EVALUATION OF SHORT-TIME COMPENSATION PROGRAMS

FINAL REPORT

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ABSTRACT

Short-time compensation (STC) is an option within the unemployment insurance system that allows employers to reduce the hours of workers, while permitting workers to receive compensation for their partial layoff. This report examines the operations of short-time compensation programs, and is based on research conducted by Berkeley Planning Associates and Mathematica Policy Research under contract to the U.S. Department of Labor. Research activities addressed state and employer participation in STC and a range of issues related to the administration, financing, and impacts of STC programs. Conclusions from this research point to a variety of means for improving the operations of STC programs and increasing employer participation.

EXECUTIVE SUMMARY

Section 401 of the Unemployment Compensation Amendments of 1992 (P.L. 102-318) directed the Department of Labor to report to Congress on the implementation of short-time compensation (STC) programs. This volume provides the Department and Congress the most complete information available on the status of such programs, and presents several recommendations for their improvement.

As originally intended, STC provides employers with an alternative to layoffs, enabling them to apportion work reductions among a larger group of workers than they would have in the absence of the program. Rather than lay off 20 percent of the workforce, for example, an employer might reduce the hours of the entire workforce by 20 percent. Workers whose hours are reduced are compensated with STC benefits, which are essentially unemployment insurance benefits pro-rated for partial work reductions. In the absence of STC programs, workers generally receive no UI benefits for such partial layoffs. STC thus eases the impact of work reductions on individuals, and eliminates a significant gap in UI coverage. It also helps firms to retain valuable employees. When business improves, employers can increase the hours of their existing employees rather than hiring new ones. As a result, STC can reduce recruitment and training costs for employers.

Short-time compensation programs were first introduced in the United States in 1978 in California. Federal legislation enacted in 1982 encouraged other states to adopt STC, and 17 states now operate such programs. Within these states, participation in STC has been limited to less than 1 percent of employers in any given year. This evaluation was motivated by concerns with the levels of state and employer participation in STC, as well as a range of issues related to the administration, financing, and impacts of STC programs.

RESEARCH GOALS AND METHODS

The evaluation was guided by four principal research goals.

(1) To explain why states choose to adopt STC and to describe variations in STC states' policies and practices. While 17 states operate STC programs, 36 states and jurisdictions do not. We sought to explain the circumstances surrounding the adoption of STC as well as the concerns of states and jurisdictions that do not operate these programs. In addition, we sought to document the variations among existing STC programs.

(2) To identify lessons for improving the administration and use of STC. STC programs have been in operation in the U.S. for fewer than 20 years. Our research was designed to document the operational lessons learned by states during this relatively short period, and to make these lessons

available to existing STC states, as well as to states and jurisdictions considering adoption of the program.

(3) To assess the practices and perspectives of STC employers and the effects of STC on employees. The decision to use STC is made by firms, and obtaining the input of employers was thus a key feature of our evaluation. In addition, we sought to examine the effects of STC on employees, although we were limited in our ability to address this issue.

(4) To assess the impact of STC on the Unemployment Trust Fund and firm layoff behavior. States considering the adoption of STC have raised concerns about the impact of the program on the Unemployment Trust Fund, and previous research has challenged the assumption that STC reduces layoffs. Our research was designed to investigate both of these issues.

Three major research activities were implemented to address these goals including: a survey of employment security agency officials in every state, a survey of 500 employers who have used STC, and an analysis of unemployment insurance administrative records in five states.

FINDINGS

The evaluation produced nine major findings.

(1) The adoption of STC programs by states is being slowed by an absence of clear support from various stakeholders, and by a variety of lingering concerns about the program. Where STC has been adopted, it has been largely due to the efforts of key stakeholders, including representatives from the state employment security agency, legislators, employers, labor groups, and the state governor. Stakeholders who understand the program and support it strongly have faced minimal opposition. Opposition to STC has generally been based on concerns with the program's administrative costs, its impact on Unemployment Trust Funds, or the belief that it is not appropriate or needed in certain states.

(2) Among states that have adopted STC, the basic design of the program is fairly consistent, although specific rules vary. The basic outlines of STC programs were identical in all states: employers must complete a plan describing their planned work reductions, states must approve plans, and ongoing claims must be filed for the duration of the plan. Apart from this basic outline there were substantial variations in STC programs. STC plans could last from 13 to weeks to one year, allowable work reductions ranged from 10 to 100 percent, and plans could be renewed indefinitely in some states, but were sharply limited in others. There was also considerable variation in the administration of STC programs by state employment security agencies.

(3) Several states have developed practices that show promise for reducing the ongoing costs and administrative burden of STC. Several state employment security agencies have developed strategies to automate and streamline the processes for STC plan filing, plan approval, and the filing

of ongoing claims. These efforts appear to have reduced the administrative costs of STC programs for both employers and state employment security agencies.

