

The Effects of Employer-Provided Severance Benefits on Reemployment Outcomes

Surveys have shown that many employers offer severance packages to their laid-off workers and that severance pay provides substantial income for many people displaced from long-time jobs. Yet little, if anything, is known about the effects of severance pay. Does it lead people to alter the intensity of their job search or their decisions to take advantage of retraining opportunities? Does it enable them to hold out for better-paying jobs?

The obstacle to studying the effects of employer-provided severance benefits has been a lack of data. Plans vary across employers and their provisions are not generally made known to the public. Furthermore, even if information on particular severance plans were revealed more widely, it would be difficult to observe their impacts on laid-off workers. Employers do not track what happens to their former employees, and the most commonly used national data source on laid-off workers—the biennial Displaced Worker Survey—does not contain the names of former employers.

This article forges new ground by combining information from an administrative data base on displaced workers from Massachusetts that includes the names of their previous employers with severance plan summaries obtained from a subset of these employers. It starts with a discussion of how employer-provided severance benefits compare with government-mandated unemployment insurance (UI). Severance pay is a voluntary supplement to UI payments, and employer severance plans do not make any adjustments for UI benefits. Although severance plans vary considerably across employers, they tend to be more generous for longer-term and more highly compensated employees. By comparison, unemployment insurance does not vary by years of work (except for provisions that tend to exclude casual employees), and UI benefits for highly paid workers are limited by state-imposed caps. However, the duration of unemployment insurance does vary considerably over the business cycle, while employers do not explicitly take labor

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market conditions into account when setting severance policies.

While previous evidence is lacking on how severance pay affects reemployment outcomes, considerable analysis has been performed with respect to unemployment insurance. Studies generally find that unemployment benefits increase the duration of joblessness among workers who have been laid off, but on the whole they fail to find evidence that recipients use this added time to find jobs with higher pay. Severance pay differs somewhat from unemployment benefits in that it is not conditioned on the worker continuing to search for a job and it typically does not end if the worker finds a new job. However, like unemployment benefits, severance packages may induce recipients to remain jobless by providing an independent source of income.

The study finds that severance recipients in Massachusetts returned to work more slowly than non-recipients in the early 1990s, even after adjusting for other factors such as local unemployment rates and demographic characteristics that may have played an independent role. Severance benefits had some positive impact on enrollments in remedial and basic education programs but no consequences for reemployment pay.

I. Income Support for Job Losers

Unemployment insurance and severance arrangements both provide income support for job losers, but they have fundamental differences in addition to their obvious similarity. The design of unemployment insurance reflects social goals, as the program offers general protection to workers who have lost their job while also taking hardship into account. Benefits are more generous at times of high unemployment and, in some states, for workers with larger families. They are capped for workers with high previous pay, and benefits end if the recipient takes a new job. By contrast, severance arrangements are not set by law and, thus, vary considerably across employers. For any given employer, long-term and high-level employees often receive more generous payments relative to their prior earnings than short-term and low-level employees. Employers do not adjust severance pay to take workers' need into account. Thus, the amount of severance pay does not depend on UI benefits or other current sources of income. States, in turn, vary widely in how they treat severance pay for purposes of computing UI benefits. Some make no

adjustment, others reduce UI benefits by the amount of severance pay, and still others require severance recipients to delay their receipt of UI benefits.

Specific differences between unemployment insurance and employer-provided severance benefits are outlined further in Table 1. Federal unemployment insurance statutes specify universal coverage among employers except for some very small businesses and religious organizations. Although states have leeway to set specific eligibility rules for employees within the federal guidelines, the basic thrust of the statutes is to exclude only those workers with limited recent employment experience, such as seasonal or occasional employees. However, in order to collect UI, workers must not have been directly responsible for their job loss. Thus, someone who was terminated as part of a plant closure or whose position was eliminated would be eligible to receive UI, but someone who retired, quit, or was terminated for cause would not. Individuals must be actively seeking a job or preparing for a new job (for example, via approved training programs) in order to keep receiving benefits. Benefits end when recipients become reemployed, although state laws typically allow them to earn a limited amount without loss of UI.

By contrast with UI, individual employers can decide whether to offer severance payments and, in practice, the likelihood of a severance plan varies by size of employer.¹ A 1995 survey of about 3,000 employers found that only 66 percent of those with fewer than 100 employees had a severance policy, versus 90 percent of those with more than 1,000 employees. Furthermore, the larger the organization, the more likely it was to have a written severance policy and the more generous its provisions were likely to be (Lee Hecht Harrison 1995).² Employers

¹ Only Hawaii and Maine guarantee severance pay to terminated employees even in the absence of an explicit policy on the part of the employer (McCulloch 1998). In Hawaii, employers pay a "dislocated worker allowance" for four weeks, equal to the difference between the previous wage and the amount of UI benefits. Since 1975, Maine employers with 100 or more employees who relocate or substantially cease operations are obligated to make severance payments to terminated employees with at least three years of service. Payments equal $\frac{1}{2}$ of the previous twelve months' earnings (that is, one week for full-year employees) per year of service. The Maine statute was upheld by the U.S. Supreme Court in 1986.

² The surveyed organizations were clients of Lee Hecht Harrison, an outplacement and career development firm, as well as other subscribers to a journal specializing in personnel issues. The construction of the survey may in effect result in oversampling of companies with an interest in human resources issues. However, no evidence is available that would serve to indicate how representative the responses are of U.S. employers in general.

Table 1

Major Features of Unemployment Insurance and Severance Benefits

	Unemployment Insurance	Severance Benefits
Employer Coverage	Almost all employers covered. ^a Financing and benefit rules vary by state within guidelines established by the federal government.	Voluntary. More common among large employers. Benefits determined by individual employers, sometimes in negotiations with unions. ^b
Initial Eligibility	Limited to workers with sufficient prior employment experience, typically expressed in terms of duration and/or earnings. Also limited to workers who were not responsible for their job loss.	Limited to workers with sufficient prior employment experience, typically expressed in terms of duration with the employer, prior to involuntary or voluntary reduction in force. ^b
Continuing Eligibility	Workers must demonstrate continuing attachment to the labor force.	No requirements. ^c
Replacement Rate ^d	Statutory replacement rates in the general vicinity of 50%. However, maximum benefit amounts lower effective replacement rates for high earners.	100% if benefits paid as a series.
Duration	Regular benefits: 26 to 30 weeks. Federal extended benefits triggered automatically at times of high unemployment. Federal emergency benefits enacted on a discretionary basis.	If benefits paid as series, generally longer for workers with longer job tenure up to a specified maximum and sometimes longer for higher-paid workers. ^e
Predictability	Benefit rules determined by laws existing at time of job loss. However, extended or emergency benefits may apply if economic conditions worsen.	Benefit rules specified in union contracts. For nonunion workers, benefit rules and reductions in force typically announced at the same time. No changes in benefit rules subsequent to job loss.
Funding	State and federal payroll taxes. Individual employers' state tax rates adjusted partially to reflect their job cuts. Separate mechanisms used for extended and emergency benefits.	Financed by individual employers.
Additional Provisions	Added cash or noncash benefits available for dislocated workers. Some union workers receive supplemental unemployment benefits. Some states provide family allowances. Federal law governs extension of group health insurance.	At discretion of the employer, plans may provide job search assistance, tuition allowances, extension of group health and life insurance, service credits for retirement, and other added benefits.

^aSmall farms and religious organizations, certain employers of household help, and the self-employed are exempt.

^bSpecial conditions may apply to individual senior executives.

^cSome plans terminate workers' benefits upon reemployment.

^dMonthly or weekly benefits as a share of prior monthly or weekly earnings.

^eAs is the case with severance plans providing a continuation of pay, lump-sum severance plans typically are more generous for workers with longer job tenure up to a specified maximum and sometimes more generous for exempt workers. Some employers offer workers a choice between continuation of pay and a lump-sum payment.

Source: Anderson (1997), Bassi and McMurrer (1997), Corson (1997), Decker (1997), Hewitt Associates (1993), Lee Hecht Harrison (1995), Nicholson (1997), O'Leary and Rubin (1997), Woodbury and Rubin (1997).

are also free to decide the circumstances under which their former employees qualify for severance pay. For example, they may have separate plans governing involuntary and voluntary separations. Plans frequently specify a minimum tenure with the company and sometimes a minimum number of weekly hours.

Unlike UI, severance benefits usually are independent of individuals' activities after they lose their job.

For eligible workers, unemployment insurance and severance plans differ in the structure of benefits. States generally set unemployment benefits to replace approximately 50 percent of prior pay for a specified

duration, typically 26 weeks. However, the existence of maximum weekly benefit amounts results in some degree of progressivity. That is, high-paid workers' benefits replace less than 50 percent of their former pay even if the typical replacement rate is 50 percent. The effective definition of "high-paid" varies considerably from state to state. As of 1995, states most commonly specified a maximum weekly benefit amount in the range of \$200 to \$250, and all but 11 states had a maximum of \$300 or less (O'Leary and Rubin 1997). Some states provide additional benefits varying with the number of dependents.

Employers set severance pay without any regard for UI benefits. States vary in whether and how UI benefits are adjusted for severance pay.

The duration of UI benefits varies considerably over the business cycle. Under federal law, high state unemployment rates automatically trigger extended benefits, up to an additional 13 weeks. At times the federal government has chosen to enact further "emergency" benefits. For example, in response to the last nationwide recession Congress passed such legislation in November 1991 and authorized its extension four times, until early 1994. During this period, the maximum duration of unemployment benefits was increased by up to 33 weeks (beyond the applicable regular duration). UI recipients who are still unemployed when any such extensions are enacted receive the extension. However, they are not penalized if reduced unemployment rates trigger a decrease in duration.

Severance arrangements may be determined by company policy or by negotiations with unions. In the case of nonunionized personnel, they often are specifically tailored for a particular reduction in force and thus may not be anticipated by employees. The typical severance plan determines total cash benefits as a certain number of weeks of pay times another number reflecting how long the employee has been with the company. Plans most frequently call for one week of pay per year of service, although about one-third of the plans for exempt workers and one-quarter of

the plans for nonexempt workers in the Lee Hecht Harrison poll offered at least two weeks per year of service.³ Many companies also specify a maximum severance.

The form of payment varies among employers. Some plans provide a continuation of pay for the specified number of weeks, others provide the full amount as a lump-sum payment upon termination of employment, while still others offer employees a choice between these two methods.

As mentioned, employers set severance pay without any regard for UI benefits. States vary in whether and how UI benefits are adjusted for severance pay.⁴ Some states even make distinctions among different types of severance plans. For example, Tennessee disqualifies individuals from obtaining unemployment compensation if they receive severance pay, but this prohibition does not apply to severance pay determined by collective bargaining. In Colorado and Massachusetts, UI benefits are unaffected when a dismissed employee receives severance pay conditional on agreeing to release the employer from legal liability associated with the termination. (See McCulloch 1998 for descriptions of state laws.)

