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Labor Market Adjustment in Europe, Japan, and the United States

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Companies in industrialized countries use a wide variety of approaches to adjust their workforce levels in response to changes in product demand and technology. Although approaches to workforce reduction vary within countries according to the industry and skill level of the workforce, large, systematic differences exist across countries. In general, American companies, whose workers have relatively weak job security, rely extensively on layoffs to effect reductions in force. Companies in some European countries and in Japan, whose workers enjoy strong job protection, rely more on alternatives to layoffs, including work sharing arrangements, attrition, and early retirement.

In this paper, I compare labor adjustment practices in European countries, Japan, and the United States; discuss the role that public policies play in influencing the adjustment process; and review evidence on the efficacy of different approaches to labor adjustment. I begin by discussing public policies in Europe, Japan, and the United States that are likely to have a significant impact on labor adjustment practices. Employment protection laws are reviewed in section I and short-time compensation and early retirement programs are described in section II. While many European countries and Japan heavily regulate layoffs, they facilitate the use of alternatives through programs that subsidize the pay of workers on short time and programs that subsidize early retirement.

Companies' use of temporary, part-time, or contract workers to increase employment flexibility is discussed in section III. Companies may use these workers, who usually are not covered by employment protection laws, to buffer their core workforce against fluctuations in product demand. These forms of employment have been rapidly expanding in many countries, and I review evidence that this growth may be partly attributed to employer demand for greater employment flexibility.

Evidence on the effects of employment protection laws and employment adjustment practices have on the operation of labor markets is reviewed in section IV. Opponents of labor market regulations fear that they will inhibit firms' ability to adjust to downturns and that they will raise unemployment by making firms reluctant to hire new workers. The evidence on these issues is mixed.
There is no simple correlation between the stringency of dismissal regulations and the unemployment rate. Moreover, in at least some countries where regulations on dismissals are accompanied by liberal short-time compensation programs, companies are able to compensate for the sluggish employment adjustment by adjusting average hours per worker more in the short run.

The efficiency of different labor adjustment strategies is discussed in the final section of the paper.

I. Employment Protection Laws

The degree of government regulation of dismissals varies greatly across countries. Government regulation of dismissals is most stringent in European countries. European countries generally require that employers provide workers with some period of notice prior to dismissal, that they provide compensation to laid-off workers under certain circumstances, and that they take additional steps in the event of a mass layoff. Although Japan requires that companies provide workers with notice prior to dismissal, Japanese dismissal legislation is less stringent than that in most European countries, leading many to conclude that it is legally easier to lay off workers in Japan than in Europe. However, Japanese courts have extended strong job protection to core workers, thus making it extremely difficult for companies to lay off permanent, full-time employees. In contrast to the situation in Europe and Japan, employers in the United States still have the right, for the most part, to hire and fire workers at will.

Opponents of employment protection laws claim that because they impose costs on firms, firms will be reluctant to hire new workers, thereby raising unemployment. It is also feared that such laws will encourage firms to hire more casual workers, such as temporary and part-time workers, who may not be covered by the legislation, thus leading to a highly segmented market characterized by protected and unprotected workers.
Proponents of employment protection laws have justified them on several grounds. They have been viewed as a vehicle for deterring unfair dismissal, thus promoting equity, and as a vehicle for providing labor with more clout, thus correcting a perceived imbalance in power between employers and workers. Moreover, proponents have argued that various market imperfections are likely to exist, warranting some government regulation. For example, because workers and employers are unlikely to take into account the full costs of layoffs on a community, too many layoffs occur, justifying some government regulation to deter excess reductions in force. In addition, because employers are likely to have better information than workers about the probability and timing of layoffs and are likely to have incentives to withhold this information from workers, some government regulation is justified to correct this asymmetry in information and promote efficient labor market transactions.¹

Below I discuss key provisions of employment protection laws in various European countries, Japan, and the United States. Table 1 summarizes selected provisions in these countries.

Europe

Most European countries require that dismissals be justified on social or economic grounds. All countries also require that employers provide workers with notice prior to dismissal, except in cases where the individual is dismissed for serious misconduct. The amount of mandatory notice varies with an individual’s tenure with the company, and, in some countries, according to whether an individual is a blue-collar or white-collar worker. For example, in Germany mandatory notice periods for individuals vary from two weeks to six months, depending upon a worker’s seniority and age. In France, employers must provide one month’s notice for workers with at least six months’ service, two months’ notice for workers with at least two years’ service, and three months’ notice for persons in middle management positions.

