
Upjohn Institute Press

Job Displacements in Recessions: An Overview of Long-Term Consequences and Policy Options

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Chapter 2 (pp. 17-36) in:
**Reconnecting to Work: Policies to Mitigate Long-Term Unemployment
and Its Consequences**

Lauren D. Appelbaum, ed.

Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2012

DOI: 10.17848/9780880994095.ch2

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2012

W.E. Upjohn Institute for Employment Research
Kalamazoo, Michigan

Library of Congress Cataloging-in-Publication Data

Reconnecting to work : policies to mitigate long-term unemployment and its consequences / Lauren D. Appelbaum, editor.

p. cm.

Papers presented at a conference held on Apr. 1–2, 2011.

Includes bibliographical references and index.

ISBN-13: 978-0-88099-406-4 (pbk. : alk. paper)

ISBN-10: 0-88099-406-1 (pbk. : alk. paper)

ISBN-13: 978-0-88099-408-8 (hardcover : alk. paper)

ISBN-10: 0-88099-408-8 (hardcover : alk. paper)

1. Labor policy—United States—Congresses.
2. Unemployment—United States—Congresses.
3. Full employment policies—United States—Congresses.
4. Recessions—United States—Congresses. I. Appelbaum, Lauren D.

HD5724.R337 2012

331.13'770973—dc23

2012034390

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300 S. Westnedge Avenue
Kalamazoo, Michigan 49007-4686

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Cover design by Alcorn Publication Design.

Index prepared by Diane Worden.

Printed in the United States of America.

Printed on recycled paper.

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Job Displacements in Recessions

An Overview of Long-Term Consequences and Policy Options

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As the U.S. economy continues to recover from the Great Recession, an important unknown is the fate of the millions of workers affected by layoffs and lengthening spells of unemployment. This chapter focuses on the short- and long-term consequences of layoffs and unemployment for affected workers, and on potential policy options to ease the burden of adjustment on workers and their families.

Judging from experience in past recessions, the consequences of layoffs for job losers are severe and persistent across several dimensions. The average mature worker losing a stable job with a good employer will see earnings reductions of 20 percent lasting over 15–20 years. While these earnings losses vary somewhat among demographic groups or industries, no group in the labor market is exempt from significant and long-lasting costs of job loss (von Wachter, Song, and Manchester 2011a).

A job loss is also typically followed by an extended period of instability of employment and earnings. During this period, job losers can experience declines in health. In severe downturns, these health declines can lead to a significant reduction in life expectancy of 1–1.5 years (Sullivan and von Wachter 2009). The consequences of job loss are also felt by workers' children—who can suffer even into adulthood—and their families. All of these costs are likely to be greater for the long-term unemployed.

Government programs can alleviate part of the short-term earnings loss associated with job loss and unemployment. As a typical measure, extensions of unemployment insurance (UI)

- ease the burden of adjustment for laid-off workers,
- are likely to prevent entry into more costly government programs such as disability insurance,
- provide a degree of demand stabilization, and
- are unlikely—at least in recessions—to be associated with significant reductions in employment in the short or the long run.

However, policy is unlikely to be able to prevent the large and lasting reductions in earnings that eventually follow a typical job loss. The majority of long-term losses are due to factors that are not easily manipulated by government policy, such as losses in the value of certain skills as industries decline, the loss of long-term career jobs, or slow wage-adjustment in the labor market. Some policies, though, have been shown to be able to reduce unemployment, such as targeted efforts to help workers in their job search, or programs reducing the costs of long-term adjustment, such as the costs of retraining.

Given the difficulties of helping job losers and unemployed workers recover from long-term earnings losses after the fact, it may be worthwhile to explore available options to prevent large-scale layoffs in the future. Such options include programs of work sharing to subsidize employment before workers are laid off and become unemployed, to encourage the introduction of flexible work-time arrangements, or to encourage the provision of credit to economically viable firms affected by distress in financial markets.

For example, the cost of UI benefits for a typical worker is a small fraction of the total earnings lost due to a layoff over the remainder of the individual's working life. If the same benefits were paid during employment to avoid job loss, the cost of recessions would be substantially reduced. This would be beneficial even if the worker were to be let go eventually, since earnings losses tend to be significantly smaller for layoffs that do not occur in a large recession.