Table 2 compares the maximum total unemployment insurance and severance benefits under various hypothetical situations for workers earning \$400 and \$800 per week (\$20,800 and \$41,600, respectively, on a full-time, full-year basis). Several assumptions are made throughout these examples: Unemployment benefits replace 50 percent of weekly pay subject to a \$300 maximum weekly benefit amount; workers collect unemployment benefits for the maximum duration possible; and severance benefits are subject to a maximum of 30 weeks of pay. It is also assumed that UI benefits are not reduced to reflect severance pay. The results are shown under two hypothetical severance plans—"typical" and "generous"—for workers with 5, 10, and 20 years of tenure at their previous employer. Although many unemployed persons have relatively short durations with their previous employer, the usual definition of "displaced" workers includes only those with at least three years' tenure at

³ The terms "exempt" and "nonexempt" refer to the employee's status under the national Fair Labor Standards Act, which establishes minimum wage, overtime pay, and record keeping requirements pertaining to covered workers. Executive, administrative, and professional employees are generally exempt, while most nonsupervisory, nonprofessional employees are nonexempt.

⁴ In addition, under federal law (and some state laws), UI benefits become taxable if total income exceeds a given threshold. Severance pay is included in computing this total income.

Table 2
Hypothetical Maximum Total Unemployment Insurance and Severance Benefits for Workers at Different Earnings Levels

Years of Service	Earnings = \$400 per week			
	Unemployment Insurance ^a		Severance	
	Regular (26 weeks)	Regular plus Emergency (65 weeks)	Typical (1 week of pay per year of service ^b)	Generous (2 weeks of pay per year of service ^b)
5	\$5,200	\$13,000	\$ 2,000	\$ 4,000
10	\$5,200	\$13,000	\$ 4,000	\$ 8,000
20	\$5,200	\$13,000	\$ 8,000	\$12,000

Years of Service	Earnings = \$800 per week			
	Unemployment Insurance ^a		Severance	
	Regular (26 weeks)	Regular plus Emergency (65 weeks)	Typical (1 week of pay per year of service ^b)	Generous (2 weeks of pay per year of service ^b)
5	\$7,800	\$19,500	\$ 4,000	\$ 8,000
10	\$7,800	\$19,500	\$ 8,000	\$16,000
20	\$7,800	\$19,500	\$16,000	\$24,000

^aAssuming 50 percent weekly replacement rate and \$300 maximum weekly benefit amount.

^bAssuming maximum of 30 weeks.

Source: Author's calculations.

their previous job (as well as certain other characteristics that make reemployment difficult). In 1990, the median tenure of displaced workers was 7 years (Fallick 1996).⁵

For both unemployment insurance and severance, benefits rise with prior pay, although the relationship is less than proportional in the case of UI because of the maximum benefit amount. As shown in the example, for a given earnings level, the key determinant of unemployment benefits is the overall unemployment rate, since maximum total benefits rise when extended or emergency benefits are in effect. Severance benefits vary with both the generosity of the plan and years of employment.

The example illustrates several key facts about these two forms of support. *At some points in the business cycle and for some types of workers, unemployment insurance potentially provides greater income than*

⁵ The federal government has set up specific reemployment services to assist displaced workers, in light of their perceived difficulties of finding comparable new employment. A sample of workers receiving such services forms the basis for the empirical analysis in this article.

employer-provided severance plans; in other cases, severance plans provide greater income than unemployment insurance. When unemployment is very high, unemployment insurance tends to provide greater benefits than severance plans, with the exception of very long-term workers displaced from companies offering generous plans. In "normal" economic times, however, total severance benefits can exceed total unemployment benefits for many displaced workers with only moderately long tenure at their former job, especially those whose unemployment benefits are constrained by a maximum weekly benefit amount.

For many job losers with at least several years' experience with the same employer, severance benefits account for a noticeable fraction of total support. Take the case of workers who are unemployed for six

months after five years of working for a company offering "typical" severance benefits. Severance accounts for 28 percent of total post-employment benefits for a person who had been earning \$400 per week and 34 percent for a person who had been earning \$800 per week. Even if such displaced workers collect unemployment benefits for the maximum period of 65 weeks, severance benefits still account for at least 13 percent of total support. Workers who stay with their employer longer tend to derive a greater fraction of their post-employment income from severance plans.

Because severance benefits are a significant source of income for those workers who receive them, the disparity between the post-displacement support for workers from companies providing severance plans and those without severance plans is substantial. The specific numerical example considered only severance pay, but many severance plans offer additional forms of assistance, such as extension of group health insurance beyond the federally mandated period. These further benefits accentuate the potential differences in living standards among displaced workers.

II. Unemployment Insurance, Severance Benefits, and Job Search

A sizable body of literature has examined the effects of unemployment insurance on the duration of joblessness.⁶ The existence of unemployment benefits reduces the opportunity cost of remaining without a job and, thus, on the whole a more generous UI system is expected to lead to longer joblessness among the unemployed.⁷ The analytical results are borne out by empirical studies, summarized recently by Decker (1997). Generosity has been measured both by the degree to which weekly or monthly benefits replace lost earnings and by the duration of benefits. A 10 percentage point increase in the replacement rate has been found to increase the duration of joblessness by 0.5 to 1.5 weeks.⁸ A one-week increase in the potential duration of jobless benefits has been found to extend unemployment by 0.1 to 0.5 week. There is also some evidence that the unemployed time their return to work to coincide with the exhaustion of benefits. In some samples, though not all, unusually large numbers of workers start a new job within a week or two of when unemployment benefits expire (or might have been expected to expire in the absence of an extension).⁹

Very little is known, however, about how UI affects displaced workers' activities while out of work or their ultimate choice of a job. Although theory indicates that UI benefits provide a subsidy to "not working," it does not provide a clear guide on the extent to which this added time would be spent on leisure, housework and other unpaid labor, intensified job search, or preparation for a new job in the form of training. Empirical studies typically lack information on how displaced workers allocate their time. And although theory indicates that the existence of unem-

⁶ Additional studies have examined the extent to which unemployment insurance creates incentives for layoffs. Both types of inquiry are needed to assess how unemployment insurance affects the overall rate of unemployment.

⁷ This tendency is balanced, to a degree, by the need to find a new job in order to meet the eligibility requirements for unemployment benefits in the event of future layoffs.

⁸ Analytically, the replacement ratio should be measured with respect to expected wage offers. In practice, it tends to be measured with respect to past pay.

⁹ Despite these findings, whether or not UI causes "large" or problematic work disincentives remains in dispute, given the inherent subjectivity involved in interpreting empirical results. However, several field experiments have attempted to determine how such disincentives may be reduced without reducing the desirable cushion of support that unemployment insurance provides (see Decker 1997).

ployment benefits makes unemployed workers less likely to accept low-paying jobs, the limited evidence that exists is inconclusive as to whether recipients of unemployment benefits tend to accept jobs with higher pay than those who do not receive such benefits, all else equal.¹⁰

While economists have some knowledge about the effects of UI on the unemployed, they know almost nothing about the effects of severance packages. Alternative theoretical models reach somewhat different conclusions, although on balance they support the view that severance pay should cause job losers to stay out of work longer than they otherwise might have. For one thing, like UI, severance pay raises the income

While economists have some knowledge about the effects of unemployment insurance on the unemployed, they know almost nothing about the effects of severance packages.

of workers who become unemployed, which should lead on average to longer spells of joblessness as recipients feel less need to work.¹¹ Severance pay differs from UI, however, in that usually it does not stop (or have to be repaid) upon reemployment. The return to reemployment equals the full amount of pay (rather than pay net of benefits, as in the case of UI). Therefore severance plans may cause less increase in the duration of joblessness than is the case with UI. However, because severance recipients do not have to demonstrate a continuing intent to return to work, they may be somewhat more likely to drop out of the

¹⁰ Decker (1997) speculates that UI may allow laid-off workers to search longer for jobs that are better in terms of characteristics other than initial pay, such as greater benefits or possibilities for advancement. Fallick (1993) finds that UI benefits retard the mobility of workers between industries, although he does not attempt to explain this phenomenon or draw any conclusions about job quality.

¹¹ While not focusing specifically on severance packages, a study by Nickell (1979) examined the incentives caused by all observable resources available to unemployed men in Britain, including unemployment benefits, supplementary benefits, family allowances, various subsidies, wife's income, and unearned income. He found that these resources had a significant, positive effect on the duration of joblessness.

labor force, at least temporarily. This would diminish their chances of receiving (and therefore accepting) a job offer. Moreover, by not receiving current information about job possibilities, they might adhere to unrealistic expectations about pay and other job characteristics, thereby lowering their likelihood of accepting a job upon reentering the labor force.

In some cases, state laws specify that the amount or timing of severance pay affects UI benefits. If severance pay must be deducted in computing UI benefits, a worker's incentives depend on which is greater—severance pay or (unadjusted) UI. If severance pay causes a delay in the receipt of UI, it also may have some special effects—although the overall direction is not clear. Lacking immediate UI benefits, some unemployed workers may have an incentive to return to work earlier than they otherwise would have. However, those who are nearing the end of their severance pay may have an incentive to stay out of work in order to collect UI. For further discussion of specific ways to model severance benefits, see the Box.

III. Analysis with a Sample of Displaced Workers from Massachusetts

To examine the effects of severance benefits on job losers, this paper uses information on workers who were laid off between 1991 and 1994 and who attended assistance centers in Massachusetts operating under the provisions of the displaced worker amendment to Title III of the Job Training and Partnership Act. Beneficiaries of this program include workers who lose their jobs in mass layoffs or plant closures, as well as others who have been laid off and are unlikely to return to their jobs.¹²

Job cuts were quite common during the period studied. A deep recession had started in Massachusetts in the late 1980s, well ahead of the much milder national recession of 1990–91. Massachusetts' unemployment rate peaked at 9.6 percent in July 1991 and at that time was close to 3 percentage points higher than the national unemployment rate. (The national unemployment rate peaked at 7.8 percent in June 1992.) The state continued to lose jobs through mid 1992 and did not recover its 1989 total employment count until 1997. The manufacturing sector continued to shed jobs long after a general recovery had begun.

¹² In some cases, workers who lose their jobs as part of a voluntary reduction in force (such as an early retirement plan) also are eligible.

In the course of providing services, the worker assistance centers collected information on demographic and prior job characteristics for the displaced workers and kept track of the assistance services they used while out of work. For those individuals who found new employment through a center before the end of the sample period (September 1994), information is also available on the duration of joblessness and the characteristics of the new job, including pay, occupation, industry, and location. Descriptions of the data and related research are found in Kodrzycki (1996, 1997).

To examine the effects of severance benefits on job losers, this study uses information on about 2,400 workers collected from 15 employers, mostly fairly large companies.

The full data set includes records on some 20,000 Massachusetts residents. However, the worker assistance centers did not collect information on severance arrangements and such information is not generally a matter of public record. For the current study, 65 employers were identified as accounting for 50 or more layoffs each in the sample. Of these, some had gone bankrupt or were otherwise impossible to locate. The remainder were contacted by mail, with telephone follow-up. As usual in the case of a voluntary survey, some employers were unable or declined to answer questions about their severance plans. Thus, the paper uses information collected from 15 employers, mostly fairly large companies, some of which had operations in more than one location. These included nine manufacturers, two retailers, two hospitals, a financial services firm, and a utility. One of the hospitals was owned and operated by a municipal government, and the same severance package was also available to other workers laid off by that municipality. The sample was expanded to include these former municipal employees who used worker assistance centers during the study period, for a total of 2,515 workers. Almost 60 percent of the workers in the sample had been displaced from manufacturing jobs. Although manufacturing accounted for a disproportionate share of

Models of Severance Benefits and Reemployment

Two basic approaches have been used by economists to examine how unemployment insurance affects reemployment: the labor-leisure choice model and the job search model (Decker 1997). Both models support the hypothesis that severance benefits would lead to a longer duration of joblessness, although they differ in identifying the strength of this effect and the circumstances under which it holds, as well as in their usefulness for analyzing training and pay.

