3 Regulating unions and collective bargaining
Kenneth G. Dau-Schmidt and Arthur R. Traynor

1 Introduction
Historically, developed nations have undertaken the regulation of unions and collective bargaining in the pursuit of three over-arching objectives: to foster unions and collective bargaining; to minimize industrial strife; and to promote union democracy. Nations have pursued these objectives not merely because these ends themselves were viewed as laudable, but also because it was thought that they served underlying societal goals of equity, efficiency and voice (Budd 2004).

Proponents of the right to organize have argued that collective bargaining promotes equity in bargaining power between labor and management and allows employees to gain a larger share of the fruits of their efforts. Such a redistribution of wealth is desirable not only because it produces a more equitable distribution of the rewards of production, but also because it promotes economic growth and political stability. Workers deserve a greater share of the proceeds of their labor and this income makes them better workers and consumers and adds strength to the fiber of our democracy (Atleson 1983, pp. 35–43).

However, in regulating labor relations countries generally go beyond merely protecting the right to organize. Labor laws prescribe and proscribe various behaviors in the selection of collective representatives, the conduct of collective bargaining and the enforcement of collective agreements. The proponents of such regulation reason that, in order to obtain the greatest net benefit from collective bargaining, it should be conducted under a system that promotes the rational selection of collective representatives, useful exchanges of information between labor and management, ‘good faith’ bargaining and the efficient enforcement of collective agreements. Such regulation is thought to improve the outcomes of collective negotiations and minimize the costs of negotiation and enforcement. Economists have argued that employee voice can improve economic efficiency in the negotiation and enforcement of employment contracts, the reduction of turnover costs and the management of companies (Freeman and Medoff 1984). Moreover, although the occasional resort to economic warfare is necessary for the private resolution of disputes through collective
bargaining, society can minimize the costs of such strife to both the parties and society by promoting ‘cooperative labor relations’ and ‘industrial peace’ (Dau-Schmidt 1992).

Finally, in many developed countries reformers have argued for regulation to promote democratic practices and accountability within unions. Union representatives can only act as the workers’ voice in the employment relationship if they are in fact democratically selected (Summers 1984). Moreover, equity and efficiency require that, as the employees’ representatives in contract negotiations and enforcement, union officials should be held accountable to fairly represent employees’ interests. This argument has added force in a system of exclusive representation, like that of the United States, where the union represents all employees in the unit whether they are union members or not.

Economic analysis can be usefully employed to examine the efficacy of government policies regulating unions and collective bargaining in achieving the desired objectives. Although not all objectives are within the scope of economic analysis – for example, we know of no useful economic analysis of the important proposition that the right to organize is a fundamental human right – theoretical and empirical work in economics can be very useful in evaluating whether certain policies are likely to promote employee organization, cooperative labor relations and union democracy and, ultimately, what the impact of these policies will be on the distribution of wealth, efficiency and even employee voice.

There are several economic models of unions and collective bargaining that begin with very different assumptions and yield divergent predictions and implications. In this chapter, we present an outline of the economic analysis of the regulation of unions and collective bargaining. We begin with the simple model of the market for union services and analyze regulations that may increase or decrease either the demand or supply for union representation. In this way we provide an economic basis for evaluating government policies that are designed to protect and foster employee organization. Next we present simple expositions of the primary models of the impact of unions on wages and employment, including the monopoly model, the efficient contract/collective voice model and the median voter model. These models provide the basic framework for analyzing the impact of collective bargaining on equity, efficiency and voice. Finally, we present two simple models of collective bargaining that depict the problem of strikes alternatively as a function of imperfect information and strategic behavior. These models provide a basis for evaluating the potential for government policies to promote cooperative labor relations and industrial peace. Although none of these models is literally true, all of them yield useful insights. The ultimate arbiter of the efficacy of various government
policies is, of course, empirical work. Where appropriate, we cite the most important empirical work that is available on the examined problems.

2 Regulations to protect and foster employee organization: the market for union services

According to their common practice, economists begin their analysis of labor laws by positing the existence of a market for union services (Berkowitz 1954; Pencavel 1971; Kaufman and Hotchkiss 2006). The equilibrium in that market between the demand and supply for union services determines the amount of union services provided in the economy and the density of union organization. By regulating behavior, a government can affect union and employer cost structures and shift the demand and supply for union services to increase employee organization.

A The market for union services

In a labor market, workers’ demand for union services depends on the price of those services in union dues and initiation fees, the net benefit of union representation and worker income and preferences. The net benefit of union representation includes the value of increased wages and benefits and union representation in contract enforcement minus the expected costs of lost work due to employer anti-union discrimination, strikes and increased layoffs. As with all goods, the level of worker income may influence demand, although it is generally assumed that union services are a normal good and demand increases as the price drops. Worker preferences for union membership influence demand, with higher demand expected from workers who enjoy solidarity and influence in the workplace and lower demand from those who are satisfied with accepting employer directives in the employment relationship. In Figure 3.1, the workers’ demand curve for union services is represented by D1. This demand curve slopes downward indicating that as union dues and initiation fees fall, ceteris paribus, workers’ demand for union representation will increase.

The supply of union representation in a given market is posited to depend on the price of union services, the cost technology of providing those services and the objectives of the unions in that market. The cost technology of providing union services depends on the costs of organizing, securing relevant information, negotiating contracts, conducting strikes and enforcing collective agreements. There may be economies of scale in providing union services and it is generally assumed that the marginal costs of providing such services is increasing in the short run so unions must be paid more to supply higher levels of union services and the supply curve slopes up. Unlike simple profit-maximizing firms, unions may place more importance on social objectives such as increasing their membership and
Regulating unions and collective bargaining

99

economic and political influence. Accordingly, the supply curve for union services will be further out and probably less price sensitive the more the relevant unions value growth in membership. The supply curve for union services is represented in Figure 3.1 by S₁ and reflects the assumption that unions are willing to supply more services if they can charge a higher price for those services in dues and initiation fees.

The market equilibrium for the provision of union services occurs where the workers’ demand for such services equals the unions’ supply of those services. In Figure 3.1 this equilibrium occurs at point E₁ where the price of union services is P₁ and the quantity of union services, or ‘union density’, is given by Q₁. E₁ is the equilibrium because it is at this point that market price and quantity tend to come to rest. At higher prices, the demand for union services is less than the supply so there is downward pressure on price. At lower prices, the demand for union services exceeds the supply so there is upward pressure on price. It is only where demand equals supply that there is no present impetus for change in market price or quantity.