(4) Employer participation in STC is low, but the reasons for low participation remain unclear. STC has failed to attract substantial interest among employers, and lack of information about the program may be partially responsible. Some evidence exists that improved marketing of STC to employers can raise participation levels, but such strategies have not been systematically tested.

(5) Employers who have used STC were generally satisfied with the program. Most employers were satisfied with the STC program and would use it again. The major attraction of the STC program for employers was its ability to help retain valued employees. The most frequent cause for complaint was an increase in UI taxes following participation in STC.

(6) A substantial portion of STC firms used the program repeatedly. Although STC is often thought to be most appropriate for averting layoffs during temporary economic downturns, many firms used STC repeatedly. In some cases firms used STC in every quarter over a three-year period. The extent of repeat STC use varied greatly by state.

(7) Among firms that have used STC, layoffs remained the primary workforce reduction strategy. Despite their use of STC, firms continued to lay off workers and had substantially higher UI charges, on average, than STC charges. STC firms also experienced higher UI charges than comparison firms that had not used STC. These results suggest that the STC firms might have experienced greater economic distress than matched non-participating firms.

(8) Consistent with prior studies, STC does not appear to disproportionately benefit ethnic and racial minorities, the young, or women. We found no evidence that STC disproportionately protected the jobs of minorities, women, and young adults.

(9) As it currently operates, STC does not appear to threaten the solvency of state Unemployment Trust Funds. STC benefits were at least as fully experience-rated as other UI benefits, and were quickly recouped with higher taxes It is possible, however, that Trust Fund impacts could be more serious if STC participation rates were much higher and overall shifts in tax schedules were constrained.

LESSONS FOR STATES

This study's findings suggest a number of lessons for states operating or considering adoption of STC programs.

(1) The impacts of STC on state Unemployment Trust Funds appear to be minimal. Many states fear that STC will impact Unemployment Trust Funds negatively, but this perception is not supported

by our research. Even in the absence of surtaxes or other special financing provisions, STC claims appear to be experience-rated at least as well as regular UI claims.

(2) Careful attention to the design of procedures for filing and processing STC plans and claims can reduce administrative costs. In the past states have also questioned whether STC's administrative costs are adequately compensated, but our research points to practices that can reduce costs significantly. States with the most efficient systems for processing STC plans and claims were less likely to report high administrative costs than states that processed plans and claims manually.

(3) Slight changes in program rules can affect STC participation. Restrictions on seasonal employers and repeat usage of the program by employers appear to be correlated with lower levels of participation. States enforcing such provisions may wish to consider their effects upon employer participation.

(4) Marketing of the STC program may increase participation levels. Few states promote STC programs actively, but participation levels appear to respond to marketing efforts. One-time mailings regarding the STC program have produced temporary increases in participation, and ongoing promotions may have more lasting effects.

LESSONS FOR THE DEPARTMENT OF LABOR

Our research also suggests several lessons for the Department of Labor.

(1) States continue to require technical assistance with STC programs. The Department last offered STC guidance to states in 1987, in the form of a handbook. Many states cited this handbook as an aid in designing their STC programs, and renewed guidance is warranted.

(2) States have much to learn from each other, and greater communication among states has the potential to improve STC operations. States have developed a variety of mechanisms for improving STC programs, but these lessons have not been broadly shared. Most STC programs appear to operate in isolation, and the Department may wish to facilitate information-sharing among states.

(3) Better marketing of the STC program may increase employer participation, though it is unclear to what extent. The potential of improved marketing for raising participation levels has not been adequately tested, and the Department may wish to sponsor further efforts in this area. For substantial increases in participation it may also be necessary to increase incentives for employers.

(4) Many questions remain about the STC program. Our conclusions regarding the impacts of STC on Unemployment Trust Funds and on reducing layoffs add to the debate over STC, but should not be deemed conclusive. In addition, our discoveries of extensive repeat use of STC, and the greater economic distress among STC than non-STC firms, deserve further investigation.

I. INTRODUCTION

Section 401 of the Unemployment Compensation Amendments of 1992 (P.L. 102-318) directed the Department of Labor to report to Congress on the implementation of short-time compensation (STC) programs. This volume provides the Department and Congress the most complete information available on the status of such programs, and presents several recommendations for their improvement. Highlights of this report include:

- an examination of administrative practices among short-time compensation programs, documentation of the variation in these programs among states, and recommendations for improving their efficiency;
- an analysis of the characteristics and perspectives of employers who use short-time compensation programs;
- an investigation of how STC employers differ from employers who have not used STC, how employers use STC over time, the types of workers who participate in STC, and whether STC reduces layoffs; and
- estimates of the impact of STC on the Unemployment Trust Fund, as well as the time needed for STC costs to be recouped by unemployment insurance (UI) taxes.

The research presented in this report was initially funded by the Department of Labor in July, 1994. The major research goals and methods were identified in a request for proposals prepared by the Department, and a contract was awarded to Berkeley Planning Associates and its subcontractor Mathematica Policy Research.