Labor-Leisure Choice Model

The standard labor-leisure choice model predicts that severance pay generally would lead to longer periods of joblessness. The magnitude of the impact per dollar of benefit is less than or equal to that from expanded unemployment insurance benefits.

In this framework, an individual's utility is an increasing function of both income and unemployment, where unemployment is valued because of its leisure component. The individual may become reemployed at any time at a weekly wage w , which does not depend on his or her job search efforts or job preparation, nor on the state of the economy. The choice of working or remaining unemployed is made with reference to a given time period, here assumed to equal Y weeks. Unemployment benefits equal b per week and are received over a period of T weeks, where T is less than Y .

The individual's basic budget constraint, as shown in the accompanying figures, is ABC . The distance OA represents total income over the period if the individual is employed the whole time, and thus equals Y times w . The distance CY represents total income over the period if the individual is unemployed the whole time, and thus equals T times b . Until time T , the slope of the budget constraint is $-(w - b)$, indicating that for each added week of unemployment, the individual forgoes receiving a wage but receives partial compensation in the form of unemployment insurance benefits. After the exhaustion of UI benefits at time T , the slope equals simply $-w$. The resulting

duration of unemployment would be indicated by the point of intersection of the budget constraint with the worker's highest possible indifference curve.

Figure B-1 considers an extension of unemployment benefits to T' weeks, which produces a new budget constraint $AB'C'$. For individuals who would normally choose to get a job before time T , the extension of benefits would have no effect. For individuals who would otherwise return to work later than T , the extension of benefits leads to a longer duration of unemployment. The effect is greatest for those who would have gone back to work between weeks T and T' . Not only do they receive added income from the extended UI benefits (the "income effect"), but each added week of unemployment now costs only $w - b$ (not w) in forgone income (the "substitution effect").

Figure B-2 considers an increase in UI benefits to b' (while holding the duration at T). The budget constraint rotates to $AB''C''$. This policy change produces longer durations of unemployment. All workers receive added UI benefits, and those who would have become reemployed before time T also face a lower opportunity cost of unemployment ($w - b'$ rather than $w - b$).

Figure B-3 shows the effects of severance pay in addition to UI. Assume, first, that severance pay is received as a lump sum. This does not affect the opportunity cost of remaining out of work, so the slope of the budget constraint does not change. The only change is to shift the entire budget constraint upward by the amount of the severance pay, to $A'DE$. Next consider a severance plan that is paid out in a series. So long as payments do not cease when a worker finds a new job, this type of severance pay also does not change the slope of the budget constraint. Thus the budget constraint is identical to that in the case of a lump-sum plan. Because workers have higher total income in the presence of severance pay, they tend to remain out of work longer.

Finally, Figure B-4 assumes that the severance plan calls for a series of payments until period N

Figure B-1

Increase in Duration of Unemployment Insurance Benefits

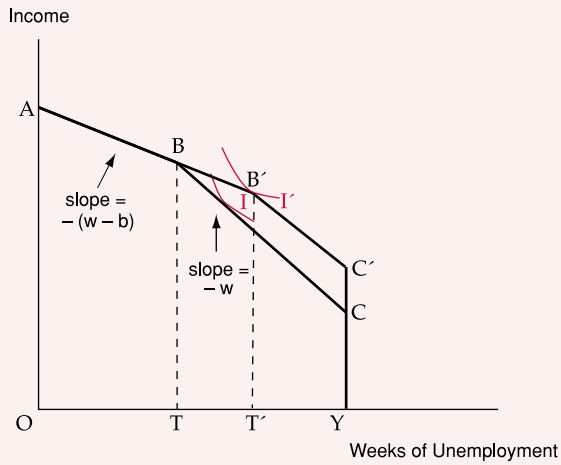


Figure B-2

Increase in Generosity of Unemployment Insurance Benefits

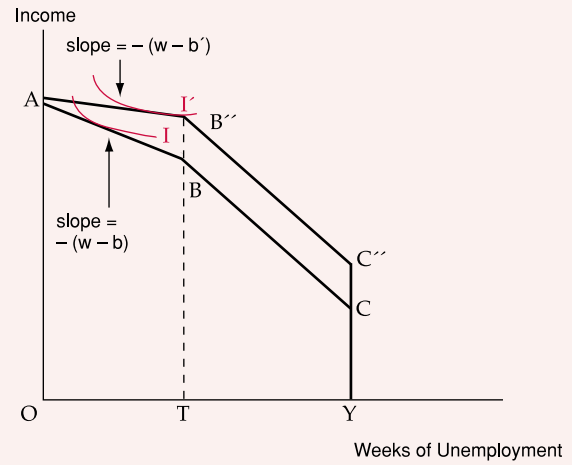


Figure B-3

*Addition of Severance Pay
(Lump Sum or Series)*

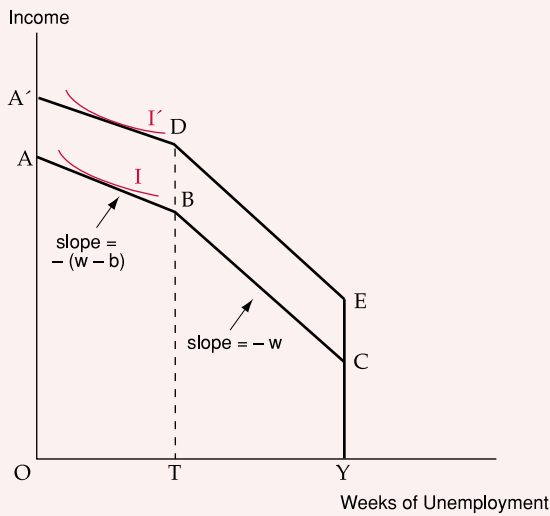
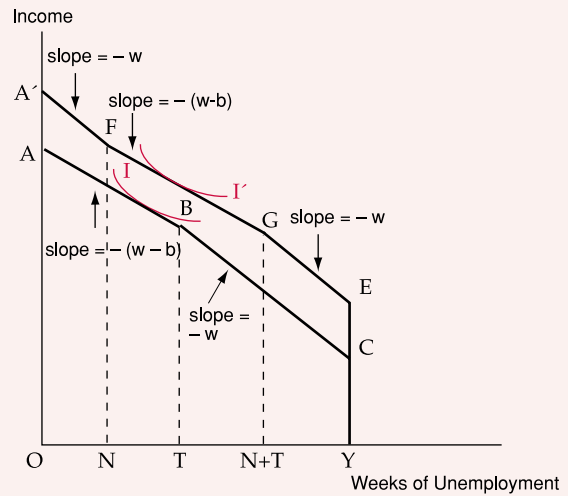


Figure B-4

*Addition of Severance Pay that Causes
Delay in Receipt of
Unemployment Insurance Benefits*



(regardless of whether or not the worker finds a new job) and that the unemployment insurance laws prohibit receipt of UI benefits until severance pay is exhausted. Someone who becomes reemployed immediately would have total income over the period of OA plus AA'. Someone who remained unemployed would have income of YC plus EC (where EC equals AA', the total amount of severance benefits). But for intermediate cases, the budget constraint does not shift in a parallel fashion. Until time N (when severance pay is exhausted) and after time N + T (when UI benefits are exhausted), the slope of the budget constraint is $-w$. Between time N and time N + T, its slope is $-(w - b)$. The budget constraint thus becomes AF'GE, and the relative tendency of severance pay to lengthen unemployment spells will be different for different individuals, depending on whether both the income and substitution effects are operational.

Because it assumes that wages are exogenous, the labor-leisure choice model does not offer any guidance on how severance packages affect reemployment pay. Nor is it useful in analyzing training decisions.

Job Search Model

An alternative approach to analyzing the behavior of the unemployed is the job search model, which predicts a smaller role for severance pay than the labor-leisure choice model does. In the job search model, the wage rate is endogenous, in addition to the duration of unemployment. Workers have a finite probability of being offered different levels of pay. They are uncertain about the wage they will be offered at any given time, although they can increase their chance of receiving an offer by expending the time (and perhaps income) to search harder. They determine the intensity of their job search and their minimum acceptable wage (called their "reservation wage") so as to maximize the present discounted value of their future income. They may revise this reservation wage downward as they become more familiar with the job market (that is, with the probability distribution of wage offers), assuming they have not received a suitable offer. Their unemployment spell ends when they

receive a job offer that matches or exceeds their reservation wage. The pure job search model assumes that workers do not place any direct value on remaining without a job: They do not benefit from added leisure or the opportunity to reflect on what type of job to seek.

Unemployment insurance benefits lower the cost of unemployment and therefore encourage recipients to reduce the intensity of their job search or to raise their reservation wage. Thus, more generous weekly benefits or a longer duration of benefits in effect cause fewer unemployed workers to receive and accept job offers quickly. Once UI benefits are exhausted, however, workers intensify their job search or reduce their reservation wage, since they derive no intrinsic benefit from remaining without a job.

In the pure job search model, severance packages have no effect at the margin. However, laws that require UI benefits to be delayed until workers exhaust their severance pay may have some effect, although the direction is ambiguous. Lacking UI in the early stages of unemployment, some workers may go back to work more quickly than otherwise (at lower pay). Those who are still without a job as their severance payments are about to end have an incentive to reject any marginally acceptable job offers in the anticipation of being able to collect UI (and having a chance of receiving an even better offer). Once receiving UI benefits, they face a longer duration of benefits relative to their date of dismissal (N + T).

Severance pay is not expected to have any direct effects on training decisions in the job search model. In this framework, unemployed workers weigh the costs of training against the expected return from being able to find a higher-paying job.

Despite these predictions, the job search model may allow some role for severance pay if the unemployed are liquidity-constrained and if capital markets are imperfect. That is, severance plans can help to cover living costs or training expenses for unemployed workers who make rational decisions about job search strategies but who find it impossible or expensive to borrow the funds to implement these plans.

layoffs in the early 1990s in both Massachusetts and the nation, the share in the sample is considerably higher than the actual experience. Displaced workers from industries with smaller layoffs were underrepresented in the sample.¹³

Severance benefits were imputed to individual workers based on plan information provided by their former employers and their job characteristics as recorded by the worker assistance centers. Previous hourly wage, hours per week, and tenure with the company were the most important variables. Some plans specified different benefits depending on the category of employee (for example, union or non-union, hourly or salaried, exempt or nonexempt). In these cases, to the extent possible displaced workers were assigned to categories depending on their former occupation and pay, as well as any additional relevant information provided by the employer such as the types of occupations that were unionized. In some cases, information on union benefits was obtained from the union rather than the employer. In the case of employers who had separate severance plans for involuntary and voluntary reductions in force, it was assumed that the employees in the sample lost their jobs involuntarily. Voluntary reductions in force usually consist of early retirement programs, the eligibility for which is limited to older employees. Because of the uncertainty about whether severance benefits were measured correctly for these workers, separate analy-

¹³ In the nationally representative Displaced Worker Survey, manufacturing accounted for about one-third of all displacements in the early 1990s (Kletzer 1998). This was approximately double the manufacturing sector's share of overall employment. Several factors account for the even greater share of manufacturing workers in the current sample. The proportion of Massachusetts' employment in manufacturing fell more sharply in the early 1990s than in the nation as a whole, implying a somewhat greater concentration of layoffs in that sector. Another reason is that worker assistance centers (both nationally and in Massachusetts) are frequently set up to serve workers laid off from particular, typically large, establishments. Manufacturing plants tend to be larger than establishments in other sectors of the economy. Finally, manufacturing is more heavily represented in the subsample used for this study than in the original sample of 20,000 workers from which it was drawn (53 percent). This primarily reflects the decision to concentrate on large layoffs, though the pattern of responses and non-responses to the severance survey may be a contributing factor. Former trade sector employees account for about 19 percent of the current sample, the same as reported for the Displaced Worker Survey by Kletzer. No former construction workers are included, although they accounted for almost 16 percent of displaced workers nationally and, undoubtedly, a sizable proportion in Massachusetts given the sharp decline in real estate activity. Similarly, non-professional services and mining are not included, but were 12 percent and 1 percent, respectively, of national displacements. For further discussion of the industrial composition of Massachusetts employment and layoffs, see Kodrzycki (1996).

ses of the data were performed omitting older workers.¹⁴ For further details of the severance computations, see the Appendix.

