Introduction

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1

Introduction

Competing in the global marketplace implies that a national economy will be in a constant state of change, with new commodities and technologies supplanting old commodities and technologies. At the same time, the mobility of capital increasingly obliges workers in highly industrialized nations to compete with willing and cheap labor in developing countries around the world. While contributing greatly to economic well-being, this process of change generates each year large numbers of enterprise closures and business restructurings, each associated with the permanent layoffs of experienced workers. The term “displaced” is applied to these unemployed workers because they face a low probability of being recalled to their old jobs or perhaps even to jobs in their old industries. Unfortunately, many displaced workers who received high wages to perform the repetitive tasks required by mass production technologies find, after a period of job search, that their reemployment options are restricted to less-well-paying jobs. Displaced workers typically differ from other unemployed workers by the continuity of their prelayoff work experience, the duration of their postlayoff joblessness, and their lower wages upon reemployment.

The availability of the first biannual Displaced Worker Survey (DWS) in 1984 gave researchers and policy makers a much better handle on the number and characteristics of displaced American workers. In these data, displaced workers are distinguished from other unemployed workers by affirmative answers to a question asking whether within the last five years the respondent was separated from his or her job because of a plant closing, an employer going out of business, or a layoff from which the respondent was not recalled. Using three years of prelayoff job tenure as the cutoff point to further distinguish displaced workers, the benchmark analysis by Flaim and Sehgal (1985) calculates a population of 5.1 million displaced workers during the January 1979 to January 1984 period.

More recent estimates of the size of the displaced worker population are provided by Ross and Smith (1993). Merging the five DWS data sets available for the 1984-92 period and using a slightly different definition of the displaced, they estimate that on average two million
full-time workers were displaced from their jobs each year during the 1980s. Not surprisingly, the annual number of displaced workers is found to vary with the overall state of the economy. In the recession year of 1982, 2.7 million workers—about 1 of every 25 full-time wage and salary workers—lost their jobs and were not recalled. But even during the relatively strong labor market existing in 1988, 1.5 million workers—about 1 in every 50 full-time workers—are estimated to have permanently lost their jobs.

The governments of most industrialized nations, including that of the United States, have committed themselves to help shoulder the adjustment costs borne by displaced workers by providing an arsenal of both active and passive labor market programs. Active labor market programs are basically intended to shorten the duration of postdisplacement unemployment spells and to restore long-run earnings potential. These programs typically include job search assistance to sharpen job search techniques that may have grown dull from disuse, and retraining in job skills to enable workers to qualify for jobs opening up in growing industries. In contrast, passive labor market measures provide income support to prevent unemployed workers and their families from slipping into poverty. Thus passive labor market programs are often collectively referred to as the "social safety net." Included among passive programs are unemployment compensation, pensions and early retirement benefits, continuation of health insurance, and welfare benefits.

During the 1980s, concern over an increasing incidence of long-term unemployment as a fraction of total unemployment led many industrialized nations to shift their mixes of public expenditures toward active and away from passive labor market programs. The Organization for Economic Cooperation and Development (OECD) has been instrumental in leading policy makers in member countries to redirect their focus toward active labor market policies. In the United States, events occurring during the first few years of the 1990s dramatically heightened the attention paid by policy makers to the needs of displaced workers. These events include:

• job losses in the defense sector—both federal civilian and military personnel and private sector defense industry workers—associated with large-scale cutbacks in the defense budget;
• concern that the implementation of the North American Free Trade Agreement (NAFTA) would cause U.S. producers to shift operations to other countries, thereby eliminating domestic jobs; and

• the perception that the corporate restructuring ongoing during the 1990-91 recession and the years immediately following is, for the first time, substantially increasing joblessness among white-collar workers in services as well as blue-collar workers in manufacturing (see, for example, Karr 1991).³

This heightened attention to the needs of the displaced was apparent in policy deliberations leading to the very sizable expansion in the 1994 fiscal year budget of the U.S. Department of Labor and to the drafting of the proposed Reemployment Act of 1994 (see, for example, U.S. Department of Labor 1993). Prominent issues considered in these deliberations include early identification of unemployed workers unlikely to be recalled to their old jobs, enhancement of the long-term retraining options available to displaced workers, establishment of national skills standards, imposition of a national payroll training tax, improvement of the school-to-work transition of youth, development of one-stop career centers supplying workers and employers better labor market information and career development services, and provision to states of the flexibility to offer unemployed workers reemployment bonuses and self-employment programs.