Overall, job loss and unemployment during severe recessions can impose substantial and lasting costs on affected workers in terms of earnings, health, and strain on their families. The short-term burden

of these costs can in part be alleviated at a comparatively small cost, such as by extensions in UI. Less is known about how to help reduce the substantial long-term costs. While cost-effective policies may be available to help reemploy the long-term unemployed, the potential of policy interventions to significantly aid recovery of long-term earnings declines appears bleaker. Given these large and long-term costs, preventive measures to avoid massive layoffs are a policy option worth considering.

THE SHORT- AND LONG-TERM CONSEQUENCES OF LAYOFF AND UNEMPLOYMENT

An increasing literature has documented that job losses during recessions have severe and lasting consequences for earnings. For example, workers displaced in the recession of the early 1980s—which, until 2008, was the strongest U.S. recession since World War II—on average had earnings reductions of 30 percent or more in the first year after layoff. These losses declined somewhat over time, but even 15–20 years after job loss, the earnings reduction was still 20 percent (Jacobson, Lalonde, and Sullivan 1993; von Wachter, Song, and Manchester 2011a). Such lasting earnings reductions occurred for job losers in all age ranges, in all industries, for men and women, and throughout the earnings distribution. This phenomenon is not limited to the early 1980s recession or to particular regions of the country, and it does not depend on the particular way of measuring the cost of displacement.¹ Older workers suffer larger losses in earnings, but these losses extend over shorter periods of time, since remaining lives are shorter and job loss hastens retirement (Chan and Stevens 2001). Workers in the middle of the education distribution, such as workers with some college or only a high school degree, appear to lose more than very low- or very high-skilled individuals (von Wachter and Handwerker 2009).

These long-lasting reductions in earnings occur alongside, and may be partly augmented by, increases in job instability, recurring transitions to nonemployment, and repeated switches of industry or occupation (Stevens 1997; von Wachter, Song, and Manchester 2011a). Some of this increased mobility between jobs may be a sign of beneficial adjust-

ment, but on average those workers who immediately find a stable job in their predisplacement industry do significantly better. The increase in job instability lasts up to 10 years after layoff. During the same period, these workers experience continuing increases in earnings instability. Thus, there is no sign that laid-off workers trade lower earnings for more stable employment. While heightened regional mobility appears beneficial in the short run, as mobile workers may eschew a particularly depressed local labor market, movers do not have lower long-term earnings losses.

There is also increasing evidence that laid-off workers suffer short- and long-term declines in health. In the short term, layoffs and unemployment are associated with an increasing incidence of stress-related health problems, such as strokes or heart attacks (Burgard, Brand, and House 2007). These problems can lead to a large spike in mortality right after job loss. For example, mature men who lost their stable jobs in Pennsylvania during the early 1980s experienced an increase in the mortality rate right after job loss of up to 100 percent. This initial rise in mortality declines over time, but mortality remains significantly higher for job losers than for comparable workers who did not lose their jobs. If sustained until the end of their lives, such increases lead to reductions in life expectancy of 1–1.5 years (Sullivan and von Wachter 2009).

Several studies also point to short- and long-term effects of layoffs on the children and families of job losers and unemployed workers. For example, in the short run, parental job loss reduces schooling achievement of children (Stevens and Schaller 2009). In the long run, it appears that a lasting reduction in the earnings of fathers also reduces the earnings prospects of their sons (Oreopoulos, Page, and Stevens 2008). There is also evidence that layoff heightens the incidence of divorce, reduces home ownership, and increases the rate of application to and the receipt of disability insurance programs (Charles and Stephens 2004; Rege, Telle, and Votruba 2009; Rupp and Stapleton 1995; von Wachter and Handwerker 2009).