Of course, over time the market equilibrium may change due to shifts in the demand or supply curves. The demand curve can shift in or out, for example to D₂, as the net benefits of union membership fall or increase and worker preferences for union services fall or increase respectively. The supply curve can shift in or out, for example to S₂, as the costs of providing

Figure 3.1 The market for union services
union services increase or decrease and union objectives for organizing workers fall or increase, respectively. If the demand curve shifted out from \( D_1 \) to \( D_2 \), perhaps due to an increase in the net benefits of unionization, and the supply curve shifted out from \( S_1 \) to \( S_2 \), perhaps due to a decrease in the costs of organizing, the market for union services would shift to a new equilibrium, \( E_2 \), with a slightly lower price, \( P_2 \), and a significantly higher level of the provision of union services, or union density, \( Q_2 \).

\[ \text{B \ Government regulation to foster employee organization} \]

Government regulation can be used to shift the demand and supply curves for union services away from the origin and thus ‘protect or foster employee organization’ by shifting the market equilibrium to a higher level of union services. For example, the common prohibition against employer discrimination on the basis of union affiliation is designed to decrease the expected costs to employees of organizing, increase their expected net benefits from union representation, and shift out the demand curve for union services. Similarly, regulation that is designed to promote cooperative labor relations – for example, the obligations to ‘bargain in good faith’ and mediate disputes – lowers the expected costs of organizing to workers due to strikes and again increases the workers’ expected net benefits from union representation. On the other hand, government regulations, such as requiring employers to provide unions with names and addresses of employees, requiring employer recognition on the basis of valid card checks, and encouraging arbitration or low cost ‘labor courts’ for the enforcement of collective agreements all lower the costs to unions of organizing and providing union services. These regulations therefore shift the supply curve for union services away from the origin.

The issue of union security agreements and ‘right to work’ laws merits a slightly more detailed discussion. In the economic model, union solidarity is a public good. Workers who are members of the bargaining unit cannot be effectively excluded from the benefits of union organization. In the United States unions are required to fairly represent all members of the bargaining unit whether they are members of the union or not. Even in the absence of such a prescription, it would be a foolish employer that did not grant similarly situated non-union employees the same wages and benefits as its union employees. Accordingly, individual employees have an incentive to free-ride by letting others undertake the costs of organizing and union representation while still enjoying the benefits.

Employers can exacerbate the public good problem by increasing the individual costs of organization with discriminatory discharges of union supporters and ‘yellow dog’ contracts that require employees to abstain from union membership as a condition of employment. For their part,
unions have tried to solve the public good problem by negotiating ‘union security agreements’ with the employer in which the employer agrees to require employees as a condition of employment to join or financially support the union. Accordingly, laws that prohibit discriminatory discharges and prohibit yellow dog contracts lower the costs of organizing and shift the supply curve for union services out, while ‘right to work’ laws that prohibit union security agreements lower the net benefit of joining a union, raise the cost of organizing and shift both the demand and supply curves toward the origin.

Although these issues were debated before rigorous empirical work was common, strong empirical evidence exists that administrative delay in processing unfair labor practices and conducting elections under the National Labor Relations Act (NLRA) raises union costs in organizing and decreases the chances of union election victory (Freeman and Medoff 1984, pp. 234–5; Flanagan 1987, pp. 59–60). There is also good evidence of a significant increase in American employer resistance to unions as represented in the number of unfair labor practices committed per election, size of back pay awards (Flanagan 2005, pp. 476–7) and use of permanent strike replacements (LeRoy 1995) beginning in the late 1970s (Logan 2002). However, the empirical evidence is mixed as to whether such offenses generally intimidate workers or steel their resolve to organize (Bronfenbrenner 1997; Fiorito 2002).

Empirical studies of Canadian provinces that have switched from ‘card check’ procedures (that is, voluntary recognition of a union that has collected authorization cards from a majority of workers) to NLRA-style elections suggest that the more burdensome election procedures decrease union election success by about 9–19 per cent (Johnson 2002; Riddell 2004). Other analyses of the Canadian experience with and without bans on permanent strike replacements suggest that such bans increase the duration, but not incidence, of strikes (Budd 1996) and increase wage settlements (Tracy et al. 1999). Finally, analyses of state and firm data suggest that ‘right to work’ laws prohibiting union security agreements decrease union election win rates by 5–10 per cent (Ellwood and Fine 1987; Moore 1998) and undermine union bargaining power (Abraham and Voos 2000).

C The rise and fall of unions in the American private sector

The rise and fall of unions in the American private sector can also be explained by reference to this simple model of a market for union services (Dau-Schmidt 2001; Kaufman and Hotchkiss 2006). In the early industrial period of the twentieth century, employers actively resisted employee organization through discriminatory discharges, blacklisting, yellow dog contracts and violence. Accordingly, during this period the net benefits
of unionization were low and the costs of organizing were high so that both the demand and supply for union services hovered near the origin. Thus during the period from 1900–29 the equilibrium for union services occurred near the origin and the percentage of workers organized in the private sector hovered just above 10 per cent.

The labor legislation of the New Deal not only prohibited these costly employer strategic behaviors, but provided a new and relatively efficient election procedure for the determination of representation questions and an efficient mechanism for the enforcement of collective agreements through arbitration. Moreover, during the immediate post-war period American industry was largely free of international competition and organized in large vertically integrated firms that were governed by administrative rules and benefited from long-term employment. American employers could afford higher wages and union benefits and administrative rules were consistent with management objectives and styles. Thus during the period 1940–75 the net benefits of union representation were high and the costs of organizing were low so that both the demand and supply curves shifted out and union density in the private sector increased to between 25–35 per cent.

More recently, with the rise of new information technologies and the global economy, American firms have become subject to low-wage competition from abroad and organized in a horizontal fashion across global markets. As a result there has been constant downward pressure on wages while firms are governed more by the market, value flexibility and short-term employment relationships. In this environment, American employers have actively resisted union efforts and have resorted to new weapons in actively campaigning against organization and replacing strikers. Thus since about 1975 the net benefits of union representation have fallen while the costs of collective action have increased, shifting both the demand and supply curves into a new equilibrium union density rate of about 10 per cent in the private sector (Flanagan 2005, pp. 468–77). For a fuller discussion of collective action in the global economy, see Hirsch (Chapter 21) in this volume.

The debate within the American labor movement as to how to respond to this decline can also be represented in this model. The AFL-CIO leadership has argued that the labor movement should commit resources to politics in an effort to amend the labor laws and lower the cost of organizing while the break-away ‘Change to Win’ Coalition has expressed a greater preference for membership, arguing that the movement should commit more money to organizing and achieve political power through strength of membership. The ‘Change to Win’ leadership has also argued that the labor movement should lower the costs of organizing and providing services by
Consolidating unions and undertaking area-wide multi-union organizing campaigns to achieve economies of scale (Bai 2005; Masters et al. 2006).

