

From Gregory K. Dow, Governing the Firm: Workers' Control in Theory and Practice Cambridge U Press, 2003 pp 260-289
Getting There from Here

12.1 Practical Considerations

A classic tale from the state of Maine goes something like this. The residents of a small Maine community notice a tourist from New York. He comes to an intersection at the east end of the town, gazes at a complicated set of road signs, and then drives back toward the west end of town. Baffled by an equally complicated set of road signs, he turns around and drives east again. This continues for a while. Finally he pulls up to the general store and asks, "How do you get to Nesowadnehunk?" After pondering this for a moment, one of the locals replies, "You can't get there from here."

The conclusions of Chapter 11 may have left the reader somewhat discouraged. The inalienability of labor is a fundamental physical fact, and few of us would want to live in a society that pretended otherwise. Workers' control may thus appear infeasible, at least beyond the narrow niches where it is currently found, despite the normative arguments in its favor. But all is not gloomy, because some of the consequences of inalienability can be remedied through policy measures. Capital market imperfections can be corrected to some degree. Collective-choice problems can be mitigated through sensible institutional design. The appropriation and free-rider problems hindering employee buyouts of capitalist firms can also be overcome to some extent. There is no plausible strategy for converting every capitalist firm to workers' control by tomorrow, but the scope of workers' control can be broadened in incremental ways. This chapter offers some road signs that may prove useful in getting there from here.

A few guidelines are adopted in the discussion that follows, not all of them likely to be popular with every LMF advocate. But in my view, these practical considerations are essential to any program of workers' control that is meant to move beyond rhetoric. First, I steer away from strategies involving large redistributions of income or wealth, not because I oppose redistribution but because workers' control is more likely to expand if it does not make politically influential segments of the population significantly worse off.

Second, I propose institutional arrangements that resemble existing models of the sort discussed in Chapters 3 and 4. Many elements in my proposal are minor extensions or adaptations of known practices. Any novelty derives principally from the recombination of the component parts. The spirit of the approach is to acknowledge the limits of our present understanding, proceed incrementally, and leave room for future tinkering.

Third, I try to avoid unrealistic assumptions about monitoring and enforcement. A workable governance structure needs to respect human abilities to manipulate information, free-ride on colleagues, covertly appropriate wealth, and engage in other strategic activities. In particular, it is important not to create large temptations for shareholders or managers to evade workers' control by keeping firms small, incorporating in other jurisdictions, failing to incorporate, delisting firms on stock exchanges, or playing subtle accounting games.

Finally, I have designed the organizational proposals of this chapter in light of the theoretical synthesis from Chapter 11. We are far from completely understanding workers' control and the reasons for its rarity, but available theory and evidence should be exploited. There is no need to wait until we have achieved complete consensus on the positive theory of workers' control before formulating policy ideas. The wait could be quite long, and in the meantime many experiments with workers' control are already underway. Economists and other social scientists should learn from these experiments, debate their meaning, and offer suggestions of their own.

One major unknown is whether efficiency gains can be achieved through the spread of workers' control. If LMFs are held back by a remediable market failure, then the case for policy intervention is stronger. However, one can accept the normative arguments of Chapter 2 even if LMFs lack efficiency advantages in a conventional economic sense. In the latter situation, one would presumably be attracted to policies that achieve workers' control at the lowest-possible efficiency cost. Our knowledge is too primitive to attach a confident positive or negative sign

to the efficiency properties of workers' control, which undoubtedly vary with industry characteristics and the specific organizational design one has in mind. My proposals are designed to secure net benefits where these exist, while limiting the extent to which workers' control is imposed in grossly inappropriate settings.

Efforts to encourage LMFs might involve interventions at various stages in a firm's life cycle: for example, (1) when the firm is organized as a proprietorship or partnership; (2) after it has become a privately held limited liability corporation; or (3) after it has sold shares to the general public. Interventions at stage 1 face serious obstacles. Specifically, it is difficult to design policies to counter informational asymmetries at the firm-formation stage. I do not deny the value of capital-market interventions to make credit more available to LMFs, but the KMF has a strong advantage as a device through which entrepreneurs can appropriate the rents from innovation. Accordingly, I am not optimistic that capital market policies alone would substantially increase the relative birthrate of LMFs and thereby raise their steady-state share of the firm population.

Turning to stages 2 and 3, it is easier to formulate strategies for a transition from KMF to LMF when there is an open market for equity shares. The conversion of privately held firms involves special considerations, especially valuation problems, to be discussed later. Thus I consider stage 3 for most of this chapter. Although much of the economy as measured by sales, employment, or investment lies outside the realm of the publicly traded corporation, this sector is clearly important. Indeed, one can think of workers' control as a developmental stage that may become relevant after a firm has reached a level of size and maturity sufficient to warrant policy attention.

Section 12.2 outlines a proposal for converting KMFs into LMFs. The next three sections evaluate the strengths and weaknesses of the proposal in light of three topics from Chapter 11: the difficulty of making commitments to non-controlling groups, the internal composition of control groups, and commodification of control rights. Many qualifications and caveats will be postponed until these sections. Section 12.6 provides a few illustrative calculations, and Section 12.7 concludes with a larger historical perspective.

12.2 A Modest Proposal

The general strategy is to expand workers' control by facilitating employee buyouts of corporations listed on public stock exchanges. There

are three central elements: a labor trust, labor directors, and labor shares. After describing these components of the strategy, I fill in some institutional details about how the conversion process would be set in motion, how financing might be arranged, and how firms might be linked through a federation.

The labor trust

This is a legal entity through which employees buy a firm's equity shares on the stock market. Its function is to phase out the equity market by taking the firm private, while phasing in a market for labor shares. The role of the trust is similar to that of an employee stock ownership trust (ESOT; see Chapter 4), but it differs in some ways, and a distinct label is warranted. Equity shares are purchased at the prevailing market price using funds generated from a system of payroll deductions. I will assume that the trust is funded by taking an identical percentage from the paycheck of each employee.

The dividends paid on equity shares held by the labor trust are constrained to equal those paid on the equity shares of outside shareholders. Rather than being paid out directly to employees in the form of cash, dividends on shares in the labor trust are used during the transitional phase to buy additional shares from outside investors. For the transition phase only, each employee has an individual capital account. The balance in this account records the cumulative capital contribution made by the employee to the labor trust through payroll deductions and reinvestment of dividends. Assuming the share-purchase program is not terminated by procedures to be discussed later, the labor trust will eventually hold enough of the firm's equity shares that it can acquire the rest in one transaction, perhaps by converting it into a moderate amount of debt. This is analogous to the procedures through which publicly listed firms are taken private in leveraged buyouts.

Just before the firm is taken private by employees, dividends must be aligned with wages. Because of their differing wage histories, some employees may have large balances in their capital accounts relative to their current wage, while others are in the reverse position. The former need to sell equity claims to the latter to make dividend claims proportional to wage claims. The price for these transactions may be the current market price for equity shares, or an average computed over several recent years to avoid excessive sensitivity to short-run fluctuations. If necessary, the labor trust should help to finance these transactions through loans or temporary wage transfers via the firm's

payroll system. No net liability arises for the firm as a whole during this process.