Federal legislation promoting the adoption of STC programs by states was passed in 1982 (P.L. 97-248).[1] Supporters of STC had great hopes for the program's potential to benefit both employers and employees during temporary economic downturns. As originally intended, STC provides employers with an alternative to layoffs, enabling them to apportion work reductions among a larger group of workers than they would have in the absence of the program. Rather than lay off 20 percent of the workforce, for example, an employer might reduce the hours of the entire workforce by 20 percent. Workers whose hours are reduced are compensated with STC benefits, which are essentially unemployment insurance benefits pro-rated for partial work reductions. In the absence of STC programs, workers receive no UI benefits for such partial layoffs. STC thus eases the impact of work reductions on individuals, and eliminates a significant gap in UI coverage. It also helps firms to retain valuable employees. When business improves, employers can increase the hours of their existing employees rather than hiring new ones. As a result, STC can reduce recruitment and training costs for employers.

In spite of its potential to benefit workers and firms, STC remains underutilized. Of 53 states and jurisdictions in the unemployment insurance system, only 19 have adopted STC. The majority of these states began their programs in the 1980s, and only four states have adopted STC since 1990. In addition, two states which adopted programs in the 1980s have subsequently discontinued them, reducing the number of active programs to 17. Thus, less than a third of states and jurisdictions currently operate STC programs. Among states that operate STC programs, few employers participate. No more than one percent of employers participates in any state, and in most states fewer than one hundred employers participate in any given year.

Our research was designed, in part, to address the underutilization of STC by states and employers. We conducted surveys of state employment security agencies and employers to explore the reasons for adoption and use of the program, and to suggest means by which participation might be increased. We

[1] This legislation authorized the Department of Labor to develop model legislative language, establish guidelines, and conduct research on short-time compensation programs. It expired in 1985 and was renewed by the 1992 legislation.

also collected UI data from states to examine in detail how employers use the STC programs, and to estimate the impact of STC use on the Unemployment Trust Fund. These analyses suggest several reasons for low participation rates, and shed new light on the STC programs.

Chapter II of this report provides an overview of our research, and describes the methods used to obtain data for our analyses of STC. Chapter III establishes the context for these analyses through an extensive review of the STC literature. Chapters IV through VII report the results of our research. In Chapter IV we examine state practices in adopting and administering STC programs. Chapter V reports on the characteristics and perspectives of employers who participate in STC. Chapter VI describes how employers actually use STC to implement workforce reductions, and highlights the differences between STC employers and others. Chapter VII analyzes how employer participation in STC impacts the Unemployment Trust Fund. We conclude in Chapter VIII with a summary of our findings and recommendations for the future administration of STC programs.

II. OVERVIEW OF THE RESEARCH

This report concludes a 30-month research project examining the operations and implications of short-time compensation (STC) programs. As discussed in Chapter I, STC is a recent policy development in the United States. Although the federal-state unemployment insurance (UI) program has been in existence since 1935, the first STC program was not initiated until 1978. Several major questions about STC have become prominent in the intervening period, and our study was designed to address these directly. As described in our original proposal to conduct this evaluation, our goals were:

- To explain why states choose to adopt STC and to describe variations in STC states' policies and practices,
- To identify lessons for improving the administration and use of STC,
- To assess the practices and perspectives of STC employers and the effects of STC on employees, and
- To assess the impact of STC on the Unemployment Trust Fund and firm layoff behavior.

These goals were influenced by the unique evolution of STC in the United States. Although national legislation has promoted STC, the first STC program was initiated at the state level, in California in 1978. Subsequent federal legislation led to the adoption of STC by 18 additional states in the 1980s and 1990s. The remaining 34 states and jurisdictions, however, have not adopted STC programs. We sought to understand the reasons why some states have adopted STC but others have not. We also sought to identify state administrative practices that might increase the efficiency of STC programs, reduce costs to states, or increase the participation of employers. Resolving such issues could assist states with existing programs and encourage others to adopt STC.

Adoption of STC by a state, however, does not insure that the program will be widely used. Indeed, in states with STC programs, less than one percent of employers participate in a given year. We sought to understand who these employers were and to investigate their motivations for using STC. We also sought to explore the patterns of STC and unemployment insurance use among this group of firms.

The most controversial aspects of STC concern its impacts on the Unemployment Trust Fund and on firms. Critics have frequently questioned the effects of STC on the Unemployment Trust Fund, hypothesizing that the program might make work reductions more attractive to employers. If work reductions become more attractive, unemployment benefits will rise, and demands on the Unemployment Trust Fund would also increase. Proponents of STC have countered by pointing to the program's potential to reduce employer layoffs. By providing employers with greater flexibility in making workforce decisions, efficiency is increased and jobs may be saved. Ultimately, its proponents have argued, STC reduces layoffs. Our research was designed to address both of these issues: the effect of STC on the Unemployment Trust Fund and the effect of STC on layoffs.