3 The impact of unions on equity, efficiency and voice

Economists have also modeled the impact of unions on wages, employment and efficiency. Using these models we can evaluate the theoretical implications of encouraging employee organization on equity, efficiency and voice. It is uncontroversial that, across the economy as a whole, unions achieve a wage premium for their members on the order of about 14–22 per cent (Blanchflower and Bryson 2007). Union members are also more likely to have benefits such as health insurance or a pension and to have more generous benefit plans than non-union workers (Budd 2007). All of the models account for this increase in the employees’ share of the proceeds from the business; however, the implications of each model as to whether this increase improves or worsens equity and efficiency are highly dependent on the underlying assumptions that are made in the model. As a result, these are largely empirical questions.

A The monopoly model of unions

The most negative model of unions is commonly referred to as the ‘monopoly model’. This model assumes that unions achieve higher wages and benefits by establishing a labor cartel to which the employer responds by raising prices, cutting output, substituting capital for labor and laying off workers (Kaufman and Hotchkiss 2006). The model therefore predicts that the benefits workers achieve through organization come at the expense of consumers, other workers and economic efficiency. Consequently, the monopoly model suggests that by fostering unions a government actually decreases both equity and economic efficiency.

The monopoly model of unions is represented in Figure 3.2. In that figure the two graphs represent two sectors of a market for the same workers. Each sector has a downward-sloping demand curve, \( D_1 \), reflecting employers’ declining marginal product in employing more labor and an upward-sloping labor supply curve, \( S_1 \), reflecting workers’ increasing marginal costs in supplying more labor. Before the union is formed, both sectors are in a competitive equilibrium at \( E_1 \) where supply equals demand, employment equals \( N_C \) and the market wage is \( W_C \). However in one of the sectors, the employees seek to raise their wages and benefits by forming a labor cartel. After the employees in that sector organize, their leaders establish a monopoly wage, \( W_U \), according to their preferences with respect to wages and employment as represented in the union’s indifference curve, \( U_0 \). Confronted with an employee cartel that can dictate wages, the employers in the now-unionized sector determine the number
Figure 3.2 The monopoly model

(a) Union labor market

(b) Non-union labor market
of employees they want to employ by retreating up their labor demand curves to \( N_u \), laying off \( N_c - N_u \) workers. In what is commonly referred to as ‘the displacement effect’, the workers who are laid off in the union sector move into the non-union sector shifting the labor supply curve out to \( S_2 \) and depressing wages in the non-union sector to \( W_N \). The higher union wage also calls forth additional workers to the union sector \( (N_s - N_u) \) who would like to work at the union wage, but can’t because of the union’s monopoly and employers’ limited demand. Thus the union wage results in unemployment in the union sector \( (N_s - N_u) \).

The implications of the monopoly model are that unions are both inefficient and inequitable. The monopoly union wage increase results in inefficient production because in cutting employment the union employers inefficiently substitute capital for labor and lay off workers who had previously been productively employed in that sector, relegating them to unemployment or less productive work in the non-union sector. The price increase in the union good that occurs after the monopoly union wage increase also results in inefficient consumption as consumers decrease consumption of the union good and substitute less satisfactory goods. Moreover, because the union employers are assumed to be price-takers in all markets, the union wage increase comes not from employer profits, but instead at the expense of the displaced workers, who now have lower wages, and the consumers of the union good, who pay higher prices. Assuming that the laid-off workers and consumers are of the same or lesser economic means as the union workers, this redistribution of wealth from them to the union workers increases the inequality of wealth in society. Although it is not a necessary part of the monopoly model, proponents of the monopoly model of unions often characterize unions as thuggish institutions riddled with brutality and corruption (Friedman and Friedman 1980, pp. 228–47). Accordingly, proponents of the monopoly model also generally give unions low marks for increasing employee voice in the workplace. Since under the monopoly model unions are inefficient, inequitable and anti-democratic, it would seem that the ultimate implication of the analysis is that the government should ban labor unions rather than protect and foster them.

The monopoly model of unions is straightforward and simple – and very naïve. The first problem with the model is that if there is a non-union sector with similar workers and enterprising employers, why don’t these employers use their employees to produce the union good and drive down the union wage? If there are barriers that prevent such entry to the union product market, why weren’t these barriers exploited by the much more concentrated employers in the union sector before the employees organized? As will be seen, if the employees organize to share a rent that is already exploited by their employer, the economic analysis yields very
different implications. Second, in the determination of the collective bargaining agreement, why assume that the union unilaterally sets wages while the employers unilaterally set employment? If the parties can bargain about wages and employment and the union values both, it can be shown that both the union and the employer can be made better off by adopting an agreement on wages and employment that is to the right of the employer’s labor demand curve. We will demonstrate the logic of this argument in the next section in our presentation of the efficient contract model. Finally, if the workers have a monopoly on labor supply, why do the employers ever resist and take a strike? The simple monopoly model contains no explanation of industrial strife and thus is not useful in evaluating government policies designed to promote industrial peace. All three of these limitations have been addressed by further theoretical work in the economic analysis of unions and collective bargaining.

B Other sources of union wage and benefit increases

In explaining how unions can negotiate and maintain wages and benefits in excess of the competitive rate, economists have observed that there are a number of other possible sources of union wage and benefit increases besides a labor cartel. As already alluded to, one of the most likely is product market rents the employer obtains because it operates in a less than perfectly competitive product market. If the employer enjoys profits in excess of the competitive rate of return because it is a monopoly or operates in a product market that is characterized by oligopoly or monopolistic competition, it can afford to pay wages and benefits in excess of the competitive rate of return and still remain in business. Indeed, if the employer is already producing and pricing optimally to maximize its product market rent, it will only decrease the rent it splits with the union employees if it changes either production or price. Thus the employer should not change the way it does business when its employees organize unless the union negotiates to increase employment and sacrifice rents or the employer finds a way to capture a portion of the employees’ share of the rent by reducing employment and ultimately the total rent.

In the case of employer product market rents, union wage and benefit increases come at the expense of employer profits, not other workers or consumers. Empirical studies confirm that both employee organization and the size of the union wage premium are associated with lack of competition in the employer’s product market (Brown and Medoff 1978; Pugel 1980; Salinger 1984; Karier 1985; Rose 1987). Consistent with this, Voos and Mishel (1986) have found that, across the economy as a whole, 80 per cent of the amount of union wage and benefit increases is paid out of company profits and only 20 per cent is paid out of price increases to consumers.
Other possible rents that could fund wage and benefit increases are ‘Ricardian rents’ and ‘quasi-rents’. A Ricardian rent is a return on capital in excess of the competitive rate of return that the employer enjoys because it has access to an exceptionally productive resource such as a rich vein of iron ore or Michael Jordan. The analysis of the implications of employees bargaining to share Ricardian rents is much the same as that for the case in which they bargain to share monopoly rents. If an employer enjoys Ricardian rents, it can pay higher wages and benefits without raising prices or going out of business. Indeed the employer who only enjoys Ricardian rents cannot increase price since it is a price-taker in the product market. Once again, in the case of Ricardian rents, union wage and benefit increases come at the expense of employer profits, not other workers or consumers.