¹OECD (1986) and Houseman (1990) contain expanded discussions of the arguments for and against employment protection laws.
<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th>France</th>
<th>Belgium</th>
<th>U.K.</th>
<th>Japan</th>
<th>U.S.</th>
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</thead>
<tbody>
<tr>
<td>Social or economic</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Only through case law</td>
<td>No</td>
</tr>
<tr>
<td>justification of dismissal</td>
<td>required</td>
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<tr>
<td>Period of notice to</td>
<td>2 weeks - 6 months, depending on seniority</td>
<td>1-2 months, depending on seniority</td>
<td>Blue collar: 28-56 days, depending on seniority</td>
<td>1-12 weeks, depending on seniority</td>
<td>Legislated maximum of one month's notice</td>
<td>No general notification requirements</td>
</tr>
<tr>
<td>affected individuals</td>
<td></td>
<td></td>
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<tr>
<td>Definition of Collective</td>
<td>Approximately 20% of work force over a 30-day period, depending on establishment size</td>
<td>2 or more employees over a 30-day period. More stringent regulations apply if 10 or more dismissed</td>
<td>Approximately 10% of work force over a 60-day period, depending on establishment size</td>
<td>Approximately 10% of work force (30 or more workers in large establishments) over a 30-day period</td>
<td>More than 30 permanent regular employees within a month</td>
<td>Approximately 1/3 of work force over a 30-day period, depending on establishment size</td>
</tr>
<tr>
<td>Dismissal</td>
<td></td>
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<tr>
<td>Notice and consultation</td>
<td>Obligation to inform and consult with worker representatives. Local employment office must be informed of dismissal. May delay dismissal for up to 2 months</td>
<td>Obligation to inform and consult with worker representatives. Labor inspector must be informed of dismissal of 10 or more workers and dismissal may take place only after specified waiting period.</td>
<td>Obligation to inform and consult with worker representatives. Government must be informed of dismissal. Waiting period of 30 days following notification to government. Waiting period may be extended to 60 days.</td>
<td>Obligation to notify labor authorities. Negotiation or consultation with trade unions usually required by courts</td>
<td>Obligation to give workers and state and local government officials 60 days advance notice.</td>
<td>Cnection &amp; payment requirements.</td>
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<td>requirements in event of</td>
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<tr>
<td>collective dismissal</td>
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<tr>
<td>Statutory severance</td>
<td>No, but social plan must be negotiated between works council and management in event of a collective dismissal.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>payments</td>
<td></td>
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Table 1
Summary of Selected Provisions of Dismissal Law in Europe, Japan, and the United States
In addition to the above requirements, which apply to all individual dismissals, European labor law typically requires that employers follow certain other procedures in the event of a mass layoff. For example, by European Union directive, employers in all EU countries must consult with employee representatives to discuss possible alternatives to layoffs or measures to alleviate their impact. Employers in all EU countries also must notify labor market authorities in the event of a mass layoff. Employers must provide employee representatives and labor market authorities with information concerning the number and timing of dismissals and the reasons for dismissals, and wait at least 30 days prior to implementing the layoffs. In addition to the information and notification requirements, administrative approval of mass layoffs is mandated in the Netherlands, Greece, Portugal and Spain.

The definition of a collective dismissal, and hence the threshold triggering these additional requirements, varies from country to country. A collective dismissal is defined as the dismissal of just two or more persons over a 30-day period in France. In Germany, it is approximately 20 percent of the workforce over a 30-day period, depending on the size of the establishment. In large establishments, the threshold is the dismissal of 60 or more workers over a 30-day period. In Belgium, a collective dismissal is defined as the layoff of approximately 10 percent of the workforce over a 30-day period, depending on the size of the establishment.

Many European countries provide for statutory compensation to dismissed workers under certain circumstances. For example, France requires that employers pay 1/10th of a month’s pay per year of service plus 1/15 of a month’s pay for each year over 10 years of service for all individuals dismissed. The United Kingdom also sets statutory payments for all dismissals for economic reasons. These severance payments are determined by a formula based on an individual’s age and years of service. Although German law stipulates no statutory compensation to dismissed workers, in cases of collective dismissal at an establishment normally employing more than twenty workers, employers and works councils must negotiate a social plan that provides for compensation to workers who lose their
job. In the event that the two parties cannot agree on a social plan, the law provides for binding arbitration. In a sample of social plans negotiated between 1980 and 1985, the median settlement was between 10,000 and 15,000 DM per recipient, or about 15 to 25 weeks of pay for a person with average blue-collar earnings (Abraham and Houseman 1993, pp. 21-2).

In addition to regulating dismissals, many European countries regulate employment on fixed-term contracts. Without such regulation employers could circumvent notice and severance payment requirements by hiring workers on fixed-term contracts and repeatedly renewing these contracts. Among the twelve European Union countries only three—Denmark, Ireland, and the United Kingdom—impose no restrictions on the use of fixed-term contracts, and these countries have relatively weak employment protection laws (Commission of the European Communities 1993, p. 176).