Other highly industrialized nations possess a wealth of experience gained from the design and actual implementation of these kinds of active labor market policies in permanent, nationwide programs. The perspective taken in this monograph is that increased awareness of how active labor market programs operate in other nations can substantially improve the way in which we deal with worker displacement in the United States. Nations examined in detail are Sweden, Germany, Japan, Britain, Canada, and Australia. These countries fall naturally into two groups. The first group, consisting of Sweden, Germany, and Japan, provides their workers with stable, nationwide employment and training systems. On the other hand, the countries in the second group—Britain, Canada, and Australia—have all anticipated U.S. policy with recent major restructurings of their employment and training programs involving the shift of resources from passive to active labor market policies.
Increased insight into the adjustment assistance needs of displaced workers, no matter in what nation they reside, requires a discussion of the costs of displacement. We turn to this issue next.

Costs of Worker Displacement

Some amount of job change plays a positive allocative role in assuring that workers are appropriately matched with employers and that inappropriate matches are terminated. While it is widely perceived that society as a whole benefits from maintaining a dynamic, generally open domestic economy, it is also recognized that displaced workers bear the brunt of the inevitable adjustment costs. It is this recognition that has prompted the governments of many nations to provide special assistance to the displaced.

A large body of literature exists dealing with the identification of the private and social losses incurred by displaced workers (see, in particular, Hamermesh 1987, 1989). A worker is said to experience an economic loss when an income stream expected to continue into the future is unexpectedly and permanently lost. Income streams considered in this literature are generated by either of two factors: (1) investment in human capital specific to the firm (or perhaps to the industry or geographic location), and (2) economic rents accruing to the beneficiaries of union-induced job queues. Upon a permanent separation from the firm, the private cost of displacement includes lost income streams generated by either or both of these factors, whereas a social cost of displacement arises only in the case of forgone returns to specific training. Both cost measures must also include the value of resources lost during the adjustment process. Special assistance to displaced workers is commonly rationalized on the basis of the first factor. The argument is that unless compensation is available, risk-averse workers and their employers will be discouraged from investing in specific human capital. The second factor also plays a role to the extent that compensation to displaced workers is needed to buy off unions and other politically powerful interests that would otherwise block socially desirable policies such as free trade and the introduction of labor-saving technology.
The empirical literature measures economic losses incurred by displaced workers in terms of length of postlayoff spells of unemployment and reduction in wages upon reemployment. Hamermesh (1989) summarizes the evidence found in thirteen studies of the effects of displacement on wage and employment losses. Six of these studies utilize DWS data. A key finding in all of the studies is that workers with the longest tenure on the job from which they were displaced suffered the greatest losses in subsequent wages and time employed. Kletzer (1989) finds, using 1984 DWS data, that the direct relationship between pre-displacement tenure and wage loss is particularly strong for blue-collar workers since the returns to tenure for these workers are more job-specific, reflecting both job-match heterogeneity and specific human capital.

A second conclusion reached by Hamermesh (1989) is that poorly educated workers spend more time unemployed and suffer disproportionate wage losses. He reports no consensus, however, that particular demographic groups, such as women, minorities, or older workers, suffer especially large losses from being displaced (though minorities are more likely to be displaced).

Several more recent studies generally reinforce these findings and add new insights. Jacobson, LaLonde, and Sullivan (1993a, 1993b) examine a large sample of both displaced and nondisplaced Pennsylvania workers for whom administrative data are available on quarterly earnings covering the 1974-86 period. Focusing on prime-age, high-tenure (six or more years of tenure) workers, their evidence suggests that studies based on data such as the DWS, which lack a long earnings history or an appropriate comparison group, are likely to understate earnings losses associated with worker displacement from distressed firms. The reason is their finding that earnings of displaced workers tend to be abnormally low in the year prior to separation. Without a longer earnings history or a suitable comparison group with which to measure normal predisplacement earnings, earnings losses would be substantially underestimated. These earnings losses are also long term, with little evidence of substantial recovery even after the third year following displacement. Similarly, Ruhm (1991) finds, using data for both displaced and nondisplaced workers, that while the initial rise in joblessness associated with displacement dissipates after several years, there is a significant long-term loss of earnings potential. Ruhm's anal-
ysis is based on the University of Michigan’s Panel Study of Income Dynamics (PSID) data set.