A quasi-rent is a profit earned on a resource in excess of what could be earned on that resource by transferring it to its next best use. An example would be the return on a large fixed capital investment such as a steel mill that cannot easily be transported or converted to another use. In the short run, union wages and benefits can be paid out of such quasi-rents without the employer raising price or cutting employment because the employer will continue to operate in order to minimize its loss on the fixed investment. However, in the long run an employer who loses its quasi-rent to a union has an incentive not to reinvest in the same plant and the employees will lose their jobs. Thus, although in the case of quasi-rents union wage increases come at the expense of employer profits, in the long run this sharing of profits causes inefficient investment and job loss. Empirical work has also found that employee organization is associated with Ricardian rents and quasi-rents (Hirsch 1991 and 2004, pp. 213–14; Cavanaugh 1998).

Economists have also hypothesized a variety of scenarios under which employee organization can lead to greater efficiencies and productivity increases that can serve as a source of union wage and benefit increases. First, the ‘Institutionalists’, led by Sidney and Beatrice Webb, John R. Commons and Selig Perlman, long ago argued that employee collective organization redressed inequality of bargaining power between employers and employees and allowed employees to negotiate wages and benefits that fully accounted for the costs of maintaining the employee and his or her family, thereby reducing the inefficient subsidization of capital through private charity and government programs (Kaufman 2005). Employers gained their advantage in bargaining power because labor is ‘perishable’ in that if one does not work for a period of time, that opportunity to earn is gone forever; the labor market does not always clear and as a result there is a ‘reserve army of the unemployed’; and legal rules systematically favor employers. Employee organization solves the negative externality by
raising employees’ wages so that the full costs of maintaining this resource are reflected in the price of the good. In this case, even though the union wage increase causes a price increase and a reduction in the demand for labor, these are efficiency enhancing because labor was over-used and not maintained in the absence of a union. Although this theory has not been the subject of recent empirical work, the argument finds current empirical relevance in: the debate over the ‘living wage’ campaign; the proposals in Maryland and other states to place ‘pay or play’ taxes on large corporations that don’t provide employee health insurance; and discussions of international bans on child labor.

Second, it has long been recognized that even a labor cartel can raise wages, employment and efficiency if it is bargaining with an employer or group of employers who have monopsony power in the labor market. The monopsonist’s marginal cost of labor curve lies above the supply curve because the monopsonist realizes that it increases the market wage by demanding more labor. In accordance with traditional neoclassical theory, the monopsonist employer maximizes profits by setting wages below the competitive rate and choking back employment to the point where the marginal cost of labor equals its marginal benefit. If the relevant employees organize into a labor cartel, the monopsonist employer now has to bargain over wages and employment and no longer assumes that increases in employment will bring increases in wages. Indeed, assuming that the parties bargain in a Coasean fashion to maximize producer and consumer surplus, one would predict that a monopsonist employer and monopoly labor union would negotiate to the higher wages and employment that would exist in a competitive labor market. Thus in this case employee organization results in higher wages, more employment, redistribution of wealth from the employer to the employees and greater efficiency.

Although there are certainly historic and current examples of employers who exercise monopsony power in a geographic region or occupation, most economists assume that in the current day, over the economy as a whole, employer monopsonistic power is not a common problem (Kaufman 2004). However, recently there has been a renewed interest in this analysis as Manning (2003) has argued that, regardless of market structure, firms sometimes face upward-sloping labor supply curves due to limitations on worker mobility and thus have the ability and incentive to engage in monopsonistic wage discrimination.

Finally, some labor economists have argued that employee organization can raise employee productivity. Freeman and Medoff (1984) have argued that employee organization can raise productivity by giving employees a collective voice as an alternative to ‘exit’ in dealing with conflicts in the employment relationship. The collective voice alternative improves
Regulating unions and collective bargaining

Productivity by decreasing the search and training costs associated with turnover or exit. Collective bargaining also provides a means through which the employees can negotiate and enforce efficient contract terms that cover public goods in the workplace, such as the speed of the assembly line, the quality of air in the workplace and the level of workplace safety. If left to individual bargaining, such terms are subject to free-riding, which results in inefficiently low levels of these goods. Collective organization also allows the enforcement of long-term implicit agreements to defer income that otherwise would fall prey to employer strategic behavior in discharging employees before the deferred income is due. Such long-term deferral of income is useful in deterring shirking and promoting efficient investment in firm-specific training (Harris 2007).

Employees’ collective voice may also directly increase productivity because employees have useful knowledge of the foibles of the production process. The collective voice can communicate what is wrong with a job or the methods of production much better than individual bargaining and exit. Moreover, some economists have argued that the wage demands of organized employees can cause a ‘union shock effect’ that prompts management to try to preserve profitability by curing existing agency cost inefficiencies in the firm (Leibenstein 1966). It is also argued that employees have a stake in the profitability of the firm and, with union job security, they make a superior monitor of management agents than absent stockholders. To the extent that employee organization results in productivity increases, union wage increases need not come at the expense of other workers or consumers, or even the employer. Under such circumstances employee organization furthers all three of the objectives of equity, efficiency and voice.

The empirical evidence on the impact of unions on productivity is mixed (Hirsch 2004). It is uncontroversial that employee organization reduces turnover, search and retraining costs in both the US and the UK (Lewin and Boroff 1997; Addison and Belfield 2004; Hammer and Avgar 2005). It is also uncontroversial that even if unions do raise productivity, in general they raise wages more so that, across the economy, unions tend to decrease their employers’ profits from 10–20 per cent (Hirsch 2004, p. 435). Approximately two-thirds of the studies of the effect of employee organization on productivity found positive effects though estimates varied across sectors and sometimes within the same sector (Belman 1987). Some studies have found that employee organization increases firm productivity from 6–31 per cent (Brown and Medoff 1978; Clark 1980a, 1980b) while others have found zero or negative effects (Hirsch 1991; Doucouliagos and Larouche 2003). Perhaps the best summary of the current empirical findings on the subject is that unions can increase firm productivity in certain industries, particularly if management constructively embraces, rather
than fights, union contributions (Freeman 2005). Even skeptics seem to concede that, across the economy as a whole, unions have no net negative effect on productivity (Hirsch 2004).