We addressed these research issues through three major activities:

- A survey of employment security agency officials in every state,
- A survey of 500 employers who have used STC, and
- An analysis of state administrative records.

In the remainder of this chapter we discuss how these research activities were designed and conducted.

A. UNITS OF ANALYSIS AND THE STUDY PERIOD

We identified two distinct units of analysis for this evaluation: firms and states. STC firms provided the primary unit of analysis, and two of the three major research tasks we engaged in addressed the

experiences of this group.[1] Firms decide whether or not to utilize STC, and relatively few have opted to participate in the program. Less than one percent of U.S. firms utilize STC in any given year, a level far below that of Europe. This study was designed, in part, to better understand the low utilization of STC by employers. States comprise an additional unit of analysis because of their critical role in the adoption and promotion of STC programs. States are not required to offer STC as an option for employers, and only 19 of 53 states and jurisdictions have enacted STC legislation to date.[2] Utilization of STC has been lower than originally expected for states, as well as firms, and previous research has offered few explanations for this situation.

Although much could be gained from research on the experiences and perspectives of employees with STC programs, we have not included this group as an independent unit of analysis. The focus of this study is to examine the utilization of the STC programs, which is determined by states and employers. Employees have little impact on the decision to participate in STC programs.[3] Accordingly, we focused our research on states and employers.

To narrow the focus of our research further, we selected the calendar year 1992 as our key study period. Although it might have been valuable to examine STC in each year since its inception, time and budget constraints required us to limit most of our data collection and analysis to a single year. The choice of a single year for the study required us to balance several concerns. Because STC is intended for use primarily during recessionary periods, 1991 (which included the most severe quarters of the most recent recession) might have been the best option. But, we found that using this year would have posed major

[1]We defined the firm to be the UI tax-paying unit. By adopting this definition, we were able to examine both workforce decisions and their UI tax implications on a consistent basis. Note also that throughout this report, we use the terms "firm," "employer," and "UI tax-paying unit" interchangeably.

[2]STC legislation has been passed in 19 states but STC programs are operational in only 17 states. Illinois passed STC legislation but allowed the program to expire as a result of a sunset clause. Louisiana has retained STC legislation but no longer operates the program. Throughout this report we treat Illinois and Louisiana as non-STC states.

[3]Employees, when organized in collective bargaining units, have the ability to block the use of STC, but can not initiate participation in this program.

logistical problems, particularly in terms of the availability of administrative data from states. We explored the possibility of using 1993 as the study period but found that STC caseloads were too small in many states for meaningful analysis during that year. We also believed that 1993 represented a period too far from the trough of the recession to permit meaningful analysis of the STC programs' operation under the labor market conditions for which it was primarily intended. Hence, we opted for 1992 as the primary study year because it represented a good compromise between the need to examine STC during a period of labor market weakness and limitations we faced in data accessibility.

B. SURVEY OF STATE OFFICIALS

After considering several alternative methods, we identified a survey of state officials as the best means for addressing several of our research goals. The survey enabled us to examine why states have and have not adopted STC programs, and to document how these programs are administered in those states where they exist. Possible alternatives to a survey included case studies of state operations and reviews of written materials. We discarded these alternatives as too costly in the first instance, and too cursory in the second. The survey of state officials fulfilled our needs for both economy and detail.

We designed different questionnaires for officials in states with and without STC programs. For states without STC programs we focused on the reasons why states had or had not considered adopting an STC program, and the particular circumstances involved when states had rejected such proposals. For states with STC programs we focused on both the circumstances surrounding the adoption of the program and on the states' subsequent experiences administering it. When investigating the circumstances surrounding the adoption of STC our questions were sometimes of an historical nature. California's STC program, for example, was adopted 18 years prior to our survey, and few current staff of the program were present at the program's inception. In such instances we relied on secondary accounts of program adoption, or identified knowledgeable individuals outside of the STC program. To examine state experiences in administering STC, we requested detailed information on program rules, perceptions of their effects on employer participation, and the strengths and weaknesses of the program. We also investigated past and current efforts to conduct outreach to employers.

Respondents varied somewhat across states. Our chief respondents in non-STC states were unemployment insurance directors. In STC states we were provided with an initial point of contact by the states themselves, typically with STC program directors or the managers of offices of special UI programs. As noted above, in some instances we contacted additional respondents to complete specific portions of the survey, such as the history of the adoption of the program.

C. SELECTING STATES FOR EMPLOYER DATA COLLECTION

We selected five states from which to collect data on employers: California, Florida, Kansas, New York, and Washington. In this section we describe our reasons for limiting our employer analysis to five states, and for selecting these particular states.

