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EMPLOYMENT LAW AND THE LABOR MARKET

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ABSTRACT

Legal rules governing the employer-employee relationship are many and varied. Economic analysis has illuminated both the efficiency and the effects on employee welfare of such rules, as described in this paper. Topics addressed include workplace safety mandates, compensation systems for workplace injuries, privacy protection in the workplace, employee fringe benefits mandates, targeted mandates such as medical and family leave, wrongful discharge laws, unemployment insurance systems, minimum wage rules, and rules requiring that employees receive overtime pay. Both economic theory and empirical evidence are considered.

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In a modern economy, individuals usually rely on paid work to meet their basic material needs. The present paper is concerned with the economic analysis of laws governing this ubiquitous employer-employee relationship. Such laws have proliferated in both number and scope across nations, and economic analysis of these laws' desirability and effects has accordingly attracted significant attention.

Within a pervasively unionized economy, the body of what is referred to in the United States as "labor law" plays an important role in regulating the employer-employee relationship. This body of law governs the practices and treatment of labor unions. In countries with only moderate levels of unionization, however, the central responsibility for legal regulation of the employer-employee relationship falls to what is referred to in the United States as "employment law." Employment law governs the treatment of individual employees regardless of their union status. Areas of regulation include workplace safety and privacy, employee fringe benefits, workplace leave, job security, and the payment of wages. The present paper is concerned with the economic analysis of these employment law rules.

An obvious but critical starting point in the economic analysis of employment law is that legal regulation of the treatment of employees typically takes place against the backdrop of a market relationship. This market relationship often imposes significant limits on the prospects for using employment law purely for the purpose of transferring power, wealth, or other entitlements to employees – although employment law is often enacted with such motives as the law's declared purpose. In the area of mandated leave from employment, for instance, if employment law seeks to better employees' situation by specifying minimum entitlements to leave from work, it is possible that the end result will be to worsen employees' situation as wages or employment levels adjust in response to the new legal requirements. Because of the

way in which the market constrains the prospects for using employment law purely to effect transfers of resources, the economic analysis of employment law in this paper gives primary emphasis to market failures in the employer-employee relationship. In the presence of a market failure, legal intervention through employment law may both enhance efficiency and make employees better off.

This paper situates the major areas of employment law within this market-failure analytic framework; importantly, it also identifies certain areas in which legal intervention may help targeted employees even in the absence of market failure (sections VI and IX below). At the broadest level, the paper seeks to describe both theoretically and empirically the degree to which major forms of legal regulation of the employer-employee relationship may enhance efficiency and make employees better off. Section I of the paper briefly presents the basic framework used throughout much of the paper. Sections II-X consider specific areas of employment law, including workplace safety regulation, privacy protection in the workplace, fringe benefits mandates, targeted mandates such as medical and family leave, wrongful-discharge laws, minimum wage requirements, and rules requiring overtime pay. A separate chapter of the *Handbook of Law and Economics* (chapter 18, by John Donohue) considers antidiscrimination requirements in employment law and other domains such as housing and education.

I. Framework

As suggested above, the analysis in this paper rests on the assumption that employment law operates to regulate market relationships between employers and employees. Obviously, it is possible to organize an economy in which wages and conditions of employment are set not by

private actors in employment markets but instead by a central planner; such non-market settings would naturally require a different analysis.

Within a market setting, when wages and conditions of employment are determined by the interaction of labor supply and labor demand, legal intervention not tied to an identified market failure will often, although not always, reduce both efficiency and employee welfare (section I.A). However, a number of important market failures may characterize the employer-employee relationship (section I.B).

A. Employment law in the absence of market failure

Most of the rules of employment law considered in this paper reflect the imposition of a legally prescribed term governing the conditions of work into the parties' employment contract. This subsection describes the typical effects of such rules in the absence of market failure. Section VI below shows how the analysis differs for rules that target the work conditions of discrete, identifiable subgroups of employees. Note that the framework described here does not apply to the rules establishing minimum wage and overtime pay requirements or to the rules governing discharge of employees because these forms of legal regulation directly operate on the wage or employment level in the regulated employment markets rather than on the conditions of work; these forms of legal regulation are covered separately in sections VII - X below.

In speaking of legally prescribed terms within a contract, it is important to distinguish between mandatory and default terms. Mandatory terms are ones that cannot be changed by the parties even if they express a desire to do so. For instance, if the Occupational Safety and Health Act (OSHA), which regulates workplace safety in the United States, requires that a particular safety measure be adopted, employers and employees may not avoid the requirement simply by

agreeing through contract that it does not apply. Default terms, by contrast, are terms that apply unless the parties reach a contrary agreement. Most employment law rules are mandatory rules, and the analysis to follow assumes that the rule in question is a mandatory one. The specific employment law rules discussed in the reminder of this paper are all mandatory ones.

The legally prescribed terms that employment law specifies for the employer-employee relationship typically require employers to provide something of value – a safer workplace; privacy; certain fringe benefits; leaves from work in specified circumstances – to employees. Accordingly, within a simple labor supply and demand framework with no market failure of any sort, these rules will produce a downward shift in the labor supply curve by the amount of the value of the mandated benefit and a downward shift in the labor demand curve by the amount of the cost of the mandated benefit (Summers 1989). These effects are depicted graphically in Figure 1.

Within this simple framework, it is obvious that the effects of a particular employment law rule on efficiency and employee welfare turn on the relative magnitude of the labor supply and labor demand shifts. If the downward shift in the labor supply curve (S° to S' in Figure 1) is less than the downward shift in the labor demand curve, then the wage will fall by more than the value of the legally mandated benefit to employees in the employment market in question, and employment (and, with it, efficiency and employee welfare) will fall (Figure 1, top panel). If, by contrast, the downward shift in the labor supply curve is larger than the downward shift in the labor demand curve, then the wage will fall by less than the value of the legally mandated benefit to employees, and employment (and with it, efficiency and employee welfare) will rise (Figure 1,

bottom panel). But if that were the case, then, given the assumed lack of any form of market failure, employers would have offered the benefit without any need for a legal mandate.[1]

Thus, in the absence of market failure, employment law rules will generally reduce both efficiency and employee welfare. However, employment markets may fail for a variety of reasons. Section I.B below describes the most commonly discussed market failures in the employer-employee relationship.

B. Market failures in the employer-employee relationship

As described above, market failures provide an organizing paradigm for the analysis of many major areas of employment law. A number of market failures may occur in the employer-employee relationship, as described below.

1. Information failures

Of central importance in the employment setting are possible information failures. Information failures occur when some market participants lack information that bears upon their decisions in that market. In employer-employee relationships, both parties may suffer from information failures.

[1] This analysis assumes that there is no binding legally specified minimum wage in the employment market in question. At least in the United States, the minimum wage is sufficiently low in most jurisdictions that it is not binding in most employment markets. With a binding minimum wage (meaning the market wage is near or below the legally prescribed minimum wage) the effects of legally mandated terms would be felt in employment levels rather than wages.

a. Employee-side information failures

Some aspects of the employment relationship are likely to be relatively transparent to employees. Wages, for instance, are an aspect of the relationship about which employees will usually have good information. By contrast, the magnitude of the risk of long-term occupational disease is something about which employees will often not be well informed.

Employee-side information failures may be modeled in two distinct ways. One possibility is that employees with limited information are aware of their informational limits and take rational steps in response to those limits. As described below, this type of modeling assumption is often adopted in analyzing employer-side information failures. A second possibility is that employees with limited information either are not aware of their informational limits or do not change their behavior in response to such awareness. This is the usual modeling assumption adopted in analyzing employee-side information failures and is the assumption used in this paper for analyzing such information failures.

If employees are unaware of some aspect of the employment relationship that would affect their willingness to supply labor, then observed labor supply will differ from employees' "true" willingness to supply labor. In the case of workplace safety, for instance, employees may lack adequate information about risks and harms and, as a result, may oversupply labor at a given wage rate. In terms of Figure 1 above, the labor supply curve is shifted toward S', and employees behave *as if* their workplace were covered by an employment term fostering safety even though it is not. In such cases, the information failure means that some transactions that take place are inefficient – because the cost of supplying labor (measured by S° in Figure 1) in these transactions exceeds the marginal revenue product of labor (measured by D°); it also means that employees are worse off than they would be in a well-functioning market – because they are

engaging in some transactions in which the cost of supplying labor exceeds the wage they earn. Employee-side information failures are discussed further in sections II (workplace safety) and IV (workplace privacy) below.

b. Employer-side information failures

Employers will frequently have only imperfect information about the attributes of their employees. This is particularly likely to be true at the point of hiring but may be true later on as well. A large literature in labor economics examines the consequences of such employer-side imperfect information for labor markets (e.g. Greenwald 1986; Gibbons and Katz 1991).

As noted above, the usual modeling assumption in the case of an employer-side information failure is that employers are aware of the limits on their information and respond rationally to these limits. Thus, the employers' information problem is typically modeled as a situation of adverse selection. Employer-side information failures and the resulting adverse selection problems are discussed further in sections V (fringe benefits mandates) and VII (wrongful discharge law) below.

2. Monopsony

A second failure in employment markets is monopsony power. (Because this paper is focused on employment law rules that protect employees and does not examine labor law, the paper does not discuss the alternative scenario of market power or monopoly on the employee side.) If an employer is a monopsonist in the market for a particular type of employee, then instead of taking the wage as given as in a competitive labor market, the individual employer will face an upward-slowing labor supply curve. This employer will choose its employment

level E to maximize $R(E) - w(E)E$, where $R(E)$ is the employer's revenue and $w(E)$ is the labor supply curve. Under the associated first-order condition for the employer, it is clear that the wage under monopsony falls short of the marginal revenue product of labor $R'(E)$. This outcome is inefficient, as well as detrimental to employee welfare, because some employees who would produce more value than the cost of their labor are not hired. Section IX below notes the familiar argument that minimum wage laws may respond to such monopsony-based market failure – a point that, while of theoretical interest, is generally believed to have limited practical importance.