Once dividend and wage claims are aligned across employees, and shareholders are bought out, the distinction between labor and capital income is abolished by replacing the dividend stream with wages. Individual capital accounts are simultaneously closed. From this point on, the return to equity capital is implicitly distributed using the same procedures as are used to determine wages. In practice, it will normally be desirable to distribute a part of the firm's net income as bonuses that reflect current financial performance, hold back some for expansion, and add some to the labor trust's collective reserves.

Labor directors

The labor trust is run by its own board of directors elected by firm employees on the basis of one vote per person. The sizes of the capital contributions made by employees are irrelevant in awarding voting rights. The election of these labor directors should involve proportional representation to ensure that all major interests have a voice in managing the trust. Thus, blue-collar and white-collar employees might choose directors through separate voting procedures, as in German codetermination. Electoral systems could also provide representation according to product line, geographical location, or other criteria.

The firm's overall board of directors comprises two groups: the labor directors, who manage the labor trust, and the capital directors, who represent outside shareholders. The number of seats on the board for each group reflects the fraction of equity capital shares held by the labor trust compared with the fraction held by outside shareholders. Because the labor trust continues to purchase equity shares at the current market price throughout the transition phase, the fraction of labor directors for the firm as a whole will grow over time.

Assuming that the labor trust buys common stock until it exhausts the outstanding shares, the firm will eventually be fully controlled by its workforce. The supervisory role of the board is retained, so the employees' elected representatives choose top management. After the transition is complete, the firm's capital stock is collectively owned and managed by its workforce, rather than being collectively owned and managed by outside investors.

Labor shares

When the labor trust is created, each employee receives a labor share free of charge. An employee gets just one of these shares, regardless of wages

or balances in individual capital accounts, and each share carries a single vote. A labor share entitles its owner to work in the firm, receive income, and vote for directors of the labor trust.

Labor shares must be transferred when a worker leaves and is replaced by someone else, both during the transition phase and afterward. This is essential to avoid a situation where non-employees vote for labor directors. One way to do this is to let the departing worker sell her labor share at a mutually agreeable price to anyone with suitable skills who wants to replace her. In practice, though, the sale of a labor share to a new worker would generally require approval from the labor directors or a hiring committee.

Alternatively, the labor trust might prohibit unilateral sales of labor shares but offer to buy back these shares at a publicly announced price (see Section 12.5). The labor directors could then replace an outgoing worker by reselling the labor share to an incoming worker at the same price. The incoming worker would be asked for a down payment and would finance the rest through payroll deductions or a loan. A similar procedure could be used to create and sell new labor shares when the firm expands, or to buy back and retire labor shares when the firm contracts.

Referendum procedures

I am not advocating that the system just described be imposed on all firms. The principle of workers' control demands that workers themselves have a voice in this decision. Thus it is necessary to hold a referendum among employees on the question of whether a labor trust should be organized, where each employee has one vote. Basic parameters, including the rate of payroll deduction, must be specified in a legally binding way prior to this referendum. The creation of a labor trust is a public good from an employee standpoint, and the use of payroll deductions to finance it should be regarded as qualitatively similar to the collection of mandatory union dues or public payroll taxes.

Very possibly, a majority of employees in many eligible firms will choose not to set up a labor trust, either because they want to consume now rather than later or because they want to diversify their savings. For some workers, these considerations will outweigh any benefits derived in the future from increased job security or protections against managerial abuse. Such preferences should be respected if they are freely expressed.

A reasonable requirement for conducting a referendum is a petition endorsed by a substantial minority of employees, perhaps 10 percent, 20 percent, or 30 percent. A higher threshold helps avoid costly and

frivolous referenda with no prospect for success, while a lower threshold limits the severity of the free-rider problem confronting the proponents of workers' control. Petitioners should be required to incorporate standard features of a labor trust, labor shares, and so on into their proposed referendum language, but within these constraints would be able to tailor the proposal to the circumstances of their own firm.

Assuming a neutral regulatory body has certified that the petition threshold has been exceeded, a referendum campaign can begin. It should go without saying that rights to free speech and free assembly must be vigorously enforced during any such campaign and that employees must be free from intimidation by management (for example, dismissal threats). The issues here are the same as those arising in the context of union organizing drives in North America, and the regulatory experience gained from such campaigns should be transferable to referenda on labor trusts. Employees must have access to audited financial statements so that any decision to start a buyout process is based on credible information.

A referendum is likely to stimulate a torrent of propaganda from top management, either in the interests of investors or those of managers themselves. Employees can give such pronouncements whatever weight they deserve. More substantively, shareholders or managers might offer employees higher wages or other benefits if they forego a labor trust. These transfers can serve a useful purpose by inducing employees not to pursue workers' control in industries for which it is poorly suited. Again, employees will have to assess the credibility of such promises. But the referendum remains an exercise in democracy among employees, not shareholders. Each manager has only one vote, and shareholders have no vote at all. The fate of shareholders under this scheme will be addressed in Section 12.3.

It is also the workforce that must decide whether to end a labor trust, or terminate further equity investment before reaching 100 percent share ownership and complete control. If the labor trust is to be dissolved entirely – for instance, by selling its equity claims to outside investors and converting the firm back into a KMF – a referendum among employees seems appropriate. As with major reorganizations in most corporations, a supermajority of two-thirds or three-fourths of the workforce would be a reasonable constitutional requirement.

Less dramatic cases may also arise in which the labor directors want to suspend or slow the accumulation of equity shares temporarily without dissolving the trust, perhaps in order to pay out some cash dividends. For this, a simple majority of labor directors should suffice, and there is

little need for a referendum before resuming equity accumulation. As a safeguard against unresponsive labor directors, employees might be empowered at annual general meetings to halt the process of payroll deduction if they so desire.

Eligible firms

As mentioned earlier, the referendum legislation should apply to all limited liability companies traded on a public stock exchange. On average, these will tend to be fairly large firms, but an arbitrary size cutoff (for example, 2,000 employees) should be avoided. Such thresholds can encourage management to keep firms just below the cutoff, or to spin off divisions as legally independent firms. They also disenfranchise employees in smaller firms that may be especially good candidates for workers' control (recall that successful workers' cooperatives often have 200–500 members).

Public listing has many benefits as a criterion, including its usefulness as a discrete and easily verified test of eligibility for a referendum. A market for the firm's shares also offers an uncontroversial valuation method in a transition. For many firms, the advantages of going public, including the opportunities to attract additional capital, diversify portfolios, and gain enhanced liquidity, eventually become too large to forego. Assuming reasonable safeguards for shareholders are in place (Section 12.3), these advantages will usually offset incentives to remain private in order to avoid a possible employee buyout in the future. But a few firms may decide to stay private because their shareholders fear severe inefficiencies or massive redistribution under workers' control, or just prefer not to dilute their existing control rights. Opting out procedures of this kind provide useful screening devices that forestall the extension of workers' control to firms for which it is poorly suited.