Three other findings supplied by Jacobson, LaLonde, and Sullivan are of interest. First, they find that while earnings losses were substantial for displaced workers who found new jobs in the same industries, losses were even greater for those who changed industrial sectors. Using 1984 DWS data, Addison and Portugal (1989) also report that wage losses associated with a change in industry or occupation, but not location, are greater than wage losses for displaced workers not obliged to make such shifts. Similarly, Carrington (1993) finds, using 1984, 1986, and 1988 DWS data, that much of the wage loss suffered by displaced workers is the result of downturns in entire industries rather than of firm-specific declines in demand. That is, displaced workers tend to be victims of “industrial restructuring.”

A second additional finding by Jacobson, LaLonde, and Sullivan is that sizable earnings losses occur even in relatively strong labor markets. Finally, the authors find that earnings losses are substantial across a broad range of industries and firm sizes. Nevertheless, losses are especially large for workers separating from highly unionized industries and large firms. This finding suggests that loss of rents, including union wage premiums, may contribute to earnings losses of displaced workers.

Farber (1993) adds to these findings evidence on employment losses as distinct from earnings losses resulting from worker displacement. To provide a comparison group of nondisplaced workers, he appends to the 1984-92 Displaced Worker Surveys data from outgoing Current Population Survey rotation groups from 1982-91. Several of Farber’s main findings should be highlighted. First, male displaced workers face a dramatically lower probability of reemployment compared with nondisplaced males. Displaced females also face a lower reemployment probability, although the displaced/nondisplaced difference is not as great. Second, displaced workers are less likely to obtain full-time jobs upon reemployment; and this cost of displacement is especially great during recessions. Since part-time wage rates are substantially lower than full-time wages, the increased incidence of part-time employment during recessions is an important component of the cost of job loss to the displaced. Third, even conditioning on reemployment in a full-time job, displaced workers earn substantially less than either otherwise
comparable nondisplaced workers or what they themselves earned prior to displacement. Moreover, length of previous job tenure and a less-than-high-school level of education are strongly and negatively related to wage change. In the case of job tenure, an additional year of predisplacement tenure is estimated to result in about 1 percent lower wage growth.

Finally, Farber finds that while the effects of displacement on the probability of reemployment and on full-time reemployment appear to be temporary, there is no evidence that the earnings gap between full-time reemployed displaced and nondisplaced workers narrows over time. This finding reinforces evidence on the persistence of earnings losses reported by Jacobson, LaLonde, and Sullivan (1993a, 1993b) and Ruhm (1991). Farber’s interpretation of the permanence of the full-time wage effect is that wage losses are directly related to tenure, and lost tenure is never recovered. It might also be noted that the wage loss is considerably larger for workers displaced in 1990-91 than it was for workers displaced earlier.

One last study, by Crossley, Jones, and Kuhn (1994), is noteworthy because it uses recently available Canadian data to examine the costs of displacement for women relative to men. Data analyzed by the authors are derived from a survey of 1,736 workers (612 women and 1,124 men) laid off from their jobs in twenty-one establishments located in Ontario. For both male and female Canadians, postdisplacement wages are found to decline as predisplacement tenure increases. As noted, this is a common result in the literature utilizing U.S. data. More novel is the authors’ finding that women lose more from displacement than men, and that the magnitude of women’s losses increases faster with tenure. For example, predicted hourly wage losses for workers with three to five years of service are 4 percent of predisplacement wages for men and 13 percent for women. For workers with fifteen to twenty-five years of service these estimates rise to 15 and 26 percent, respectively, for men and women.
An Evaluation Framework

With this background on the costs of worker displacement, a next issue to consider is how government programs designed to reduce these costs are evaluated. Haveman and Saks (1985) point out an interesting contrast between program evaluation in the United States and in other industrialized countries, particularly those in Western Europe. In Western European nations, stable, well-funded, and highly professional employment and training systems receive constant feedback from employers and workers on the quality of their activities. In these countries, there is little formal evaluation of marginal program impacts. In the United States, by contrast, government-sponsored programs are less stable, funding often fluctuates dramatically, and the professional quality of program managers is uneven. Program evaluation in the United States is therefore largely based on statistical analyses of program effects in limited-duration demonstration projects, and the United States clearly leads the world in the quantity and sophistication of its program evaluations. Even so, available evaluation evidence is subject to enough qualifications, particularly with respect to skill training, that it is not easy to draw strong policy recommendations.

In summarizing this situation, Wilensky (1985, p. 9) proposes as "Wilensky's law" the following proposition: the more evaluation, the less program development; the greater the number of demonstration projects, the less follow-through. Underlying his proposition are three problems Wilensky identifies with existing program evaluations: (1) evaluation research is typically quite narrow, politically naive, and often seriously flawed in design and execution; (2) research focused on a single program, which is usually the case, obscures the interaction and interdependence of many programs; and (3) evaluated success has little to do with program funding.