3. Externalities

A third potential failure in employment markets arises from the external effects of some decisions by market participants. If, for instance, an employee is killed or injured on the job, it is not only the employee (and possibly employer) who may suffer harm. Family members will typically suffer, though employees may usually take such effects into account. Systems of social support will often be affected as well. Although externalities are obviously a classic form of market failure, they have received less attention than information failures and monopsony in the existing literature on the economics of employment law and, thus, receive relatively limited attention below.

4. Employee-side cognitive bias

Information failures, market power, and externalities are the traditional forms of market failure within conventional economic analysis. A separate set of potential market failures,

however, arises from the possibility that employees will exhibit distorted labor supply decisions as a result of various forms of cognitive bias.

Of natural relevance to employment law is a substantial literature showing that many individuals exhibit optimism bias, adjudging their personal probability of facing bad outcomes to be lower than the average probability of facing such outcomes (Weinstein 1980). Many people, for instance, believe that their chances of having an auto accident are significantly lower than the average person's chances of experiencing this event (DeJoy 1989), although of course these beliefs cannot all be correct, for if everyone were below "average," then the average would be lower. There is also evidence that people underestimate their absolute as well as relative (to other individuals) probability of experiencing negative events such as auto accidents (Arnould and Grabowski 1981:34-35; Camerer and Kunreuther 1989:566).

From a modeling standpoint, optimism bias among employees is similar to the employee-side information failures discussed in section I.B.1 above. Parallel to the case of such information failures, the most natural assumption, and the one that will be utilized in this paper, is that employees with optimism bias either are not aware of the bias or do not change their behavior in response to the bias.[2] Thus, as with information failures, if employees exhibit optimism bias in relation to some aspect of the employment relationship that affects their willingness to supply labor, then observed labor supply will differ from employees' true willingness to supply labor. In the case of workplace safety, for instance, optimism bias may lead even employees who have full information about the general risks and harms in their workplace to underestimate the probability that they personally will experience negative

[2] Akerlof and Dickens (1982), by contrast, analyze workplace safety under the assumption that employees are aware of their tendency to believe (in Akerlof and Dickens's model, because of cognitive dissonance) that the workplace is safer than it is. Because of such awareness, employees in their model take action in response to their biased tendencies.

outcomes, and, as a result, they may oversupply labor. The effects of this were discussed in section I.B.1 above. Optimism bias is discussed further in sections II (workplace safety) and IV (workplace privacy) below.

II. Workplace Safety Mandates

This section and the sections that follow analyze the major forms of legal regulation of the employer-employee relationship, beginning with the legal regulation of workplace safety. A few of the topics included in the sections to follow are already treated in some depth in the *Handbook of Labor Economics* or the *Handbook of Public Economics* and, thus, are mentioned only briefly here, with cross-references to the longer treatments in the existing *Handbook* volumes.[3] Throughout, work published in law review, as opposed to economics journal, format is described at greater length, on the theory that the typical degree of background and detailed exposition provided in a law review article creates a form of barrier to entry that is not present when reference is made to work published in economics journal format.

Because many individuals spend a substantial fraction of their waking hours at work and often encounter risks in the course of work, workplace safety is a central issue of public policy. Many features of employment law are concerned with enhancing workplace safety. Legal regulation in this area includes both direct mandates of safe work conditions, as under the Occupational Safety and Health Act (OSHA) in the United States, and indirect channels for

[3] In areas not already covered in other *Handbook* chapters, the treatment offered below seeks to describe and synthesize the most influential economic analyses in each major area of employment law, rather than to catalogue in a comprehensive manner all existing economic analyses in each area.

improving workplace safety through the employer incentives created by mandated compensation for workplace injuries. This section and section III consider these two basic approaches in turn.[4]

The general starting point for economic analysis of workplace safety regulation is the observation that in the absence of market failure, less safe working conditions should be fully compensated by higher wages – an application of the theory of equalizing wage differentials.[5] Viscusi (1978) and Viscusi and O'Connor (1984), among others, present evidence of adjustments in wages in response to workplace risks. The evidence on risk-based adjustments in wages, however, is limited in two important ways. First, without some independent way of monetizing the cost of a higher-risk job, at most the empirical evidence can tell us that wages move in a particular *direction* in relation to risk; it cannot tell us whether wages adjust *by the right amount* (given the employee's underlying preferences) in light of workplace risks. Movement in one direction or the other is ultimately a fairly weak test of the theory of equalizing wage differentials. The second limitation is that sources of credible identification of empirical effects are extremely difficult to find in this area because employees who select into different types of jobs with different levels of associated risk may differ along important dimensions that are not observed by the analyst; and moreover, the jobs into which employees select may also differ along dimensions that are not observed by the analyst. If either individual or job characteristics that are unobservable by the analyst are correlated with job risks, then correlations between risks and wages may be entirely spurious. Employment law, not satisfied that equalizing wage

[4] In addition to workplace safety mandates and mandated compensation for workplace injuries, general tort law may have some effect on workplace safety incentives; however, such effects are limited by the fact that, at least in the United States, workers' compensation (discussed in section III) preempts most tort liability for workplace injuries. See chapter 2, by Steven Shavell, in this *Handbook* for further discussion of the economic analysis of tort law.

[5] Brown (1980) offers a general treatment of the topic of equalizing wage differentials.

differentials fully address the issue of workplace safety, has chosen to regulate workplace safety in both the direct and indirect ways noted above.

A. Theoretical analysis of workplace safety mandates

The most direct form of workplace safety regulation is workplace safety mandates. These mandates require particular workplace practices intended to enhance workplace safety. In the United States, as previously noted, OSHA imposes a range of such mandates, which are described in detail in Smith (1976) and Mendeloff (1979).

Within economic analysis, workplace safety mandates are typically justified on the ground that either information failures or optimism bias on the part of employees leads them to oversupply labor at a given wage rate. Frequently employees will not be aware of the risks of a particular workplace, and even employees who have good information about the general risks of their workplace may overoptimistically assume that those risks do not apply to them personally.

As noted in section I.B above, an oversupply of labor because of information failures, optimism bias, or both means that some inefficient transactions are taking place and that employees are worse off than they would be in a well-functioning market. Workplace injuries may also have important externality effects, but the informational and cognitive problems have been central in the existing literature. In the presence of such problems, workplace safety mandates can in theory improve both efficiency and employee welfare by eliminating the inefficient and detrimental (to employees) transactions described in section I.B. If observed labor supply under a mandate matches the "true" willingness to supply labor (because the workplace is safe, consistent with employees' belief), then only efficient transactions will occur, and employees will accept employment only to the extent that the wage equals or exceeds their

"true" cost of supplying labor. Of course, in the real world the mandated levels of workplace safety may not match employees' beliefs or may be exorbitantly expensive; responding to even a genuine employee-side informational or cognitive problem does not guarantee that efficiency and employee welfare will rise under a workplace safety mandate. Ultimately, the effects of a workplace safety mandate are an empirical question.[6]

B. Empirical analysis of workplace safety mandates

As just noted, the central question about workplace safety mandates concerns their empirical effects on wages, employment levels, and, of course, workplace safety. A large empirical literature has attempted to identify such effects.[7] This literature has focused on workplace injuries (in the sense of immediate negative health effects), as distinguished from longer-term health risks from work; this focus is reflected in the discussion below. As the discussion below will make clear, the overall body of empirical evidence suggests modest (at best) effects of workplace safety mandates on observed levels of workplace safety, and, presumably because of the limited evidence of effects on the basic level of workplace safety, wage and employment effects of workplace safety mandates have generally not been studied. Most of the empirical evidence on the effects of workplace safety mandates comes from the United States, and that focus is reflected in the discussion below.

In sharp contrast to the workplace injury compensation systems noted in section III below, workplace safety mandates in the United States operate at the federal level, and, as a

[6] Not addressed in this discussion is the possibility that workplace safety mandates may affect the degree of precautionary behavior by employees. Rea (1981) offers related discussion, although his analysis is primarily focused on compensation systems for workplace injuries (the topic of the next section) rather than on workplace safety mandates.

[7] For a comprehensive survey of this literature through the early 1990s, see Smith (1992).

result of OSHA's status as a federal law, state law variation generally cannot be used to identify OSHA's effects.[8] Limited exceptions to this statement about OSHA are Ruser and Smith (1988) and Morantz (2005). Ruser and Smith examine the effects of the initiation of a records-check procedure in some but not all states on the level of reported workplace injuries; they find a lower level of reported injuries with the records-check procedure in place, but they are unable to determine from their data whether this results from a true reduction in injury rates or (the interpretation they emphasize) an increase in the frequency of underreporting because under the records-check procedure underreporting would reduce the likelihood of costly safety inspections. Ruser and Smith's study is largely concerned with effects on reporting levels rather than the more basic issue of effects on workplace safety. Meanwhile, Morantz's (2005) work examines how injury rates among construction workers vary with federal versus state *enforcement* of OSHA's substantive provisions and finds significantly lower injury rates in states with federal enforcement. Although the injury rate data do not go back far enough to allow Morantz to examine changes over time with the move from federal to state enforcement (so that, in contrast to Ruser and Smith, identification is based on cross-state variation only, rather than variation across both states and time), Morantz's empirical approach does attempt to control comprehensively for other cross-state differences, apart from federal versus state enforcement, that could be influencing injury rates.