Although we considered STC experiences in all states to be relevant to our analysis, we could examine the experiences of only a fraction of the employers who have used the program. Practical constraints prevented us from collecting and analyzing data on every STC employer in every state. The chief data sources on employers and unemployment insurance are administrative records maintained at the state level. Because such data are maintained by states in widely varying formats, and because access to these data requires sometimes lengthy negotiation, we concentrated our efforts on employer data in a sample of STC states. The population from which this sample was drawn included the sixteen states with STC programs in 1992. Only nine of these states appeared to have STC programs serving more than a handful of employers. We elected to collect data from five states with substantial employer participation.

We used several criteria to choose the sample of states from which to collect employer data. A first set of criteria concerned the availability and adequacy of data in each state to perform the analyses, and a second involved the collective characteristics of the final group selected.

The availability and adequacy of administrative data in each state during the year of interest (1992) were critical factors in the selection process. Although a number of states adopted STC legislation in the mid and late 1980s, many of their programs had not achieved a large enough scale by 1992 to ensure an

adequate number of firms for the impact study or employer survey. Even among states with well-established STC programs, the relatively low usage rate of the STC option resulted in sample sizes that were too low for analysis. To provide sufficient statistical precision for our analyses we sought to collect data from states where at least 100 STC firms had participated in 1992. This requirement alone greatly limited the pool of available states.

Each state also needed to have accessible administrative records available for analysis for the relevant period. Many states maintained only a few years of claimant records in a readily accessible format. We hoped to collect data on both STC and non-STC firms and their compensated STC and regular UI claimants for 1991 and 1992.[4]

In addition to selecting individual states with adequate sample sizes and accessible records, we sought to create a sample with diverse characteristics, to help ensure the generalizability of our findings to other STC states and time periods. The sample of California, Florida, Kansas, New York, and Washington seemed to provide the best mix of states meeting the data requirements for the analysis and offered the breadth of programmatic and economic characteristics that might influence STC outcomes. Representing five different federal regions, these states provided a comprehensive mix of geographic and demographic diversity. Each state appeared to have sample sizes in 1992 that were adequate for our intended statistical analyses. Each state also seemed to have accessible STC and regular UI claims data for a long enough period to use 1992 as the base year for the study.

Table II-1 presents several of the relevant characteristics for each of the five study states. Given that California had the greatest number of STC plans, its inclusion was clearly critical to a successful evaluation of STC programs nationwide. A pioneer in the development of STC legislation, California far exceeded other states in its overall 1992 STC usage, with more than 2,000 firms filing plans. California was also an important state because of its unusual UI system, with a very high UI coverage rate but a relatively low

[4]1992 was the key study period. Data from 1991 provided a means for controlling for differences between STC and comparison firms prior to the key study period. See Chapter VI for further discussion of the use of data from different years.

replacement rate. The number of firms with STC plans in the second largest STC state in 1992 (New York) was less than half of the total in California, reinforcing the importance of including California's experiences as part of the overall evaluation. Each of the three remaining states, Florida, Kansas, and Washington, approached our base criterion of having at least 100 participating firms.

Table II-1

CHARACTERISTICS OF STC STATES SELECTED FOR EMPLOYER DATA COLLECTION

	STC Usage	Economic Conditions		UI System	
State	Number of Firms with Plans, 1992	Percentage Employed in Manufacturing, 1992	Unemploy-ment Rate, 1992	Type of UI System	Average UI Replacement Rate, 1989
California	5,143	15.6	9.3	Reserve Ratio	0.32
Florida	220	9.0	8.3	Benefit Ratio	0.39
Kansas	102	16.3	4.3	Reserve Ratio	0.42
New York	737	13.1	8.6	Reserve Ratio	0.48
Washington	383	15.6	7.6	Benefit Ratio	0.46

Sources: State administrative records; U.S. Department of Labor, 1993, *Employment and Earnings* May: 142-159; U.S. House of Representatives, Committee on Ways and Means, 1993, *1993 Green Book*, Washington, D.C.: U.S. Government Printing Office, 563-564.

Table II-1 also presents several economic characteristics of these STC states, as well as information on their UI systems. Each state offered a unique set of experiences with the development and enactment of STC and recent economic conditions, but including Florida, Kansas, and Washington (with California and New York) provided a broad range of economic conditions and helped to illustrate how STC operates in a variety of environments. Table II-1 shows that both New York and California had high unemployment rates during the most recent recession, and each of the smaller states had lower unemployment. Kansas,

with an unemployment rate of less than one-half that of California, had the healthiest economy. The unemployment rate in Washington was close to the national average of 7.4 percent in 1992.

The distribution of employment among industrial sectors also varied among these five states. We sought to create a sample of states with such variation in order to examine the use of STC in these different contexts. Overall the percentage of the workforce in manufacturing, the sector where STC use is most common, ranged from 9.0 percent in Florida to 16.3 percent in Kansas. Many other STC states, such as Arkansas, with almost 25 percent of its work force in manufacturing, had higher concentrations. Nonetheless, our five states exhibited a range of variation.

