PART I

SETTING THE STAGE

1

The Puzzling Asymmetry

1.1 Introduction

A firm can be defined as an organized set of individual agents who participate in a common production process and sell the resulting output on a market. These agents may supply labor, capital, or other inputs. Because the contracts among the agents are usually incomplete, production activities require coordination. For firms of significant size, this involves a hierarchical authority structure in which managers decide what goods will be produced and how.

A fundamental question is who chooses the top management of the firm. In most large firms, capital suppliers (or a subset of them) have the power to hire and fire top managers, and thus have ultimate control over the firm. Indeed, capitalism can be defined as an economic system in which most firms are ultimately controlled by capital suppliers. Such a system is not written in the stars. One could instead imagine systems in which firms are controlled by labor suppliers, raw material suppliers, or consumers.

Of course, one can define capitalism in other ways. In casual conversation, the term "capitalism" is often used as a blanket label for any system in which resources are allocated through markets. This is much too broad, because firms controlled by workers or consumers can also allocate resources through markets. According to another popular definition, capitalism is a system in which productive assets are privately owned. Again, this is too broad, because groups of workers could manage the firms in which they work while privately owning any required machinery, buildings, and so on. Groups of workers could also manage firms while leasing assets from private nonworker owners.

In this book, I take for granted the existence of markets and the private ownership of productive assets. I largely ignore control over firms by

consumers or suppliers of raw materials. Instead, I assume that capital and labor suppliers are the main candidates for the possession of control rights within firms.

I define a capital-managed firm (KMF) to be a firm where ultimate control is held by capital suppliers and a labor-managed firm (LMF) to be a firm where ultimate control is held by labor suppliers. The use of the letter *K* stems from the usual algebraic notation for "capital." At an abstract level, "control" refers to whatever collective choice procedure is used to make decisions when legally enforceable contracts are silent about what needs to be done. In practice, this generally involves voting or bargaining among the individual members of the ultimate control group, where in the KMF votes or bargaining power are proportional to the capital supplied by individuals, and in the LMF votes or bargaining power are proportional to the labor supplied by individuals. The qualifier "ultimate" is meant to emphasize that we are not primarily concerned with the behavior of managers hired by the controllers. When such managers exist, the ultimate control group is the set of individual agents who can collectively hire and fire top managers, should they choose to do so (see Dow, 2002, for a formalization of this idea).

I focus on firms with enough formal structure that it is reasonably clear whether ultimate control rests with capital or labor. Small firms are often managed by individual entrepreneurs who contribute both inputs. Attempts to classify such firms as KMFs or LMFs are unlikely to be useful. However, in larger firms this classification system is generally easy to apply. Another complication arises from the fact that control rights may be held by a subset of capital suppliers (e.g., those who supply equity rather than debt) or a subset of labor suppliers (e.g., senior but not junior personnel). I consider a firm to be a KMF when control rights are held by a subset of its capital suppliers, and similarly for LMFs.

Suppose that we accept the premise that capitalism is an economic system in which most large firms are KMFs. One strategy for explaining why KMFs dominate modern economies is to investigate the historical process through which such firms arose during the Industrial Revolution or earlier. This is an interesting agenda. However, in this book I take a different approach and ask why LMFs are rare in modern economies.

Those who are skeptical about the merits of LMFs have a ready answer. They usually argue that under conditions of market competition, only the efficient will survive. Because KMFs are common and LMFs are rare, one can infer that LMFs are inefficient. Now that the market has spoken, we can move on to more important matters.

However, the skeptics have some explaining to do. First, it would be interesting to know exactly how or why LMFs are inefficient relative to KMFs. What is it about the DNA of the labor-managed firm that makes it poorly adapted to a market environment? Even if one is convinced that a genetic defect of this kind must exist, one could harbor some curiosity about the nature of the defect.

Second, LMFs can be found in the real world. They are rare, but not in the sense that unicorns are rare. In some developed economies, LMFs number in the thousands. A skeptic therefore needs to explain how LMFs overcome their genetic defects at certain times and places, or in certain industries. The skeptic might try to argue that when LMFs do exist, it is only because they receive support from sympathetic governments that tilt the field of market competition in their favor. However, some LMFs thrive without any obvious governmental support, or at least no more support than their KMF rivals receive.

Finally, we will see later that in a world of complete and competitive markets, a properly designed LMF behaves in ways that make it indistinguishable from a KMF. This pushes the skeptic into a corner. In order to explain why LMFs are rare, the skeptic must grant that market imperfections exist. But if markets are imperfect, can we really be sure that market competition guarantees efficient organizational outcomes?

Those who support LMFs also have some explaining to do. It is easy to see why having workers manage their own firms might be appealing for reasons of democracy, equality, dignity, or community (Dow, 2003, ch. 2). But LMF advocates also frequently claim that such firms have efficiency or productivity advantages. At this point a skeptic usually asks, "If LMFs are so great, why are they so rare?" Assuming that the LMF advocate does not want to abandon economic arguments entirely, some answer is required.