All of these costs are likely to be larger for workers who are unemployed for longer periods of time. It is well documented that earnings losses for unemployed workers increase significantly with time spent outside employment (Congressional Budget Office 2007; Machin and Manning 1999). It is difficult to establish whether this is because the duration itself worsens labor market prospects, or because those workers

facing the strongest challenges in the labor market take longer to find a new job. In one of a few studies establishing causality, Schmieder, von Wachter, and Bender (2012b) show that nonemployment indeed leads to lower reemployment wages, at least in Germany. Independently of the source, longer unemployment spells are likely to put a significant additional strain on workers' financial situations and the overall well-being of both themselves and their families. These workers are also particularly dependent on benefits from UI. The poverty rate among the long-term unemployed is high, especially for those exhausting unemployment benefits (Congressional Budget Office 2008, Tables 6 and 9).

Finally, even though they were not laid off or are not officially counted as unemployed, the long-term earnings and career prospects of young workers entering the labor market during a recession also suffer. For example, individuals graduating from college during a large recession are likely to see reduced earnings for 10–15 years compared to more fortunate graduates (Kahn 2010; Oreopoulos, von Wachter, and Heisz 2012; Oyer 2008). As is the case for job losers, those labor market entrants in the middle of the education distribution do worse, while those with lower or higher education tend to do better (Kondo 2008; Oreopoulos, von Wachter, and Heisz 2012). The pattern of recovery of unlucky college graduates is telling: a recession reduces the quality of the first employer. After about five years, workers find an employer of better quality, but their earnings still have to recover within the firm relative to more fortunate graduates who obtained their jobs in better economic times. Thus, the initial setback in the career can take 10–15 years to dissipate, even for this very mobile demographic group.

THE REASONS FOR LONG-TERM EARNINGS LOSSES AFTER LAYOFF AND UNEMPLOYMENT

There are several potential sources of lasting reductions in earnings after a layoff. An often cited explanation attributes the losses in earnings to a loss in the use of certain skills, as some industries or occupations shift their operations elsewhere or permanently reduce their employment levels. If some of workers' earnings derived from payment for services and skills only needed in specific industries or occupations, upon

job loss workers lose wages associated with these skills (Neal 1995; Parent 2000; Poletaev and Robinson 2008). Such a loss can lead to long-term earnings declines if workers do not reinvest in a new equivalent set of skills. Particularly for middle-aged or older workers, it might not be worth spending their time and money in costly retraining as they face uncertain reemployment over a shorter remaining working life.

Another explanation is that workers in stable jobs, especially workers aged 30 or older, are likely to have found an occupation and an employer suitable for their interests and qualifications. The process of searching for such a job can take time, involving both changes of occupations and employers in the beginning of their careers, as well as job search and promotions within a firm (Baker, Gibbs, and Holmstrom 1994; Neal 1999; Topel and Ward 1992). On average, this phase of workers' careers can last 10 years. Part of the gain from this prolonged search and matching process is lost at job loss. By its nature, finding such a suitable job again is likely to take a long time. If job offers start arriving only as the economy picks up, the adjustment process can last well beyond recovery in the aggregate labor market.

Increasing evidence also suggests that the first wage on a worker's new job is likely to influence her pay for a long time (Beaudry and DiNardo 1991; Schmieder and von Wachter 2010). This persistence can arise from (explicit or implicit) wage contracts between workers and firms. Since many unemployed workers end up finding the first job when wages are still depressed due to the recession, persistence implies that they may live with lower earnings for quite some time. As a result, workers laid off in recessions suffer substantially larger earnings losses than workers laid off in booms (Davis and von Wachter 2012). Although workers can improve their pay by obtaining outside job offers, changing jobs, or relocating, many face obstacles to such adjustment, often due to family commitments. However, the rate of mobility is likely to be too low even given those factors, possibly because individuals do not realize the need to keep improving their economic situations 5–10 years after a job loss or an unemployment spell.

Some workers may also experience reductions in earnings because they held jobs in industries or at firms that paid exceptionally high wages. Yet, it does not appear that workers in such jobs are more likely to be laid off. In fact, during large recessions job losers are less likely to

be selected from high-wage jobs, partly because economic difficulties are widespread and do not just affect single firms or sectors. Similarly, it is unlikely that job losses arise because firms systematically let go those workers who are overpaid or who are least productive.²

POLICY OPTIONS TO EASE THE BURDEN OF ADJUSTMENT OF LAID-OFF AND UNEMPLOYED WORKERS

Policies Aimed at Reducing the Burden of Short-Term Earnings Losses

Government programs can help to ease the burden of the short-term cost of job loss and unemployment. The most common approach to do so has been to increase the duration over which eligible workers can receive unemployment benefits. In the 2008 recession, the maximum duration of UI benefits was 99 weeks, about four times the regular duration of 26 weeks. Significant extensions in the duration of UI also took place in the 1982 and 1990 recessions (Congressional Budget Office 2004).