C The efficient contract model

In addition to examining other possible sources of union wage and benefit increases, economists have explored the assumption in the monopoly model that unions unilaterally set wages and employers simply retreat up their demand curve in response to union demands. Although movement along the demand curve may be the rational response of a price-taking employer faced with a change in the market wage, when the employer is confronted with demands from a union that cares about both wages and employment and can bargain over both, the employer and the union can be made better off by moving to an agreement on wages and employment that is off the demand curve (McDonald and Solow 1981; Kaufman and Hotchkiss 2006).

The efficient contract response is depicted in Figure 3.3. In that figure we have reproduced the employees’ labor supply curve and the employer’s labor demand curve from the union sector in Figure 3.2 and added some graphical representations concerning the union’s preferences among different wage and employment contracts and the employer’s profit-making opportunities. The union’s preferences with respect to wages and employment are represented in Figure 3.3 by the indifference curves, \( U_0 \) and \( U_1 \). Each indifference curve graphs wage and employment mixes that yield equal utility to the union as a collective entity. Indifference curves that are further from the origin (\( U_1 \)) yield higher total utility than those that are closer to the origin (\( U_0 \)). Assuming that the union’s utility is an increasing function of both wages and employment, the union’s indifference curves will be concave toward the origin. The employer’s profit-making opportunities are depicted in Figure 3.3 by the isoprofit curves \( P_0 \), \( P_1 \), and \( P_2 \). Each isoprofit curve graphs wage and employment mixes that yield equivalent levels of profit for the firm. Isoprofit curves that are lower in the graph (\( P_2 \)) specify a higher level of profits than those that are higher in the graph (\( P_0 \)). For any given wage, profit is maximized on the labor demand curve; however, identical profits can be made with either more or less labor at a lower wage rate. Accordingly, the isoprofit curves slope down on either side of the labor demand curve.

The efficient contract response can be easily explained using Figure 3.3. When the employees organize and demand a union wage, \( W_U \), the employer’s labor demand response will be to move to point A and decrease the number of workers employed to \( N_U \). However, by moving to the right along the firm’s isoprofit curve which descends out of A, \( P_0 \), one sees that
Regulating unions and collective bargaining

111

by agreeing to any point on \( P_0 \) between \( A \) and \( C' \) the firm achieves the same level of profits while allowing the union to achieve a higher level of utility. Similarly, by moving to the right from \( A \) along the union’s indifference curve which comes out of \( A \), \( U_0 \), one sees that by agreeing to any point on \( U_0 \) between \( A \) and \( C'' \) the union achieves the same level of utility while allowing the firm to achieve a higher level of profits. Thus, the employer’s labor demand response is not Pareto optimal from the perspective of the employer and the union and one or both of the parties can be made better off by moving off the demand curve to a point in the triangle \( AC' \). The tangencies between the firm’s isoprofit curves and the union’s indifference curves describe the set of Pareto-optimal solutions to the bargaining problem between the employer and the union. To the right or left of these tangencies, including points on the employer’s labor demand curve, benefits remain to be gained from bargaining in that one or both parties can be made better off without making the other worse off. The graph of these tangencies is called the ‘contract curve’ between the parties and is labeled \( C \) in Figure 3.3. Depending on the technology of the firm and the preferences of the union, the contract curve can slope to the left, be vertical, or slope to the right. However, barring complete union indifference to the unemployment of its members, the contract curve will lie to the right of

Figure 3.3  The efficient contract model

by agreeing to any point on \( P_0 \) between \( A \) and \( C' \) the firm achieves the same level of profits while allowing the union to achieve a higher level of utility. Similarly, by moving to the right from \( A \) along the union’s indifference curve which comes out of \( A \), \( U_0 \), one sees that by agreeing to any point on \( U_0 \) between \( A \) and \( C'' \) the union achieves the same level of utility while allowing the firm to achieve a higher level of profits. Thus, the employer’s labor demand response is not Pareto optimal from the perspective of the employer and the union and one or both of the parties can be made better off by moving off the demand curve to a point in the triangle \( AC' \). The tangencies between the firm’s isoprofit curves and the union’s indifference curves describe the set of Pareto-optimal solutions to the bargaining problem between the employer and the union. To the right or left of these tangencies, including points on the employer’s labor demand curve, benefits remain to be gained from bargaining in that one or both parties can be made better off without making the other worse off. The graph of these tangencies is called the ‘contract curve’ between the parties and is labeled \( C \) in Figure 3.3. Depending on the technology of the firm and the preferences of the union, the contract curve can slope to the left, be vertical, or slope to the right. However, barring complete union indifference to the unemployment of its members, the contract curve will lie to the right of
the employer’s labor demand curve. Assuming the parties bargain in a Coasean fashion to exhaust all benefits of trade, they will arrive at a wage and employment mix that is to the right of the demand curve on the portion of the contract curve between $C’$ and $C''$.

The argument can be made more simply if one assumes that the employer and the union bargain to maximize the monetary value of the rents and productivity increases to be divided between them. In such a case, beyond any initial disruption of the competitive market necessary to generate the rent to be divided, the parties have an incentive to minimize any deviations in the allocation of resources from what would have occurred in a competitive market because any such deviations only increase production costs and decrease the total value of the rent and productivity increases to be divided. For example, if the parties negotiated to divide an employer product market rent, one would expect the parties to agree to the same level of employment and for the employer to set the same product price as it would in the absence of a union. Assuming that prior to the union, the employer mixed capital and labor and set the product price so as to maximize the value of the product market rent, adjustment of any of these parameters after the formation of the union only decreases the total value of the rent to be divided. In Figure 3.3, assuming that the parties bargain to maximize the value of rents is analogous to assuming that union indifference curves and firm isoprofit curves sketch out a contract curve that is vertical at the competitive level of employment ($N_c$).

The general implication of this analysis is that the parties have an incentive to negotiate to minimize the disruption of collective bargaining on the economy. In the absence of a labor cartel as the source of the rent that supports the union wage increases, collective bargaining would have a minimal impact on employment and price and would redistribute wealth from employers to employees. Accordingly, under this analysis, by promoting collective bargaining governments would support the three goals of equity, efficiency and voice that are traditionally expressed as the objectives of such government policies.

Recent empirical work supports the employer bargaining response over the employer labor demand curve response. Studies examining whether organized employers operate on their labor demand curve or at some higher negotiated level of employment consistently reject the labor demand curve response (Abowd 1989; Brown and Ashenfelter 1986; Card 1986; Eberts and Stone 1986; MaCurdy and Pencavel 1986). The shape of the contract curve between the parties will vary from case to case and studies have found examples of both rightward- and leftward-leaning contract curves. Although further work needs to be done, perhaps the best characterization of the impact of unions in this regard, based on the available
empirical evidence, is that unions negotiate optimal contracts that have minimal impact on the capital-labor mix or the level of output of organized employers (Abowd 1989; Clark 1984).