As noted previously, it is necessary to depart from complete and competitive markets simply in order to explain why LMFs are rare in the first place. Perhaps the same market failures that account for the rarity of LMFs can be remedied through public policy. And perhaps sensible policies to promote the creation of LMFs will yield efficiency gains for the economy as a whole. If this is true, then there is no trade-off between democracy and efficiency—one can pursue both goals simultaneously.

In order to make this case, the LMF advocate must do quite a bit of work. First, it is necessary to explain how LMFs could have economic advantages. What can LMFs do that KMFs cannot do, and why? Second, it is necessary

to identify market failures that keep LMFs from competing effectively with KMFs despite their efficiency advantages. Do LMFs face obstacles that KMFs do not? If so, what are they? Third, it is necessary to devise policy interventions that enable LMFs to compete more effectively against their KMF rivals, and do so without imposing economic costs that outweigh the benefits from having more LMFs. This is a tall order.

I will put my own cards on the table at the outset. I believe that LMFs are likely to have productivity advantages over similar KMFs in a range of industries; that there are obstacles to the creation and expansion of LMFs that similar KMFs do not confront; and that well-designed policies could help LMFs overcome these obstacles, while enhancing economic efficiency. However, I readily concede that such arguments require persuasive theory and strong evidence. In particular, we need a clear explanation of why LMFs are rare before we can make convincing arguments on their behalf.

1.2 Some Facts

The asymmetry between the abundance of capital-managed firms and the rarity of labor-managed firms poses a fundamental economic puzzle. Both for policy reasons and those of simple intellectual curiosity, we need to understand why LMFs are so rare. But this is not the only interesting fact about LMFs.

Empirical researchers have discovered many ways in which LMFs differ from KMFs. A good theory about the rarity of LMFs should account for some or all of these additional regularities. If a theory cannot do so, its credibility as an explanation for the rarity of LMFs is suspect. All other things being equal, a theory accounting for more facts is preferable to a theory accounting for fewer facts.

Several generalizations about LMFs are listed here. These are intended only as statistical assertions, not ironclad laws of nature. Chapters 6 and 7 discuss these claims in detail and provide references to the literature.

(a) LMFs have less-elastic quantity responses to price shocks than similar KMFs. Such shocks tend to be absorbed through fluctuations in the incomes of LMF members rather than fluctuations in inputs and outputs.
(b) LMFs have substantially more compressed wage distributions than similar KMFs.
(c) LMFs are less likely than KMFs to enter industries with high capital requirements and high levels of risk.

(d) In industries where both LMFs and KMFs exist, LMF productivity appears to be at least as high as KMF productivity, and sometimes higher.
(e) In industries where both LMFs and KMFs exist, LMF survival rates appear to be at least as high as KMF survival rates, and sometimes higher.

These generalizations are supported by careful econometric research. Some have been replicated using data from multiple countries, time periods, or industries. A number of additional patterns will be discussed in later chapters. The well-documented empirical asymmetries between KMFs and LMFs demand some theoretical explanation.

1.3 Some Principles

Throughout the book, I use the term "perfect markets" as shorthand for "complete and competitive markets." Chapters 3–5 will show that in a world of perfect markets, LMFs can be designed so that they behave identically to KMFs. Both types of firms maximize profit, and for the same reason: the members of the firm's control group are also consumers, and in this role they want their budget sets to be as large as possible.

One implication follows immediately:

The imperfection principle. Any theory claiming to explain the empirical asymmetries between KMFs and LMFs must specify one or more departures from the framework of complete and competitive markets.

Candidate types of market imperfections could include monopoly or monopsony power, informational asymmetries, or an inability to make binding commitments. A full theory must identify imperfections in both the capital and labor markets, because if either market is perfect, there is no reason why the corresponding input suppliers need control rights, any more than the suppliers of paper clips or office furniture need control rights.

Although they are necessary, market imperfections are not sufficient to explain patterns like those in Section 1.2, because such imperfections may have symmetric effects on KMFs and LMFs. One must therefore find some difference between capital and labor that, when combined with a source of market imperfection, can account for the empirical differences between KMFs and LMFs. I summarize this point as follows:

The asymmetry principle. Any theory claiming to explain the empirical asymmetries between KMFs and LMFs must identify a causally relevant asymmetry between capital and labor.

The asymmetry principle could be irrelevant if noneconomic factors dominate. For example, KMFs (or LMFs) could be favored by political movements that have the power to regulate and subsidize, local culture could be biased toward one governance structure at the expense of the other, historical events could have given KMFs a head start from which LMFs have been unable to recover, and so on. However, when one is doing economic theory, the asymmetry principle imposes useful intellectual discipline.