[8] Much empirical work in employment law, including the work described in several of the sections below as well as much work in the employment discrimination area (e.g., Neumark and Stock 1999; Jolls 2004a; Jolls and Prescott 2006), exploits variation in legal innovation across states to identify the effects of legal rules. With change over time but no cross-state variation – as with a federal law such as OSHA – it is often difficult to disentangle the effects of the law's enactment from other unobserved changes occurring at the same time. Indeed, as Smith (1992) notes, even a simple national-level before-after comparison of injury rates in relation to OSHA's enactment is not possible because OSHA significantly changed the manner of collecting data on workplace safety.

Other empirical work on OSHA has examined variation in its enforcement over time or across industries (rather than across states) as a source of identification of the law's effects on workplace safety. In light of the low financial penalties for the typical OSHA violation and the low likelihood of OSHA inspections (Viscusi 1979; Weil 1996), many have questioned whether OSHA is likely to have any effect on workplace safety at all, regardless of variation in enforcement within the low observed ranges of penalties and inspection frequencies. Viscusi (1979) and Bartel and Thomas (1985), for instance, find limited or no relationship between measures of OSHA enforcement and injury rates, while Viscusi (1986) finds at best a modest relationship.[9]

Scholz and Gray (1990) have suggested, however, that the limited effects of OSHA on injury rates in many empirical studies reflect the overly generalized approach of these studies. Scholz and Gray focus on the firms most likely to be affected by OSHA – large, frequently inspected firms – and find significant effects of OSHA enforcement on injury rates in their sample. Unlike earlier studies, Scholz and Gray's study uses plant-level rather than industry-level data on OSHA enforcement levels and injury rates. However, a recent study by Gray and Mendeloff (2005) using a methodology similar to that in Scholz and Gray (1990) found that the significant effects of OSHA on injury rates lasted only through the early 1990s and were not apparent in data for most of the 1990s.

While the central variable of policy interest in studying OSHA's effects is the workplace injury rate, several studies have examined the relationship between the level of OSHA enforcement and the degree of firms' observed compliance with OSHA's requirements. Bartel and Thomas (1985) and Weil (1996), for instance, find evidence of significant effects of

[9] See Viscusi (1983) for discussion of additional studies of OSHA's effects on injury rates from the period just after OSHA's enactment.

enforcement on compliance with OSHA's requirements, notwithstanding the general evidence, noted above, of very limited levels of OSHA enforcement. By contrast, Weil (2001) finds only limited effects of enforcement activity on compliance in the construction industry.

Ultimately, the existing empirical work provides relatively little evidence of effects of OSHA on injury rates, with slightly more evidence of compliance effects. The lack of variation across states has, not surprisingly, impeded efforts to pin down the effects of OSHA's workplace safety mandates more definitively. Although the theory suggesting the likelihood of market failure in the workplace safety context seems strong, direct empirical evidence on the effects of OSHA has, at least thus far, not provided a clear basis for concluding that this law has enhanced efficiency and employee welfare or, even more basically, that the law has decreased workplace injuries. As described below, the empirical picture on compensation systems for workplace injuries – the other major employment law mechanism for improving workplace safety – is at least somewhat more positive.

III. Compensation Systems for Workplace Injuries

Employment law seeks to enhance workplace safety not only through direct safety mandates, as under OSHA, but also through the deterrent effects afforded by legally mandated systems of compensation for those injured on the job. In the United States, state workers' compensation programs are a major source of such legally-mandated compensation. Injured workers in the United States may also be eligible for compensation through the federal disability insurance program, but the absence of any experience-rating component in this program means that it does not create any particular deterrent effects for employers. The disability insurance program, which is funded through compulsory payroll deductions by employers, is nonetheless a

significant additional source of compensation for employees injured at work and, thus, is usually included in analyses of compensation systems for workplace injuries.

Both the theory and the empirical evidence relating to workers' compensation systems are developed in chapter 33 (by Krueger and Meyer) of the *Handbook of Public Economics*, and the federal disability insurance program is also extensively discussed in that chapter; thus the reader is referred to Krueger and Meyer's treatment for further discussion of the economic analysis of these programs. In brief, Krueger and Meyer conclude that the empirical evidence suggests longer periods out of work with more generous workers' compensation benefits (a finding with ambiguous welfare consequences, as noted by Krueger and Meyer); they also note the work by Gruber and Krueger (1991) suggesting no statistically significant reduction in aggregate employment levels from increases in the generosity of workers' compensation programs (a finding suggestive of the absence of significant welfare costs from these programs, although not of affirmative efficiency gains from the programs). Meanwhile, with respect to the federal disability insurance program, Krueger and Meyer emphasize the unresolved question of what causes the observed major changes in the size of the population receiving federal disability insurance payments, a topic of ongoing research (e.g., Autor and Duggan 2003).

IV. Workplace Privacy Mandates

A very rapidly growing area of employment law – particularly with the increasing presence of computers and the associated monitoring possibilities in the workplace – is workplace privacy. Issues of workplace privacy span a broad array of domains. Questions include the degree to which employers may videotape or audiotape their employees' activities in the workplace, the restrictions (if any) on drug and alcohol testing of employees, the degree to

which employers may engage in various forms of monitoring of employees' activities on computers, and the limits on employers' disclosure of medical and other personal information about employees. Workplace privacy mandates require employers to conduct activities of this sort in specified ways, if at all. This section briefly highlights the central issues in the economic analysis of such workplace privacy mandates.

A. Theoretical analysis of workplace privacy mandates

From an economic standpoint, the possible market failures in the workplace privacy setting parallel the main potential market failures in the workplace safety context. One potential market failure is an employee-side information failure; for some forms of privacy-related employer behavior, the employee may simply have no idea that the behavior is occurring. Employees may assume that their privacy is protected at work, just as they may assume that their workplace is safe. Examples in the privacy context include video or audio monitoring and the monitoring of employees' computers – practices of which employees may be entirely unaware. In other settings, by contrast, an employee may know when a particular invasion of privacy occurs; an example is urine testing for drug use – an employer practice that obviously cannot be done without the employee's knowledge.

Even employees who have accurate information about an employer's general practices in relation to workplace privacy may be led by optimism bias to underestimate the likelihood that the at-issue employer behavior will be undertaken in relation to, or have a negative effect upon, them as opposed to other employees. The analysis is again parallel to the workplace safety context, in which employees may underestimate their personal likelihood of workplace risks. Note that in the workplace privacy context, the risks of market failure related to optimism bias

will tend to be greater when there is more uncertainty in the employer's policy. For instance, employees may underestimate the likelihood that they will be subjected to a drug test under an employer policy permitting drug testing of employees involved in a workplace accident, simply because employees may tend to underestimate the likelihood that they will be involved in such an accident. By contrast, if an employer policy provides that employees will be subjected to ongoing video or audio monitoring as a matter of course, then optimism bias is likely to be less important – though optimistically biased employees could still underestimate the likelihood that the monitoring will detect a prohibited behavior on their part.

Parallel to the discussion of workplace safety in section II.A above, a workplace privacy mandate may address an employee-side information failure or cognitive bias by eliminating the gap between observed labor supply and the "true" willingness to supply labor (because privacy is now protected at the workplace, consistent with employees' expectation). Of course, as above, whether any given workplace privacy mandate actually has positive effects on efficiency and employee welfare is ultimately an empirical question.

B. Empirical analysis of workplace privacy mandates

Very little empirical evidence currently exists on the effects of workplace privacy mandates. However, in the case of the United States, the existence of variation in these mandates across states and time suggests the potential value of empirical inquiry in this area. Whether wages and employment levels would ever move to a discernible degree in response to workplace privacy mandates is unclear, but effects on observable outcomes other than wages and employment levels may be easier to detect. Jacobson (2003), for instance, presents evidence of better safety outcomes in safety-sensitive occupations in states that enacted legislation clarifying

the permissibility of drug testing for safety-sensitive positions than in states that did not enact such legislation. There is some suggestion of preexisting trends in the enacting states, so the results should be viewed with some caution, but Jacobson also finds improved safety outcomes after the imposition of federally mandated drug testing for certain safety-sensitive positions. Jacobson's findings suggest that some forms of workplace privacy mandates (especially in the drug testing context) may have the unfortunate effect of worsening safety outcomes. Additional empirical work on the effects of workplace privacy mandates is likely to appear as these mandates become increasingly common.

V. Fringe Benefits Mandates

Employers may be responsible not only for improved workplace conditions – including safety and privacy – but also for the provision of important fringe benefits. Fringe benefits are usually understood to include such benefits as health insurance and pensions. The present section focuses on the legal regulation of health insurance, the great majority of which is provided through the employment relationship (although this is less true outside the United States). Pension-related mandates are not considered in this paper because there is very little existing literature on the effects of such mandates on wages, employment levels, or other labor market outcomes.[10]

With respect to health insurance mandates, the Medicare program in the United States requires compulsory payroll deductions by employers and offers government-provided health

[10] The central law governing pensions in the United States is the Employee Retirement Income Security Act, a federal law that broadly displaces potential state-level regulation of pensions and, thus, leaves little opportunity for credible identification (through state-level variation in legal innovation) of the effects of legal regulation of pensions. See Ippolito (1988) for further discussion of the effects of the pension-related mandates imposed at the federal level.

insurance to (primarily) retirement-aged individuals. Under this program, individuals see a deduction from their paychecks during their working years and then are entitled to health insurance financed by the federal government during their retirement.[11] The Medicare system is discussed in chapter 50 (by Currie and Madrian) of the *Handbook of Labor Economics* and chapter 31 (by Cutler) of the *Handbook of Public Economics*, and the reader is referred to those volumes for further discussion of this system. Because the Medicare system is covered in those volumes, the focus of the present section is other types of health insurance mandates.