Privately held limited liability firms would probably need separate rules if they were covered at all. These firms differ from publicly traded firms in that the problem of share valuation becomes harder to solve. Another difference is that the procedure for triggering a referendum may need modification. For example, an entrepreneur approaching retirement might seize the initiative and organize a labor trust in order to create a market for her shares. A referendum among employees could then be used to ratify the trust. ESOP legislation in the United States has proven attractive to many founders of privately held firms who want to cash out at retirement or achieve liquidity in a more gradual way, and labor trusts could play an analogous role. The use of employee petitions as a triggering mechanism

could be replaced in privately held firms by a requirement that a vote on a labor trust be held if certain well-defined events occur, such as a proposed acquisition by another company, the listing of the firm on a public exchange, or an imminent plant closure.

Even if one were to extend the proposal for labor trusts to privately held companies, it would be important to retain the limited-liability criterion, because this screens out many firms for which a labor trust would probably be a bad fit. Proprietorships and partnerships with unlimited liability are generally small, have a legal personality that is often tenuous at best, and frequently dissolve when key individuals leave. Valuation of such firms is also problematic because they may lack the lengthy track record of larger firms.

Some pitfalls

The use of individual capital accounts raises serious problems about what happens when someone leaves. If a worker resigns during the transition, withdraws "her" shares, and becomes an outside investor or sells shares on the market, this slows the process of accumulation by the labor trust and postpones the acquisition of control rights by those workers who stay behind. Assuming the remaining workers put a positive value on gaining control in the future, this creates a negative externality. Similarly, if the firm has already reached 100 percent worker control but workers are free to sell "their" equity shares on exit, collective asset ownership and perhaps workers' control itself will soon unravel.

This instability is further aggravated if workers can sell "their" capital shares while still employed by the firm. For diversification reasons, an individual worker will generally want to cash out her own capital account. In a large firm, the consequences for productivity are negligible as long as everyone else retains her shares. But if all workers sell off their shares, any productivity gains from collective asset ownership and workers' control will be dissipated. This is essentially a prisoners' dilemma game in which cooperative outcomes are undermined by the pursuit of individual self-interest. It is also a major reason why the establishment of a labor trust must involve a collective-choice process such as a referendum. Capitalist firms that create ESOPs generally require that employees hold their shares for a period of time, presumably because employers recognize both the temptation for workers to diversify and the negative implications this would have for productivity.

These pitfalls can be avoided through a constitutional clause prohibiting the sale of a capital stake to outsiders while a worker remains in the

firm and requiring that workers sell "their" equity shares to incoming employees or to the labor trust itself on departure, at the same time as they sell their labor shares. A byproduct of this institutional design is to give the labor trust a permanent legal identity on a par with that of conventional corporations.

Normative objections

One might argue on egalitarian grounds against the proposal to make equity investments proportional to wages during a transition. Why not have more highly paid employees provide a larger fraction of their paychecks to the labor trust? The central problem with this idea is that when the transition phase ends, dividends and wages must be aligned in a proportional way across workers. Otherwise, it would make no sense to drop the separation between the two in moving to a system of collective asset ownership. If more highly paid workers contributed proportionately more to the labor trust, they would accumulate proportionately larger capital stakes. At the end of the transition phase, it would then be necessary for less highly paid workers to buy back part of these capital balances. In the absence of compensation payments among employees, those with the larger capital balances would implicitly have some of their wealth transferred to other workers when the firm abandoned the distinction between capital and labor income.

Perhaps one should not rule out possibilities of this kind, and merely leave it to the workers petitioning for a referendum to decide whether they want to use a negative income tax as part of their transition strategy. In any event, a number of considerations should be borne in mind. First, it may be desirable to avoid a sharp divergence of interests between employees who think like workers (those who pay relatively little into the labor trust) and employees who think like investors (those who pay relatively more). Second, although the costs of establishing workers' control are assigned through proportional wage deductions in my proposal, the benefits after the transition might be distributed in a more egalitarian manner, for example through wage compression. Finally, a constant-percentage deduction approach is easily understood and administered. It also derives automatic legitimacy from the fact that many other wage-deduction systems operate in the same way.

One might object that workers should not have to purchase control rights at all. If, on philosophical grounds, workers are entitled to govern firms, it appears perverse to say that they must become equity investors, and therefore capitalists, to achieve this goal. This argument has some

appeal, but it should be remembered that control rights are only attached to capital during the transition phase. Afterward, everyone on the firm's board of directors is elected by the labor suppliers in a democratic fashion.

An alternative is to finance a labor trust through some form of corporate profits tax. This has practical difficulties. For one thing, such a tax might be borne largely by workers through lower wages. For another, returns to capital are a much smaller flow than returns to labor in many firms, so a high tax rate on capital would be needed even to implement majority workers' control (let alone 100 percent control) over any reasonable time horizon. In general, policies that finance labor trusts by taxing dividends, or diluting existing shares by issuing new shares and giving them to the trust free of charge, drive down the value of the firm's stock. This has unattractive consequences to be discussed in Section 12.3.

Other financial strategies

Readers familiar with U.S. ESOPs might contemplate another financial strategy to ease the burden on workers: have the labor trust borrow money from a bank and use the proceeds to buy up equity shares, which are credited to employee accounts. Unfortunately, this strategy involves double-counting, because a stream of dividends previously flowing to outside shareholders must now do two things at once. First, it must be paid out as a dividend stream to employees in their capacity as inside shareholders, or be reinvested until the transition phase is complete, after which it is again paid to employees. At the same time, however, this dividend stream is needed to pay the principal and interest on the bank loan. In the absence of large external subsidies or productivity gains, this approach is a shell game and does not enable workers to escape the cost of acquiring equity stakes in the firm. Of course, if workers only want to borrow from a bank in order to replace external equity with debt, that is a different matter.

If it is regarded as unfair for workers to bear the full cost of acquiring equity shares in the transition, a suitable response is for governments to subsidize purchases of common stock by labor trusts. Many Western nations already subsidize employee stock ownership to varying degrees, including the United States, the U.K., France, and Germany, and equivalent policies could be applied in the present context. The size of any tax concession to promote workers' control is naturally a subject for political debate.

Two efficiency justifications for such subsidies can be derived from the theoretical synthesis of Chapter 11. The first stresses that workers cannot ordinarily finance the equity requirements of a firm out of their

own resources, and must therefore borrow the necessary funds. But information asymmetries in the capital market make it difficult for workers to finance a buyout using debt. Also, employees cannot borrow against future labor income, and the returns on collectively owned assets are bundled with labor income. If workers' control would nonetheless increase productivity sufficiently, a subsidy may be warranted.

Another efficiency argument is that individuals or small groups cannot appropriate the full social benefit of converting a firm to workers' control, even if they face no financial barriers. The potential benefits of this governance structure are widely diffused among the workforce. In order to capture the benefit to each individual worker, the buyout organizer would need to threaten each with expulsion from the firm after the transition phase unless the worker paid a suitable price to the organizer. But no one has the property rights needed to charge such a price. There is also an informational problem because no one knows what each employee is willing to pay for democratic governance. Furthermore, employees and shareholders are large constituencies, and there are serious free-rider problems in organizing a transaction to benefit both groups. Those in the best position to do so – the incumbent managers – would likely oppose workers' control for their own reasons.