A number of European countries have experienced high and persistent unemployment since the 1980's. Many have argued that regulation, including the regulation of dismissals, has been partly to blame for the sharp increase in unemployment. In response to pressure from business, governments in several European countries relaxed restrictions on dismissals and, perhaps more importantly, liberalized the use of fixed-term contracts, thus enabling businesses to circumvent dismissal regulations. In 1986 the French government eliminated the requirement that all dismissals receive government authorization. Legislation passed in Germany in 1985 significantly reduced restrictions on the use of fixed-term contracts, raised the thresholds defining a collective dismissal, and gave new firms a four-year exemption from the social plan requirement. The British government extended the qualifying period for unfair dismissals from 26 weeks to 105 weeks. The governments in Spain and Portugal,

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2German works councils are composed of employee representatives and are officially independent of trade unions.
which have among the most stringent regulations on dismissals of permanent employees, liberalized the use of fixed-term contracts.³

**Japan**

Japanese statutes provide few restrictions on dismissals. The relevant statutes, while specifying a period of notice, do not require that the employer give any justification for terminating an individual. However, a large and complex body of case law governing dismissals has evolved over the years.⁴ Since the 1950's, the courts have ruled that even when an employer has provided the required notice, it must have some compelling reason or just cause for dismissing the individual. In practice, courts have ruled dismissals of individuals invalid unless serious misconduct by the worker is shown. In cases of economic dismissals, courts have ruled that the employer must take every step to avoid dismissals, such as eliminating overtime, stopping the recruitment of temporary workers, and transferring workers to related enterprises. In the event of a mass layoff, defined as the dismissal of more than 30 workers within a month, employers must notify labor authorities. Courts also generally require that employers negotiate or consult with trade unions prior to a mass layoff.

According to Matsuda (1992) court decisions concerning dismissal protection of part-time workers have been contradictory. Some courts have ruled that during economic downturns part-time workers should be the first to be dismissed, while others have ruled that objective and social criteria used to determine layoffs should be applied equally to full-time and part-time workers. In practice, however, it is generally understood among management, unions, and workers that part-time workers have little job security.

³For a more extensive discussion of the changes to employment protection laws in EU countries, see Commission of the European Communities (1993) pp. 177-8.

⁴The following discussion of dismissal law in Japan draws heavily on descriptions in Matsuda (1992) and Schregle (1993).
Relative to Americans and Europeans, Japanese resolve few personal disputes through the legal system. One might conclude from this fact that dismissal law is of limited relevance to what happens in practice. Schregle (1993), however, argues that the court decisions reflect the strong social value Japanese place on job security.

As in Europe, Japanese employers may circumvent restrictions on dismissing regular, full-time employees by hiring workers on temporary contract and repeatedly renewing their contracts. In contrast to most European countries, Japan places no restrictions on the length of a fixed-term contract and the number of times it may be renewed if the temporary worker is hired directly by the company. However, Japan does regulate the use of workers hired through temporary help agencies. Contracts of so-called dispatched workers may be renewed only three times. In addition, dispatched workers are supposed to possess special skills that the company has difficulty finding in regular workers. Temporary help agencies, therefore, are only allowed to place workers with certain skills, though the list of skills is deliberately left quite broad.

The United States

In contrast to the situation in Europe and Japan, there is little regulation of dismissals in the United States. Advance notice provisions were first enacted into U.S. law in 1988 and took effect in 1989. The law requires that employers give workers and state and local government officials sixty days' advance notice before a mass layoff or plant closure. A mass layoff is defined as a layoff of at least one-third of the workforce at a single site over a 30-day period or a situation in which at least one-third of the workers have their hours reduced by at least 50 percent for six months. At least 50 workers must be affected, and so small establishments are exempted from the advance notice requirement. Advance notice requirements also apply if 500 or more workers are affected, even if this number constitutes less than one third of an establishment's workforce.
The U.S. advance notice law, which is considerably weaker than advance notice laws found in Europe and Japan, has had little effect on private sector layoff practices, however. According to a recent study, three-quarters of all companies that appeared to meet the criteria requiring advance notice either failed to file notice or gave less than 60 days' notice (U.S. General Accounting Office 1993). In most cases, then, companies either slip through the law's large loopholes or fail to comply with the law. Moreover, U.S. law does not require that companies consult with worker representatives prior to mass layoffs or provide compensation to affected workers—provisions common in Europe.