D  The median voter model

Both the monopoly model and the efficient contract model assume that the union has a well-defined objective function for choosing among alternative levels of wages and employment. This objective function is represented by the union indifference curves $U_0$ and $U_1$ in Figures 3.2 and 3.3. However, as Kenneth Arrow has shown, there is no method for constructing such a well-ordered social preference function from heterogeneous individual preferences (Arrow 1950). Accordingly each of these models implicitly assumes that either the union’s leadership determines its objective function or that the members have homogeneous preferences with respect to employment and wages and an equal chance of being laid off. Some economists have explored the implications of relaxing these assumptions in what has come to be known as the ‘median voter model’ of union behavior.

The median voter model assumes that the union leadership is perfectly responsive to the democratic will of a heterogeneous bargaining unit (Kaufman and Hotchkiss 2006; Kaufman and Martinez-Vazquez 1987). The model recognizes that most union contracts require layoff according to members’ inverse seniority, and assumes that each member seeks the maximum wage consistent with his or her continued employment. In accordance with these assumptions, the union leadership will seek the maximum wage consistent with the continued employment of 50 percent, plus one, of the bargaining unit because any lesser wage will result in their removal from office. Accordingly the preferences of the union with respect to wages and employment are determined by the ‘plus one’ or ‘median voter’.

This model is clearly unrealistic, but offers some useful insights. If taken literally, it suggests the unions enter each negotiation with the objective of raising wages so high that only half of its membership plus one continues to be employed. Clearly no union or company could long continue with such an attitude and so in real life, union leadership must intercede or workers must realize that their continued employment depends on the continued viability of the firm and the employment of workers below them in seniority. Nevertheless, the median voter model provides the useful insight that, in democratic unions, there will inevitably be some pressure on the leadership to sacrifice the interests of insular minorities or future employees in favor of the interests of the current majority. Certainly there are examples of such behavior in collective bargaining where the interests of skilled workers have been sacrificed for the benefit of more numerous assembly workers or the
parties have negotiated ‘two-tiered’ contracts with lower wages and benefits for future employees. American labor law recognizes the vulnerability of insular minorities and places on unions a duty to ‘fairly represent’ all of the employees in the bargaining unit by avoiding arbitrary or discriminatory treatment. Members’ heterogeneous interests clearly influence internal union politics and union positions in collective negotiations, but not to the extent suggested by the simple median voter model.

4 Regulating the conduct of collective bargaining and contract enforcement

As previously mentioned, most industrialized nations go beyond merely protecting or fostering employee organization to regulate the conduct of collective bargaining and the enforcement of collective agreements. There are at least three possible purposes for such legislation. First, by outlawing certain behaviors or economic weapons, the government may attempt to adjust the relative bargaining power of the parties for the purposes of producing more equitable results. For example, during the 1930s the American electorate believed that unions were too weak and Congress responded by enacting the Wagner Act to promote ‘union power’. In the post-war period the strikes of 1946 convinced many Americans that unions had become too strong and Congress responded by enacting the Taft-Hartley Amendments to ‘rein in’ union power. Second, regulation may be intended to minimize the costs of collective bargaining and contract enforcement by encouraging cooperative labor relations and discouraging strategic behavior. Again, in reference to the American experience, the legislative history and court interpretations of the NLRA commonly make reference to the idea that a given legal provision or doctrine will help fulfill the purpose of promoting industrial peace. Finally, Freeman and Medoff (1984) have argued that legislators should regulate to promote the socially beneficial aspects of unions while discouraging their less desirable features. In addressing the ‘two faces’ of unionism, the government might prescribe appropriate bargaining units and rules for negotiations in order to promote the beneficial collective voice aspects of unions while discouraging their ‘monopoly face’. Economists have developed a number of arguments and models that are relevant to evaluating the efficacy of various regulatory schemes in promoting equity in bargaining power, industrial peace and collective voice.

4.1 Models of the bargaining process

Economists have sought to provide more elaborate models of collective bargaining than that depicted by the monopoly model. Almost all of these models focus on bilateral negotiations between the union and an employer over the single facet of wages. Although these models are clearly mere
caricatures of a very complex phenomenon, they offer insights into the process of collective bargaining and the concept of ‘bargaining power’ that are relevant to the consideration of labor legislation.

(i) Union resistance and employer concession curves

The economic model of collective bargaining was first developed by Hicks (1932) and later elaborated by Cross (1969), Kaufman (1992) and Gallagher and Gramm (1997). A general representation of this model is presented in Figure 3.4 where the vertical axis measures the wage rate and the horizontal axis measures time, for example, in days. In this representation, the union and the employer begin the negotiations at time zero with an offer of $W'_{U}$ and $W'_{E}$ respectively. Under the monopoly and efficient contract models, the union’s starting point, $W'_{U}$, is determined by the union’s objective function with respect to wages and employment, while under the median voter model $W'_{U}$ is determined by the preferences of the union members and is the highest wage rate consistent with the majority of unit members keeping their job. At a minimum, the employer’s initial offer, $W'_{E}$, would have to be at or above the competitive market wage because below this figure the employees would logically seek work elsewhere. The parties will ultimately agree to a contract wage between $W'_{U}$ and $W'_{E}$ and so the area between these two values is referred to as the ‘contract zone’. It is assumed that the parties have set a strike deadline of $T_{S}$ and if no agreement is reached by this time, a strike will ensue. As time and the negotiations progress, the union’s wage offers are described by $R$, the ‘union resistance curve’, sloping downward out of $(0, W'_{U})$ to the right. Similarly, over time the employer’s wage offers are described by $C$, the ‘employer concession curve’, sloping upward out
of \((0, W_L)\) to the right. The actual shapes of the resistance and concession curves depend on the union’s preferences, the firm’s cost technology, the parties’ bargaining strategy and their relative bargaining power, which will be discussed at length below. It is assumed that the curves converge because each successive round of offers conveys information which moderates each side’s aspirations in achieving a contract on their terms and because the parties fear the cost of a strike (Kaufman and Hotchkiss 2006).