The United States is clearly at one extreme in terms of the application of this proposition. At the other, Wilensky (1985, p. 3) points to Sweden as the country that combines the least program evaluation with the most action and greatest achievement in utilizing its human resources. Given its stable institutional structure, heavy national investment, and staff of well-trained professionals, it is quite likely that there are important lessons to be learned from the experience of Sweden as
well as from other European nations about the design and implementation of active labor market policies. We can also gain insight from other non-European nations, including Britain, Canada, and Australia, that have preceded us in restructuring their employment and training systems.

In the absence of quantitative evaluations allowing program benefits and costs to be measured and compared, how might a discussion of the experience of other nations be made meaningful to U.S. policy makers? The approach taken in this monograph is to specify an evaluation framework against which alternative active labor market programs may be consistently assessed. The six criteria listed below, which make up the evaluation framework, are drawn from the current labor economics and labor market policy literatures. They are not necessarily mutually exclusive.

1. Program services should facilitate the transition of displaced workers to jobs in expanding industries and growing sectors within existing industries. By definition, adjustment assistance services are intended to make it easier for displaced workers to respond to market signals by moving from markets in which there is an excess supply of labor to those in which there is an excess demand. Growing markets may be in entirely different industries from declining markets or, as appears to be the case in manufacturing, growth may be centered in small, nimble single-plant firms at the expense of large, centralized corporate giants. Clearly, the more complete the coverage of job vacancy information and the faster vacancy information is conveyed to unemployed workers, the more rapidly the reemployment process can be completed. Sweden's system of employment exchange offices represents a model to be studied for insight into how to improve the matching process between available workers and vacant jobs.

The flip side of this criterion is that labor market services that distort or retard the response to market signals should be substantially modified or eliminated entirely. As mentioned earlier, recent concern over rising long-term unemployment has led most industrialized nations to increase their emphasis on active labor market measures and to deemphasize passive programs. Among active programs, moreover, funding for direct job creation programs has been reduced. Motivating this decision is the desire to decrease reliance on "make-work" schemes
that over the longer run cannot ensure sustainable jobs, and instead to switch resources to measures that improve the skills of the workforce. Even the highly regarded Swedish adult training system has been criticized for doing little more for some workers than keep them off the unemployment rolls.

2. **Program activities must meet the needs of displaced workers.** Two important factors emerge from discussions of the characteristics of displaced workers and the costs of worker displacement. The first is that lengthy job tenure with the predisplacement employer often means that the job search skills of displaced workers will typically be rusty from disuse. Employment services, including job matching, assessment and testing, counseling, training in job search skills, and job development, are therefore an essential part of a comprehensive labor market system. As has been widely noted (see, for example, Marshall and Tucker 1992, p. 223; and Baily, Burtless, and Litan 1993, pp. 136-37), the U.S. Employment Service is basically limited to the referral of unskilled workers to low-paying and often temporary jobs. In its current form, the Employment Service does not come close to offering the employment services provided in other nations.

The second factor is that displaced workers are interested in jobs, not training. An immediate implication of this point is that on-the-job training may be preferred to classroom training as a vehicle for providing job skills. However, targeted employment subsidy programs have not always proven successful in attracting a sufficient number of employers willing to provide on-the-job training opportunities. Voluntary employer participation in the firm-based German and Japanese training systems is especially important to study for insight into how to increase the interest of American employers in supplying on-the-job training opportunities. An interesting policy initiative to be considered in the context of stimulating firm-based training is the payroll training tax recently imposed in Australia.

Regarding skill training provided in a classroom setting, workers’ interest in jobs rather than training suggests that classroom training programs be designed with three goals in mind. First, training courses must be timely and flexible. Circumstances such as layoffs that generate a demand for retraining can occur at any time, and training programs should be designed to be available on a timely basis and flexible
enough to fit into workers’ schedules. Second, training programs must demonstrate to enrollees a clear connection between skills learned and employment opportunities. This goal is especially important, albeit difficult to accomplish, in the context of basic education programs. Finally, since most adult workers support families, the tuition charged for training courses must be low or paid for by government subsidies. Strong consideration should also be given to providing trainees with a form of income maintenance while they are engaged in training.