II. Short-Time Work and Early Retirement

Employment protection laws may limit employers' ability to reduce workforce levels during downturns in demand. Even in countries with relatively weak employment protection laws, employers often try to increase employee commitment by providing workers with explicit or implicit job guarantees. Companies may reduce labor input without resorting to layoffs by reducing the hours that workers work or by offering job buyouts or early retirement incentives. Although many countries discourage layoffs through employment protection laws, they help subsidize the costs of using such alternatives.

For example, most European countries and Japan offer benefits to workers whose hours of work have been reduced for economic reasons. Among EU countries, only the United Kingdom does not offer short-time benefits. In the United States short-time compensation programs have been introduced recently by 17 states. Although short-time compensation schemes vary from country to country, in general workers on short time receive pro-rated benefits for the reduction in hours below a

\[\text{\footnotesize \cite{Abraham and Houseman (1993)}}\]
specified level. For example, in Germany, where short-time compensation is part of the unemployment insurance system, workers receive pro-rated unemployment insurance benefits for the reduction in hours worked. Employees who, say, work four days per week instead of five receive 80 percent of their pay plus 20 percent of the unemployment insurance benefit to which they would be entitled if wholly unemployed. German firms applying for short-time benefits on behalf of their employees must show that they have taken other measures, such as reducing overtime and rebuilding inventories, to accommodate the fall in demand. Short-time benefits are payable for up to six months under ordinary circumstances and for up to twelve months to employees in establishments in depressed industries or regions.

In France the cost of providing benefits to workers on short time is shared by companies and the government. The government pays out an hourly benefit equal to about 65 percent of the minimum wage for reductions in hours below 39 hours per week, and companies, by the terms of a national inter-industry agreement, raise the short-time benefit amount to 50 percent of the worker's gross wage for reductions in hours below 36 per week, subject to a ceiling. To encourage the use of short time, the state typically reimburses the employer for between 50 and 80 percent of the employer's share of the benefit payment. Benefits may be paid for up to 500 hours per year.

Belgium has one of the most liberal short-time compensation programs. Short-time compensation benefits are paid by the government from the regular unemployment insurance fund and replace 55 to 60 percent of a blue-collar worker's net wages. Blue-collar workers may collect benefits indefinitely provided they work a minimum of three days per week or every other week if on a system of rotating layoffs and if the government does not disapprove the payment. Belgian white-collar workers are guaranteed full pay during slack periods and so generally are not eligible for short-time benefits.
Japan also has a quite liberal short-time compensation program. This system, which only compensates for full days of work stoppage, is generous for workers, who often receive full compensation for the days they do not work.\(^6\)

A company also may effect workforce reductions by lowering the age of retirement. Legal protection against layoff tends to be the strongest for older workers in European countries, and hence early retirement measures have been a popular mechanism for reducing workforce levels and opening up jobs for younger workers. Many European countries have developed programs that help subsidize the cost of early retirement to companies.

For example, the German government implicitly subsidizes early retirement through the unemployment insurance system. Workers age 60 who have been unemployed for at least 52 weeks out of the last year and a half may start receiving their government pension. Under the German unemployment insurance system, all unemployed workers may receive tax-free benefits that replace about 68 percent (63 percent for workers with no dependents) of their previous income for one year. After that period of time unemployment assistance is means tested and qualified individuals receive benefits at a reduced rate. In the mid-1980's the unemployment insurance laws were changed to allow older workers to collect non-means tested unemployment benefits at the higher (68 or 63 percent) rate for a longer period of time. Under current law persons age 54 and over may collect these unemployment benefits for 32 months. Companies use this system to help subsidize early retirement by officially dismissing workers as young as age 57 and 4 months. These workers then receive unemployment insurance, possibly supplemented by a company payment, for up to thirty-two months, and at age 60 they may begin receiving their government pension.

\(^6\)For descriptions of short-time compensation programs in Europe and Japan see Van Audenrode (1994) and Abraham and Houseman (1994).
The practice of early retirement is particularly common in Japan. Although large and medium-sized Japanese companies typically provide strong job security for regular workers, they usually require regular employees to retire early, often as young as age 55. These workers may then be reemployed as contract workers by their former company, without job security, or they may find a job, usually with a smaller company, at substantially lower wages. By varying the age of early retirement Japanese companies may increase the employment flexibility of their regular workforce.

Large Japanese companies also commonly transfer workers from an operation requiring workforce reductions to a subsidiary operation. This practice became popular during the first oil price shock in the mid-1970's as a means of avoiding mass layoffs.