Both federal and state law in the United States play a role in structuring the system of health insurance mandates considered in this section. The federal role here is two-fold. First, the Employee Retirement Income Security Act (ERISA) broadly "preempts," or renders inapplicable, all state-level health insurance mandates insofar as employer-provided health insurance is concerned, unless the employer-provided insurance is procured from an insurance company. Thus, any employer that self-insures – as many now do – is not subject to any health insurance mandates imposed at the state level. Second, federal law imposes a few limited mandates on health insurance plans. One such mandate is contained in the Consolidated Omnibus Budget Reconciliation Act (COBRA), which requires that, above a certain employer-size threshold, employees be allowed to continue purchasing health insurance through their former employer for up to 18 months after leaving that employer. A second source of federal health insurance mandates is the Health Insurance Portability and Accountability Act (HIPAA),

[11] By contrast, the Medicaid program in the United States is targeted to the needy and is not linked to the employment relationship in any way.

which imposes a variety of requirements on employers and other health insurance providers, including mandated coverage for preexisting conditions.[12]

State-level health insurance mandates, to the extent that their application is not preempted by ERISA, also impose a variety of requirements on health insurance plans; for instance, some state laws impose continuation coverage mandates similar to the mandate in COBRA (see Gruber and Madrian 1994). State-level regulation is discussed briefly below where its mandates overlap with federal requirements, but, because of the preemption issue noted above, the focus of this section is on federal health insurance mandates.[13]

A. Theoretical analysis of fringe benefits mandates

Several potential market failures, including employee-side information failures and cognitive biases, may be relevant to analysis of the health insurance mandates noted just above, but perhaps the most obvious labor market failure in this context involves employer-side imperfect information. (For discussion of the broader issue of provision of health insurance through, rather than independently of, the employment relationship, see chapter 50 (by Currie and Madrian) of the *Handbook of Labor Economics*.) For instance, an individual employer opting unilaterally to offer continuation coverage of the sort required by COBRA might disproportionately attract employees who are less likely to remain employed (especially those who simultaneously have concerns about their future health) and, thus, who are particularly

[12] Moreover, recently enacted HIPAA regulations impose a series of privacy-related requirements on employers concerning the disclosure of medical information; those requirements may be analyzed under the framework set forth in section IV (workplace privacy) above. An additional federal law regulating health insurance is the Mental Health Parity Act. For the reasons given in section VI below, this law is best viewed as a targeted mandate and, thus, is discussed in section VI rather than here.

[13] Economic analyses of the effects of various state-level health insurance mandates include Gruber (1994b), Kaestner and Simon (2002), and Simon (2005). Chapter 31 (by Cutler) in the *Handbook of Public Economics* also contains discussion of these mandates.

focused on the issue of continuation coverage. In broad terms, the problem of adverse selection here is similar to the problem – described in detail in section VII.A below – faced by an individual employer opting to offer protection against discharge from employment without just cause. In both cases, offering the benefit may make the employer disproportionately attractive to less desirable employees.[14]

In the health insurance context, if the value to employees of a particular form of health insurance coverage (such as continuation coverage) exceeds the cost of providing such coverage, then mandating such coverage may efficiently respond to the adverse selection problem just described. Of course, in the case of continuation coverage, employers in an ideal world might offer not this type of coverage but, instead, employee-specific packages of wages and health insurance tailored to each employee's individual costs and needs (Gruber and Madrian 1994). However, as Gruber and Madrian note, the barriers to such an approach – whether achieved voluntarily or through legal regulation – in the real world are clear, and thus mandated continuation coverage, as under COBRA, may be a good second-best solution. Empirical evidence on the effects of both mandated continuation coverage and mandated coverage for preexisting conditions is noted in the next section.

B. Empirical analysis of fringe benefits mandates

Empirical evidence on the effects of continuation coverage mandates on a variety of employment-related outcomes is discussed in chapter 50 (by Currie and Madrian) of the *Handbook of Labor Economics*; the discussion there of the studies by Gruber and Madrian (1994, 1995, 1996, 1997) of both COBRA and state-level continuation coverage mandates is

[14] Aghion and Hermalin (1990) offer general discussion of the problem of adverse selection in employer-employee and other contracting releationships.

especially relevant. On balance, continuation coverage mandates appear to increase both separation and retirement from work by employees; effects on overall wage and employment levels (which would permit conclusions about the welfare effects of continuation coverage mandates) presumably were not large enough to be studied empirically.

With respect to preexisting conditions coverage mandates, chapter 31 (by Cutler) of the *Handbook of Public Economics* discusses the effects of various state-level health insurance mandates, including preexisting condition coverage mandates, on health insurance coverage rates. In addition, in the time since this volume of the *Handbook of Public Economics* was published, studies by Kaestner and Simon (2002) and Simon (2005) have also examined the effects of state-level health insurance mandates, including preexisting condition coverage mandates, while recent work by Sanz-de-Galdeano (2006) studies the effects of HIPAA, which (as noted above) includes a preexisting conditions coverage mandate. The body of existing empirical work suggests that these mandates have limited or no effects on insurance coverage rates, wage and employment levels, or other outcomes.[15]

VI. Targeted Mandates

While the employment law mandates discussed in sections II through V above are mandates predominantly directed to employees as a whole rather than to any discrete subgroup of employees, other employment law mandates are targeted to particular demographic subgroups. Indeed, many employment law mandates – including certain aspects of employment

[15] Note that although the primary focus of the empirical literature on health insurance mandates is on outcomes other than overall wage and employment levels, insofar as overall wage and employment levels are concerned, the framework described in section I.A above may require some adjustment when analyzing the effects of health insurance mandates. This is so because the cost of health insurance is likely to vary with the number of employees rather than, as depicted in Figure 1 above, with the number of total worker-hours; in other words, the distribution of worker-hours over employees may matter greatly in the health insurance context. Cutler and Madrian (1998) offer further discussion of this point.

discrimination law as well as employment law rules such as mandated workplace leave (emphasized below) – are targeted in this way. The direct effects of these targeted mandates will be felt primarily or exclusively by demographic subgroups of employees, such as individuals with disabilities, women, or members of particular racial groups, rather than by employees as a whole (Gruber 1994a).

Of course, no benefits mandate may be entirely untargeted; many mandates, including at least some of those discussed above, may tend to benefit some demographic groups within a given employment market more than others within this market. Thus, the difference between general and targeted mandates is probably best viewed as a difference in degree rather than a difference in kind.

The importance of distinguishing between general and targeted mandates arises from the fact that the subgroups to which targeted mandates are directed are generally *groups whose wages and employment opportunities are legally required to match those of the nontargeted employees*. In the absence of such requirements (or if such requirements were not binding),[16] the targeted subgroup could simply be treated as a separate labor market, and the same basic sort of analysis as was discussed in sections II through V above would continue to apply. However, in the presence of binding restrictions on differential treatment across groups, the analysis of targeted mandates proves to be quite different from the analysis employed until this point in the paper. As described more fully below, employment law mandates targeted to demographic subgroups of employees constitute an important exception to the general focus in this paper on market failures as a necessary condition for employment law regulation to enhance employee welfare. If the goal of a targeted mandate is to enhance the welfare of targeted employees – as it

[16] More precisely, if restrictions on wage differentials between the two groups were not binding. See Jolls (2000) for further discussion.

often is – then the desired result may obtain wholly apart from any sort of market failure – a point obscured by the common focus in the literature on the standard mandated benefits framework even when analyzing targeted mandates.[17] In light of this observation, and for the sake of analytic clarity, the present section will analyze targeted mandates on the assumption of no market failure of any sort. The analysis below could readily be adjusted to incorporate market failure in combination with a targeted rather than general mandate. As above, empirical analysis follows the theoretical analysis.

A. Theoretical analysis of targeted mandates

With a targeted mandate and no market failure of any sort, labor supply with the mandate in place will shift exclusively or disproportionately for the targeted employees, rather than (as in section I.A above) for employees as a whole. Meanwhile, on the employer side, the total marginal revenue product of labor (reflecting, among other things, the cost of the mandated benefit) will shift exclusively or disproportionately for the targeted group. If, for instance, employers are legally required to provide leave from work following the birth of a child, as they are in many countries, then both the willingness to supply labor and the total marginal revenue product of labor are likely to shift disproportionately for female employees.[18]

Because of the differential effects of a targeted mandate across groups of employees, it is important for purposes of the analysis of such mandates to separate out two distinct labor markets: the market for employees targeted by the mandate and the market for the remaining

[17] See Jolls (2000) for further discussion of this point.

[18] For expositional ease, the analysis below will assume that the mandated benefit has value only to the targeted group and imposes costs only in connection with that group. However, the conclusions offered below would remain qualitatively uncharged if the mandate had some value beyond the targeted group (although less than the value to the targeted group); the same is true if the mandate imposed some cost beyond the targeted group (although less than the cost for the targeted group).

employees. Each market will have its own labor supply and demand functions (although, as described below, the demand functions will end up being the same if restrictions on wage and employment differentials are binding). And, because the demand for employees of one type will depend, among other things, on the demand for employees of the other type, it will no longer be possible to represent everything of interest on a single, two-dimensional labor supply and demand diagram, as in Figure 1.

The following notation will be used below:

E_t = employment level of targeted employees;
W_t = wage level of targeted employees;
E_n = employment level of nontargeted employees;
W_n = wage level of nontargeted employees;
C (> 0) = per-worker-hour cost of providing mandated benefit to targeted employees;
V = per-worker-hour value of mandated benefit to targeted employees;
MRPL = per-worker-hour marginal revenue product of labor from production.