All together, eligibility for severance pay was determined for 2,426 workers and weeks of severance for 2,413 workers. (This latter figure includes zero weeks for workers whose former employers provided no severance benefits or who were not eligible for severance benefits because of insufficient length of service or, in a few cases, part-time status.) One large manufacturer accounted for about 38 percent of the observations and a retail chain accounted for another 15 percent. None of the remaining employers accounted for more than 7 percent.

As expected, severance benefits differed considerably by tenure. All but one of the employers limited severance pay to employees who had been with the company for at least one full year. Severance benefits also varied according to pay level.

Potential unemployment benefits were more straightforward to compute, as they varied over time but not by employer (with one exception, indicated below). In Massachusetts, unemployment benefits replaced one-half of the recipient's previous weekly wage, up to a maximum benefit that reached \$325 at the end of the sample period. In addition, beneficiaries received \$25 per week per dependent child. The normal maximum duration of unemployment benefits in Massachusetts is 30 weeks. As a result of high unemployment in the state, the federal-state extended benefits program added another 13 weeks' benefits between March and June 1991, for a maximum duration of 43 weeks. Under the federal emergency benefits program between November 1991 and January

¹⁴ Another issue in the case of older workers is that they may be eligible for company pensions, if not Social Security, even in the case of an involuntary separation. The lack of availability of information on retirement income was another reason to examine whether the results applied even if older workers were omitted from the sample.

1994, Massachusetts UI recipients were eligible to receive benefits for between 33 and 63 weeks, depending on the exact timing of their unemployment.¹⁵ One of the employers in the sample is a Connecticut firm. Even though the workers were Massachusetts residents, their UI benefits were determined by the laws applicable to Connecticut, which generally provided somewhat lower benefits than Massachusetts. See the Appendix for details.

Massachusetts law calls for deferral of UI benefits while dismissed employees receive severance pay, on the grounds that they are not unemployed if they receive remuneration from their employer. However, individuals receiving a lump-sum severance award in connection with a sufficiently large permanent layoff may collect UI without any delay, as may those who collect a lump sum payment conditional on executing a general release of legal claims against their former employer.¹⁶

Whether the workers in the sample were in fact required to defer receiving unemployment compensation proved difficult to determine. For one thing, some employers offered departing employees a choice between lump-sum and series awards, or different levels of severance awards depending on whether or not they signed a release. Moreover, in most cases the person who responded to the severance survey was unable or reluctant to provide information indicating whether the layoffs constituted a plant closure for purposes of UI. Thus, the empirical work below focuses on the maximum possible amount of severance and UI benefits rather than their timing.

Severance Plans

Of the 15 employers included in the study, three did not offer severance benefits to departing employ-

¹⁵ Although extended benefits would have resulted in larger UI payments than emergency benefits for some intervals, states have the incentive to use emergency benefits when available because they are funded exclusively by the federal government.

¹⁶ The latter situation was the subject of a 1996 Massachusetts Court of Appeals ruling with respect to a severance plan in effect for 1993 (Moriearty, Adkins, and Kahn 1997). More generally, Massachusetts law defines remuneration to include "termination, severance or dismissal pay or payment in lieu of dismissal notice" but not if such payment is in connection with a "plant closing," defined as "a permanent cessation or reduction of business at a facility of at least fifty employees which results or will result as determined by the commissioner in the permanent separation of at least fifty percent of the employees of a facility or facilities." See Commonwealth of Massachusetts Department of Employment and Training (1993).

ees and some provided quite modest packages.¹⁷ For example, one firm offered benefits that in most cases amounted to between one-quarter and one-third of a week of severance pay for each year of service, although special bonuses were available for workers with more than 25 years of service. Another employer restricted severance payments to workers who had been with the company for at least four years, with qualifying employees receiving one-half week of pay per year of service. Both of these employers offered greater benefits for exempt employees.

At the other extreme, some sampled companies offered sizable benefits. One granted three weeks' severance pay for every year of service, with a minimum of six weeks of severance pay. Two other companies offered two weeks' severance pay per year of service, and one of these offered additional benefits for highly compensated staff.

The company with the largest representation in the sample offered its departing workers one week of pay per year of service. However, both the plan's high minimum benefits and the fact that many of the dismissed workers had been with the company for an extended period of time contributed to relatively high average benefits.

Severance Benefits in the Sample

Table 3 summarizes severance benefits for displaced workers in the sample. The general patterns are consistent with what is known from larger surveys. As shown in the first column, 86 percent of the workers received severance pay from their previous employer. The median worker received 10 weeks of severance. The median amount of severance pay was \$6,042, and for the median worker severance benefits accounted for 30.8 percent of the total combined value of severance plus unemployment benefits (where unemployment benefits are calculated as the maximum amount available under the laws existing at the time of layoff, without regard to subsequent extensions).

As expected, severance benefits differed considerably by tenure. All but one of the employers in the sample who had a severance policy limited severance pay to employees who had been with the company for at least one full year. As mentioned above, at one

¹⁷ For expositional purposes, the descriptions of the plans are simplified somewhat in this paragraph. For example, while some employers computed severance pay based on completed years of service, others used partial years, two-year intervals, or a nonlinear schedule.

Table 3

Severance Benefits in the Displaced Worker Sample, by Years of Service

	Full Sample	Years of Service				
		Less than 5	5 to 9	10 to 14	15 to 19	20 or more
Percent Receiving Severance Pay	86.2	75.5	83.8	91.8	87.3	94.5
Weeks of Severance ^a						
25th Percentile	4	1	5	10	15	23
Median	10	4	7	12	18	25
75th Percentile	19	4	12	14	19	29
Amount of Severance (\$) ^a						
25th Percentile	1,852	222	2,117	4,848	6,657	12,359
Median	6,042	1,445	4,233	7,976	11,028	18,176
75th Percentile	11,638	3,063	7,295	10,416	14,616	24,734
Severance as a Percent of Total Benefits						
25th Percentile	14.8	2.8	16.3	28.1	34.7	48.3
Median	30.8	11.5	25.4	36.7	44.1	58.0
75th Percentile	47.3	18.6	32.7	46.1	55.6	67.0
Memo						
Sample Size	2,413	506	702	523	213	469
Average Years of Service	11.6	2.4	6.8	12.0	17.2	26.0
Average Annual Pay (\$) ^a	31,493	25,787	29,973	32,852	33,131	37,695

^aRounded to nearest whole number.

company, dismissed workers had to have had four years of service to qualify for benefits. Thus, almost one-quarter of the sample with less than five years' tenure did not receive any severance pay.

For workers who had been with their previous employer for at least five years, the probability of receiving severance benefits tended to increase with tenure. Among those with five to nine years of service, 83.8 percent received severance pay, compared to 94.5 percent for those with at least 20 years' service.¹⁸ Companies laying off long-time employees might have felt more obliged to offer severance pay. An alternative explanation is that workers generally form longer-term relationships with companies offering employee benefits, with severance plans being one example of such benefits.

Workers with at least five years' tenure typically received about one week of pay per year of service (in line with the findings in the Lee Hecht Harrison poll). Thus, the median severance benefit for workers with at least 20 years' service was \$18,176 or almost half a year's pay. Since maximum unemployment benefits at this time amounted to 23 weeks of pay, severance

¹⁸ The rate dipped slightly for the 15- to 19-year group, however.

benefits typically accounted for over one-half of these long-tenured workers' potential post-employment benefits.

While severance benefits varied markedly by job tenure, they also varied across workers with similar job tenure. Looking within tenure categories—5 to 9 years, 10 to 14 years, 15 to 19 years, and 20 or more years—workers in the 75th percentile received between four and seven weeks' more severance pay than those in the 25th percentile. This amounted to a 26 percent difference in the highest tenure category and more than a twofold difference in the five- to nine-year category.

Severance benefits also varied according to pay level. As Table 4 indicates, over 90 percent of workers in the upper pay categories received a severance award, compared to less than three-quarters of the workers in the bottom quintile. The median worker in the top pay quintile received 15 weeks of severance, versus only 4 weeks for the median worker in the bottom quintile.

Considerable variation existed within quintiles. As a result, almost all workers in the top 25 percent of the four lower pay quintiles received more weeks of severance pay than the median worker in the highest pay quintile.

Table 4

Severance Benefits in the Displaced Worker Sample, by Annual Pay

	Bottom Quintile	2nd Quintile	3rd Quintile	4th Quintile	Top Quintile
Percent Receiving Severance Pay	72.8	88.1	82.6	94.2	92.9
Weeks of Severance ^a					
25th Percentile	0	3	4	8	9
Median	4	7	11	13	15
75th Percentile	15	16	19	17	26
Memo: Average Annual Pay (\$) ^a	16,609	24,877	29,855	35,210	50,899

^aRounded to nearest whole number.

Severance Pay and Job Search

As indicated above, severance pay could affect displaced workers' activities while unemployed as well as their subsequent reemployment. The study examined three outcome measures: participation in education and training programs, duration of joblessness, and pay at the new job. The remainder of this section compares how workers with different severance awards fared with respect to these outcomes; the following section uses regression analysis to examine the role of severance pay, controlling for other relevant factors.

All displaced workers in the sample were offered basic readjustment assistance consisting of workshops on topics related to job loss and job search, individual meetings with counselors, and access to phone banks and job listings. In addition, some workers were granted funding to pursue education and training classes at a local educational establishment, typically for a period of two to six months. The most common course of study was occupational training—that is, classes related to a particular field of employment. Other, far less popular options included basic education courses to improve reading, writing, mathematics, and computer literacy; English as a second language (ESL); classes to obtain a high-school equivalency diploma (GED); and training to start one's own business.¹⁹

The decision to take advantage of education and training options was made jointly by worker assis-

¹⁹ The data set contains only limited information on whether enrollees completed their coursework.

tance center personnel and their clients. Together, they developed a plan for the type of job the worker would seek. Subject to budget constraints, center personnel approved education and training programs that were deemed an integral part of achieving these reemployment goals.