III. Core versus Peripheral Workers

Employers can reduce labor input without layoffs by implementing short-time work schemes, encouraging older workers to retire early, and transferring excess workers to subsidiary operations or to positions vacated by those who retire or quit. Employers also may choose to maintain job security for only a core set of workers and lay off part-time, temporary, or subcontract workers, who usually are not subject to employment protection laws and are not given job guarantees by their employers. Japanese companies are perhaps best known for their "core versus peripheral" employment strategies. However, the use of temporary and part-time workers, in part to increase employment flexibility, is widespread in all countries.

The use of temporary and part-time workers has grown in virtually all industrialized countries in recent years, and evidence suggests that at least some of the growth may be attributed to employer demand for these types of workers. The growth in temporary employment has been particularly dramatic in certain European countries that have strong employment protection laws but that recently relaxed restrictions on the use of fixed-term contracts. In Spain, for example, the share of employees
in temporary jobs increased from 16 percent in 1987 to 32 percent in 1991; in France the share of employees in temporary jobs grew from 3 percent in 1983 to 10 percent in 1991 (Commission of the European Communities 1993, p. 181).

In Japan the share of paid employment that is temporary has remained fairly stable in recent years at about 11 percent. Studies using aggregate industry data show that the responsiveness of temporary employment to output changes is much greater than that of regular employment in Japan, suggesting that temporary workers play a role in buffering regular workers from demand fluctuations (Hashimoto 1990; Houseman and Osawa 1994).

There is little information on temporary workers hired directly by companies in the United States. Employment in the help supply services industry, which is composed primarily of workers in temporary help agencies, has grown rapidly in recent years, albeit from a small base. From 1982 to 1993 employment in the help supply services industry increased from about 0.5 percent to 1.5 percent of non-farm payroll employment in the United States. Employment of temporary workers is much more cyclically sensitive than is aggregate employment, indicating that temporary workers help to buffer regular workers from fluctuations in demand in the United States as well.

Employers also may have incentives to increase their hiring of part-time workers to lower labor costs and increase employment flexibility. Part-time workers, who usually receive fewer fringe benefits than full-time workers, often are exempted from social security and other payroll taxes. In addition, part-time workers may be exempted from employment protection laws. A 1985 survey of 72 large firms in the United Kingdom found that 90 percent recently had changed their staffing strategies to increase numerical employment flexibility. Three-quarters of the firms surveyed increased their use of part-time workers and 42 percent increased their use of temporary workers. In Japan, where the

7 For a discussion of this issue see Houseman (1994).

8 For a discussion of the study’s results, see OECD (1986) p. 115.
share of employment that is part-time has grown dramatically from 11 percent in 1982 to 16 percent in 1992, part-time workers, along with temporary workers, have been used to help buffer regular workers from fluctuations in demand.\textsuperscript{9}

IV. Empirical Evidence on Employment Adjustment

As seen in the above discussion, very different labor adjustment strategies exist across countries. In the United States, it is relatively easy to dismiss workers. In Europe and Japan, employment protection laws make it more difficult or costly to dismiss even blue-collar workers. Companies in these countries make greater use of other mechanisms to adjust labor input to fluctuations in demand. Although employment protection laws make layoffs more costly for companies, certain government programs in Europe and Japan help subsidize the cost of using alternatives to layoffs. Short-time compensation programs in European countries and Japan subsidize work-sharing schemes, and most European countries have implemented programs to subsidize early retirement as a mechanism to avert layoffs. In addition, temporary and part-time workers, who do not receive the same employment protection by law or job guarantees from companies, are widely used in Japan to increase employment flexibility. The use of temporary workers has increased in European countries where regulation of fixed-term contracts has been relaxed.

What effects do the different adjustment strategies have on the operation of the labor market? If employment protection laws are very costly to companies, one might expect that they would inhibit companies from hiring new workers, thereby raising unemployment. However, the existence of government programs that subsidize alternatives to layoff, such as short-time work and early retirement, should reduce companies' costs of adjusting labor and thus mitigate any adverse

\textsuperscript{9}For documentation of this fact see Houseman and Osawa (1994).
One would also expect that employment protection laws would result in sluggish adjustment of employment levels to demand changes. Although one might expect slower adjustment of employment levels in countries with stronger employment protection laws, it does not necessarily follow that adjustment of total labor input is slower. We might expect adjustment of average hours per worker to be greater in these countries, both because of the higher costs of adjusting employment levels and because of the existence of short-time compensation programs.