3. Programs must serve the entire spectrum of displaced workers, not just those easiest to place. Evidence for the United States suggests that only a small fraction of the eligible displaced worker population is served by Job Training Partnership Act (JTPA) programs. Of those served, in addition, relatively few displaced workers are provided with skills training and even fewer eligible workers receive basic education (see Levitan and Gallo 1988, pp. 57-62). This is a not unexpected result since basic education is expensive relative to other adjustment assistance services and program administrators have a natural propensity to “cream” (i.e., to select those individuals who are the most job-ready) in the applicant selection process.

Yet on equity grounds the case can be made that it is adults at the low end of the skill distribution who should be first in line for access to training services. With the possible exception of Japan, the displaced worker populations of the countries considered include a substantial fraction of workers in need of basic education. Swedish experience offers some insight into the operation of basic education programs, and the limited formal education and vocational skills of British workers make the ongoing restructuring of the employment and training system in the United Kingdom especially interesting to study. Guidance on the design and operation of basic education programs can also be gained from evidence generated from state welfare employment demonstration projects in the United States.

4. Training programs must supply marketable skills to program graduates. As suggested in the discussion of criterion 2, it is reasonable to suppose that firm-based training is more likely to enhance labor market opportunities than classroom training, since it is directly demand-related. Clearly, one of the most difficult problems in design-
ing classroom training programs is to guarantee that the training will supply program completers with job skills currently in demand in local labor markets. All of the countries examined recognize that some degree of employer involvement is necessary to solve this problem. Most countries, including the United States in the JTPA program, involve employers in helping to set policy and provide feedback. In Britain, for example, this type of employer involvement is a major emphasis of the national network of Training and Enterprise Councils (TECs) recently established to deliver training services and promote small business development at the local level. Sweden has gone one step further in seeking to decentralize decision making and increase responsiveness to changes in market demand. Created in 1986, the Swedish National Employment Training Board is responsible for being financially self-sufficient through the sale of training services to any customer willing to buy.

5. Programs should effectively utilize existing educational and training institutions. The existence of an extensive postsecondary schooling system makes it most unlikely that the United States will follow the Swedish model in establishing a government-funded adult training system independent of the regular educational infrastructure. Rather, the presumption for our country, as well as for Britain, Canada, and Australia, is that existing institutional training providers will be heavily utilized in supplying adult training services. This presumption raises the issue of how to encourage third-party providers to adapt to the special needs of adults while supplying training that leads to job placement.

The contractual mechanism often used to deal with this issue is performance-based contracting. This form of contracting is used in the JTPA program in the United States and in contracts entered into by TECs and the training providers with which they subcontract in Britain. The operation of performance-based contracting in JTPA programs, in the British network of TECs, and in an important state program, California's Employment Training Panel, will be examined for direction in establishing policies that preserve the incentive to provide training leading to job placement while restraining the incentive to cream in the participant selection process. Also to be considered is the role of nationally recognized credentials in Sweden, Germany, and
Britain in certifying the quality of program graduates to employers and in helping potential trainees make informed choices between training curricula and institutional providers.

6. A broadening of the concept of job skills should be encouraged. Reports of recent national commissions and discussions in the popular press and professional journals stress the need for a radical change in skills that workers should possess in order for American firms to be competitive in the international marketplace.6 As recently described by Lynch (1994, p. 63), concern during the 1970s over how to absorb “overeducated Americans” into the labor market shifted during the 1980s to how to stimulate the skill development of “undertrained Americans.” Rather than simply achieving competency at a particular narrowly defined job, it is frequently argued that American workers need to be able to think creatively and solve problems, work effectively in teams, adapt flexibly to rapid shifts in product demand, and engage in lifetime learning. Frontline workers in this model, termed “high-performance work organizations” by former Secretary of Labor Ray Marshall and Marc Tucker (1992), often operate in teams and are expected to substantially supervise themselves while assuming responsibility for quality control, equipment maintenance, ordering supplies, and many other functions traditionally reserved for management and technical staff. Countries that are often presented as being far ahead of the United States in developing most or all of these productive characteristics in their workers are Japan and Germany.

Empirical evidence is just beginning to appear on the extent of upskilling within the American labor market. For goods-producing industries in particular, this evidence indicates that the breadth of skills required of American workers is in fact increasing. Using data collected by Hay Associates, Cappelli (1993a) examines changes in skill requirements for production jobs in ninety-three manufacturing establishments between 1978 and 1986 and for clerical jobs in 211 firms between 1978 and 1988. His results for manufacturing indicate a highly significant upskilling within all but one of the ten production job families considered. (The lone exception is “housekeeping.”) For eight clerical job families, on the other hand, there is an even split between job families experiencing significant upskilling and those
experiencing deskilling. New office technologies appear to explain the deskilling of specific clerical jobs.