Another set of criteria that affected our selection of states concerned administrative rules and procedures used by the UI systems. In particular, we hypothesized that differences among states in the method of determining tax liabilities for unemployment insurance might affect the use of short-time compensation programs by employers. Two general methods for determining liabilities are commonly used, and our sample include states using both of these. Florida and Washington used the benefit-ratio method, while the other three states used the reserve-ratio method. The states in this sample also offered a broad range of UI benefits for employees who are either laid off or placed on a shortened work week. As shown by replacement rates in Table II-1, there was substantial variation in the generosity of UI benefits. The New York and Washington programs were relatively generous, in contrast to the programs in California and Florida.

D. THE IMPACT STUDY

The principal goals of the impact analysis were to determine how participation in the STC programs affected firms' layoff behavior, and whether increased program use would pose significant threats to the solvency of the Unemployment Trust Fund. The primary methodology chosen for these purposes was the selection of a matched sample of STC participants and non-participants to explore differences in outcomes between groups. This methodology offered quantitative estimates from a large sample of firms that might be more easily generalized than could the more specialized findings from case studies. Although a randomly

assigned experimental methodology would have been superior to the comparison methodology selected (especially in terms of the promise of unbiased estimates), such a design was considered infeasible given the time and resource constraints of the project and the limited use of STC in states. It was recognized at the outset, however, that the comparison methodology posed problems for the impact analysis, especially if STC participants and non-participants proved to be significantly different in ways that could not be measured and controlled for in the analysis. To an important extent, such fears were realized, causing some reorientation of the impact research.

Our examination of the impact of STC on firms' behavior during the study period was conducted using only administrative data. Utilization of these data permitted the creation of fairly large sample sizes in each of the study states at relatively low costs. The administrative data sets available contain a limited amount of information on firms, especially on their economic circumstances. Collection of more extensive data would have required, at a minimum, a survey of key informants in each firm. Such a data collection effort was outside the scope of this study.

To maximize sample sizes from the existing administrative data, we collected information from all firms that used STC during the 1992 study year in three of the states: Florida, Kansas, and Washington. Relatively large random samples of STC participants were chosen in California and New York.[5] Each STC participant was then matched (using a statistical procedure to minimize firm-specific differences in matches) with an otherwise similar non-participant using three variables: (1) industry; (2) employment; and (3) UI tax rate. In general, as we describe in Appendix C, the observed matches between STC participants and non-participants were quite close. Assuming that these close matches also served to control for unobserved differences between the firms, it was believed that the resulting data set would permit unbiased estimates of the effect of STC on the firms that used it.

[5]Selection of a sample of STC participants on the basis of the administrative data that states had available posed some problems. In general, states could easily only provide information on which firms had filed STC plans, not on whether any benefits had been paid under such plans. Hence we initially selected our STC sample on the basis of having filed a plan, though in Chapter VI we utilize a definition of STC use that requires that some benefits be paid under a plan. Alternative definitions of STC use are examined in Appendix E.

As our analysis proceeded, however, we found strong suggestive evidence that firms that participated in the STC program may have faced different economic forces or were less healthy than comparison firms. Most importantly, we found that STC firms had much *higher* regular UI charges than did otherwise similar comparison firms (see Chapter VI and Appendix E). Not only did STC firms have higher levels of UI charges, but they also appeared to have a greater frequency of mass layoffs, as measured by the number of claimants (relative to the total number of employees) who filed for UI benefits.

Since no economic theory predicts these findings, we conclude that the underlying assumption for the comparison methodology does not hold, and simple comparisons between the STC and non-STC samples yield biased estimates of the effects of STC usage on firm layoff behavior. Since we could not measure firm-specific economic health to control for differences in the samples, we concluded that the comparison sample should play a much smaller role in the research than originally designed. Because STC firms appear to be so different, and self-selected, from other firms, we were also unable to estimate precisely the impact of STC usage on the Unemployment Trust Fund.

Despite our inability to directly measure the effects of STC on layoffs and on the Unemployment Trust Fund by using the comparison sample, we were able to use the STC sample by itself to investigate the workforce reduction patterns by participating firms, the Unemployment Trust Fund effects, and other impact analysis topics. These investigations included measuring the demographic characteristics of workers on STC and layoff at participating firms, estimating the extent to which STC firms used UI and STC simultaneously, and documenting the frequency that firms repeatedly participate in the STC program. We were able to generate what we consider to be conservative estimates of the impact of STC on the Unemployment Trust Fund by using simulation techniques and making what we consider to be fairly realistic assumptions about changes in UI tax schedules.

E. THE EMPLOYER STUDY

The employer study was designed to examine the perceptions and experiences of employers who had previously participated in STC. Our data for this study came from in-depth telephone interviews with

employers in the same five states involved in the impact analysis: California, Florida, Kansas, New York, and Washington. We utilized the administrative records obtained for the impact study to identify and contact individual employers. Because so few employers use STC, this approach had several advantages over any alternative method of identification. The administrative records led us to many of the same employers included in the impact analysis, expanding the range of information available on individual employers.