The conclusions of studies that have examined the effects of employment protection laws on unemployment have been mixed. In a cross-country comparison Lazear (1990) found a positive relationship between the level of mandatory severance pay and a country's unemployment rate, controlling for other factors. One OECD study concluded, however, that little is known about the relationship between employment protection laws and unemployment, citing the fact that countries with the most "efficient" labor markets include both highly regulated economies, such as Germany, and highly unregulated economies, such as the United States.¹⁰

Some studies have looked for the effect of changes in employment protection laws on changes in the patterns of employment and hours adjustment within a country. Nickell (1979) examined the impact of the strengthening of employment protection laws in the United Kingdom. He found that while the responsiveness of employment to output changes slowed, the responsiveness of average hours to output increased over time, a fact that he attributed to more stringent employment protection laws. Another study looked at the effects of changes in employment protection laws in France, Germany, and Belgium on employment and hours adjustment and found little evidence to suggest that these changes substantially affected adjustment practices (Abraham and Houseman 1994).

¹⁰See OECD (1986) p. 123. The study also counted Japan as an efficient, unregulated market. As noted above, although Japan's employment protection laws are not particularly stringent by European standards, case law in Japan has made it extremely difficult to lay off regular workers.
Several studies have compared the adjustment of employment and hours in response to demand changes across countries. Collectively these studies show that the adjustment of employment levels to demand shocks in European countries and in Japan is significantly slower than that in the United States. In a comparison of employment adjustment in selected European countries, Japan, Canada, and the United States, Hotz-Hart (1987) found that employment adjustment is faster in France, Germany, and the United Kingdom than it is in Japan, but that employment adjustment is significantly slower in these European countries than in Canada and the United States.

These findings on the relative speeds of employment adjustment in Europe, Japan, and the United States are not surprising. The interesting empirical issue is whether European and Japanese companies compensate for the slower employment adjustment by adjusting average hours per worker more. Empirical evidence on this issue is mixed. One study of the German, French and U.S. steel industries found that the adjustment of average hours in Germany and France usually did not fully compensate for the lack of employment adjustment, and thus that the adjustment of total hours adjustment was generally less in these countries than in the United States (Houseman, 1988). A study of the German and American automobile industry, however, found only slightly slower total hours adjustment in Germany than in the United States (Köhler and Sengenberger, 1983). Two studies of adjustment in eleven manufacturing industries in Germany and the United States, found that cross-country differences in total hours adjustment were insignificantly different in most industries (Abraham and Houseman 1993, Houseman and Abraham 1995). Another comparison of adjustment in

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manufacturing industries in Germany, Belgium, and the United States, found that while total hours adjustment was greater in the United States than in Germany and Belgium for aggregate manufacturing, cross-country differences in adjustment were small in most industries, suggesting that the results for aggregate manufacturing were being driven by the sluggish adjustment in selected industries (Abraham and Houseman 1994).

Studies have generally found that both employment and total hours adjustment is significantly slower in Japan than in other industrialized countries. In comparing adjustment in Japan and the United States, Hashimoto and Raisin (1988) and Abraham and Houseman (1989) found significantly slower adjustment of total hours in Japan. Van Audenrode (1994) found substantially slower adjustment of total hours in Japan compared with that in the United States and several European countries.

To illustrate differences in employment and hours adjustment patterns across countries, I present some estimated elasticities of production employment, average production worker hours, and total production worker hours with respect to output for German, Japanese and U.S. manufacturing. These elasticities are estimated using the following finite distributed lag model:

\[ \ln L_t = \alpha + \sum_{i=0}^{4} B_i \ln S_{t-i} + \theta_1 t + \theta_2 t^2 + \varepsilon_t \]

where \( L \) represents production employment, average production worker hours, or total production worker hours; \( S \) is deflated shipments; \( t \) is a time trend term; and \( \varepsilon \) is an error term, which is assumed to follow a first-order autoregressive process. I use quarterly data to estimate these equations, and thus the models allow for shipments to affect labor input with a lag of up to one year. For example, the sum of \( \beta_0 \) to \( \beta_4 \) captures the cumulative effect over a year of a one time change in shipments on employment or hours. All data are seasonally adjusted.13

13The German data on production employment, production hours, and shipments come from a monthly employer survey conducted by the Federal Statistical Office (Statistisches Bundesamt).
Table 2 reports the results of these employment and hours elasticities for German, Japanese, and U.S. manufacturing over the 1973-90 period. The current quarter employment elasticity estimate for the United States, for example, implies that a one percent reduction in shipments would lead to a .560 percent reduction in employment in the quarter contemporaneous to the output shock. Assuming the shock to shipments persists, the estimates imply that a one percent reduction in shipments would result in a 1.033 percent decline in employment four quarters following the initial shock in the United States.

The adjustment of employment is much greater in the United States than that in either Germany or Japan across all time horizons. The current quarter elasticity estimate is .560 for the United States compared to .038 for Germany and .032 for Japan. Even after four quarters, the employment elasticity for the United States (1.033) is much greater than that for Germany or Japan (.390 and .296, respectively).