Severance pay could conceivably have some effect on the decision to enroll in education and training programs. Severance pay provides an extra cushion of support while displaced workers spend time investing in the development of new skills. However, the added income from severance pay may be a less important factor in Massachusetts than in some other states, since Massachusetts law permits individuals to receive extended unemployment benefits for up to 18 weeks while they are enrolled in approved coursework.²⁰

Indeed, Table 5 indicates that dismissed workers who received severance benefits were only slightly more likely to participate in training and education programs. As shown in the first two columns, 37.4 percent of those receiving severance pay enrolled in such courses, versus 34.4 percent of those who received no severance pay.

Although the special provisions of the Massachusetts UI law tend to weaken any relationship between severance income and training decisions, the existence of severance pay still tends to lower the overall urgency of recipients to find a new job. Displaced workers who receive severance pay would be expected to remain jobless for a longer period of time than those who do not. The next two rows of Table 5 confirm that this was the case for the sample. Only 30.6 percent of those receiving severance pay were observed to be reemployed within one year of layoff, as compared with 55.7 percent of those who did not receive severance pay. Some of this difference is due to the fact that severance pay recipients were more likely than nonrecipients to drop out of the assistance program, indicating that they decided to leave the labor force or search on their own. Another approach to measuring reemployment propensities is to look only at workers who succeeded in finding a job through their assistance center. This also shows that a sharp difference existed in the duration of joblessness depending on severance pay status. On average, severance pay recipients accepted a new job after 11 months, nonrecipients after only 6 months.

²⁰ Informally, staff at the Massachusetts Corporation for Business, Work, and Learning confirmed that application for so-called "Section 30" UI benefits is routine and that most enrollees in education and training programs receive such an extension.

Table 5
Job Search and Reemployment Outcomes by Severance Status

	Severance Pay Availability		Weeks of Severance Pay			
	No	Yes	1 to 4	5 to 12	13 to 20	More than 20
Percent Participating in Training and Education Programs	34.4	37.4	44.2	39.5	33.9	33.6
Percent Reemployed within One Year ^a	55.7	30.6	28.1	32.7	31.2	29.0
Average Duration of Joblessness for Reemployed Workers (months) ^b	6.0	11.1	11.8	11.2	10.9	10.9
Average Real Hourly Wage Replacement Rate	90.0	80.0	86.7	79.1	79.1	78.4

^aIncludes displaced workers observed for less than one year but excludes recalls.

^bExcludes recalls.

Finally, a longer period of searching for work could lead to a better reemployment outcome. However, as indicated above, previous studies of UI fail to find conclusive evidence on this point and, if anything, theory indicates that the effect generally would be weaker in the case of severance pay, since it does not have a direct effect on the minimum acceptable pay a person would be willing to accept. The final row of Table 5 examines the average real hourly wage replacement rate, defined as the beginning rate of pay at the new job as a percentage of ending rate of pay at the old job, adjusted for inflation during the intervening period. In contrast with the theory, workers benefiting from a severance package had a substantially *lower* replacement rate than those who did not have a severance package.

The remaining columns of the table examine how these same outcomes—participation in education and training, the speed of reemployment, and wage replacement—vary according to how many weeks of severance pay workers received. On all three scores, the results are at odds with theory. Those receiving more severance pay were *less* likely to enroll in education and training, were *not* out of work longer, and ended up at jobs that entailed *sharper* wage cuts than those who received limited severance pay.

These puzzling results may be due to other characteristics of workers that are more significant determinants of reemployment outcomes than severance pay, but that are somewhat correlated with sever-

ance pay. In particular, displaced workers with long tenure at their previous job have been found to suffer comparatively large pay cuts upon reemployment, as have those who go into a different occupation or industry (Kletzer 1998). In the sample, severance recipients had higher average job tenure than nonrecipients (11.9 years versus 8.8 years). Thirty-four percent of severance recipients switched occupations and 83 percent switched industries. The comparable rates for nonrecipients were only 23 percent and 41 percent, respectively. To uncover the independent effects of severance pay, the next section

presents the results of multivariate regression analysis.

IV. Regression Analysis

The strategy in the regressions was first to repeat the specifications in Kodrzycki (1996, 1997) that used the full Massachusetts displaced worker data set, with the addition of a variable to measure UI benefits.²¹ Then the analysis was modified to include two alternative measures of severance pay: whether or not the worker received a severance package from the former employer and the number of weeks of severance. From an analytical standpoint, weeks of severance is the preferred measure, but the need to impute benefits to individual workers on the basis of plan descriptions undoubtedly introduces some impreciseness in its measurement. Because of further ambiguities related to the special severance provisions applicable in the case of early retirement plans, the same regressions also were run for a subsample that excluded individuals aged 50 and over at the time of layoff.

As emphasized throughout this article, the probability of receiving severance pay and the number of weeks of severance pay vary with tenure and pay at

²¹ In some cases, the basic specifications were simplified slightly, owing to the reduced number of observations in the current study.

Table 6

Training Probabilities: Multinomial Logit Results

Coefficients Indicate Probabilities Relative to Base Category = No Training

Independent Variable	(1) Without Severance Variables		(2) With Severance Dummy		(3) With Unexpected Severance Receipt		(4) With Unexpected Severance Receipt and Employer Controls		(5) With Severance Amount		(6) With Unexpected Severance Amount		(7) With Unexpected Severance Amount and Employer Controls	
	Job Training	General Education ^a	Job Training	General Education ^a	Job Training	General Education ^a	Job Training	General Education ^a	Job Training	General Education ^a	Job Training	General Education ^a	Job Training	General Education ^a
Age (Omitted = less than 25)														
25-34	1.07 (.383)	1.49 (1.38)	1.16 (.419)	1.95 (1.86)	1.11 (.402)	3.54 (3.86)	1.18 (.442)	4.85 (5.51)	1.18 (.428)	2.21 (2.20)	1.09 (.395)	3.47 (3.90)	1.15 (.427)	3.39 (4.15)
35-44	.987 (.355)	1.53 (1.40)	1.02 (.371)	1.86 (1.75)	.977 (.355)	4.08 (4.37)	1.10 (.411)	6.79* (7.57)	1.03 (.375)	2.18 (2.15)	.954 (.346)	3.99 (4.38)	1.05 (.394)	5.06 (6.02)
45-54	.951 (.349)	1.26 (1.16)	.985 (.365)	1.72 (1.62)	.937 (.348)	3.75 (3.99)	1.06 (.404)	7.70* (8.62)	1.03 (.384)	2.68 (2.65)	.952 (.353)	5.33 (5.84)	1.02 (.389)	8.03 (9.70)
55 and Over	.690 (.272)	.738 (.847)	.732 (.293)	.893 (1.05)	.692 (.278)	1.96 (2.51)	.794 (.329)	2.64 (3.57)	.736 (.295)	1.07 (1.33)	.697 (.280)	2.13 (2.85)	.762 (.315)	1.74 (2.52)
Tenure (Omitted = less than 5 Years)														
5-9	1.00 (.162)	.701 (.354)	.973 (.164)	.531 (.281)	.979 (.164)	.557 (.300)	.917 (.159)	.327* (.204)	.916 (.157)	.314** (.178)	.988 (.165)	.458 (.255)	.941 (.161)	.354 (.228)
10-19	1.00 (.175)	.880 (.484)	.909 (.167)	.680 (.408)	.912 (.165)	.599 (.379)	.921 (.174)	.302 (.227)	.789 (.157)	.243** (.169)	.950 (.172)	.528 (.347)	.955 (.181)	.284 (.227)
20 or More	.668* (.145)	1.37 (.853)	.608** (.140)	1.71 (1.18)	.611** (.139)	1.78 (1.25)	.663* (.162)	.981 (.788)	.443*** (.121)	.281 (.243)	.611** (.140)	1.49 (1.06)	.681 (.166)	.709 (.641)
Education (Omitted = less than High School)														
High School	1.38 (.413)	.021*** (.009)	1.59 (.544)	.015*** (.007)	1.58 (.540)	.014*** (.007)	1.56 (.565)	.009*** (.004)	1.66 (.580)	.012*** (.006)	1.67 (.586)	.012*** (.006)	1.83 (.682)	.007*** (.004)
Some College	1.55 (.483)	.010*** (.007)	1.82* (.640)	.008*** (.005)	1.83* (.642)	.005*** (.004)	1.82 (.682)	.002*** (.002)	1.96* (.702)	.008*** (.005)	1.98* (.709)	.005*** (.004)	2.12* (.818)	.002*** (.002)
College Degree	1.16 (.401)	b	1.32 (.505)	b	1.30 (.502)	b	1.17 (.479)	b	1.35 (.528)	b	1.36 (.535)	b	1.35 (.564)	b
More than College	.865 (.427)	b	1.06 (.557)	b	1.07 (.563)	b	.894 (.490)	b	1.10 (.581)	b	1.13 (.599)	b	1.04 (.578)	b
Reading Test Score	1.00 (.041)	.947 (.130)	1.01 (.042)	.879 (.139)	1.00 (.042)	.888 (.142)	.999 (.045)	.929 (.156)	1.01 (.042)	.893 (.141)	1.00 (.042)	.908 (.145)	1.00 (.045)	1.01 (.174)
Gender and Marital Status (Omitted = Unmarried Male)														
Married Male	.951 (.154)	1.28 (.681)	.984 (.162)	1.10 (.612)	1.00 (.165)	1.36 (.806)	1.02 (.174)	1.12 (.709)	.965 (.159)	.891 (.503)	.975 (.161)	1.14 (.695)	1.10 (.172)	1.11 (.738)
Married Female	1.22 (.246)	1.50 (.958)	1.29 (.268)	2.35 (1.59)	1.28 (.266)	3.11 (2.27)	1.10 (.244)	2.70 (2.26)	1.19 (.248)	1.44 (1.00)	1.19 (.248)	2.08 (1.53)	1.08 (.240)	2.49 (2.17)
Unmarried Female	2.08*** (.400)	2.30 (1.46)	2.18*** (.438)	2.96 (1.98)	2.25*** (.452)	3.28* (2.37)	2.29*** (.471)	3.48 (2.74)	2.15*** (.428)	2.76 (1.88)	2.19*** (.438)	3.23 (2.36)	2.22*** (.457)	3.63 (2.91)
Nonwhite	1.04 (.262)	1.41 (1.05)	.912 (.243)	1.79 (1.40)	.914 (.244)	2.02 (1.63)	.920 (.250)	3.79 (3.14)	.917 (.244)	1.95 (1.54)	.913 (.243)	2.02 (1.67)	.908 (.248)	4.46* (3.97)