Because the market for employee buyouts is very imperfect or absent altogether, at least in firms that are not on the brink of financial disaster, workers' control is currently undersupplied. Total economic welfare would therefore rise if some capitalist firms located close to the present margin of workers' control were to be acquired by their employees, but these efficiency-enhancing buyouts do not occur spontaneously. This market failure can be corrected by subsidizing stock purchases by employees, provided that this is one element in a larger program to achieve democratic governance. The rationale for subsidies given here does not run afoul of the usual objection that the productivity benefits from ESOPs involve no externality problem (Kaufman and Russell, 1995; Mitchell, 1995).

In addition to setting the subsidy level, a crucial problem is to identify those firms for which a subsidy is appropriate. My proposal addresses this issue in several ways: by treating workers' control as a public good supplied through voting; by imposing reasonable hurdles on the decision to hold a referendum; by requiring workers to pay most of the cost of acquiring control; by permitting investors to bribe workers not to take control; and by limiting the set of affected firms to exclude those for which workers' control seems to be a poor fit on a priori grounds. These

provisions make it unlikely that a transition will ever get started in a firm that is not a reasonable candidate for an employee buyout, and thus tend to target any subsidies on the most promising firms.

A federation

The proposals just described owe much to U.S. ESOPs (for the concept of the labor trust), German codetermination (for the role of labor directors), and the plywood cooperatives (for the use of labor shares). In my view, the lessons derived from Mondragon and the Lega do not involve the financial structures of individual enterprises, but rather the critical importance of a federation that serves many LMFs simultaneously. Legislation authorizing labor trusts should thus create a federation consisting of those firms choosing to establish a trust. The federation could be funded by a modest extra wage deduction, as in the Lega. At a minimum, the federation should include a financial institution to serve member firms, and this institution should receive an initial endowment from public funds. I will not go into details here, but possible organizational structures are readily suggested by the Mondragon and Lega cases.

An attractive way for employees to diversify away risks is through partial pooling of incomes across member firms within a federation. There is some danger that excessive income-pooling could lead to free-riding problems among individual firms. This is not a decisive objection because many KMFs have profit-sharing plans that pool net incomes across divisions. But risk-pooling can be expected to dampen incentives to a degree, and is likely to imply more central monitoring by the federation. This could tilt the balance away from a looser system of the Lega kind toward a tighter one like that of Mondragon.

Aside from the evident static advantages of centralizing services for which there are scale economies, a federation helps workers' control become self-reinforcing in a dynamic sense. As the federation expands, financial reserves will be accumulated, opportunities for risk pooling will grow, more specialized services can be offered, and lessons can be drawn from earlier experience. Over time, individual firms will likely derive greater advantages by joining, and workers facing the decision of whether to create a labor trust will become more confident of receiving professional support if they do so.

The Mondragon and Lega experiences also make it clear that a federation is essential if LMFs are to become self-replicating. A federation or its financial institutions can buy out KMFs and transform them into LMFs,

spin off new LMFs as internal growth occurs within existing firms, and assist workers who want to start LMFs de novo. It can also evolve into a large or even transnational organization while retaining democratic governance internally. This requires nested representational structures such as those pioneered by Mondragon and the Lega, which are analogous to the relationships among city, state or provincial, and federal governments. In this approach, authority can be delegated to the center for certain purposes, while retaining accountability of the central authority to individual workers or their firms.

12.3 Reassuring Shareholders

Some readers may be impatient with the idea that workers need to buy control rights from shareholders. Why not just pass a law transferring voting rights from the owners of common stock to the employees of firms? One probable effect is that the market price of a firm's shares would drop sharply as soon as the legislation was thought to have a serious chance of passage. Shareholders would fear, perhaps with justification, that the employees would use their newly found control rights to increase wages at the expense of dividends and capital gains. On normative grounds, one might view this with equanimity, believing that the shareholders have no right to control the firm in the first place. There is of course the practical problem that such redistributive effects kindle political resistance and may sink the entire project of workers' control, but this is not the point on which I want to focus here.

It is an inescapable reality that any largely capitalist economy must rely on capitalist firms for growth, job creation, and innovation. If investors in capitalist firms are routinely exposed to threats of expropriation because their employees can opt for a referendum on workers' control, and the outcome of a successful referendum is likely to be the destruction of shareholder wealth, investors will have little interest in establishing or expanding firms. Shareholders can also shield themselves against expropriation. Potential strategies include avoiding legal structures covered by referendum legislation, incorporating in jurisdictions where such legislation is absent, and pre-empting any referendum by taking firms private. These responses undermine efforts on behalf of workers' control. A better strategy is to keep shareholder wealth intact when a firm makes the transition to workers' control. This ensures the continuing creation of KMFs, which offer the best available raw material for the creation of LMFs.

How can shareholders be convinced that the market value of their shares will not collapse when a labor trust is established? One factor postponing the day of reckoning is that shareholders continue to hold a majority of seats on the board of directors throughout the early stages of the transition process. Employees cannot immediately raise wages at the expense of dividends. As discussed in Section 4.3, there is little evidence that the passage of the 1976 German codetermination law or the later court rulings upholding it diminished shareholder wealth, even though this law required near parity on the board of directors. As long as employees are in the minority, even if that minority is large, their role on the board is likely to remain mostly informational in nature.

The territory in which employee representation exceeds a majority but falls short of 100 percent is less well charted. One safeguard may be a need for additional equity financing in the future, but I do not put much weight on this for reasons given in Section 11.3. A more promising point is that workers receive dividends per share that equal those of outside investors. A higher wage thus comes partly out of the returns on the equity capital already accumulated by workers. Workers will not be in a position to impose wage increases until they have a majority on the board and hence own a majority of the firm's equity shares, so this is not a trivial consideration. It is still true that a portion of any wage increase can be shifted to outsiders. But this temptation declines as the capital accounts of workers grow, and falls to zero when employees gain complete control.

If national or industry-wide collective-bargaining exists, then to some degree wages will be exogenous for an individual firm. This may curb excessive wage demands during the transition. But many countries lack such institutions, and even those that have them experience some wage drift at the firm level. In either case, it is probably best to remove bargaining over wages and benefits from the purview of the board of directors. This was done at United Airlines, for example, where changes in collective bargaining agreements were left to a separate committee having shareholder representatives but no union members (see Section 10.3). More generally, one could mandate that wages and benefits be decided in a committee having an equal number of shareholder and employee members regardless of the composition of the board of directors. A neutral referee could be selected in advance to resolve deadlocks, perhaps through final offer arbitration.

Employees might also divert resources to other less tangible forms of consumption, such as roomy offices, travel opportunities, or on-the-job leisure. Because the costs come partly at the expense of shareholders,

this provides another avenue for expropriation. This problem can also be expected to decline in severity as employees accumulate more equity. In particular, employees nearing retirement will need to sell their individual capital accounts back to the firm or to a replacement worker at a price determined on the stock market, and will not be favorably disposed toward colleagues whose behavior diminishes the value of their accounts. As workers gain control, productivity might also increase through mutual monitoring among employees and better information-sharing. This could fully or partially compensate the firm's outside shareholders for any opportunism on the part of employees.