I believe that the most important asymmetry between capital and labor is the fact that capital is alienable whereas labor is not. Simply put, ownership of nonhuman productive assets can be transferred from one person or group to another, while this is not true for endowments of time, skill, and experience. This fundamental asymmetry has several implications that will be important in later chapters. I sketch four of them briefly here.

(a) *Control transactions:* In a KMF, there can be turnover in the membership of the firm's control group while the firm's physical inputs remain unchanged, because ownership of the firm's capital stock can be transferred from one person or group to another. In an LMF, turnover in the membership of the control group changes the firm's physical inputs by changing the identities of the firm's labor suppliers.

(b) *Composition of control groups:* Firms of significant size require a worker team of significant size, but a few investors may be able to finance the firm's capital stock. For this reason, LMF control groups are often larger than KMF control groups. I will also argue that the inalienability of labor tends to make LMF control groups more heterogeneous with respect to preferences over firm decisions.

(c) *Stocks and flows:* Capital can be owned by a firm as a stock, whereas labor is only available as a flow. When collective asset ownership by firms is important, LMFs must finance such assets. For workers with limited wealth, this implies a need for transactions with outside investors.

(d) *Role in the production process:* Workers participate directly in production, while investors do not. This can give workers valuable

knowledge about technology, organization, market conditions, and the performance of coworkers. As a result, LMFs sometimes enjoy a productivity advantage over similar KMFs.

These four aspects of the alienability distinction will receive varying degrees of emphasis as the book proceeds. I will combine them to construct an overall causal framework for the LMF in Chapter 19.

A third principle is intended to avoid arbitrariness in how KMFs and LMFs are defined. It can be viewed as a corollary of the asymmetry principle and requires that asymmetries between KMFs and LMFs be essential rather than superficial.

The replication principle. No economic advantage should be regarded as intrinsic to the KMF if the factors responsible for it can be easily replicated by an LMF, and conversely.

The point of the replication principle is that KMFs and LMFs are defined by the identity of the input suppliers who have ultimate control over the firm, not other optional features. For example, supposing that KMFs are more productive than similar LMFs, it would not be satisfactory to explain this by asserting that KMFs have managerial hierarchies but LMFs do not. There is nothing about the principle of ultimate control by labor suppliers that rules out the use of a managerial hierarchy. To make the argument convincing, one would have to show that control by labor suppliers makes a managerial hierarchy more costly or less effective than it would be in an otherwise identical KMF.

Conversely, supposing that LMFs are more productive than similar KMFs, it would not be satisfactory to explain this by asserting that LMFs have worker committee meetings while KMFs do not. Again, there is nothing about ultimate control by capital suppliers that rules out employee meetings. For this argument to get off the ground, one would have to show that control by capital suppliers makes such meetings less productive than they would be in an otherwise identical LMF.

A broader methodological point is that no single formal model can capture every distinction between KMFs and LMFs. Alienability operates through too many different causal channels, and interacts with too many market imperfections, for this to be possible. The only feasible strategy is to create a family of related models stitched together through words. Fortunately, no rule of scientific method requires a theory to be described in one mathematical model, and no rule prohibits the use of words. I will use math where I can and rely on ordinary language elsewhere, but it is all one theory.

1.4 The Structure of the Book

A highly abbreviated summary of the theoretical argument in the book runs as follows. One can demonstrate that with complete and competitive markets, there is an isomorphism between KMFs and LMFs. In this environment, the two kinds of firms are behaviorally indistinguishable, and economies with each institutional arrangement can support identical resource allocations.

Nevertheless, in the real world there are systematic differences between KMFs and LMFs. To account for these differences, we need to consider market imperfections. However, this is only a necessary condition. We also need to identify some asymmetry between capital and labor. The main candidate for this role is the alienability of capital and inalienability of labor.

The combination of market imperfections with this difference in alienability has causal effects through four main channels. First, there are appropriation problems that arise when control rights in firms are treated as commodities that can be bought and sold on markets. For various reasons it is important to have markets of this kind. However, I argue that this is more readily accomplished for KMFs than for LMFs, because it is easy to transfer title to a firm's capital stock from one person to another, but it is impossible to transfer ownership of human capital from one person to another.

Second, there are public good problems that are associated with collective choice and free riding within firms. I argue that the alienability of capital tends to induce unanimity among investors with respect to the policies pursued by the firm. On the other hand, the inalienability of labor tends to yield heterogeneous preferences among workers. This difference typically makes KMFs more stable than LMFs. A related problem is that employees face free rider problems in deciding whether to buy out a KMF, but investors need not face parallel problems in deciding whether to buy out an LMF.

Third, there are problems of opportunism. Firms arise due to the incompleteness of contracts and give controllers authority over noncontrollers. However, authority can be abused in opportunistic ways. Furthermore, alienability of capital allows firms to acquire capital as a stock, but inalienability of labor means that they acquire labor as a flow. This difference in the intertemporal features of the two inputs can lead to situations where the temptation for opportunism by LMFs against capital suppliers exceeds the temptation for opportunism by KMFs against