Extensions of UI benefits have several beneficial aspects for recipients and for the economy as a whole. Extended benefits allow workers to buffer the effect of the earnings loss on consumption, albeit consumption still falls for the average UI recipient (Browning and Crossley 2001; Congressional Budget Office 2007; Gruber 1997). In addition, extended benefits allow workers to search longer for a suitable job, and provide insurance against the stress of not being able to find a job because of continued slack in the labor market. Extensions in UI benefits also prevent some workers from applying to other government programs not intended to smooth short-term economic shocks, such as Social Security Disability Insurance or Old Age and Survivors Insurance. In particular, benefits provided under disability insurance can be very costly, especially if provided to younger or middle-aged workers with low-mortality impairment (Autor and Duggan 2006; von Wachter, Song, and Manchester 2011b). While increases in unemployment rates typically lead to a significant rise in application and award rates, extensions in UI have the potential to dampen this effect. Finally, extended

UI benefits can provide a degree of demand stabilization through the multiplier effect (Congressional Budget Office 2008, Table 1).

On the downside, several studies have suggested that UI may impose a cost by reducing recipients' willingness to work (Congressional Budget Office 2008).³ In addition, prolonged spells of unemployment may lead workers' skills to atrophy or otherwise reduce their employability. Yet, it is likely that in severe recessions the benefit of extended UI outweighs the costs. First, the value of income replacement to workers should be particularly high. Second, longer UI durations are unlikely to have a strong effect on employment, since strategic considerations are likely to be weaker when the number of jobs is scarce (see, for example, Congressional Budget Office [2008]). Moreover, recent research suggests that a sizable part of the decline in employment may not be due to the reduction in the willingness of UI recipients to work, but rather to the fact that some individuals have limited access to credit. If this is the case, not all of the employment effects of UI represent a distortion, but it may be a sign that UI helps to alleviate credit constraints that prevent individuals from self-insuring against unemployment shocks.⁴

In the only study of its kind, Schmieder, von Wachter, and Bender (2012a) analyze large extensions in the durations of UI in Germany and show that these led to only moderate reductions in employment, without a noticeable difference in this effect in large recessions. Based on a very large sample of unemployed workers spanning over 25 years and utilizing a very credible research design, these findings lie at the lower range of typical U.S. estimates (Meyer 2002, Table 5). For a large increase in UI duration from 26 to 99 weeks, the estimates from Germany suggest that extended UI would lead to a moderate increase in the rate of unemployment. Yet, for several reasons the current effect in the United States would likely be smaller. The increases in UI durations were stepwise, and extension was not always certain. Only 50 percent of all eligible unemployed workers have taken up UI benefits in this recession, further reducing the potential impact of UI extensions on employment.⁵ Finally, the effects on aggregate employment are based on the assumption of full employment; under a slack labor market, the effect of individual search decisions on aggregate employment is likely to be smaller.⁶

This research also suggests that contrary to what is often believed, extensions in UI benefits appear to neither help nor strongly hurt the longer-term job prospects of recipients. Increases in UI durations have

small negative effects on the wage at the first job after unemployment. Yet, neither the wage nor the employment rate five years after entry into unemployment is affected by longer UI durations (Schmieder, von Wachter, and Bender 2012b). Thus, it appears that extended UI benefits have an effect on workers' disposable income, consumption, and short-term employment choice, but they may have neither strong adverse nor beneficial effects on long-term employment prospects.

Several other measures to ease the short-term burden of adjustment have been tried in the current and in past downturns, and have been featured in policy proposals in the 2008 recession. These include wage subsidies paid to employers and tax breaks for firms to raise job creation, temporary assistance to obtain further training, and some form of public employment. The best available evidence suggests that these measures are somewhat successful in reducing unemployment and alleviating earnings losses of job losers.⁷ These measures do not share the advantage of extended UI, which builds on an existing infrastructure of a successfully functioning program and immediately affects UI recipients and the economy (Congressional Budget Office 2008, Table 1). However, with the exception of training, the measures share with extended UI the mainly short-term focus, with less known long-term benefits for laid-off and unemployed workers.