The model envisions that negotiations proceed from time 0 with successive rounds of offers and counter-offers by the union and management. Each offer conveys some information to the other side about what the offering side is willing to accept as a settlement, thus moderating the other side’s bargaining aspirations and their counter-offer (Walton and McKersie 1965; Teitz 1983; Kaufman and Hotchkiss 2006). This communicative and interactive model of bargaining provides insight into the phenomenon of ‘bluffing’ in negotiations since parties have an incentive to exaggerate their resistance to future concessions in order to diminish the other side’s bargaining aspirations and achieve a contract on their terms. It also explains why it is not an optimal strategy for a party to go directly to its bottom line in negotiations since that raises the other side’s expectations that there is yet more to gain. Beyond the influence of strategy, the shape of the resistance and concession curves will depend on the relative bargaining power of the parties, with the party that has greater bargaining power being able to force a contract more on its terms. With the resistance and concession curves depicted in Figure 3.4, the parties bargain right up to the strike deadline \(T\) and agree on a wage \(W_K\). At this equilibrium there is no strike, and the parties agree to a wage that is less than what would have been unilaterally set by the union under the monopoly model, but more than the competitive wage.

\(\text{(ii) Bargaining power} \) ‘Bargaining power’ has been defined as the ability to induce an opponent to accept an agreement on one’s own terms (Chamberlain 1955). In economic terms, a party’s bargaining power depends on that party’s ability to impose costs on the other side for failure to reach agreement while minimizing the party’s own costs of disagreement. In collective bargaining, the union’s bargaining power depends on its ability to inflict costs on the employer through lost sales from a strike or other collective action while minimizing the costs of the collective action to their membership in lost wages and jobs. The employer’s bargaining power depends on its ability to minimize its costs from the collective action – for example, by stockpiling their product or operating with replacements – while maximizing the costs of the collective action on the union members, for example, by permanently replacing them.
Accordingly, in collective bargaining the parties’ relative bargaining power depends on: the nature of the firm’s product (whether it is perishable or can be stockpiled); the firm’s technology of production (whether production requires a lot of workers or great skill or can be done with easily obtainable low-skill replacements or a skeleton crew of defectors and managers); general economic conditions (whether there is currently great demand for the employer’s good or a small supply of potential replacement workers); the structure of bargaining (large unions can generally support a strike longer than small employers while large employers can generally resist a strike longer than small unions); and the employees’ commitment to collective action (whether employees will defect and cross the picket line) (Kaufman and Hotchkiss 2006). If these factors favor the union and it has relatively greater bargaining power, the union’s resistance curve will be flatter, the employer’s concession curve will be steeper and the equilibrium wage rate ($W_K$), where the curves intersect, will be higher. However, if these factors favor the employer and it has relatively greater bargaining power, the union’s resistance curve will have a greater negative slope, the employer’s concession curve will be flatter and the equilibrium wage rate ($W_K$) will be lower.

A government might enact legislation to try to affect the relative bargaining power of unions and employers in order to raise or lower negotiated wages and achieve a more equitable distribution of the proceeds from production. For example, a government might limit or prohibit the use of permanent replacements if it wanted to lower the potential costs of strikes to employees and raise union bargaining power and wages. Similarly, a government might prohibit employer lockouts to lower employers’ ability to impose costs on employees for not agreeing, thereby lowering employer bargaining power and raising union wages. Alternatively, if the government thought unions were too powerful, it might outlaw secondary boycotts to lower the unions’ ability to impose costs on employers for not agreeing and lower union bargaining power and wages. This was, in fact, one of the purposes behind the prohibition on secondary boycotts enacted in the Taft-Hartley amendments to the NLRA. As previously discussed, to the extent that a nation’s labor laws raise or lower union bargaining power relative to employer bargaining power, such regulation will also encourage or discourage employee organizing as it raises and lowers the expected benefits of organization relative to its costs.

B Models of strikes
In order to evaluate the efficacy of a regulation in promoting industrial peace one of course needs a model of ‘industrial strife’ or strikes. In Figure 3.4, a strike occurs when the union resistance curve and employer reaction...
curve do not converge fast enough to reach an agreement before the strike deadline $T_s$. Strikes are a very curious phenomenon in the context of the traditional neoclassical economic model of perfect information, individual preferences and competitive markets. Why would two rational parties engage in such costly behavior to arrive at a bargain that is necessarily inferior to the one they could have negotiated before the strike dissipated some of the joint benefits of production? At the very least, one would expect two cooperative parties to forgo the strike, adopt the contract they would have obtained after the work stoppage, and split the profits gained by continuing production. Economists have generally explained strikes as the result of imperfect information or strategic behavior. Both of these analyses yield insights in the assessment of labor law.

(i) Imperfect information Traditionally, economists explain strikes as the result of imperfect information (Card 1988; Fernandez and Glazer 1991). According to this view, strikes occur when both sides believe that they will gain more in concessions than they will suffer in costs from a strike. Since this cannot be true for both sides to the conflict, one or both must be mistaken due to imperfect information. In these models, unions undertake strikes either to adjust unrealistic expectations among rank-and-file workers as to the wage increase that is possible (Ashenfelter and Johnson 1969) or to sort out low-wage from high-wage employers. Employers may also gain information about employee organization and resolve from a strike. Long ago Hicks (1963, pp. 146–7) opined that the strike weapon ‘grow(s) rusty if unused’ and union leaders would have to occasionally undertake a strike just to maintain their bargaining power with the employer by demonstrating that their members were up to a confrontation. Thus, in these models strikes are merely the cheapest way to educate the workers or union leadership as to the optimal wage that can be extracted from the employer or the cheapest way to educate the employer on the resolve of the workers.

The primary implication of these models of strikes for public policy is that regulation can reduce the number of strikes by promoting a reliable exchange of information between the parties. This could be done through a number of means, including requiring public filings on revenue and costs by employers, requiring exchanges of information as part of ‘good faith’ bargaining, prohibiting lying in negotiations and encouraging mediation or factfinding in disputes to encourage exchanges of relevant information. American labor law doctrine requires the exchange of ‘wage data’ and other information that is necessary for the union to perform its obligations as exclusive representative, but does not require the exchange of ‘financial data’ (the firm’s profits) unless the firm puts its profitability at issue by
pleading an inability to pay. If the disclosure of information minimizes the chances of a strike, one might think that employers would voluntarily adopt this strategy and, indeed, there have been proponents of voluntary disclosure in bargaining (Fisher et al. 1991). However, pursuant to the aspirational models of bargaining, each side might gain at the expense of the other by bluffing about their true preferences and cost structures to obtain a better settlement. It may also be that an employer may not want to make its entire cost structure publicly known and available to credit markets and competitors for fear that this will raise its costs in borrowing money or sacrifice some competitive advantage. Nevertheless, if minimizing industrial strife is a driving purpose of labor law, accurate disclosure of relevant cost and profit information may be more important than the value to either side in non-disclosure that facilitates bluffing to fool the other into accepting a worse bargain.