Prior to the imposition of a targeted mandate, the wages earned by targeted and nontargeted employees will be given by $W_t = W_n = MRPL(E_t + E_n)$. Meanwhile, labor supply for the two groups of employees prior to the imposition of a targeted mandate may be written as follows:

$$E_t = S_t(W_t)$$
$$E_n = S_n(W_n)$$

Let $(W_t^\circ, W_n^\circ, E_t^\circ, E_n^\circ)$ with $E_t^\circ > 0$ and $E_n^\circ > 0$ denote an interior solution to this system.

After the imposition of a targeted mandate, labor supply for the two groups of employees will be given by the following equations:

$$E_t = S_t(W_t + V); \quad (1)$$
$$E_n = S_n(W_n). \quad (2)$$

However, labor demand after the imposition of the mandate will depend on the degree to which restrictions on wage and employment differentials are binding. One possibility is that

restrictions on wage differentials are not binding (and restrictions on employment differentials are or are not binding); in this case, as noted above, a targeted mandate may be analyzed within the basic type of framework used in sections II through V above.[19] A second possibility is that restrictions on wage differentials are binding while restrictions on employment differentials are not; in this case targeted employees will effectively be more expensive to employ (as they must earn the same wage but cost the employer more), and employers will thus tend to reduce their hiring of targeted employees. The most interesting possibility, and the one that will be examined in the remainder of this section, occurs when restrictions on both wage and employment differentials are binding. In this case there must not be any difference between the wages or employment opportunities of targeted and nontargeted employees within a given employment market; employers must pay each type of employee the same wage and must demand each type in proportion to its willingness to supply labor at that wage.

With binding restrictions on wage and employment differentials, the common wage W for the two groups of employees after the imposition of the mandate will be given by:

$$W = [E_t/(E_t + E_n)][MRPL(E_t + E_n) - C] + [E_n/(E_t + E_n)]MRPL(E_t + E_n).$$

Rewriting:

$$W = MRPL(E_t + E_n) - [E_t/(E_t + E_n)]C. \qquad (3)$$

The equation in (3), together with the labor supply equations in (1) and (2), yields a system of three equations in three unknowns; let (W^*, E_t^*, E_n^*) denote a solution to this system.

As (3) shows, a targeted mandate will affect labor demand both as a result of the mandate's effect on MRPL through changes in $E_t + E_n$ and as a result of the direct cost C of the mandated benefit. With respect to the former effect, it is straightforward to show that because

[19] See Jolls (2000) for further discussion.

of the downward pressure on labor demand as a result of the cost of the mandated benefit, the employment level of nontargeted employees will fall with the mandate: $E_n^* < E_n^\circ$.[20] Intuitively, the mandate, by requiring employers to incur costs for targeted employees that nontargeted employees will have to share as a consequence of the binding restrictions on wage and employment differentials, induces marginal nontargeted employees to exit the market. This relationship between E_n^* and E_n° in turn allows one to depict the effects of a targeted mandate on the wages and employment of targeted employees in simple graphical form in a figure (Figure 2) similar to Figure 1 from above.

In Figure 2, the curve D_t° is the pre-mandate labor demand curve for targeted employees at the pre-mandate equilibrium level of nontargeted employment (E_n°). Thus, the curve D_t° is given by $W = MRPL(E_t + E_n^\circ)$. Meanwhile, the curve D_t' is given by the following equation:

$$W = MRPL(E_t + E_n^\circ) - [E_t/(E_t + E_n^*)]C.$$

The curve D_t' thus depicts the effect of the shift due to the cost of the mandated benefit after the mandate is imposed; the MRPL term is ignored by assuming that the marginal revenue product of labor from production as a function of targeted employment (E_t) is the same pre-and post-mandate ($MRPL(E_t + E_n^\circ)$ in both cases). Because, as noted above, $E_n^* < E_n^\circ$, it is straightforward to see that the ultimate post-mandate labor demand curve for targeted employees, with $E_n = E_n^*$, must lie above the curve D_t' in Figure 2.

We are now in a position to assess the effects of a targeted mandate on the wages and employment levels of targeted employees. As the discussion in section I.A above suggests, it is useful to separate the analysis into distinct cases based on the relationship between the value and the cost of the mandated benefit. The straightforward case is the one in which the value of

[20] See Jolls (2000) for details.

the mandated benefit equals or exceeds its cost.[21] In this case, not surprisingly, the targeted employees' wage will fall by less than the value of the mandated benefit, while their employment level will rise, as depicted in Figure 2.

The more interesting case is the one in which the value of the mandated benefit is less than its cost. In this case it is no longer certain that targeted employees will be better off after the mandate is imposed, but it remains likely; as long as the fraction of nontargeted individuals in the qualified population is not too small, and the gap between the value and the cost of the mandated benefit is not too large, a targeted mandate will always make targeted employees better off. If, for example, nontargeted employees constitute the vast majority of the employment market in question, then the fall in the total marginal revenue product of labor for all employees in that market with the imposition of a targeted mandate will be small, as the average cost of the mandated benefit across the employment market will be small. And the smaller the downward shift in the total marginal revenue product of labor as a result of the mandated benefit cost, the smaller the gap between the curves $D_t°$ and D_t' in Figure 2, and hence the lower the likelihood that this gap will exceed the downward shift in the labor supply curve ($S_t°$ to S_t'). As long as the downward shift in the labor supply curve equals or exceeds the gap between $D_t°$ and D_t' over the relevant range of employment levels, the wage of targeted employees will fall by less than the value of the mandated benefit, while their employment level will rise.

[21] In the absence of any market failure – the assumption maintained throughout this section – a benefit whose value equals or exceeds its cost might, but conceivably would not, be provided in the absence of a mandate. Because the benefit accrues exclusively or disproportionately to targeted employees, it seems possible that the benefit would not be provided (with binding restrictions on wage and employment differentials) even if the value of the benefit exceeded its cost. This issue is not analyzed rigorously here, however.

Thus, targeted mandates may be justifiable on distributive grounds even when the cost of the mandated benefit exceeds its value.[22] In the case of general mandates, by contrast, distributive considerations cannot justify legal intervention when the cost of the mandated benefit exceeds its value because, as noted in section I.A above, the employees' wage will fall by more than the value of the benefit to them. This effect occurs because there is no other group to whom to shift costs. But with targeted mandates, even if the value of the mandated benefit is less than its cost, the mandate may make targeted employees better off because nontargeted employees will bear some of the associated cost.

The point about potential distributive gains wholly apart from market failure is especially important because the fact that the value of a mandated benefit is less than its cost may reflect precisely the undesirable distributive situation that employment law seeks to remedy. The reason is that "value" in this framework is measured by employees' willingness to pay for the benefit by accepting lower wages, and the distributive situation of targeted employees might preclude them from accepting lower wages (see generally Dworkin 1980). If, for instance, a mandate requires employers to provide medical leave to employees with serious medical problems, the value (measured by willingness to pay) of this benefit to the targeted employees may be limited not by the utility of the leave to these employees but by their financial position. Mandated medical leave is discussed further in the next section.

[22] Of course, distributive goals might alternatively be achieved through a tax-and-transfer regime (Kaplow and Shavell 1994).

B. Empirical analysis of targeted mandates

As suggested above, some targeted mandates arise under employment discrimination law and, for that reason, are not analyzed further in this paper.[23] The primary employment law application of the analysis of targeted mandates is workplace leave mandates, which at least in the United States arise under employment law outside of what is generally considered employment discrimination law.[24] Workplace leave mandates in the United States disproportionately target both disabled employees (through mandated entitlement to medical leave) and female employees (through mandated entitlement to leave following the birth of a child).[25] These two aspects of mandated workplace leave are considered in turn below.[26]

1. Mandated medical leave

As noted above, the wage and employment effects of a targeted mandate depend significantly on the degree to which restrictions on wage and employment differentials between targeted and nontargeted employees are binding. Starting with restrictions on wage differentials, such restrictions are likely to be binding in the absence of significant occupational segregation

[23] Disability discrimination law, for instance, requires employers to make "reasonable accommodations" for disabling conditions – a mandate targeted to employees with disabilities (Acemoglu and Angrist 2001). Similarly, to the extent that sex discrimination law requires health insurance coverage of maternity-related medical costs, it imposes a mandate targeted to female employees (Gruber 1994a)

[24] The Family and Medical Leave Act, which requires employers to provide employees with leave from work under specified conditions, is not part of any of the employment discrimination statutes in the United States and is administered by the Department of Labor rather than the agency (the Equal Employment Opportunity Commission) that administers employment discrimination statutes.

[25] Mandated leave following the birth of a child is targeted to female employees even though leave is typically available to male employees because female employees who have biological children will require at least a brief period of time off from work after a birth to recover from the temporary disability associated with giving birth and, thus, will almost certainly (for purely biological reasons) be more likely than male employees to take leave.

[26] Another targeted mandate in the United States is the Mental Health Parity Act, which requires that coverage of mental and physical conditions under health insurance plans be comparable in certain respects. Because this law is generally believed to be of modest practical impact, it seems unlikely to be the source of observable empirical effects.

between targeted and nontargeted groups. Legal restrictions on wage differentials are generally fairly easy to enforce (e.g., Posner 1987), and, moreover, employers may have incentives to adhere to norms of pay equity wholly apart from legal restrictions because of the potential morale problems that can result from inequity in wages between different groups performing the same work.

In the case of mandated entitlement to medical leave, the group of employees disproportionately (though of course not exclusively) targeted by such a mandate is employees with disabilities, some of whom will be significantly more likely to require leave than nondisabled employees. With respect to occupational segregation, at least in the United States employees with disabilities are not significantly segregated, so restrictions on wage differentials between employees with and without disabilities are likely to bind.