Policies Aimed at Reducing Long-Term Unemployment and Lasting Earnings Losses

The reach of the large losses in earnings, increases in job instability, and reductions in health goes beyond the duration of extended UI benefits. In fact, since the losses persist well beyond 5 or 10 years, the majority of the lifetime loss in earnings occurs after eligibility for UI benefits has expired. Yet, few policy options are available to alleviate the long-run costs of job loss and unemployment.

For example, there is no current evidence that the longer duration of UI benefits improves the long-term earnings or employment trajectories of the unemployed (Schmieder, von Wachter, and Bender 2012b). Similarly, the evidence of efforts to successfully train laid-off workers in new skills is mixed, and there is little evidence available on the long-term effects of other programs.⁸ By the nature of the mechanisms behind long-term earnings losses as explained above, it is unlikely that

any policy will completely close or significantly reduce the long-term earnings gap—short of altering the market’s mechanisms of wage setting, the trade-offs governing workers’ investment in their skills, or the multiple factors affecting the decision to relocate. Yet, there are some options available to help those with long unemployment spells find jobs and try to improve the long-term earnings prospects of job losers.

In particular, it is likely that a lack in mobility between jobs, occupations, or regions will contribute to the persistence of reductions in earnings at job loss, perhaps because workers are not aware of the time it would take to dissipate their earnings losses. As explained above, the individual’s recovery process is likely to last well beyond the recovery of the aggregate labor market. Job losers might not be aware of the long-term efforts required to rebuild a career, and active counseling may help in bringing expectations in line with the reality workers will be facing in the labor market. Evaluations of job search assistance have found that counseling reduces UI rolls and is cost-effective.⁹

Another reason why workers do not move or change occupations might be because they are not aware that the job prospects in their lines of work and in their local labor markets may have declined permanently. This may lead individuals to wrongly assess the prospects of finding a job in their old industries or occupations in their local labor markets, and wait too long to switch careers, change employers, or move to another region. Information on how job prospects in the workers’ professions and related occupations are evolving both locally and nationally might be a useful tool to help unemployed workers and their families make better choices. Such information is routinely available from the Census Bureau and the Bureau of Labor Statistics, and could, for example, be included with workers’ UI benefit checks.

Part of the effort to rebuild a career might involve retraining or relocating. One way to raise mobility is to offer workers support in covering expenses related to retraining or moving. Evaluations of subsidies to attend community college have found that they, on average, raise earnings of displaced workers, particularly if covered subjects are of a more technical nature. However, such programs seem to be beneficial and cost-effective for selected populations but may not be a solution for the broader population of participants (Jacobson, Lalonde, and Sullivan 2005). Less is known about the potential benefits of relocating unemployed workers. On the one hand, reallocation of labor across regions

plays an important role in equilibrating local labor markets (Blanchard and Katz 1992). On the other hand, regional mobility does not appear to significantly lower earnings losses of displaced workers, perhaps because most large recessions afflict most regions of the country (von Wachter, Song, and Manchester 2011a). Yet, over the longer run, government programs helping unemployed workers to relocate, for example, by reducing their mortgage debt, are likely to help workers recover some of their lost earnings.

An alternative set of policies includes efforts to directly stimulate employment growth at the local level. These could be targeted at improving the economic situation in regions particularly hard hit by the recent downturn. Yet, in general, an upturn in the labor market improves the lot of some workers, but does not raise the earnings trajectory of job losers or those formerly unemployed (Jacobson, Lalonde, and Sullivan 1993; von Wachter, Song, and Manchester 2011a). There is no reason *per se* why localized policies should have a different effect on the employment of the long-term unemployed or the earnings of reemployed laid-off workers than a regular upturn in the labor market.