(ii) Strategic behavior Even if there were perfect information, strategic behavior in which one side tries to benefit at the expense of the other can lead to strikes (Dau-Schmidt 1992). This can be seen by considering a simple bargaining game in which the union and employer have to decide how to divide a $10 product market rent. In this bargaining game there are two negotiating strategies each side must choose between, cooperation or intransigence. If both sides are cooperative, we assume they just split the rent. However, either side might do better by being intransigent. We assume that intransigence in bargaining is a positional externality in that, if only one side is intransigent, they will do better in bargaining relative to the other side. If both sides are intransigent, however, their efforts cancel each other and their strategic behavior serves only to waste a portion of the cooperative surplus in a strike or lockout.

These assumptions concerning the bargaining game between the employer and the union are represented in Figure 3.5. In the graph in Figure 3.5(a), the outermost diagonal line represents all possible Pareto-optimal divisions of the $10 rent between employees and employer, from $10 for the employees and none for the employer, to $5 for each, to none for the employees and $10 for the employer. If both sides bargain cooperatively, it is assumed that they split the surplus and each receives $5 – represented by point (5, 5). Consistent with the assumption that one side can benefit if it is intransigent while the other is cooperative, if the union is intransigent while the employer is cooperative, it is assumed that the parties arrive at the bargain represented by the point (2, 8) which yields $8 for the employees and $2 for the employer, while if the union is cooperative and the employer is intransigent, it is assumed that the parties arrive at the bargain represented by point (8, 2) which yields $2 for the employees and
$8 for the employer. Finally, if both sides are intransigent, the result is a costly strike that consumes $4 of the rent to be divided and the ultimate bargain is represented by the point (3, 3), which yields $3 for each party. This result from a strike is interior to the diagonal representing all Pareto-optimal results and is not Pareto optimal. The parties’ payoffs for the various combinations of bargaining strategies are recorded in the payoff matrix of Figure 3.5(b).

Although very simple, this example demonstrates the potential for conflicts in industrial relations to escalate into costly affairs if the parties act only according to their own individual best interests. As represented in the matrix in Figure 3.5(b), the parties’ choice as to whether to bargain cooperatively or intransigently displays the classic divergence of individual and collective interests represented in a prisoner’s dilemma game. Based on individual incentives, the dominant strategy for each party is to be intransigent since regardless of the strategy the other side adopts, each party will do better individually by being intransigent. Regardless of the strategy the employer chooses to adopt, the employees do better if the union is intransigent. Similarly, regardless of which strategy the union adopts, the employer does better individually by being intransigent. However, if both parties follow this individually rational strategy and are intransigent, the result is a strike that wastes a portion of the cooperative surplus ($4) and each party gets just $3. The parties can improve on this result by instead acting on their collective interest in cooperation and just dividing the available rent at $5 each.

The example suggests at least two basic strategies by which the government might seek to promote cooperation and discourage costly strategic behavior or strikes (Dau-Schmidt 1992). First, where it is easy for the government to identify and prosecute costly strategic behavior, the government can simply prohibit the behavior and enforce its prohibition with suitable fines. For example, in the simple bargaining game presented above, if the government punished intransigent bargaining with a $4 fine, the expected payoff for intransigence would be less than the expected payoff from cooperation in all cases and the parties would find it in their collective and individual interest to cooperate. Although it is not always possible to distinguish when a party is negotiating intransigently and when they truly cannot afford the other side’s demands, certain deleterious bargaining strategies such as lying, committing to third parties to achieve a certain bargain and cutting off negotiations are more easily identifiable and could be prohibited and punished. The use of permanent replacements can be viewed as an attempt by the employer to escape the bargaining game, thereby imposing inefficient costs on the parties and society for the purpose of recapturing rents (Harris 2002; but see Cohen and Wachter 1990). Other
Regulating unions and collective bargaining

(a) Possible bargaining divisions

Union’s share

(2, 8)–Only the employer is cooperative

(5, 5)–Both cooperative

(3, 3)–Strike, both intransigent

(8, 2)–Only the union is cooperative

Employer’s Share

(b) Matrix

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<th>Cooperative Bargaining</th>
<th>Intransigent Bargaining</th>
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<tr>
<td>Cooperative Bargaining</td>
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Figure 3.5 Bargaining with strategic behavior
forms of strategic behavior are also identifiable and could be prohibited and punished – for example, discriminatory discharges or striking in violation of a no-strike clause.

Second, even where the government cannot readily identify and prosecute costly strategic behavior, the government can formulate the laws governing collective bargaining in such a way as to promote the parties’ ability to act on their collective interest in avoiding costly strategic behavior rather than succumbing to their individual interest in being intransigent (Dau-Schmidt 1992). Theoretical and empirical work in game theory suggests that there are a number of ways of improving the parties’ chances of cooperating in such dilemma games. The government might promote homogeneity among the members of the bargaining unit and limit the number of parties to negotiations in order to simplify the bargaining problem and prevent free-riding on cooperation (Hamburger 1977). The government could also require exchanges of information to promote the parties’ ability to determine the cooperative solution and engender trust (Rapaport and Chammah 1965, pp. 87–102; Fox and Guyer 1978). Promoting repeat play of a dilemma game, such as collective bargaining, has been found to encourage cooperation by raising the specter of future retaliation for current intransigence (Lave 1962). Government enforcement of private armistices to refrain from costly strategic behavior encourages the formation of such armistices and promotes cooperation (Axelrod 1984, p. 11). Finally, where the government or some neutral party can determine the cooperative solution, the government can reduce strategic behavior by requiring the parties to adopt that cooperative solution or by mediating the dispute to encourage the cooperative agreement. In deciding which of these strategies for promoting cooperation the government should adopt, legislators should examine the relative costs and benefits of each strategy and adopt those policies for which the benefits of the policy equal or exceed its costs.

5 Conclusion
The narrow manner in which most economists once viewed unions and collective bargaining led them to the conclusion that unions are inefficient and inequitable. More recent and comprehensive economic theory, supported by empirical research, demonstrates that, in addition to raising employee wages, unions and the collective voice they enable can increase both efficiency and equity. As parties to collective bargaining, employers and unionized employees have a mutual interest in promoting efficiency and productivity in the firm. This increased productivity can serve as a source for employee wage and benefit increases along with various market rents. Effective regulation of labor–management relations will foster cooperative bargaining with the goal of minimizing the negative monopoly face
of unions while maximizing the potential of collective voice to increase productivity, efficiency and equity. Theoretical work and empirical studies demonstrate that the regulation of collective bargaining can minimize costly strategic behavior that subtracts from any benefits gained through unionization by encouraging information sharing, stable relationships and cooperative bargaining. The latest labor relations theory, supported by recent empirical work, suggests that the best possible labor relations policy will enable the employees and employer to transcend the dilemma nature of bargaining in order to reach an optimal agreement that maximizes the mutually shared benefits of their production.

Bibliography