In a second recent study, Osterman (1994) finds that about 35 percent of the 694 manufacturing establishments he surveyed in 1992 made substantial use of "flexible work practices," which he defines as the use of teams, job rotation, quality circles, and Total Quality Management. Moreover, Osterman is able to isolate several important factors that are highly correlated with the adoption of flexible work practices. These include an international product market, a complex production technology, a "high-road" competitive strategy (one that emphasizes service, quality, and variety of products rather than low costs), and a commitment to increasing the well-being of employees' families.

**Organization of the Study**

Chapter 2 provides an overview of labor market policies in place in the seven countries examined (including the U.S.). The purpose of this overview is to supply the necessary background for understanding basic differences between countries in their labor market institutions and in the levels and mixes of their active and passive labor market program expenditures. The chapter also investigates a possible linkage between these countries' labor market policies and differences in their unemployment rates and especially in the incidence of long-term unemployment.

With this background, chapter 3 reviews the evaluation evidence available for demonstration projects and experiments implementing various kinds of active labor market programs in the United States. This evidence includes evaluation reports on five major displaced worker demonstrations and on a number of additional experiments implementing three proposed reforms of the unemployment insurance (UI) system. The proposed UI reforms involve (1) enhanced employment services and stricter enforcement of job search requirements, (2) reemployment bonuses paid to UI recipients who find jobs quickly, and (3) self-employment as an alternative reemployment strategy. Also discussed in this chapter are selected evaluation reports examining the
effectiveness of training and basic education programs in demonstration projects targeted to economically disadvantaged workers (i.e., welfare recipients).

Chapters 4 and 5 examine the design and operation of particular active labor market programs in other countries. Adult retraining programs are considered in chapter 4. Beginning with classroom training, this chapter investigates in detail the operation of the highly regarded government training model in Sweden and Britain's employer-led/school-based model with its requirement of performance-based contracting. Concerning on-the-job training, the firm-based training systems in place in Germany and Japan are discussed, with emphasis on the questions of how best to give employers an incentive to provide on-the-job training opportunities and whether important features of these firm-based systems might be transferable to the U.S. labor market. Also considered in this chapter are the payroll training tax implemented in Australia and the national skill certification system in Britain.

Chapter 5 focuses on employment services, including the traditional labor exchange function matching unemployed workers to job vacancies, as well as more proactive job search assistance services. Carefully examined are the job matching system provided by the Swedish public employment service and job development services supplied by the Canadian Industrial Adjustment Service. This chapter concludes with a consideration of recent policies implemented in Britain, Canada, and Australia to link eligibility for income support payments to participation in active labor market programs in order to maintain the work incentive of the unemployed.

A final chapter pulls together the findings presented in chapters 2 through 5 and outlines an agenda for assisting displaced Americans.

NOTES

2. In defining the displaced, Ross and Smith count only workers who lost full-time jobs and ignore length of prelayoff job tenure.
3. Farber (1993) presents empirical evidence supporting the impression that recent events have changed the demographic and industrial composition of the displaced worker population. Using DWS data from the 1984 through 1992 surveys, he compares the nature of job losses during the 1990-91 recession to job losses during the earlier 1982-83 recession and the more prosperous
1984-89 period. While job loss is still disproportionately concentrated in the goods-producing sector, Farber's evidence indicates that displacement was more common during 1990-91 than during the 1982-83 recession in important and growing nongoods-producing industries. In addition, the rate of job loss among older workers during the 1990-91 recession is found to be higher than during the earlier recession, especially for college-educated men.

4. Addison and Portugal also attempt to model the simultaneity noted by Hamermesh (1989) between unemployment duration and postdisplacement wages resulting from worker search behavior and to relax the strong restriction imposed by identifying the tenure coefficient with the return to firm-specific training investments.

5. The major federal program providing reemployment services to displaced workers is Title III of JTPA.

6. Examples of national commission reports are the Secretary's Commission on Achieving Necessary Skills (1991) and the Commission on Workforce Quality and Labor Market Efficiency (1989). In the academic literature, Bound and Johnson (1992) conclude from their study of the dramatic changes in the U.S. wage structure during the 1980s that the rise in the relative wage position of women and the highly educated stems largely from an increase in the relative demand for skilled labor stimulated by changes in computer-based technology.