It is also unclear whether this agency problem is any worse than the parallel agency problem arising between shareholders and top managers in a capitalist firm. Shareholders do have nominal control rights in the latter case, but their control is highly attenuated when equity capital is diffusely held. Managers in capitalist firms hold a much smaller fraction of the firm's equity than the majority position workers must acquire in order to gain effective control under the proposal of Section 12.2. This larger equity role obliges employees as a group to bear more of the cost of resource diversion than is currently true for top managers.

Shareholders might even gain by replacing *de facto* managerial control with *de jure* workers' control because workers will monitor top managers as well as one another. The case of German codetermination in Section 4.3 suggested that the political resistance to this institutional innovation came more from managers than from shareholders. The scarcity of employee representation on U.S. boards of directors, even in the firms where ESOPs have large equity holdings, may stem more from a desire by top managers to avoid supervision and accountability than from any threat perceived by shareholders. In fact, the shareholders may prefer a predictable program of share repurchase to the sporadic dividends paid out by a group of self-perpetuating managers.

One motivation for the referendum proposal is to reduce the collective-action costs facing the employee coalition, and the rationale for installing the protections of this section is to assure shareholders that they will not be made worse off should employees vote yes. If these procedures work well, any net gain from workers' control will be internalized by employees, and managers will be unable to block the transition. The referendum procedure is thus a crude way of testing for the existence of potential gains: If workers take over and share prices do not fall, one can infer that workers' control was previously stalled by the resistance or inertia of management.

Firm governance involves a wide range of issues other than distributional conflict and agency problems. Examples include choices about product line, investment strategies, production methods, incentive systems, job security, and working conditions. Employees often have diverse attitudes toward such matters. In a transitional context, this diversity can be useful in stabilizing the role of outside shareholders after they are in a minority position. Some labor directors, such as those representing managerial or professional interests, can be expected to vote with capital directors on certain issues. Shareholders will thus continue to have a strong voice even when they have only 30–40 percent of board seats. A more formal strategy to protect minority interests would be to impose a supermajority rule for a subset of particularly important decisions, giving shareholders a veto in sensitive domains until their voting strength falls below a threshold such as one-third or one-quarter.

This precaution could be accompanied by a further requirement that the labor trust complete the transition phase by acquiring the last 10, 15, or 20 percent of total equity in a single discrete transaction. Under such a rule, the last shareholders out the door would not have to fear being in a position of negligible influence relative to workers. If the labor trust lacked the resources for such a transaction, it might seek to arrange financing through bank loans, bond issues, a government agency, or the federation from Section 12.2. Alternatively, the trust might suspend its equity purchases temporarily while accumulating sufficiently large internal reserves to take the firm private through an offer to all remaining shareholders.

12.4 Governing Firms

What about the danger that workers would prove unable to manage a large firm in a coherent way as a result of their diverse preferences and interests? One potential objection can be handled immediately. The cycling problems associated with majority voting (Section 9.7) are most likely to occur under a system of direct democracy where issues are routinely put to a vote and the agenda always remains open to further proposals. This is not the setting under consideration. I take it as given that any reasonably large worker-controlled firm will use representative methods and have an administrative system with professional managers. Cycling is not a plausible worry for a board of directors of moderate size, at least no more than it is for committees or legislatures of other sorts where diverse groups are represented.

Interactions within the boardroom are instead likely to involve bargaining and quid pro quos among a small set of well-organized interests. Assuming all directors have access to common information, and side payments can be arranged if necessary, there is no reason why such a committee could not bargain its way to efficient decisions. Specific outcomes, especially from a distributional standpoint, would depend on the power of each coalition to block the policies favored by other coalitions.

Some problems can nonetheless be anticipated. First, voting procedures are poorly adapted to handle distributional conflicts. Absent other institutional mechanisms, the group with the greatest voting strength can seize the entire pie. Conflicts among employee groups are likely to revolve around relative wages, especially because after a transition to workers' control, wage payments include implicit returns from jointly owned capital assets, and there is no obvious benchmark analogous to wages on an external labor market that can serve as a focal point in partitioning this income stream. One solution is to hand off the task of developing wage determination criteria to a separate committee, independent of the board of directors, with any proposal requiring ratification by the workforce. Systems of this sort have proven workable in large cooperatives, and labor unions face similar internal conflicts in formulating a bargaining strategy. The difficulties do not seem insurmountable.

A predictable outcome of workers' control is that wages will be compressed relative to similar capitalist firms. Whatever the rules for wage determination may be, the skewed nature of the initial wage distribution will imply that the wage of the median voter is below the mean. Experience with cooperatives and labor unions shows that the majority located below the mean will use their political strength to limit the salaries paid at the top. Similar forces will operate in a referendum on whether to pursue workers' control in the first place. Organizers can be expected to seek support from the lower end of the wage distribution by emphasizing the opportunities that will arise to reduce salaries at the upper end. More than anything else, this may lead management to oppose a transition to workers' control.

Another problem is that some employee constituencies with limited voting strength may find themselves constantly on the losing side of every conflict. This danger is obvious for an at-large voting system where every labor director is elected by the entire workforce, because a cohesive majority could exclude every other group from the board. Proportional representation by occupation, establishment, seniority, or other criteria

is indispensable to ensure that smaller groups will have a voice at the board level. But the same problem arises within the board because representatives of larger groups will outnumber representatives of smaller groups. There is a continuing danger that democratic processes will degenerate into a form of dictatorship run in the interests of a single dominant constituency.

One solution is to impose supermajority requirements on issues of special concern to minority interests, and another is to give these interests a veto over proposals in certain domains. The difficulty with these arrangements is that they can paralyze the bargaining process, especially if there is no easy way to split differences or compensate losers through side payments. No standardized governance system of this kind is likely to be satisfactory across a wide range of firms. Such procedures must be tailored to the needs of particular firms in order to provide various coalitions with the right mix of influence and veto power. Procedural details are therefore best left to the advocates of workers' control within a firm, subject to broad statutory constraints.

A specific basis for conflict among employees involves differences in the amount of equity capital each member has invested in the enterprise. This problem only arises in the transition phase because afterward, individual capital accounts no longer exist. But in the transition, older workers with more accumulated equity will be more inclined to support dividend payments, while younger workers favor higher wages. Section 12.3 suggested that these disagreements may help to reassure outside investors that some employees share their interest in preserving the market value of the firm. But such conflicts are nonetheless real, and cannot easily be eliminated.

Many of the dilemmas outlined here can be circumvented by delegating substantial authority to managers and giving them job security for a defined period of time, subject to the usual caveat that managers can be removed for corruption or gross negligence. Going to an extreme in this direction, decisions by the board of directors might be confined mainly to hiring managers and renewing or terminating their contracts. This would put the burden of determining worker preferences squarely on the shoulders of managers, but presumably if they are well paid they will accept this challenge. It also raises questions about whether board representatives can credibly promise not to intervene in managerial decisions. If they can, then one need not be quite as concerned with collective-choice problems. The crucial tradeoff will instead

become the extent to which democracy must be sacrificed on the altar of managerial authority in order to make workers' control a viable governance structure.