Likewise, with respect to restrictions on employment differentials, while these restrictions are unlikely to bind directly for employees with and without disabilities because of the difficulty of enforcing such restrictions (e.g., Posner 1987), the ultimate effect may be the same in analyzing mandated entitlement to medical leave because many of the conditions for which such leave will be required are unobservable to employers at the time of hiring and, thus, cannot be the basis of differential employment decisions (Jolls 2006). In this case, the analysis in section VI.A above predicts that mandated entitlement to medical leave will increase both wages and employment levels of employees with disabilities, unless either the fraction of targeted individuals in the qualified population is too large or the cost of the leave significantly exceeds its value. In the United States, because medical leave under the Family and Medical Leave Act (FMLA) is unpaid, it seems unlikely that the cost of this benefit significantly exceeds its value.

A straightforward empirical measure of the wage and employment effects of mandated entitlement to medical leave under the FMLA on employees with disabilities is a comparison of wages and employment levels of such individuals before and after the FMLA went into effect – ideally with an additional comparison between states in which mandated entitlement to medical leave under the FMLA was an innovation and those in which it was not. Both approaches suggest neutral to positive effects of mandated entitlement to medical leave on disabled employment levels (relative to nondisabled employment levels), with the most credible evidence suggesting positive effects (Jolls 2006). This evidence underlines the prospects for positive effects of targeted mandates on the employment opportunities of targeted employees, consistent with the theoretical analysis offered in section VI.A above.

2. Mandated leave following the birth of a child

As noted above, relatively limited degrees of occupational segregation (as in the case of employees with and without disabilities in the United States) suggest that restrictions on wage differentials will be binding. But in the case of male and female employees – the groups likely to be disparately affected by mandated entitlement to leave following the birth of a child – employment markets remain quite segregated.[27] With substantial occupational segregation, restrictions on wage differentials will tend to be of little force because the only comparisons that are drawn in the law are those between employees within the same employment market (or, more technically, those performing the same or similar work). As noted above, in the absence of

[27] See chapter 25 (by Blau and Kahn) in the *Handbook of Labor Economics* for further discussion of occupational segregation by sex.

binding restrictions on wage differentials, an analysis similar to that used in sections II through V above remains applicable to the case of a targeted mandate.[28]

Mandated entitlement to leave from work following the birth of a child exists in a wide array of countries and has been extensively studied. Waldfogel (1999), for instance, examines female employees' wages and employment levels in the aftermath of the FMLA's enactment in the United States and finds no consistent pattern of statistically significant results. The lack of clear results may stem in part from the fact that, as Waldfogel notes, many female employees were entitled (by state legislation or firm policy) to FMLA-type benefits following the birth of a child even prior to the FMLA's enactment.

Another test of the effects of mandated entitlement to leave following the birth of a child comes from looking at the effects of European leave laws. Ruhm (1998), for instance, finds that the length of the leave period under these laws generally is negatively related to the wages of female employees and positively related to their employment levels. Note that because employees' leave is paid, in contrast to the situation under the FMLA, positive employment effects are more likely under the European laws, which are presumably valued more by employees than the FMLA because of the paid nature of the leave. (Negative labor demand effects of paid leave are blunted by government rather than employer financing of the leave.) An exception to the general pattern of Ruhm's findings is that the effect of having some mandated leave versus none – as distinguished from the effect of having a short mandated leave versus a long mandated leave – has no statistically significant effect (rather than a statistically significant negative effect) on wages of female employees. This may result from the fact that a

[28] Of course, very few employment markets are actually perfectly segregated, so that there is absolutely no opportunity to compare targeted and nontargeted employees' wage levels. Jolls (2000) provides further discussion of the reasons that markets with significant segregation are nonetheless most naturally modeled as markets in which restrictions on wage differentials are not binding.

short leave, as opposed to a long leave, imposes relatively few costs on employers, and thus provides little occasion for a wage adjustment.[29]

Overall, the empirical evidence on mandated entitlement to leave following the birth of a child suggests neutral to positive employment effects – the same broad pattern as with mandated entitlements to medical leave. Wage effects, by contrast, appear more negative with mandated leave after the birth of a child – a likely consequence of the degree of occupational segregation by sex. Note, however, that because sex (in contrast to many medical conditions) is easily observable to employers, decreasing occupational segregation by sex over time is more likely to generate job losses from mandated entitlement to leave following the birth of a child (as wage adjustments are precluded by decreased segregation) than to produce the benefits for targeted employees that may come from mandated entitlement to medical leave.

VII. Wrongful Discharge Laws

One of the most fundamental issues in employment law involves the general conditions under which employers may engage in "the industrial equivalent of capital punishment" by discharging an employee.[30] In many countries, a pervasive set of laws limits the conditions under which employees may be discharged without attendant legal obligations (e.g., Blau and Kahn 1999). In the United States, by contrast, a sharply different approach prevails; an employee may generally be fired at any time, without identification of any reason whatsoever for the discharge and without any attendant employer obligations, unless either the employee's

[29] An important subtlety in discerning the effects of mandated entitlement to leave following the birth of a child is that, as Waldfogel (1998, 1999) emphasizes, such mandates may have a sort of composition effect, moving female employees into, or keeping them in, better, higher-level jobs. If this is so, then the aggregate effects of the mandates may be more mixed and more complex than the effects suggested by the theoretical framework described above.

[30] The quoted phrase comes from Complete Auto Transit, Inc. v. Reis, 451 U.S. 401 (1981).

contract specifically provides otherwise or the discharge reflects unlawful discrimination or some other unusually arbitrary or abusive basis for decision (Kim 1997). Only one of the fifty United States (Montana) departs from this regime of "at will" employment. The United States does have an unemployment insurance system, which is a limited form of employment protection and is discussed in the next section, but (outside of Montana) there is no general requirement that employers offer any sort of justification when discharging an employee and no general set of employer financial obligations attending such discharges.[31]

The issue of the scope of wrongful discharge laws – defined for purposes of this paper as laws requiring a threshold level of justification before employers may discharge employees – does not fit well within the framework described in section I.A above because, in contrast with the legal rules discussed in the preceding sections, the legal regulation here is directly linked to the employment level. (In the case of the legal rules governing workplace safety, workplace privacy, and various types of employee benefits such as health insurance and workplace leave, the rules affect the wage and employment levels only indirectly through the shifts in labor supply and marginal revenue product of labor they will produce.) The analysis below first provides theoretical discussion of the labor market effects and the efficiency of wrongful discharge laws; it then notes evidence from empirical studies of these laws.

A. Theoretical analysis of wrongful discharge laws

1. Labor market effects of wrongful discharge laws

In general, wrongful discharge laws have competing potential effects on the employment level. On the one hand, they potentially increase employment because they impose barriers to

[31] For further discussion of current law governing discharge from employment in the United States, see Kim (1997).

firing. On the other hand, these very barriers may discourage the hiring of employees in the first place. Models of these types of competing effects are discussed in chapter 25 (by Blau and Kahn) in the *Handbook of Labor Economics*, and the reader is referred to that volume for further discussion of the theoretical analysis of the labor market effects of various forms of employment protection law.

2. Efficiency analysis of wrongful discharge laws

At least in theory, several market failures may justify legal rules requiring a threshold level of justification before employees are discharged. Two leading arguments are noted below.[32]

a. Employee-side information failures

The most straightforward justification for wrongful discharge laws is that in the absence of such laws, inadequate employee-side information about the ability of an employer to discharge employees without offering an adequate justification for the discharge leads employees to oversupply labor at a given wage rate. Empirical evidence on this form of market failure is discussed in section VII.B below.

If, in the absence of wrongful discharge laws, many employees incorrectly believe that they can only be discharged after a threshold level of justification has been met, then wrongful discharge laws can improve both employee welfare and efficiency by eliminating the gap between employees' observed and "true" willingness to supply labor. With a wrongful discharge law in place, the governing regime is consistent with employees' belief – although of course in

[32] Levine (1991) notes additional potential market failures in this context, including cognitive bias and externalities.

the real world the mandated level of justification for discharge may not match employees' beliefs, or its imposition may impose very large costs. As described below, the available empirical evidence on employee-side information failure in the wrongful discharge context – while strongly supportive of the existence of such information failure – does not allow any inference about whether existing wrongful discharge laws are ultimately a welfare-enhancing response to employee-side information failure in this context.

b. Employer-side information failures

Alongside employee-side information failure, Levine (1991) develops the argument that employer-side information failures may also justify wrongful discharge laws. Intuitively, an individual employer may not offer wrongful discharge protection on its own, even if such protection, adopted universally, would increase both efficiency and employee welfare, because the individual employer who offers the protection may become a magnet for less desirable employees.

In Levine's model, employees are of two different types, and discharge occurs either on an at will basis – where employers need not provide any reason for discharge – or on a "just cause" basis – where employers must prove employee malfeasance in order to justify a discharge. Note that, by contrast to the focus in sections II through VI above on models in which employees are paid in accordance with the marginal revenue product of labor, Levine's model is a species of efficiency-wage model, in which employees may earn rents in order to discourage shirking. Levine shows that a single firm may not profit from adopting just cause when its competitors do not adopt it, even if such an approach, adopted universally, would be efficiency-

increasing. Because of the phenomenon of adverse selection, a mandated just cause requirement may enhance both efficiency and employee welfare.