This strategy had its risks as well. In order to focus on STC use during a recession year we collected administrative data on STC and UI usage in 1992. Since our contacts with employers were scheduled to occur in 1995, our survey would be addressing experiences that had occurred three years earlier. Due to difficulties in obtaining administrative data from states, these contacts were further delayed until early 1996, increasing the time lag to four years. This delay created a risk that employers would no longer be in business, that key individuals responsible for the use of STC might no longer be employed with firms, or that contacted individuals might not recall the circumstances surrounding their firm's use of STC. Despite these risks we determined that 1992 was still the best choice for the study. The numbers of employers who used STC in subsequent years were too small for our planned analyses and the later years did not include a period of recession, when STC is designed to be of greatest use.

To obtain consistent and comparable data among the employers we contacted, we developed a detailed survey with closed-ended questions. We based the survey instrument on a similar instrument used in Mathematica's earlier evaluation of STC programs to provide a basis for comparisons of employer responses over time. Survey components addressed firm characteristics, how employers heard about the program, employer perceptions of STC and experiences with it, and employer views of employee perceptions of STC.

Our employer sample was drawn from the larger pool of employers on whom we collected administrative data for the impact study. This pool included all employers filing STC plans in 1992 in California, Florida, Kansas, New York, and Washington, a total of 6,585 employers. Because many firms

file plans but do not go on to participate in STC, this total included many firms without actual STC participation. In addition, because we planned to survey only 500 employers, some sampling of this larger pool was required. For Florida, Kansas, and Washington our sample included all employers with approved STC plans. Since California and New York had much larger numbers of firms with approved plans, we randomly selected a sample of firms from these states. In total our pool of potential survey respondents included 1,817 employers: 607 in California, 220 in Florida, 102 in Kansas, 505 in New York, and 383 in Washington.

To increase the feasibility of cross-state comparisons, we attempted to complete 100 surveys in each of our five states, randomly selecting respondents from the available pool of employers. We also sought to maximize response rates overall. The time lag between the use of STC and our survey created obstacles to both of these goals. In every state, we were unable to locate substantial numbers of employers. Almost one-third of the employers we attempted to contact (32.8 percent) were not available for the survey. Two-thirds of this group, or almost one-quarter of all employers we sought to survey, appeared to be out of business. These businesses were not listed in telephone directories and could not be otherwise located. Among the other reasons businesses were unavailable for the survey are having never used STC, complete turnover in the firm since the time STC was used, and the sale of the business to another firm.

Of firms which were available to be surveyed, a small proportion refused to participate. In total, 7.9 percent of available firms declined to be surveyed, citing reasons such as lack of time, reluctance to participate in any survey, and a variety of individual circumstances.

A total of 511 surveys were completed. To determine whether the substantial number of invalid cases and the smaller number of refusals biased our results, we compared completed and non-completed cases on a variety of measures. We used administrative data from 1992 to compare the presence of STC charges and the levels of STC, UI, and total charges for completed and non-completed cases. In addition, we examined 1993 administrative data to determine whether data were missing for firms in our sample. We hypothesized that firms with missing data may have gone out of business, explaining our difficulty in

contacting them. These analyses greatly reduced our concerns about possible non-response bias. There were few instances of statistically significant differences between completed and non-completed cases, and there were no consistent patterns of differences across the five states. In each state, however, non-completed cases were more likely than completed cases to have missing administrative data for at least two quarters in 1993. These differences were statistically significant in all states, and support our hypothesis that at least a portion of unavailable employers were indeed no longer in business after 1992.

III. REVIEW OF THE STC LITERATURE

A. BACKGROUND OF THE STC PROGRAM

In the United States, as well as in many other countries, short-time compensation (STC)[1] is a provision in the Unemployment Insurance system in which firms adopt compensated hours reductions instead of layoffs as a method of temporary workforce reduction. Under STC, a larger group of workers than would have been laid off in the absence of STC are placed on shorter work weeks and are compensated for their lost work time with Unemployment Insurance (UI) benefits. STC may therefore neutralize what some have seen as the pro-layoff bias inherent in the regular UI system by paying UI benefits for an alternative workforce reduction strategy.[2] As implemented in the United States, STC is intended as a workforce stabilization program which can be used during periods of economic downturn that are expected to have only temporary effects on employers' labor needs.

In this chapter we review the existing literature on STC, focusing on a few key issues. We examine the extent to which STC averts layoffs in participating firms, the views of employers and employees, and the effect of STC on the Unemployment Trust Fund.

[1]Throughout this chapter, we utilize the term STC to refer to U.S. and European programs and the term Work Sharing (WS) in reference to the Canadian program.