12.5 Trading Jobs

Concern has repeatedly been expressed in the literature on LMFs that any form of collective asset ownership makes it impossible for workers to cash out their equity stakes when they leave the firm, and thus makes firm members reluctant to finance investments out of retained earnings. This is incorrect. A transferable labor share enables a worker to recover the present value of her claim on future net income on departure and preserves proper investment incentives for the membership. This system also compensates insiders for admission of new members. Even so, it is desirable to adopt a constitutional rule forbidding non-member labor except in narrow and well-defined situations, because even small imperfections in the labor-share market can unravel workers' control.

The theory behind these conclusions was discussed at length in Chapter 7. Here I want to focus on the heterogeneity of occupations and the role of career paths in an LMF. Such factors have been ignored in most theoretical analyses of membership markets, but a practical scheme must address them. I will also consider the valuation issue arising after the transition phase when there is no longer an open market for equity shares.

To begin, imagine an LMF in which members receive an explicit wage equal to their next best alternative in the labor market. Any returns on collectively owned assets, gains from superior productivity, or product-market rents are labeled as dividends, and awarded to individual workers in some democratic way. Now consider a new member who expects to remain in a given job with a fixed wage and dividend for some time period, and then depart. Ignoring credit rationing, risk aversion, and the like, the equilibrium price of the labor share for this job is equal to the discounted present value of future dividends associated with the job, including dividends to be paid after the worker leaves, since at exit the worker's labor share can be sold to a replacement who will pay a similar present value.

A real LMF will not generally partition its net income in a way that corresponds to the categories of economic theory. Instead, returns to collective capital, productivity gains from workers' control, and product-market rents may all be lumped together as "wages," or paid out in the form of fixed wages supplemented by annual bonuses that reflect current

financial results. Some firm income will also be added to collective reserves or used for expansion. Nevertheless, the principles in valuing a worker's labor share are fairly clear.

Let each labor share be tied to a job description and appropriate skill requirements. Estimate a base wage that is the best available approximation to the wage that a worker with these characteristics could obtain on the outside labor market. Summing up these base wages for the labor force and deducting them from sales revenue, along with expenditures for materials and debt service, leaves a flow of dividends attributable to implicit returns on assets owned by the membership, the firm's idiosyncratic productivity characteristics, and possibly rents due to imperfect competition. The discounted present value of this dividend flow is the shadow value of the firm. The difference between the actual income paid to a worker in a given job (including bonuses, profit-sharing, and other current income) and the base wage for the job is the portion of the dividend flow paid out to that worker.

Assuming that base wages and the shadow value of the firm's total dividend stream can be estimated, the correct way to value the labor share attached to a given job is to multiply the shadow value of the firm by the fraction of current dividends paid to the incumbent in that job. It is enough to compute the fraction of dividends actually paid out in a given year because dividends that are reinvested in the firm will lead to higher dividends later, and to a first approximation future dividends will be awarded in much the same proportions as the dividends currently being paid out.

Next, suppose that a worker who is already a member moves to a new job within the same firm, perhaps after acquiring new skills. This job will be associated with some other base wage on the external labor market. The gap between the actual wage and the base wage may also differ compared with the old job. This raises no problem in principle. The old and new jobs both have shadow values for their corresponding labor shares, so the worker can sell the old labor share back to the firm and buy the new labor share instead. This will involve a net payment from the worker to the labor trust if a promotion results in a larger claim on total dividends. To avoid lumpy transfers, payments could be implemented through suitable payroll adjustments in the first year or two of the new job.

The hard part is to estimate base wages and the shadow value of the firm. It is not always obvious what someone's opportunity cost is, and the shadow value of the firm is dependent on expectations about future events. There are, however, some grounds for optimism. Personnel departments

in large firms routinely survey labor-market conditions or hire consultants to gather data on the wages paid by firms in the same industry or region. These are precisely the data needed to estimate base wages. The task of estimating a firm's shadow value, given the base wages, differs little from the task of valuing the equity claims of minority owners in closely held capitalist firms, or valuing the positions of members in professional partnerships. For this purpose, the LMF is not an exotic new species, but just another corporation that has been taken private. Thus, existing valuation expertise should transfer without great difficulty.

In practice, a combination of actual and imputed market values could be used. There is little reason to avoid market-driven membership prices on entry into the firm, whatever the particular job description may be, as long as there is an ample supply of candidates. If the labor share price posted by the firm is too high, few workers will apply. If the price is too low, applicants will queue for admission. Either way, insiders have incentives to revise the price in the right direction. Market mechanisms cope less well with career paths within the firm because of the pervasiveness of idiosyncratic skills and the corresponding absence of competition. Capitalist firms deal with this issue in part by creating internal labor markets where wages are attached to jobs rather than persons, and bilateral bargaining is minimized. A democratic firm could likewise attach posted labor-share prices to jobs.

Some additional institutional features are needed. First, the firm must stand ready to buy back anyone's labor share at its posted price in order to give workers confidence that their investments will have some liquidity. Second, it is vital that valuations be carried out by independent professionals on the basis of generally accepted principles. Disagreements are most likely to erupt over alleged errors with respect to outside labor-market conditions, but these disputes would probably not differ qualitatively from disputes over wages and salaries in conventional firms. Such conflicts might be resolved by a neutral arbitrator acceptable to both sides. Of course, firms remain free to set actual wages in any way they like and to revise their decisions from time to time. The point is that labor-share valuations need to reflect these distributional decisions in a transparent and reliable way.

It might also be desirable to set up a central place at which labor-share transactions can be carried out among firms operating in the same industry or requiring a similar set of skills. The federation outlined in Section 12.2 could offer this service. Finally, it would be useful for a regulatory body to establish consistent disclosure requirements, or at least attest to the

solvency of firms in the labor-share market, to restrain adverse selection and outright fraud. This would parallel the role of securities regulators in the stock market.

12.6 Sample Calculations

A key issue in evaluating the proposal from Section 12.2 is the likely duration of the transition phase leading to full workers' control. One would also like to know how long it would take for employees to achieve a simple majority on the firm's board of directors, or a two-thirds majority if this is needed for major corporate reorganizations. Another point of interest is the equilibrium price of a labor share after a transition has been completed. Some illustrative calculations can be used to highlight the major variables and derive very rough answers. The analysis in this section involves a number of heroic simplifications, and is not meant as a serious formal model.

Let us define the following notation:

Y = value-added per year (sales revenue minus expenditures on materials)

W = wage costs per year

K = value of collectively owned assets

D = firm debt (bank loans, outstanding bonds)

E = firm equity (where $K = D + E$)

r = rate of return on debt and equity capital

α = fraction of wages contributed to the labor trust annually

$\beta = W/Y$ = share of labor in value-added

$\gamma = E/K$ = share of equity in total assets

Several simplifying assumptions are used. Value-added, wage costs, and assets all remain constant over time. Debt and equity have the same rate of return, so total capital costs are independent of the debt-equity ratio. The parameter γ determining this ratio is exogenously fixed and risk aversion is ignored. The firm operates in a competitive product market, so $Y = W + rK$. Depreciation and taxes are also ignored.