B. Empirical analysis of wrongful discharge laws

1. Labor market effects of wrongful discharge laws

The evidence on the labor market effects of various forms of employment protection law is discussed in chapter 25 (by Blau and Kahn) in the *Handbook of Labor Economics*. In addition, in the time since this volume of the *Handbook of Labor Economics* was published, studies by Miles (2000), Autor (2003), and Autor, Donohue and Schwab (2006) have further examined the wage and employment effects of wrongful discharge laws in the United States. Both Miles (2000) and Autor (2003) find a significant positive relationship between more restrictive wrongful discharge laws and the substitution of temporary for regular employees. Meanwhile, Autor, Donohue and Schwab (2006) find negative employment effects of some, though not all, types of wrongful discharge laws.

2. Efficiency analysis of wrongful discharge laws

The available empirical evidence on the efficiency of wrongful discharge laws bears most strongly on the first potential market failure discussed above – employee-side information failure. Kim (1997, 1999) presents evidence that most individuals in the United States are not aware of the fact that employers need not meet some threshold level of justification in order to discharge their employees. Kim surveyed a total of 921 recently discharged employees at unemployment benefits offices in California, Missouri, and New York in the late 1990s. To file a claim for unemployment benefits, claimants in these states must appear in person at a benefits

office. In Kim's study, claimants were approached while waiting for assistance at benefits offices and asked if they would complete a written survey. Presumably because the claimants were already waiting and did not have the option to be elsewhere, response rates were high – 85% in California and Missouri and 69% in New York.

The surveys in Kim's study asked respondents to consider specific scenarios in which individuals were discharged without a good reason and then to indicate whether they believed such discharges would be found to be lawful by a court of law. For instance, one question asked about the lawfulness of a termination based upon personal dislike of the employee; another asked whether it was lawful to terminate an employee based on a mistaken belief that the employee had stolen money (a belief that the employee could prove was incorrect). While such discharges are unquestionably permitted under the law in the United States (outside of Montana), the vast majority of respondents believed that the discharges were unlawful. Table 1 below summarizes Kim's main findings.

One issue with Kim's findings is whether unemployment insurance claimants are representative of the overall employee population in the United States. On the one hand, as Kim notes, individuals who recently lost their jobs may be more likely than the average employee to have some familiarity with the legal regime governing discharge, precisely because of their recent experience with being discharged. In addition, because eligibility for unemployment benefits requires both that the claimant have some prior attachment to the labor market (in the form of a minimum number of weeks employed) and that the claimant undertake an active search for new employment, claimants' beliefs should provide a good measure of what a job seeker with labor market experience knows at the moment at which a decision is made about accepting a job offer from a particular employer. On the other hand, unemployment benefits claimants may be

less informed than the average employee about the legal rules governing termination because those who are better informed – and thus realize that they have no legal protection against discharge without an adequate justification – may better protect themselves from involuntary termination. Balancing these various factors, there does not appear to be a strong a priori reason to believe that unemployment benefits claimants will be systematically less aware than other employees of the United States rule of at will employment, thought only additional empirical study can definitively resolve the question.

Note that because unemployment benefits claimants are disproportionately individuals who earned low to moderate, rather than high, wages prior to their discharge from employment, Kim's evidence bears most directly on the existence of employee-side information failure in employment markets other than those involving highly compensated employees. However, Kim finds that erroneous beliefs about the legal rules governing discharge are common regardless of education level. In Missouri, for instance, respondents with college degrees still exhibited strongly mistaken beliefs about the legal rules governing discharge (Kim 1997).

Kim's findings suggest that employees often do not have good information about the United States rule of at-will employment. While in some search models a limited proportion of informed actors may eliminate the effects of information failure in markets (e.g., Wilde and Schwartz 1979), Kim's evidence suggests that the proportion of United States employees suffering from information failure is extremely large. While the empirical support for employee-side information failure is thus large, it is, as noted above, not clear exactly what legal reform would bring the treatment of discharge in the United States in line with employees' expectations or what the costs of such reform would be.

VIII. Unemployment Insurance Systems

Unemployment insurance, briefly noted in the preceding section, is an extremely common, although limited, form of employment protection. Unemployment insurance requires the payment of benefits in lieu of wages upon discharge from employment, typically (at least in the United States) without regard for the reason for the discharge except in extreme circumstances. Under the United States system, benefits are financed by a payroll tax that employers must pay on a per-employee basis.

Both theory and evidence relating to unemployment insurance are developed at length in chapters 13 (by Atkinson) and 33 (by Krueger and Meyer) of the *Handbook of Public Economics*, and, thus, the reader is referred to that volume for further discussion of the economics of unemployment insurance. In brief, Krueger and Meyer, in the more recent of the two chapters, conclude that the empirical evidence suggests longer periods out of work with more generous unemployment insurance benefits – a finding, like its counterpart in the workers' compensation context from section III above, with ambiguous welfare consequences.

IX. Minimum Wage Rules

Among the most extensively discussed rules within the economic analysis of employment law are minimum wage rules. Under these rules, employers must pay a legally-specified minimum wage to employees. An important opening observation about these rules is that, akin to the analysis in section VI above, the usual role of market failure in justifying employment law rules is altered. Even in the absence of market failure, a minimum wage rule may increase total employee income and, thus, at least by this measure, may enhance employee welfare.

For minimum wage rules to increase not only total employee income but also efficiency and the income of each individual worker, market failure is necessary. It is often observed in discussions of minimum wage rules that market failure in the form of monopsony may justify such rules. This is so because, as discussed in section I.B above, under monopsony the wage is set below the marginal revenue product of labor. Anything that moves the wage closer to the marginal revenue product of labor will both enhance efficiency and make all employees better off.

Both theory and evidence relating to minimum wage rules are developed in chapter 32 (by Charles Brown) in the *Handbook of Labor Economics*, and the reader is referred to that volume for further discussion of these rules and their effects on efficiency and employee welfare.

X. Overtime Pay Requirements

The Fair Labor Standards Act (FLSA) in the United States imposes both minimum wage rules – discussed in the preceding section – and overtime pay requirements, which are the focus of the present section. Under overtime pay requirements, employers are legally required to pay a wage premium for hours above a specified weekly or other threshold. In the United States, employers generally must pay one and a half times the normal wage for hours worked above 40 hours per week. This section describes both theoretical and empirical analysis of overtime pay requirements

A. Theoretical analysis of overtime pay requirements

Overtime pay requirements, like the employment law rules discussed in the preceding sections, represent a legally prescribed term in the employment relationship. However, there is

an important analytic difference between overtime pay requirements and the rules considered in all of the preceding sections. In the case of overtime pay requirements, the legally prescribed term simply concerns the *form* within which dollars are paid to an employee, rather than some other aspect (such as the safety, privacy, or wage level) of the job. In principle, then, it may be possible for employers to undo completely the effects of overtime pay requirements (Ehrenberg and Schumann 1982, pp. 36-37). To borrow Trejo's (1991) example, suppose that in the absence of overtime pay regulation, an employee works 50 hours per week and earns $11 per hour. The employer in this circumstance could satisfy the FLSA by reducing the employee's straight-time wage to $10 per hour and then paying time and a half for the 10 hours in excess of the 40-hour-per-week cutoff. The employee would be in an identical situation, working 50 hours per week for $550 in pay. By contrast, when, for instance, a particular workplace safety mandate is put into effect, employers in the new equilibrium must provide the new safety feature (possibly compensated by lower wages) and cannot directly replicate the prior equilibrium.

Of course, there are limits on the foregoing account of the undoing of overtime pay requirements. To the extent that straight-time wages are at least somewhat sticky, employers may not be able to adjust such wages continuously over time in response to the number of desired overtime hours. In addition, adjustment will be either impossible or limited for employees whose straight-time wages are at or near the legal minimum wage level prior to any requirement of overtime pay. Both of these points are emphasized by Trejo (1991). Ultimately, then, empirical evidence is necessary to determine whether the theoretical account of the irrelevance of overtime pay requirements is true in practice.

To the extent that overtime pay requirements are not completely undone – as a result of various forms of wage stickiness or other factors – is there a market failure to which overtime

pay requirements might be thought to be responsive? The conventional view is that intensive use of a smaller set of employees, instead of reliance on a broader group of employees, has a negative externality effect on those individuals who are unable to obtain employment when a smaller group of employees is used intensively. To the extent that overtime pay requirements increase employment levels to some degree, it is possible that these requirements represent an effective response to the negative externality just noted.

B. Empirical analysis of overtime pay requirements

In an effort to determine whether overtime pay requirements are effectively undone by changes in base wages, Trejo (1991) studies differences in base wages across employees covered and not covered by the overtime pay requirements of the FLSA. The noncovered employees used in Trejo's analyses – who are comparable to covered employees in being paid on an hourly basis – include nonsupervisory agricultural workers, many transportation employees, and certain retail and services employees. (The largest group of employees not covered by the overtime pay requirements are employees who are paid on a salary rather than an hourly basis, but these individuals would, for obvious reasons, provide a weak control group for examining the effects of overtime pay requirements on covered, hourly wage employees.) Using a sample of repeated cross sections, Trejo finds that the hourly wages of covered employees are significantly lower than the hourly wages of noncovered employees. According to Trejo, this evidence provides some suggestion that overtime pay requirements are partially, although not completely, undone by adjustments in straight-time wages. Potential limits on Trejo's empirical analysis include the fact that the results are somewhat sensitive to the measure of wages used (with weekly earnings yielding results different from those just described) and the limited degree of identification

resulting from possible unobservable differences across individuals in hourly wage jobs within covered versus noncovered sectors. In contrast to Trejo, Hunt (1999), examining evidence from Germany, finds increases rather than decreases in wages in response to strengthened overtime pay requirements negotiated between unions (which are industry-wide in Germany) and employers; wages may well be less flexible in Europe than in the United States. Hunt's identification strategy has the virtue of employing both cross sectional and time series variation.

