<sup>12</sup> Oliver Williamson, not a member of the UCLA School, won the Nobel Prize in Economics in 2009 for his work on how the structure and governance features of organizations are influenced by risks of opportunism, as well as on the factors that give rise to those risks. For overviews of his seminal work on this topic, see Williamson (1973 and 1975).

The essence of the School's theory of the firm is similar in spirit to its description of the market system. Specifically, there are real-world costs to engaging in transactions, whether between independent transactors or within individual organizations. This means that any public policy evaluation of how efficiently any set of transactions is being carried out needs to recognize that alternative arrangements will also bear such costs, and that competition combined with private ownership is a powerful process to ensure that the transactions in question are typically carried out in the least costly ways possible.