Suppose initially that all of the equity capital E is supplied by outside shareholders. The firm's employees then create a labor trust. In the first year, payroll deductions generate an amount αW , which is used to purchase shares on the stock market. Let $E_1^L = \alpha W$ be the total amount of equity capital in workers' accounts at the end of the first year.

At the beginning of the second year, the equity shares in workers' accounts receive a dividend payment equal to rE_1^L . This dividend is used to acquire more equity shares from outside investors. In addition, workers still have the principal $E_1^L = \alpha W$ in their accounts. Payroll deductions generate another contribution of αW , so the balance in workers' capital accounts at the end of the second year is

$$E_2^L = \alpha W + (1+r)E_1^L = \alpha W[1 + (1+r)]$$

After T years, the total balance is

$$\begin{aligned} E_T^L &= \alpha W[1 + (1+r) + (1+r)^2 + \dots + (1+r)^{T-1}] \\ &= \alpha W[(1+r)^T - 1]/r \end{aligned}$$

where the last equality results from a standard piece of algebraic manipulation.

We want to know the first year T in which the employees will have transferred an arbitrary fraction λ (perhaps half) of the firm's equity capital from the outside shareholders to their individual capital accounts in the labor trust. The task is therefore to find the value of T such that $E_T^L/E = \lambda$. Using the zero profit assumption $Y = W + rK$ and the definition $\beta = W/Y$, we get $K = (1-\beta)Y/r$. Using the definition $\gamma = E/K$, we get $E = \gamma K = \gamma(1-\beta)Y/r$. Substituting this result and the solution for E_T^L into the equation $E_T^L/E = \lambda$ yields

$$(1+r)^T = 1 + [\lambda\gamma(1-\beta)/\alpha\beta]$$

In the year T at which this equation holds with equality, the labor trust reaches the fraction λ of equity capital. This occurs sooner if the payroll deduction is large, if the firm is labor-intensive, if the equity share in assets is low, and if the rate of return on capital is high.

Given some assumptions about the parameter values, a few numerical calculations can be performed. As a baseline, I consider $\alpha = .075$, $\beta = .70$, and $\gamma = .50$. A 7.5 percent rate of payroll deduction is high but not unrealistic, and the other values would not be unusual for North American manufacturing. I use a baseline return on capital of 10 percent.

Table 12.1 Years needed to achieve workers' control with dividends reinvested in purchase of equity shares

	λ (fraction of equity capital held by employees)		
	0.50	0.67	1.00
α : (.05), .075 , (.10)	(13), 10 , (8)	(15), 12 , (10)	(18), 15 , (13)
β : (.50), .70 , (.90)	(16), 10 , (4)	(18), 12 , (5)	(>20), 15 , (6)
γ : (.30), .50 , (.70)	(7), 10 , (12)	(9), 12 , (14)	(11), 15 , (17)
r : (.05), .10 , (.15)	(19), 10 , (7)	(>20), 12 , (8)	(>20), 15 , (10)

In practice, the after-tax return on equity is often higher and the return on debt is often lower.

Table 12.1 shows how the number of years required to reach a given employee capital share (λ) depends on the parameters. Figures not in parentheses correspond to the baseline values stated earlier. Figures in parentheses indicate how the dependent variable λ changes as one parameter varies, holding other parameters constant at their baseline levels.

In every case, a majority share is reached in less than two decades. In the baseline case, only one decade is needed. The latter figure is greatly reduced if the firm is especially labor intensive (4 years if $\beta = .9$) or the return on capital is high (7 years if $r = .15$). Only two more years are needed to achieve two-thirds share ownership in the baseline case, with full workers' control in 15 years. The time until full control is quite sensitive to the degree of labor intensity (6 years for a labor intensive firm, but more than 20 in the capital-intensive case) and to the return on equity (with a high return, full control is reached in 10 years).

The effect of a government subsidy can be seen from Table 12.1. Suppose tax breaks cover 33 percent of the cost of share purchases, a subsidy comparable to that for ESOP programs in the United States (see Section 4.2). If workers contribute 5% of their wages, then net of subsidy the relevant figures are those for $\alpha = .075$ in Table 12.1. The effects of a 50 percent subsidy, again with a 5 percent payroll deduction for workers, are given by the figures for $\alpha = .10$.

These results assume that dividends are reinvested in further stock purchases during the transition phase, so that employee capital accounts grow exponentially. An alternative is to pay cash dividends, which can be used for consumption purposes. The total employee equity stake after T years is $E_T^L = \alpha WT$ in this situation, with equity E computed as before. The length of the transition phase under this linear accumulation plan is

Table 12.2 Years needed to achieve workers' control with dividends paid out as cash

	λ (fraction of equity capital held by employees)		
	0.50	0.67	1.00
α : (.05), .075 , (.10)	(22), 15 , (11)	(29), 20 , (15)	(43), 29 , (22)
β : (.50), .70 , (.90)	(34), 15 , (4)	(45), 20 , (5)	(67), 29 , (8)
γ : (.30), .50 , (.70)	(9), 15 , (20)	(12), 20 , (27)	(18), 29 , (40)
r : (.05), .10 , (.15)	(29), 15 , (10)	(39), 20 , (13)	(58), 29 , (20)

shown in Table 12.2. A quick comparison with Table 12.1 reveals that the failure to take advantage of compounding in rates of return leads to long delays in achieving high levels of share ownership. Only if the firm is very labor intensive ($\beta = .9$) can full control be achieved within a decade.

A final scenario is similar to that used in present-day ESOPs. Suppose dividends are always reinvested to purchase additional shares, but when an employee leaves the firm her accumulated shares are sold back to the open market. Under this system, full workers' control may never be attained. Instead, the firm is likely to reach a steady state where new equity purchases by incumbent employees are exactly offset by the equity sales of outgoing employees, yielding no net increase in the total equity stake held by the labor trust.

The steady-state employee capital share can be calculated using assumptions about the length of a typical worker's stay in the firm. Suppose every worker stays 5 years and then leaves. Assuming that wages are flat throughout a worker's tenure in the firm, a fifth of the workforce at the end of any given year will be newcomers who have saved $(.2)\alpha W$, a fifth will have saved $(.2)\alpha W[1 + (1 + r)]$, and so on, with the last fifth having accumulated $(.2)\alpha W[1 + (1 + r) + \dots + (1 + r)^4]$. More generally, if every worker stays T years and then leaves, each term is multiplied by $1/T$, and the last exponent is $T - 1$. Summing terms and using a few algebraic tricks, the steady-state employee equity stake turns out to be:

$$E_T^L = \alpha W[(1 + 1/r)[(1 + r)^T - 1]/T - 1]/r$$

Total equity E is the same as before.