One reason why workers experiencing long-term unemployment spells are not affected by an improvement in labor market conditions is that they have become detached from the labor market. In this case, low-cost policies, such as informing workers about job opportunities or the employment outlook in their occupation, may not deliver the desired effect of increasing workers' mobility and raising their chances of finding a job. In this case, a more active approach may be needed to reintegrate long-term unemployed workers into the labor market. For example, it may be cost-efficient to temporarily subsidize workers' wages upon reemployment for a certain period if this leads to a permanent increase in labor force participation and reduces applications to programs geared for the disabled or the poor.¹⁰

Finally, given increasing evidence that children's long-term economic success might be influenced by the layoff of a parent, it is worth considering ways to directly assist families with children. One possibility that builds on existing programs is to provide additional financial aid to cover college tuition and living expenses. While work on the cross-generational effects of displacement is still developing, many families that experienced a layoff with children in college or nearing college age today are likely to feel the pinch in their financial resources. Thus,

it may be worth exploring measures to help cover part of the costs of higher education or training for the children of job losers.

Policy Initiatives to Avoid Mass Layoffs in Future Recessions

It is likely that cost-effective government policies can help the long-term unemployed find renewed employment. Yet, few measures promise to substantially reduce the long-term earnings losses that can afflict laid-off or unemployed workers. While Congress considers financial reform to safeguard against another financial crisis, it may be worth considering reforms that help prevent costly earnings losses during a future recession, such as work sharing. For jobs lost in declining firms or industries, this may mean that inevitable job destruction would be spread over time. Thus, layoffs would likely occur in a better economic environment and therefore lead to significantly smaller losses in earnings. For jobs lost in economically viable sectors or at viable firms, work sharing could avoid costly breakup of productive employment relationships that would have likely continued in the absence of an economic crisis.

Two mechanisms to achieve such a temporary buffering of employment at firms in economic difficulties could be work-sharing arrangements supported by the government, or private arrangements such as work-time accounts. Work sharing has effects that are similar to those of current measures to increase job creation through tax breaks or wage subsidies, except that incentives to generate employment are given prior to job displacement. In particular, instead of firing, say, 30 percent of its workers, an employer would reduce hours worked by all of its workers by 30 percent. Government subsidies comprise part of workers' reduced earnings. They could be financed partially by the UI system, in which case workers essentially draw part of the benefits they would have received if they had become unemployed.

Work-sharing policies have been currently adopted by 21 U.S. states. Yet, these have a limited public commitment to replace earnings, so the take-up is relatively low. Even though a large amount of layoffs have already taken place, if expanded, such programs could increase aggregate employment by reducing continuing layoffs at those firms that keep shedding workers.¹¹ Work sharing was also available to firms in Germany during the current recession, and has been credited to have

helped avert a significant number of layoffs, despite a drop in GDP growth that was larger than the decline in the United States.¹² Clearly, it is important to pay attention to the details of such an arrangement. From the point of view of UI, being unemployed is a clearly defined state. For administering work sharing, it may be difficult to screen eligible firms. Yet, the successful implementation by many states suggests that these difficulties can be surmounted on a practical level.

The evaluation of work sharing is still at an early stage. However, it comes with lower financial involvement and less direct steering of economic activities than more targeted interventions, and is likely to extend the benefits of government support to a much broader group of workers. A related strategy to help avert layoffs of productive workers would be to create programs geared to maintain access to short-term credit to firms in financial distress that are otherwise economically viable. This approach would be most sensible in times of a sudden reduction in private credit, such as what occurred after the financial crisis in 2008.

A second approach would be to encourage workers and firms to find private solutions to reduce the risk of layoffs, such as work-time accounts based on an agreement between workers and firms to smooth hours over the business cycle. Thus, effectively the firm saves part of the overtime pay on behalf of workers during good economic times, and draws down balances when economic conditions worsen instead of firing the worker. In addition to work sharing, such work-time accounts were a major factor in keeping layoffs to a minimum in Germany during the current recession. The use of these accounts was particularly prevalent in sectors that exhibited stable growth prior to the crisis and were experiencing shortages in skilled labor (Möller 2010). Such an arrangement is based on long-term relationships between workers and firms that involve some degree of firm- or sector-specific skills. While the paradigm in the United States is one of high labor turnover, many employment relationships are long-lasting, and employers invest in searching for and training workers. Thus, in light of the large costs of job displacement, such arrangements may be beneficial to both workers and firms.¹³