Table 6 continued

Training Probabilities: Multinomial Logit Results

Coefficients Indicate Probabilities Relative to Base Category = No Training

Independent Variable	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
	Without Severance Variables		With Severance Dummy		With Unexpected Severance Receipt		With Unexpected Severance Receipt and Employer Controls		With Severance Amount		With Unexpected Severance Amount		With Unexpected Severance Amount and Employer Controls	
	Job Training	General Education ^a	Job Training	General Education ^a	Job Training	General Education ^a	Job Training	General Education ^a	Job Training	General Education ^a	Job Training	General Education ^a	Job Training	General Education ^a
County Unemployment Rate at Time of Layoff														
Level	1.64**	.908	1.64***	.808	1.60**	.842	1.58**	1.34	1.63***	.993	1.62**	1.20	1.61**	1.36
	(.309)	(.491)	(.313)	(.439)	(.307)	(.468)	(.325)	(.859)	(.312)	(.550)	(.311)	(.693)	(.332)	(.887)
12-Month Change	1.17	.768	1.17	.678	1.16	.707	1.17	.955	1.19	.860	1.18	.974	1.18	1.03
	(.147)	(.280)	(.149)	(.249)	(.147)	(.264)	(.162)	(.443)	(.151)	(.325)	(.150)	(.381)	(.164)	(.493)
Difference between Statewide and County Unemployment Rate at Time of Layoff														
Level	1.35	.952	1.32	.895	1.29	.928	1.29	1.09	1.32	1.21	1.31	1.48	1.31	1.09
	(.262)	(.549)	(.261)	(.511)	(.255)	(.540)	(.275)	(.757)	(.261)	(.703)	(.260)	(.901)	(.282)	(.762)
12-Month Change	.924	.685	.914	.567	.899	.566	.903	.540	.918	.727	.915	.822	.926	.709
	(.122)	(.291)	(.124)	(.237)	(.122)	(.244)	(.132)	(.284)	(.125)	(.304)	(.125)	(.357)	(.134)	(.359)
Log Real Wage at Time of Layoff														
	.880	.387	.852	.461	.911	.620	1.81	.455	.856	.395	.921	.542	1.81*	.149
	(.261)	(.356)	(.259)	(.458)	(.278)	(.642)	(.620)	(.563)	(.261)	(.406)	(.282)	(.577)	(.620)	(.198)
Amount of Unemployment Insurance														
	1.01	1.08**	1.01	1.07*	1.01	1.07*	1.02	1.03	1.01	1.07	1.01	1.07*	1.02	1.01
	(.014)	(.040)	(.014)	(.041)	(.014)	(.042)	(.016)	(.050)	(.014)	(.044)	(.014)	(.044)	(.016)	(.053)
Received Severance Pay														
			1.14	2.07	1.22	2.62	1.24	3.95						
			(.214)	(1.21)	(2.34)	(1.64)	(.342)	(3.40)						
Amount of Severance Pay (weeks)														
									1.02**	1.10***	1.01*	1.10***	1.005	1.20***
									(.008)	(.025)	(.009)	(.027)	(.013)	(.059)
Adjusted R ²														
		.156		.167		.168		.196		.175		.175		.202
Number of Observations														
		1666		1616		1606		1606		1604		1594		1594

^aIncludes workers who took job training in addition to general education. ^bCoefficient close to zero.

Note: The regressions also included occupation dummies and year dummies. The numbers in parentheses are standard errors.

*Significantly different from 1 at 10 percent level. **Significantly different from 1 at 5 percent level. ***Significantly different from 1 at 1 percent level.

the previous job. Because of these correlations, the estimated coefficients for the severance variables might reflect these other worker characteristics. To address this issue, additional regressions were run using the differences between the two severance measures (that is, severance receipt as a dummy variable and the number of weeks of severance pay) and their respective predicted values. The predicted values were obtained from regressions reported in the Appendix that use as independent variables tenure, tenure squared, annual earnings, and annual earnings squared, as well as a dummy variable indicating whether the former employer was a manufacturing firm. (In this sample, a greater fraction of former manufacturing workers received severance packages but, adjusting for tenure and pay, nonmanufacturers tended to offer more generous awards.)

Even with the severance variables purged of any tenure, earnings, or broad industry effects, their estimated coefficients could conceivably pick up other aspects of a worker's situation that are unrelated to severance pay. For example, workers from certain companies might have accumulated skills that were of considerably more value to their previous employer than to other companies that were hiring. Such companies may have been more likely to offer severance pay to departing workers (or to offer more generous severance pay) than other employers. Furthermore, the severance pay measures do not incorporate other aspects of severance packages—particularly health and tuition reimbursement benefits—that may affect workers' behavior. To encompass all of these concerns, another set of regressions incorporated dummy variables indicating the previous employer.

Unemployment insurance benefits were measured in two different ways, as of the date of layoff and including subsequent expansions of extended or emergency benefits.²² For comparability with the measurement of severance provisions, total UI benefits were expressed in terms of equivalent number of weeks of pay. As mentioned already, at the time they were terminated, on average the employees in the sample were eligible to receive UI benefits equal to up to 23 weeks of prior pay. Legislation increased this to almost 27 weeks while they were without a job. The tables below focus on the results using this latter measure of UI benefits; initial UI benefits rarely had a significant effect in the regressions.

²² UI benefits are measured excluding discretionary benefits granted for approved coursework.

Education and Training Decisions

Decisions to take job training or general education classes were modeled in the multinomial logit framework used in Kodrzycki (1997). The estimated coefficients shown in Table 6 indicate how each variable influences the probability of enrolling in job training or general education, respectively, relative to taking part only in the basic readjustment services offered to all displaced workers in the sample. Coefficients near one indicate no effect, those above one a positive effect, and those below one a negative effect.

The results in the first pair of columns, which exclude severance pay from the list of explanatory variables, generally are in accord with those reported in the 1997 article, although the considerably smaller sample size reduces the number of significant coefficients. Work history and education are among the more important characteristics influencing education and training choices. Workers with comparatively few years of experience with their previous employer are more likely to elect job training than long-term employees. Workers who have not completed high school are the most likely to enroll in general education classes. Economic conditions also matter. At times of high local unemployment rates, workers are more likely to undergo job training. As predicted in the case of liquidity constraints, greater unemployment benefits have some positive effect on enrollments in general education (though not occupational training).

The next specification includes severance pay as a dummy variable. Although receipt of a severance package is shown to have a positive effect, especially on decisions to enroll in general education, the coefficient is not significantly different from one. This remains the case in specifications 3 and 4, which use the variable measuring the receipt of a severance package relative to what was expected. When the sample includes only individuals under the age of fifty (results not shown), the receipt of a severance package increases enrollment in general education courses, and this effect is statistically significant.

When the severance plan is specified as the number of weeks of pay (in the last three pairs of columns), the coefficient becomes highly significant in the case of general education. This is true both for the entire sample and the under-fifty sample. That is, displaced workers with more weeks of severance pay were more likely to enroll in general education than workers with fewer (or zero) weeks of severance pay. General education enrollees tended to have low prior educational attainment and pay. Thus, the results

indicate that the relative generosity of the severance plan mattered for relatively disadvantaged workers. However, the overall enrollment in these programs remained limited, constituting about one-third of the high school dropouts and only 4 percent of the whole sample.

Probability of Reemployment

The next set of regressions explain how various factors influence the likelihood of finding and accepting work. As in Kodrzycki (1996), the estimated coefficients were derived using the Cox proportional hazards model and represent the relative likelihood of becoming reemployed in any given month, for a unit increase in the value of the explanatory variable. (Similarly, for dummy variables, the coefficients represent the difference in the likelihood of finding employment when the variable equals one rather than zero.²³)

Added years of potential work experience (or, equivalently, advanced age), high or rising local unemployment at the time of layoff, and a longer duration of employment and training serve to lengthen time out of work, while being recalled by one's previous employer results in a significantly shorter duration of joblessness (Table 7, first column). Married men and displaced workers with more dependents tend to find a new job relatively quickly. The coefficient for UI implies that one more week of benefits increases the duration of joblessness by almost half a week, which is near the high end of the results cited by Decker (1997).²⁴

The remaining regressions indicate that severance packages tend to prolong joblessness considerably. The first of these specifications (column 2) indicates that receipt of severance pay reduces the likelihood of reemployment within any given time interval to about 65 percent of what it would be otherwise, holding constant all other characteristics of the displaced worker and the layoff. The coefficient is very similar

²³ The effect of a two-unit change in the value of an explanatory variable is obtained by taking the square of the estimated coefficient and, similarly, the effects of larger changes are measured through exponentiation to the appropriate power. See Kodrzycki (1996) footnote 16 for further discussion of the Cox model.

²⁴ In this sample, one added week of UI is equivalent to one-half week of pay, taking into account the basic replacement rate of 0.5 as well as maximum benefit amounts and dependent allowances. According to the regression, the probability of reemployment is reduced to $(.979)^{.5} = .989$ of what it otherwise would be. Thus, the duration of joblessness is increased by $[(1/.989) - 1] = 1.07$ percent. The average completed jobless spell is 45 weeks, so the increase is 0.48 week.

using "unexpected severance receipt"—the difference between the actual severance dummy (1 = received severance pay, 0 = did not receive severance pay) and its predicted value. When employer controls are added (column 4), the availability of a severance plan was found to reduce the likelihood of reemployment even further, to 59 percent of what it would be otherwise.

The final three columns include the number of weeks of severance pay. These regressions also indicate that severance pay impedes reemployment, but to a somewhat lesser degree. According to the estimates in columns 5 through 7, the "average" recipient, with almost 15 weeks of severance pay, was 84 to 86 percent as likely to become reemployed as someone with the same characteristics who had no severance package.²⁵

Regression results indicate that severance packages tend to prolong joblessness considerably.

The estimated coefficients for severance pay in columns 5 to 7 are closer to one than those for UI. Thus the results are consistent with the predictions of the labor-leisure choice and job search models, which indicate that added severance benefits would have less effect on the duration of joblessness than an equivalent dollar increase in unemployment insurance benefits.

The effects of severance packages were found to be similar when older workers were excluded.²⁶ Thus, according to the regressions excluding employer controls, workers receiving the average severance plan were estimated to remain jobless between 16 and 61 percent longer than workers who received no severance pay.²⁷ The sampled workers who received severance packages and eventually found a new job were out of work for 11 months on average, so the regressions imply that severance pay lengthened their jobless spell by about 1½ to 4 months. With employer controls, the estimated range was wider.

²⁵ This estimate is derived by raising the coefficient for weeks of severance to the 14.7th power.

²⁶ The corresponding coefficients and significance levels were as follows: column 2, .650***; column 3, .623***; column 4, .590***; column 5, .990*; column 6, .989**; column 7, .987*.

²⁷ These figures equal $1/.862$ and $1/.623$, respectively, minus one.