Table 12.3 shows that if accumulated capital shares are sold on the market by retiring workers, it is hard for workers to acquire a substantial equity stake even with reinvestment of dividends during employment. When employees stay in the firm for 5 years, they never reach a majority

Table 12.3 *Steady-state employee share ownership with dividends reinvested and equity claims sold to outsiders on departure*

	T (duration of stay in years by an employee)		
	5	10	20
α : (.05), .075 , (.10)	(.08), .12 , (.16)	(.18), .26 , (.35)	(.50), .75 , (1.0)
β : (.5), .7 , (.9)	(.05), .12 , (.46)	(.11), .26 , (>1)	(.32), .75 , (>1)
γ : (.3), .5 , (.7)	(.20), .12 , (.09)	(.44), .26 , (.19)	(>1), .75 , (.54)
r : (.05), .10 , (.15)	(.06), .12 , (.19)	(.11), .26 , (.47)	(.26), .75 , (>1)

position. If they stay 10 years, a majority is reached only when the firm is highly labor-intensive. For a 20-year stay, full control is possible but only in exceptional circumstances: a high payroll deduction (or subsidy), a high labor intensity, a high debt-to-equity ratio, or a high rate of return on capital. There are still some parameter values under which workers fail to achieve majority control, although normally this does occur.

The lessons from Tables 12.1–12.3 are unmistakable. The best hope of reaching majority workers' control, let alone 100 percent control, in a reasonable time span rests with the strategy of reinvesting dividends in further equity accumulation and having workers sell the shares in their individual accounts to the labor trust on departure. To maintain the value of workers' equity, new and continuing workers would need to take over the capital accounts of departing workers by making cash payments to the trust.

Under present assumptions, the price of a labor share after the transition phase is equal to the implicit equity stake of a typical worker. Let L be the number of workers, with $W = zL$, where z is the annual income of a worker. Total equity capital is E , so the price of a labor share is $p = E/L = \gamma(1 - \beta)z/r\beta$. A more meaningful way to express this is to compute the ratio of the labor share price to annual income, or $p/z = \gamma(1 - \beta)/r\beta$. The price increases relative to wages when the firm is financed primarily by equity rather than debt, when it is capital intensive, and when the rate of return on capital is low.

Baseline parameter values yield $p/z = 2.14$, so the price of a labor share is slightly more than twice a worker's annual income. This is somewhat lower than corresponding figures for the shares of plywood cooperatives during the early 1980s, which were often priced at a level 2.6–3.0 times higher than annual earnings (Craig and Pencavel, 1992), and it is about the same as the entry fee of two times annual earnings reported for Mondragon during its early growth phase (see Section 3.3). In a very

labor-intensive firm ($\beta = .9$), the ratio declines to $p/z = 0.55$, so the price is only about half of annual earnings. On the other hand, in a very capital-intensive firm ($\beta = .5$), the price rises to five times annual income, a level that would be widely viewed as prohibitive.

Prices are likewise high at low interest rates because the implicit stream of future dividends associated with a labor share is not strongly discounted. However, $r = .15$ with other parameters set at baseline levels reduces the price to 1.42 times annual income. When the financial parameter γ is close to zero and the firm is largely debt-financed, the price of a labor share is also near zero. As equity becomes more important – for example, because the firm's physical assets are highly specialized or it needs to make intangible investments with a low collateral value – the price of a labor share rises proportionately.

12.7 The Long and Winding Road

The literature on LMFs contains many other proposed organizational blueprints. Interested readers may want to consult Le Grand and Estrin (1989), Bardhan and Roemer (1993), and Jossa and Cuomo (1997). All of these sources frame the question from a broadly socialist point of view and linger over problems of public asset ownership, which are not germane here. But some market socialists are quite flexible about property rights, and there is considerable overlap with the concerns of this book.

Before the nineteenth century, corporations in the U.K. and United States were generally established by royal charter. Their shares were sometimes sold when companies engaged in long-distance trade and investments were not expected to pay off until the distant future (on the case of the Dutch East India Company, see Steensgaard, 1982). In the nineteenth century, corporations built turnpikes, canals, and railways, but these activities also required specific approval from a governmental authority. General statutes that enabled groups of investors to register corporations for a wide variety of purposes, gave these corporations a distinct legal identity, and routinely granted them limited liability did not exist in the United States, the U.K., or France until the mid-1800s. Public listing of industrial corporations on stock exchanges did not occur in the United States until 1890–1914, and later in Europe (Rosenberg and Birdzell, 1986: ch. 6–7). The large publicly traded corporation is thus a recent invention.

LMFs today are in a similar position to that of corporations before general incorporation statutes. In the absence of widespread experience with LMFs and a standard organizational template that can be used in

large firms, it is necessary to cobble together governance structures on a case-by-case basis using whatever materials happen to be close at hand: partnership or corporate law, ESOPs, codetermination ideas, and so on. Further, it is necessary to do this in an environment where crucial expertise is undeveloped and a nucleus of large LMFs has not yet emerged to demand a suitable policy framework. I am not suggesting that legal institutions, regulatory agencies, or professional services are decisive in explaining the rarity of LMFs. The underlying factors are those in Chapter 11. But sensible design and a supportive policy framework are important at the margin.

The supply of policy measures is not independent of the demand. Thus it is worth considering whether there are any causal forces that might make LMFs viable in a wider range of industries over time. One candidate is the increasing average wealth accumulated by employees through life-cycle saving, which has made employees more willing and able to hold shares in their own companies. Simultaneously, profit-sharing and other incentive plans under which workers bear significant risk have come into broader use, not just in the United States but in many European countries (Perry and Kegley, 1990). If this process continues, employees may eventually demand voting rights commensurate with their risk-bearing role.

There is no reason to anticipate any systematic trend in capital intensity or minimum efficient scale. Some innovations increase capital intensity, while others decrease it; some can only be used at very large scale, while others facilitate entry at small scales. If there is a secular trend toward increasing average wealth but no strong trend in capital requirements, the proportion of industries in which workers' control is financially viable should grow.

Other technological developments are evidently encouraging greater involvement by employees in the decision-making processes of conventional firms. The increasing use of self-directed teams, for example, is well known (Appelbaum and Berg, 2000). It appears reasonable to attribute such organizational innovations at least in part to the introduction of flexible manufacturing systems (Milgrom and Roberts, 1990b) as well as improvements in information technology (Bresnahan, Brynjolfsson, and Hitt, 2000). More generally, Ben-Ner, Burns, Dow, and Putterman (2000) find that employee participation in a broad range of decision-making activities is strongly linked to the complexity of the production process. These findings suggest that the productivity gains from workers' control may be increasing in certain sectors. The demand for worker

representation may also grow as investments in firm-specific human capital increase (Blair, 1995; Levine, 1995).

A few other secular trends may push in the same direction. Workers' control might be a normal good, and if so the demand for it will increase as real incomes rise (Ben-Ner 1988b; Putterman, 1993). Higher average education levels may also spread entrepreneurial skills more widely in the population (Ben-Ner, 1988b). Greater capital mobility may mean that KMFs will appropriate or destroy rents and quasi-rents traditionally captured by labor, stimulating greater interest in workers' control as a countervailing strategy.

Contrary to the hopes and fears voiced in earlier eras, the road of workers' control leads neither to heaven nor hell. Further progress will require creative institutional design, careful attention to transition problems, and a willingness to learn from experience. Most of all it requires that dogmatism be replaced by pragmatism. LMFs will not dominate Western economies any time soon, but it should prove possible to create a robust worker-controlled sector through modest policy innovations and small public subsidies. If in the process we learn how to reconcile democratic governance with economic prosperity, that will be knowledge worth having.