Clearly, layoffs cannot be prevented altogether and are to some extent a natural feature of a market economy. However, in special circumstances, such as the financial crisis of 2008 or high interest rates in 1982, some layoffs might occur at otherwise healthy firms, leading

to costly layoffs as productive employment relationships are severed. Similarly, layoffs in declining industries might be accelerated, leading to large-scale layoffs that exceed the capacity of the labor market to reallocate these workers. For such cases, mechanisms that allow firms to avoid large-scale layoffs could prevent large and lasting consequences affecting a high number of workers. The potential benefit of such safeguards is underscored by the difficulty of alleviating the long-term consequences of workers affected by layoffs and unemployment.

CONCLUSION

An increasing number of studies indicate that job loss and unemployment during recessions can impose large and lasting costs on affected workers and their families. The short-term burden of these costs can be alleviated relatively cost-effectively, such as by extending UI. Less is known about how to help workers adjust to the significant long-term costs. While cost-effective policies exist to reintegrate the long-term unemployed into the labor market, the potential for policy interventions to reduce long-term earnings losses appears less promising. Given the large long-term costs of layoffs and unemployment, preventive measures to avoid large-scale layoffs in future recessions are worth exploring further.

Notes

This chapter is based on a testimony before the Joint Economic Committee of U.S. Congress on April 29, 2010, on “Long-Term Unemployment: Causes, Consequences and Solutions,” as well as a presentation at the Reconnecting to Work conference at the University of California–Los Angeles.

1. Davis and von Wachter (2012) contrast the effects of job loss in booms and recessions. Farber (2005) provides estimates of the short-term costs of job loss for the United States over the past two decades. Couch and Placzek (2010), Kodrzycki (2007), Schoeni and Dardia (2003), and von Wachter, Handwerker, and Hildreth (2008) show medium-run estimates for California, Connecticut, and Massachusetts in the early 1990s.
2. Estimates of the cost of job loss are robust to extensive controls for worker and

- firm characteristics; the effect of layoffs is not larger when firms displace fewer workers, such as during smaller layoffs or good economic times.
3. For a more technical overview, see Meyer (2002).
 4. This point is made by Chetty (2008), who estimates that over half of employment effects of UI may be due to such an income effect.
 5. The take-up rate of UI fluctuates between 40 and 50 percent for all unemployed and between 70 and 80 percent among job losers (Congressional Budget Office 2004). A similar back of the envelope calculation and caveat is made by Elsby, Hobijn, and Şahin (2010, Section 3.2).
 6. Landais, Michaillat, and Saez (2010) discuss the role of aggregate factors in determining the employment effects of UI extensions; Rothstein (2011) provides estimates suggesting small to moderate employment effects of UI extensions in the United States during the Great Recession of 2008.
 7. For example, for an assessment of the effect of wage subsidies, see Perloff and Wachter (1979) and Congressional Budget Office (2010). For an assessment of the effect of training programs for displaced workers see U.S. Department of Labor (1995, Section 5). For a meta-analysis of the effect of various labor market policies, see Card, Kluve, and Weber (2010).
 8. While the average returns from training are positive, relatively few displaced workers take up training (Jacobson, Lalonde, and Sullivan 2005).
 9. U.S. Department of Labor (1995, Section 5). For a survey of recent evidence see Jacobson (2009).
 10. This has been recently advocated under the name of *wage insurance*, for example, by Kling (2006); Jacobson, Lalonde, and Sullivan (1993); and Litan and Kletzer (2001). Evidence on related *reemployment bonus experiments* suggests that short-term subsidies raise employment, but may only be cost-effective if targeted to workers most likely to exhaust their benefits (O’Leary, Decker, and Wandner 2005; U.S. Department of Labor 1995).
 11. This argument is spelled out in Hassett’s (2010) testimony to the House Committee on Financial Services.
 12. Burda and Hunt (2011) and Möller (2010) assess the role of work sharing and work-time accounts in averting layoffs in Germany.
 13. A small theoretical literature discusses why such contracts are not prevalent in the United States (Grossman and Hart 1983; Ramey and Watson 1997).

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