Table 7
Reemployment Probabilities: Estimates Using Cox Proportional Hazards Model

Independent Variable	(1) Without Severance Variables	(2) With Severance Dummy	(3) With Unexpected Severance Receipt	(4) With Unexpected Severance Receipt and Employer Controls	(5) With Severance Amount	(6) With Unexpected Severance Amount	(7) With Unexpected Severance Amount and Employer Controls
<i>Experience</i>							
Potential Work	.9996***	.9996***	.9996***	.9996***	.9996***	.9996***	.9997***
Experience Squared	(.00008)	(.00008)	(.00008)	(.00008)	(.0008)	(.00008)	(.0009)
Job Tenure	.9965	1.001	.9979	.9991	1.005	.9962	.9993
	(.0044)	(.0046)	(.0045)	(.0049)	(.007)	(.004)	(.005)
<i>Education (Omitted = less than High School)</i>							
High School	.886	.934	.949	1.03	.900	.920	1.02
	(.106)	(.120)	(.122)	(.137)	(.116)	(.120)	(.137)
Some College	.883	.912	.925	1.05	.868	.891	1.04
	(.113)	(.124)	(.127)	(.150)	(.119)	(.123)	(.149)
College Degree	.802	.807	.812	.934	.794	.808	.957
	(.123)	(.128)	(.130)	(.156)	(.128)	(.131)	(.161)
More than College	.950	1.01	1.01	1.14	.932	.933	1.10
	(.216)	(.237)	(.240)	(.280)	(.219)	(.222)	(.273)
<i>County Unemployment Rate at Time of Layoff</i>							
Level	.548***	.542***	.537***	.534***	.546***	.549***	.518***
	(.038)	(.038)	(.038)	(.041)	(.039)	(.039)	(.040)
12-Month Change	.734***	.727***	.719***	.702***	.722***	.719***	.681***
	(.044)	(.043)	(.043)	(.046)	(.044)	(.044)	(.045)
<i>Difference between Statewide and County Unemployment Rate at Time of Layoff</i>							
Level	.585***	.583***	.576***	.574***	.582***	.582***	.557***
	(.044)	(.045)	(.044)	(.047)	(.045)	(.045)	(.046)
12-Month Change	.758***	.757***	.750***	.732***	.747***	.743***	.715***
	(.051)	(.052)	(.052)	(.052)	(.051)	(.051)	(.051)
Laid Off Prior to July 1992	.884	.917	.923	.875	.894	.897	.878
	(.107)	(.114)	(.115)	(.114)	(.114)	(.112)	(.115)

Table 7 continued

Reemployment Probabilities: Estimates Using Cox Proportional Hazards Model

Independent Variable	(1) Without Severance Variables	(2) With Severance Dummy	(3) With Unexpected Severance Receipt	(4) With Unexpected Severance Receipt and Employer Controls	(5) With Severance Amount	(6) With Unexpected Severance Amount	(7) With Unexpected Severance Amount and Employer Controls
Gender and Marital Status (Omitted = Unmarried Male)							
Married Male	1.37*** (.120)	1.34*** (.120)	1.33*** (.119)	1.34*** (.123)	1.38** (.124)	1.38*** (.124)	1.34*** (.123)
Married Female	1.17 (.133)	1.13 (.132)	1.13 (.132)	1.15 (.144)	1.22 (.143)	1.21 (.143)	1.18 (.148)
Unmarried Female	1.12 (.119)	1.10 (.120)	1.11 (.120)	1.13 (.126)	1.15 (.126)	1.16 (.127)	1.15 (.130)
Nonwhite	.924 (.117)	.932 (.123)	.941 (.125)	.963 (.128)	.908 (.120)	.916 (.121)	.944 (.126)
Number of Dependents	1.09*** (.034)	1.09*** (.035)	1.09*** (.035)	1.08** (.035)	1.09*** (.035)	1.10*** (.035)	1.09*** (.035)
Recalled	2.94*** (.281)	3.03*** (.292)	3.04*** (.293)	3.19*** (.316)	2.99*** (.289)	3.01*** (.291)	3.20*** (.317)
Fitted Duration of Employment and Training	.950*** (.012)	.952*** (.012)	.954*** (.012)	.953*** (.012)	.953*** (.012)	.955*** (.012)	.954*** (.012)
Amount of Unemployment Insurance	.979*** (.008)	.979*** (.008)	.982** (.008)	.978** (.009)	.979*** (.008)	.978*** (.008)	.980** (.008)
Received Severance Pay		.650*** (.064)	.623*** (.063)	.590*** (.080)			
Amount of Severance Pay (weeks)					.990** (.005)	.989** (.005)	.988* (.007)
Pseudo R ²	.036	.038	.038	.039	.037	.037	.039
Number of Observations	1640	1597	1590	1590	1585	1578	1578

Note: The column entries represent hazard ratios, followed by standard errors in parentheses. The regressions also included occupational dummies.

*Significantly different from 1 at 10 percent level.

**Significantly different from 1 at 5 percent level.

***Significantly different from 1 at 1 percent level.

Changes in Pay

The final regressions examined what effect, if any, severance plans had on displaced workers' ability to find jobs with higher starting pay than they otherwise might have.²⁸ The dependent variable in Table 8 is the real hourly wage replacement rate and the basic specification mirrors that in Kodrzycki (1996), except that two-stage least squares was used in recognition of the fact that UI and severance benefits affect the duration of unemployment. As indicated in the first column, displaced workers who had high school or college diplomas fared far better than high school dropouts. Workers who had a long history with their

More generous unemployment insurance benefits have a small but positive effect on reemployment pay, but receipt of a severance package and the amount of the severance award had no significant effect on pay.

previous employer did relatively poorly, as did those who switched occupations. Changing industries had a negative impact, although this was not statistically significant (in contrast with previous findings using the full sample of displaced Massachusetts workers). Workers who were unemployed longer tended to accept greater pay cuts, while those who were willing to take a job located far away did a little better than those who accepted a job locally.

The regression indicates that more generous UI benefits have a positive effect on reemployment pay, but the effect is rather small. The total impact of UI is measured by its coefficient in the wage replacement equation (which picks up the productivity of the job

²⁸ Kodrzycki (1996) and (1997) found that employment and training classes had little effect on starting pay at the new job, although in some cases they enabled workers to make bigger changes in their line of work or enter occupations that could be expected to have better long-term prospects.

search) less its indirect impact from causing people to stay out of work longer (and therefore become more desperate to find work or, perhaps, less desirable in the eyes of potential employers). The indirect effect is measured from the coefficient of UI in the first stage equation times the coefficient for the duration of unemployment in the wage replacement equation. All told, increasing UI benefits by one standard deviation (about 7 weeks of pay), raises the wage replacement rate by only 2 points. This is broadly in line with the literature cited, which fails to find definitive evidence that receiving UI improves subsequent pay.

The remaining columns indicate that receipt of a severance package and the amount of the severance award had no significant effect on pay. This result held up when the sample was restricted to workers aged less than 50. Thus, the 10-percentage-point difference in wage replacement rates reported in Table 5 between severance recipients and nonrecipients appears to be explained mostly by factors such as severance recipients' higher average job tenure, as well as their substantially higher tendency to change occupations.²⁹

V. Summary and Conclusions

This article has examined the effects of employer-provided severance benefits for a sample of about 2,400 Massachusetts residents who were displaced from their jobs, from 15 different employers in the early 1990s. Economic conditions in the state were quite weak during that time, and layoffs were common, especially in manufacturing. Overall Massachusetts employment fell sharply between 1989 and 1992, and the state's unemployment rate continued to exceed the national average until 1994. About 60 percent of the workers in the sample had been displaced from manufacturing jobs; retail trade was the second largest category.

Severance pay was an important source of supplemental income for the displaced workers in the study. Eighty-six percent were covered under a severance plan and median benefits (including workers with no severance pay) equaled 10 weeks of prior pay. Unemployment insurance was relatively generous during the period studied as a result of extended and emergency benefits available for states with high unemployment. Nevertheless, the median worker in

²⁹ The only factor favoring severance recipients was their greater education. Only 5 percent were high-school dropouts, compared to 10 percent for nonrecipients.

Table 8
*Real Hourly Wage Replacement Rate: Two-Stage Least Squares Regression Results,
 Excluding Recalls*

Independent Variable	(1) Without Severance Variables	(2) With Severance Dummy	(3) With Unexpected Severance Receipt	(4) With Severance Amount	(5) With Unexpected Severance Amount
Experience					
Potential Work Experience	.152 (.144)	.155 (.145)	.154 (.145)	.156 (.147)	.161 (.147)
Job Tenure	-1.67*** (.437)	-1.64*** (.468)	-1.71*** (.446)	-1.47*** (.502)	-1.66*** (.448)
Job Tenure Squared	.044*** (.014)	.044*** (.014)	.045*** (.014)	.044*** (.014)	.045*** (.014)
Education (Omitted = less than High School)					
High School	12.79** (5.81)	12.84** (5.83)	12.75** (5.83)	12.85** (5.84)	12.80** (5.85)
Some College	15.15** (5.99)	15.21** (6.01)	15.15** (6.00)	14.71** (6.05)	14.91** (6.05)
College Degree	24.70*** (6.82)	24.60*** (6.84)	24.59*** (6.84)	24.43*** (6.87)	24.55*** (6.87)
More than College	18.64** (7.95)	18.94** (8.03)	18.89** (8.03)	18.84** (8.06)	18.93** (8.06)
Reading Test Score	1.80*** (.632)	1.81*** (.638)	1.81*** (.637)	1.79*** (.642)	1.80*** (.642)
Switched Occupation	-8.70*** (2.74)	-8.71*** (2.75)	-8.66*** (2.75)	-8.39*** (2.76)	-8.50*** (2.76)
Fitted Duration of Unemployment	-1.50*** (.426)	-1.50*** (.426)	-1.49*** (.426)	-1.62*** (.426)	-1.62*** (.427)
Location of New Job					
Distance	.043** (.017)	.043** (.017)	.043** (.017)	.042** (.017)	.042** (.017)
Distance Squared	-.00002** (.000009)	-.00002** (.000009)	-.00002** (.000009)	-.00002** (.000009)	-.00002** (.000009)
Work Effort					
Full-Time at Previous Job	5.35 (7.15)	5.35 (7.17)	5.61 (7.19)	6.60 (7.24)	6.17 (7.28)
Switched to Part-Time	-.916 (3.79)	-.954 (3.80)	-.977 (3.80)	-.097 (3.92)	-.281 (3.91)
Switched to Full-Time	27.00*** (10.25)	26.84*** (10.30)	27.22*** (10.30)	27.99*** (10.31)	27.81*** (10.34)
Gender and Marital Status (Omitted = Unmarried Male)					
Married Male	-1.90 (2.83)	-2.00 (2.85)	-1.81 (2.85)	-1.70 (2.87)	-1.62 (2.87)
Married Female	-.877 (4.10)	-.986 (4.14)	-.685 (4.13)	-.049 (4.22)	-.434 (4.22)
Unmarried Female	5.72 (3.48)	5.69 (3.53)	5.93* (3.52)	6.06* (3.54)	6.14* (3.54)

Table 8 continued

Real Hourly Wage Replacement Rate: Two-Stage Least Squares Regression Results, Excluding Recalls

Independent Variable	(1) Without Severance Variables	(2) With Severance Dummy	(3) With Unexpected Severance Receipt	(4) With Severance Amount	(5) With Unexpected Severance Amount
Nonwhite	2.26 (4.57)	1.85 (4.65)	1.86 (4.65)	1.76 (4.68)	1.90 (4.68)
Switched Industry	-4.24 (3.07)	-4.35 (3.10)	-4.27 (3.10)	-4.73 (3.13)	-4.47 (3.12)
Amount of Unemployment Insurance	.677*** (.250)	.683*** (.252)	.660*** (.253)	.741*** (.252)	.727*** (.253)
Received Severance Pay		-1.00 (4.02)	1.57 (3.94)		
Amount of Severance Pay (weeks)				-.164 (.176)	-.082 (.189)
Constant	50.46*** (16.52)	51.07*** (16.80)	50.43*** (16.57)	48.33*** (16.65)	48.73*** (16.67)
Adjusted R ²	.169	.167	.167	.166	.165
Number of Observations	578	576	576	568	568

Note: The regressions also included occupation dummies. The number in parentheses are standard errors.

*Significantly different from 1 at 10 percent level.

**Significantly different from 1 at 5 percent level.

***Significantly different from 1 at 1 percent level.

the sample received severance pay equal to almost 40 percent of the maximum applicable UI payments. Because severance benefits tend to increase with job tenure, they were an even more important source of support for workers displaced after many years of working for the same employer. For the median worker with at least 20 years' experience at a single employer (a category covering almost one-fifth of the sample), severance benefits exceeded maximum UI benefits.