The results also suggest that, at least immediately following a shock to shipments, average hours are more responsive to changes in output in Germany and Japan than in the United States, although this greater average hours adjustment does not fully compensate for the lack of employment adjustment. For aggregate manufacturing the adjustment of total labor input is slower in Germany and Japan than in the United States. As noted above, however, research suggests that the adjustment of total hours is not significantly different in Germany and the United States for a majority of manufacturing industries.

Japanese production hours data come from a monthly employer survey conducted by the Ministry of Labor. Because of problems with the Japanese employment series, we used accessions and separations data from the same survey to construct an employment series over the period. The Japanese labor data are for establishments with 30 or more workers. The Japanese shipments data is an index constructed by MITI. U.S. production employment and production hours data come from the Bureau of Labor Statistics' monthly Employment, Payroll, and Hours survey and U.S. shipments data come from the Bureau of Census's Manufacturers' Shipments, Inventories, and Orders data set. More detailed descriptions of the data used here may be found in Abraham and Houseman (1989, 1993).
Table 2

Employment and Hours Adjustment in U.S., German, and Japanese Manufacturing, 1973-90*

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<td>0.984</td>
<td>1.046</td>
<td>1.033</td>
</tr>
<tr>
<td></td>
<td>(0.045)</td>
<td>(0.052)</td>
<td>(0.059)</td>
<td>(0.063)</td>
<td>(0.067)</td>
</tr>
<tr>
<td>Germany</td>
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<td>0.114</td>
<td>0.215</td>
<td>0.320</td>
<td>0.390</td>
</tr>
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<td>(0.022)</td>
<td>(0.040)</td>
<td>(0.055)</td>
<td>(0.068)</td>
<td>(0.077)</td>
</tr>
<tr>
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<td>0.132</td>
<td>0.200</td>
<td>0.257</td>
<td>0.296</td>
</tr>
<tr>
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<td>(0.034)</td>
<td>(0.037)</td>
<td>(0.040)</td>
<td>(0.041)</td>
<td>(0.044)</td>
</tr>
</tbody>
</table>

|          |         |             |              |                |               |
| **Average Hours** |         |             |              |                |               |
| U.S.     | 0.218   | 0.241       | 0.194        | 0.149          | 0.071         |
|          | (0.033) | (0.037)     | (0.041)      | (0.044)        | (0.044)       |
| Germany  | 0.308   | 0.304       | 0.221        | 0.205          | 0.175         |
|          | (0.038) | (0.061)     | (0.076)      | (0.083)        | (0.090)       |
| Japan    | 0.290   | 0.203       | 0.088        | -0.051         | -0.146        |
|          | (0.085) | (0.093)     | (0.100)      | (0.103)        | (0.109)       |

|          |         |             |              |                |               |
| **Total Hours** |         |             |              |                |               |
| U.S.     | 0.786   | 1.123       | 1.191        | 1.212          | 1.124         |
|          | (0.061) | (0.069)     | (0.078)      | (0.083)        | (0.086)       |
| Germany  | 0.372   | 0.481       | 0.545        | 0.681          | 0.760         |
|          | (0.042) | (0.073)     | (0.098)      | (0.116)        | (0.130)       |
| Japan    | 0.329   | 0.342       | 0.293        | 0.206          | 0.142         |
|          | (0.076) | (0.082)     | (0.087)      | (0.088)        | (0.091)       |

* Standard errors are reported in parentheses.
The extremely sluggish employment adjustment in Japan masks significant differences in employment adjustment across groups of workers. The employment elasticity for female production workers is substantially greater than that for male production workers in Japanese manufacturing, reflecting the fact that women are disproportionately represented among part-time and temporary workers, who have little job security in Japan (Houseman and Abraham, 1993). Figure 1, which plots the logarithm of production, regular employment and temporary employment in Japanese manufacturing, illustrates the greater responsiveness of temporary employment to output changes compared to that of regular employment. Temporary employment declined sharply during the deep recession in the mid-1970's and increased sharply during the subsequent recovery. During the most recent recession temporary employment has trended downward. In contrast, regular employment displayed little fluctuation throughout the period.

Several studies have shown that liberal short-time compensation programs play an important role in facilitating hours adjustment in lieu of layoffs and thereby in mitigating the adverse effects of employment protection laws (Abraham and Houseman 1993, 1994, Van Audenrode, 1994). Figure 2, which depicts the percent of workers in industry in the former West Germany on short time over the 1970-89 period, is suggestive of the importance of short-time work in the adjustment process in that country. During good years, few workers are on short time. During the recessions in 1974 and 1983, the share of workers on short time rose to about 7 percent. More formal analysis shows that the fluctuation in short-time hours accounts for over half of the initial adjustment of total production worker hours to changes in output in the German manufacturing sector (Abraham and Houseman 1993).