In addition to examination of whether base wages adjust to offset overtime pay requirements, empirical work has directly studied the linked question of whether workweeks longer than 40 hours in the United States are less frequent with overtime pay requirements in place. (Only with imperfect wage adjustments should such workweeks be less frequent with overtime pay requirements in place.) Costa (2000) examines changes in the frequency of overtime hours with the passage of the FLSA and finds a significant reduction in the proportion of employees working such hours. Costa also finds much greater reduction in the South – in which more employees were at the minimum wage level and, thus, could not be subjected to wage adjustments in response to overtime pay requirements – than in the North. By contrast, Trejo (2003), using as a source of identification variation over the 1970s and 1980s in the proportion of employees within an industry who are subject to the overtime pay requirements of the FLSA, finds no effect of overtime pay requirements on the frequency of workweeks longer than 40 hours in specifications that include industry time trends. However, as Trejo notes, the coefficients on coverage changes are imprecisely estimated, making it difficult to discern whether the absence of a statistically significant effect suggests no underlying effect or simply the limited power of the empirical approach. Hamermesh and Trejo (2000) study not the FLSA but a California state law expanding the set of employees covered by a strict form of overtime

pay and find significant negative effects on the level of overtime employees work. None of these studies, however, offers any evidence that, in response to a decline in long work hours, aggregate employment rises in the employment market in question – although it is obvious that a decline in workweeks longer than 40 hours is a logical predicate for such an increase. Using German data and examining the effects of industry-specific changes in overtime pay requirements, Hunt (1999) finds that, if anything, aggregate employment levels fall rather than rise in response to strengthened overtime pay requirements.

XI. Conclusion

This paper has offered economic analysis (or, at times, referred to economic analysis in the *Handbook of Labor Economics* or the *Handbook of Public Economics*) of the major topics in employment law. Topics addressed above include workplace safety mandates (section II), compensation for workplace injuries (section III), workplace privacy mandates (section IV), fringe benefits mandates (section V), targeted benefits such as mandated medical and family leave (section VI), wrongful discharge laws (section VII), unemployment insurance (section VIII), minimum wage rules (section IX), and overtime pay requirements (section X).[33] There remains much interesting work to be done on many of these topics, including the effects of some of the relatively new laws mentioned above. Moreover, while the focus of most existing employment law is on mandating particular features within the employer-employee relationship, recent legal scholarship in employment law has given increased emphasis to prospects for using "default" rather than mandatory rules. Relatively unexplored in existing work is theoretical and empirical analysis of the effects of default versus mandatory rules in the regulation of the

[33] A separate area of inquiry concerns the causes (rather than the desirability and the effects) of employment law rules. This question is analyzed by Botero et al. (2004).

employment relationships. In this and other areas, there are important potential future synergies between legal scholarship on employment law and economic analysis of this body of law.

As noted above, this paper has focused on employment law rather than labor law. However, it bears emphasis that the two fields of law do not operate in any way independently of one another. The contours of labor law, in affecting the prevalence and power of unions, may greatly affect what sorts of employment law rules are enacted and, perhaps most importantly, the degree to which employment law rules are effectively enforced against employers.[34] With respect to the importance of enforcement, it is difficult to disagree with Pound (1910, pp. 16, 34-35), who noted long ago that employment law "in action" may look quite different from employment law "on the books."

[34] For discussion of the difficulties of enforcing employment rules in a non-union context, see Jolls (2004b).

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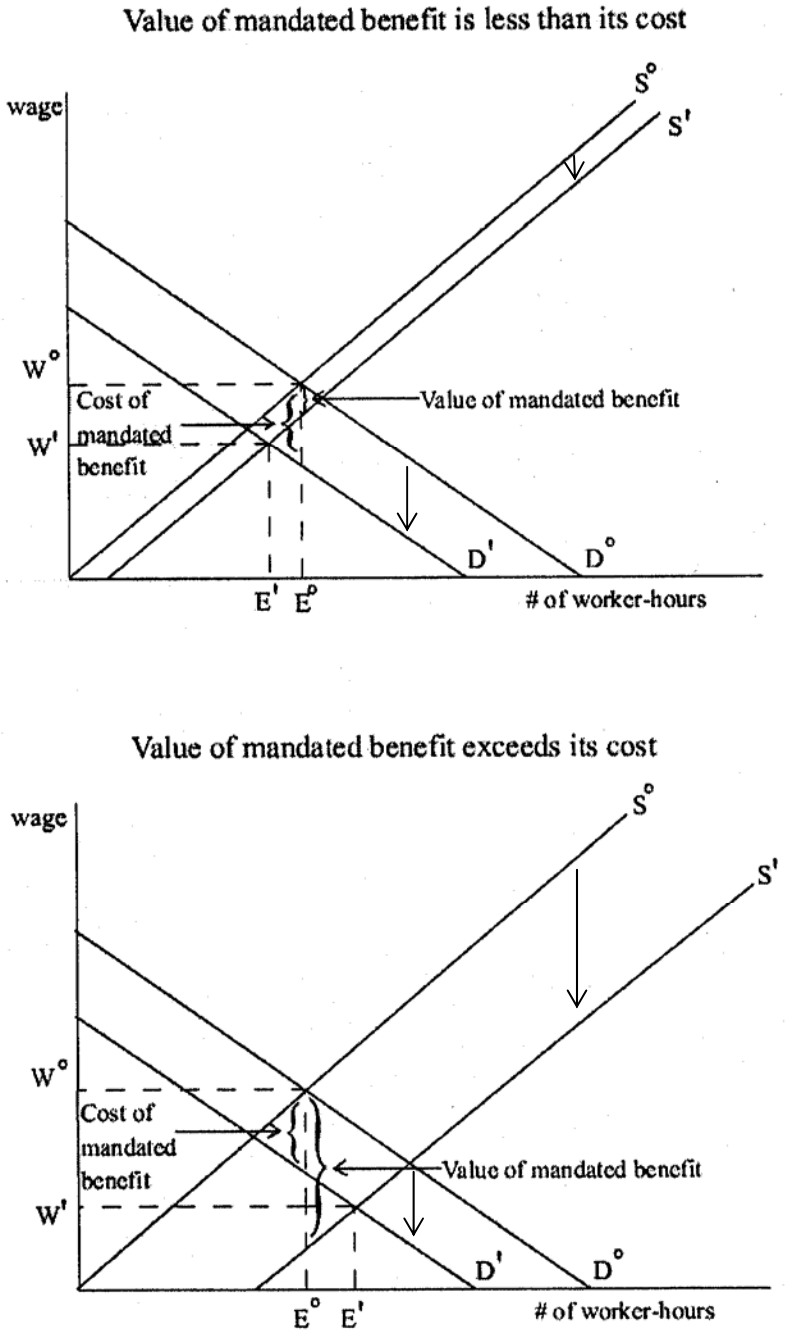
Table 1: Employees' Knowledge of Legal Rules Governing Discharge

Reason for Discharge	State	Legal Rule: Discharge is	% of Total Responses Asserting Discharge is Unlawful
Employer plans to hire another person to do the same job at a lower wage	California	Legal	81.3%
	Missouri	Legal	82.2%
	New York	Legal	86.1%
Retaliation for reporting theft by another employee to supervisor	California	Legal	80.9%
	Missouri	Legal	79.2%
	New York	Legal	81.8%
Mistaken belief that employee stole money (employee can prove mistake)	California	Legal	82.7%
	Missouri	Legal	89.4%
	New York	Legal	91.6%
Personal dislike of employee	California	Legal	88.1%
	Missouri	Legal	91.7%
	New York	Legal	90.6%

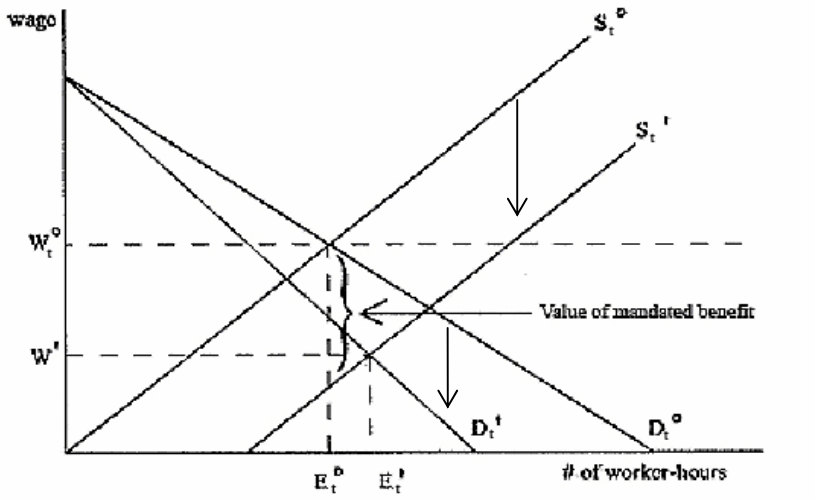
Source: Kim (1997, 1999)

Figure 1: Labor Market Effects of Legally Mandated Benefits in the Absence of Market Failure



Notes: Employees are assumed to be demanded and paid in accordance with their marginal revenue product of labor (rather than, for example, earning efficiency wages), and the mandated benefit is assumed to be a variable-cost rather than a fixed-cost one.

Figure 2: Effects of a Targeted Mandate on Wages and Employment Levels of Targeted Employees



Notes: Employees are assumed to be demanded and paid in accordance with their marginal revenue product of labor (rather than, for example, earning efficiency wages), and the mandated benefit is assumed to be a variable-cost rather than a fixed-cost one.