The study found that, in addition to any positive effects on living standards, severance benefits caused displaced workers to delay or otherwise reduce the intensity of their job search. Among those who found a job within the sample time frame, recipients of severance benefits were reemployed 11 months after losing their job, compared to only 6 months for those who received no severance benefits. Some of this 5-month difference can be explained by other factors that influenced workers' relative abilities or willingness to find work, such as their age or local economic conditions. Nevertheless, regression analysis confirmed that severance recipients were likely to remain

out of work longer than other displaced workers, although the exact difference varied with the specification used.

The study also investigated whether severance benefits resulted in more "productive" nonemployment, either by encouraging displaced workers to undergo training or by allowing them to hold out for better-paying jobs. Severance pay did result in a greater likelihood of enrolling in basic education classes to improve language, math, or computer skills or to earn a high school equivalency degree. Since only about 4 percent of the overall sample took basic education classes after losing their jobs (while 33 percent took occupational training), the overall role of severance pay in encouraging displaced workers to accumulate new skills was relatively limited. This may have been because of specific policies in Massachusetts: The state allows all displaced workers to collect extended unemployment benefits while enrolled in qualified retraining programs. As for reemployment pay, the regressions indicated, unfortunately, that receipt of severance pay as well as the amount had no significant impact.

While informative, this initial study was based on a limited sample of severance plans and displaced workers. A high priority for follow-on research is to see if the results can be confirmed using larger data sets. This would require the cooperation of more employers in divulging information on their severance practices, as well as the linking of such information to data on individuals. Ideally, data sets should also contain information on other resources available to displaced workers, such as their accumulated wealth and unemployment benefits as well as the current income of other family members.

In addition to any positive effects on living standards, severance benefits caused displaced workers to delay or otherwise reduce the intensity of their job search.

What are the normative implications, if any, of the finding that severance plans lead to longer durations of joblessness? It is important to recognize that, unlike unemployment insurance, severance arrangements are voluntary on the part of employers and fully funded by them. Furthermore, like UI, severance packages play a positive role in providing added resources for displaced workers. Some—especially those with a lengthy history with a single employer—may be too distraught to undertake a meaningful employment search soon after losing their job.³⁰ Furthermore, given the economic circumstances in Massachusetts in the early nineties, many in the sample undoubtedly were able to conduct a more

³⁰ A considerable literature has found that unemployment and the prospect of unemployment increase the likelihood of psychological distress (Kasl, Rodriguez, and Lasch 1996).

efficient job search by waiting until conditions improved somewhat.

The only apparent negative spillover might be that by prolonging joblessness, severance plans increase expenditures on public unemployment insurance, the costs of which are not borne equitably because of imperfect experience rating.³¹ The degree to which this is the case depends in part on how UI benefits are determined. In some circumstances, dismissed workers may not collect UI until their severance benefits end. In these cases, severance plans could conceivably *lower* UI costs even if they lengthen jobless spells somewhat. Furthermore, a complete analysis would have to examine whether companies offering severance packages are more or less prone to layoffs than others. To the extent severance plans increase the costs of separations, they might provide some deterrent in the case of employers contemplating what might turn out to be merely temporary layoffs.

Finally, what is to be made of the finding that workers with severance packages were not able to find jobs that paid more than those who did not receive severance packages, adjusting for all other quantifiable differences in their characteristics? While the result is somewhat discouraging, it is not really surprising, given the lack of previous evidence that the longer job search afforded by more generous unemployment insurance benefits boosts reemployment pay. Taken as a whole, the analysis strongly indicates that at least in recent years, the key to displaced workers' being able to find a new job with comparable pay is not searching longer, but having transferable skills.

³¹ See, for example, Tannenwald and O'Leary (1997) for a description of the financing of unemployment benefits. A separate mechanism by which severance plans may raise UI costs is by increasing the awareness of the unemployed concerning the availability of UI benefits, thereby increasing the proportion who collect the benefits that are due. However, governments tend to view higher take-up rates as desirable.

Appendix

by Patricia H. Bankowski

This appendix describes the calculation of severance pay and unemployment benefits for the sample. It also describes the regressions used to model whether a dismissed worker receives severance pay and the amount of severance pay.

Severance Pay

In calculating the total severance pay received by a worker, years of service, hourly wage, hours worked per week, and occupation were taken into account. Three employers offered no severance package. Six offered the same severance package for all workers. The remaining employers offered separate packages for different categories of employees such as exempt versus nonexempt, salaried versus hourly, union versus nonunion, and full-time versus part-time. In all cases, the study used the provisions pertaining to involuntary reductions in force, even if the employer had a separate plan for voluntary separations.

For the one employer that provided different severance packages to full-time versus part-time workers, severance benefits were computed using 35 hours per week as the minimum cutoff for full-time work. Although about 2 percent of the overall sample were reported to have worked more than 40 hours per week, only the first 40 hours were used in computing the rate of pay for severance purposes. That is because employers determined severance benefits on the basis of base pay, excluding overtime.

Where needed, worker classifications were determined from data on occupation, pay, and union coverage at the place of employment. For one employer, the information needed to determine union status was lacking for many employees. In these cases, severance benefits were calculated assuming, alternately, that the employee was and was not part of a union. In cases where the difference between nonunion and union benefits differed by less than 10 percent, the average of the two calculations was used. In the remaining cases, a missing value was assigned for severance benefits.

Minimum tenure requirements varied by employer. Only one firm offered severance pay to workers in its employ less than one full year. Two employers required a minimum of two full years of service and one required at least four years.

Severance benefits varied according to how long the employee had worked for the former employer. Where benefits were in direct proportion to length of service, formulas usually specified completed full years of service. However, two plans based benefits on quarter-years, and

Appendix Table 1

Unemployment Insurance Durations in Connecticut and Massachusetts, Including Extended and Emergency Benefits, 1991 to 1994

State and Effective Dates	Number of Weeks of UI		
	Regular	Emergency	Total
Connecticut			
November 17, 1991–March 1992 ^a	26	20	46
March 1992 ^a –June 13, 1992	26	33	59
June 14, 1992–October 31, 1992	26	26	52
November 1, 1992–September 11, 1993	26	20	46
September 12, 1993–October 2, 1993	26	10	36
October 3, 1993–April 1994 ^a	26	7	33
Massachusetts			
March 3, 1991–June 23, 1991	30	13 ^b	43
June 24, 1991–November 10, 1991	30	0	30
November 11, 1991–February 8, 1992	30	20	50
February 9, 1992–June 13, 1992	30	33	63
June 14, 1992–May 30, 1992	30	26	56
May 31, 1992–August 1, 1992	26	26	52
August 2, 1992–September 11, 1993	26	20	46
September 12, 1993–October 2, 1993	26	10	36
October 3, 1993–January 3, 1994	26	7	33

^aExact dates were not provided for the beginning/termination of certain emergency benefit programs.

^bExtended benefits.

Source: Connecticut Department of Labor, Massachusetts Division of Employment and Training.

another on every two years of service. In other cases, benefits increased with service, but service intervals were expressed as ranges of years. One plan measured tenure as of an arbitrary date prior to the layoff.

Some plans capped severance benefits, at between 14 and 52 weeks of pay. One plan provided a bonus for employees earning in excess of a given amount annually. A union plan included a cost-of-living adjustment for all covered workers.

Appendix Table 2

Maximum Weekly Unemployment Insurance Benefit Amounts in Connecticut and Massachusetts, 1991 to 1994

Period ^a	Connecticut	Massachusetts
1990–91	\$270	\$282
1991–92	\$288	\$296
1992–93	\$306	\$312
1993–94	\$317	\$325

^aBenefit limits applied starting the first Sunday in October of the first year indicated.

Source: Connecticut Department of Labor, Massachusetts Division of Employment and Training.

Appendix Table 3

Regression Results: Severance Pay Availability and Amount

Independent Variable	Full Sample		Excluding Individuals Aged 50 and Over	
	Received Severance Pay	Amount of Severance Pay (weeks)	Received Severance Pay	Amount of Severance Pay (weeks)
Job Tenure (years)	.017 (.003)	1.02 (.062)	.027 (.004)	1.13 (.097)
Job Tenure Squared	-.0004 (.00008)	-.003 (.002)	-.0008 (.0002)	-.006 (.004)
Annual Earnings (thousands of dollars)	.014 (.023)	.124 (.051)	.015 (.003)	.091 (.07)
Annual Earnings Squared	-.0001 (.003)	-.001 (.0006)	-.0002 (.00004)	-.0009 (.0009)
Manufacturing Dummy	.056 (.016)	-3.80 (.369)	.048 (.018)	-4.83 (.421)
Constant	.424 (.040)	.504 (.912)	.386 (.051)	1.57 (1.16)
Adjusted R ²	.080	.522	.076	.438
Number of Observations	2286	2274	1713	1703

Note: The numbers in parentheses are standard errors. The regressions for "Received Severance Pay" have a dichotomous dependent variable; hence, although the fitted values using ordinary least squares are unbiased, the standard errors are not accurate and should be interpreted as only rough guides to the significance of each independent variable.

the sample, it was assumed that all workers were eligible for UI (and that all eligible workers collected benefits). The weekly earnings base was taken as the hourly wage at the time of layoff times the number of hours worked per week. In both Massachusetts and Connecticut, UI replaced 50 percent of previous weekly earnings, up to a specified maximum. The maximum weekly benefit amounts are shown in Appendix Table 2. In addition, Massachusetts law provided \$25 weekly per dependent child, up to a maximum of 50 percent of the basic UI benefit. Former employees of Connecticut employers received \$10 per dependent child, up to a maximum of \$50. The displaced worker data set included only the total number of dependents, without specifying whether they were children or adults. Thus the total number of dependents was used in estimating benefits; if the number of dependents was missing, it was assumed to equal zero.

*Severance Regressions**Unemployment Insurance Benefits*

Although the sample consists entirely of Massachusetts residents, one of the employers was located in Connecticut. People residing in Massachusetts but working in Connecticut are eligible for Connecticut unemployment insurance benefits.

Massachusetts normally provides 30 weeks of unemployment benefits, Connecticut 26 weeks. In May 1992, Massachusetts reduced its regular weeks of UI benefits to 26 weeks while federal emergency benefit programs were in effect. Appendix Table 1 shows the maximum duration of benefits for both states during the periods when extended or emergency benefits were available.

State laws determine eligibility for UI and the amount of UI using earnings over a certain period prior to unemployment. Lacking this precise information for workers in

This article makes use of variables indicating whether an individual would have been expected to receive severance pay, as well as the amount of expected severance pay, based on factors other than company policy. These variables were constructed by estimating the regressions shown in Appendix Table 3. In each case, the severance pay measure was regressed on job tenure and its square, annual earnings and its square, a manufacturing dummy, and a constant. The regressions were estimated for the full sample and a subsample excluding individuals age 50 and over. As indicated, the probability of receiving severance pay varied positively but less than proportionately with job tenure and earnings, and it was greater in manufacturing than in nonmanufacturing. The amount of severance pay (expressed in number of weeks) varied in the same way with respect to job tenure and earnings. However, manufacturing firms provided less generous plans than nonmanufacturing firms, controlling for the other variables.

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