More generally, countries with stringent employment protection laws often have programs that lower the cost to companies of adjusting labor using alternatives to layoffs, such as short-time compensation and early retirement. A recent study by the European Commission found a strong
Figure 1
Production, Regular Employment and Temporary Employment in Japanese Manufacturing

Figure 2
Short-Time Work in German Industry, 1970-89

Percent of workers on short time

G E R M - S T . D R W  A U G 9 4  C Z T
positive correlation between the stringency of employment protection laws and public expenditures to support employment adjustment among the four largest member states (France, Germany, Italy, and the United Kingdom). Expenditures on employment adjustment measures in France exceeded 2 percent of gross domestic product (GDP) over the 1985-88 period. France made particularly large expenditures in support of enterprises undergoing restructuring, primarily in the form of support for early retirement. At the other extreme, expenditures on employment adjustment measures over this period were just 0.5 percent of GDP in the United Kingdom, which has no program to support short-time working. The report concluded that "the patterns of labour market expenditure in the four largest Member States tend to indicate that the constraints imposed on firms by employment protection regulations are in large measure offset by spending on employment adjustment measures" (Commission of the European Communities 1993, p. 183).

The effects of employment protection laws on labor adjustment may not be so neutral, however, in countries that have few programs to assist companies to use alternatives to layoffs. The same Commission report noted that in member countries where social protection systems are less well developed, notably among Southern member states, stringent employment protection laws have been justified on the grounds that companies should provide such social support by retaining workers during downturns (Commission of the European Communities 1993, p. 184). Without accompanying government programs to support labor adjustment, however, such laws are likely to reduce labor market flexibility, inhibit the hiring of regular workers, and thus raise unemployment or increase the employment of casual workers not covered by protective legislation.

V. Conclusion

The mechanisms that companies use to adjust labor input to slack demand and to the introduction of new technologies differ substantially across countries. Companies in countries such as
the United States and the United Kingdom typically rely extensively on layoffs to reduce labor input. In contrast, companies in other European countries and in Japan rely much more on short-time work, attrition, early retirement, internal transfers, and layoffs among peripheral workers to effect labor reductions.

It is often presumed that government policy is largely responsible for differences in adjustment strategies across countries. Employment protection laws, for example, are widely assumed to constrain employer behavior. However, it is likely that such government regulation frequently represents the codification of what is generally regarded by the private sector as best practice.\textsuperscript{14}

Even if government policies by themselves do not cause the large differences in adjustment practices that we observe across countries, they certainly reinforce these differences. Legal restrictions on dismissal make it more difficult and costly to adjust through layoffs in some European countries and Japan than in the United States. Conversely, short-time compensation programs and subsidies for early retirement make it more attractive for companies in some European countries and in Japan to use alternatives to layoffs.

There is little agreement among economists and policymakers concerning the relative efficiency of the various labor market regulations and associated adjustment strategies. While some argue that any government regulation of dismissals results in economic distortions that reduce labor market efficiency, others argue that market imperfections result in too many layoffs and justify some government intervention. It is likely that regulations in some countries have been excessive and have adversely affected the operation of the labor market. Some European countries have heavily regulated dismissals without providing programs to assist companies adjust through alternatives to layoff. Such policies may have contributed to high unemployment and the rapid growth of temporary and part-time

\textsuperscript{14}For example, in one study (Abraham and Houseman 1993) we show that even before major restrictions were placed on mass layoffs in Germany, employment adjustment was extremely sluggish.
employment in these countries. However, studies have shown that in at least some European countries in which policies to promote alternatives to layoff, such as short-time work, accompany regulation of dismissals, greater adjustment of average hours per worker in the short run largely compensates for slower adjustment of employment, and companies in these European countries adjust total labor input about as quickly as those in the United States.

Moreover, companies may realize certain long-run benefits by providing their workforce with strong job security. Companies that offer strong job security are likely to benefit from a more stable workforce and experience lower turnover costs. Companies may also meet less resistance to the introduction of new technologies if their workers do not feel their jobs are jeopardized by the change. Finally, although a discussion of internal labor markets is beyond the scope of the present paper, it should be noted that a number of researchers have argued that in certain countries, including Germany and Japan, strong job security has facilitated the development of a more flexible internal labor market, characterized by broad job categories, a broadly trained workforce, and hence easy redeployment of workers within the firm. Such internal labor market flexibility, it is argued, enables companies to respond more effectively to changes in product demand and technology.\(^{15}\)

References