[2]In fact, all states in the U.S. do have some type of partial benefits schedule, but these schedules are usually characterized by a dollar-for-dollar reduction in benefits for wages in excess of a modest weekly earnings disregard. For a typical worker in manufacturing, these schedules usually mean that no benefits are paid if an employee works two or more days per week. Thus, meaningful partial employment during business downturns is not encouraged under the regular UI system.

1. HISTORY OF STC IN THE U.S., CANADA, AND EUROPE

Work week reductions to avoid layoffs were applied in the U.S. long before they were supported by the government. During the Great Depression, many firms reduced work week hours, with the cooperation of their employees, to avoid layoffs and impoverishment at a time when the U.S. had no unemployment insurance. Firms continue to use uncompensated hours reductions today (Levenson 1996). However, STC is an alternative to this, allowing employees to be partially compensated through the UI system for wages lost as a result of hours reductions.

The idea of adjusting the UI system to make it easier to use reduced work weeks as an alternative to layoffs was first given serious consideration in the U.S. in response to the unemployment problems of New York City in 1975. In 1978, the state of California established the nation's first UI supported STC program. Arizona and Oregon followed California's lead, creating their STC programs in 1982. That year, federal legislation was enacted which mandated that the Secretary of Labor develop model legislative language to be used by states when adopting STC programs. This language was made available to states in July 1983 and currently eighteen states have STC programs in place. Despite these increases in program adoption, less than one percent of employers utilize the program in participating states.

Programs similar to the U.S. STC program are in place in a number of other countries as well. In Canada, for example, the Work Sharing program was initiated by the Canadian federal government in the late 1970s through a series of limited pilot demonstrations. In response to an economic downturn in the early 1980s, a national UI-funded Work Sharing program was authorized on a temporary basis. It is still in place today and recently, an option has been extended to employers to include training for employees participating in the Work Sharing program during their reduced hours. This option has not yet been utilized extensively (Ekos 1993).

Although STC programs in North America are relatively new and underutilized, they have been widespread in Europe since the 1920s. Among the nations reporting use of STC programs are Austria,

Belgium, Denmark, France, Germany, Great Britain, Italy, Luxembourg, the Netherlands, Norway, and Sweden. Funding, benefits, duration, eligibility provisions, and program administration vary considerably by country. However, each program shares the common primary goal of avoiding layoffs during short-term economic downturns (Cook, Brinsko, and Tan 1995).

2. MOTIVATIONS FOR STC USE

There are a number of reasons that firms and employees may or may not wish to participate in the STC program. Proponents of STC argue that there may be significant financial and other benefits associated with program usage. From the employer perspective, STC utilization may allow employers to retain workers during economic downturns, which may reduce the costs associated with hiring and training new workers. Hence, the costs of reorganization necessitated by layoffs may be reduced under STC, and long-term productivity gains may be realized by employers.

From an employee perspective, STC has several benefits as well. Although more workers are affected by STC than would be by layoffs, participants' lost weekly earnings are partially reimbursed by UI payments. Thus, financial disruptions to individual households are minimized. Spreading the effects of economic downturns over a large group of workers avoids placing a disproportionate share of the burden on individual workers who would otherwise be laid off. In addition, STC has been touted as promoting broader goals of equal employment opportunity. By dispersing the effects of workforce reductions over more employees, those historically hurt the most by downturns, such as minorities and women who are more likely to be the most recently hired and first fired, are not disproportionately affected. Another advantage of STC over layoffs for employees is that under STC, they are likely to retain most of their fringe benefits. In contrast, most laid off workers lose all fringe benefits. Finally, the fact that workers participating in STC may not feel the economic necessity to seek new employment during a downturn allows them to continue developing skills in their chosen careers. Thus, should these workers eventually be laid off, their skills might make them more employable and less likely to turn to other public assistance programs.

There are also potential costs associated with STC usage. From the employer perspective total fringe benefit costs are expected to be higher under STC than with layoffs, which are not usually accompanied by maintenance of employee fringe benefits. In addition, although both layoffs and STC participation could lead to increases in the UI tax rate for firms not at the maximum rate, STC participation may impose even larger increases than layoffs. This would occur if an increased number of employees, some of whom have higher than average wages, file UI claims charged to the employer. Furthermore, some states impose higher tax rates on STC employers than on those that use regular UI.

From the state perspective, administrative costs may rise with the adoption of STC as state unemployment insurance offices are required to process more claims. This is because more employees are put on STC than would have been laid off so that per full-time equivalent layoff, there are more claims filed. In addition, STC usage may have different or unexpected results for the Unemployment Trust Fund balance which need to be monitored more closely.

In addition to firms and employees, an additional potential party affected by STC is unions. Unions may oppose STC on the grounds that spreading the effects of the downturn over a large group of workers would reduce the income of many workers who would otherwise have been unaffected financially. This potentially undermines seniority rules laid out explicitly in union contracts.

Some of these issues regarding the costs and benefits associated with STC use are addressed in the existing literature which includes: reports by state UI systems; econometric analyses of U.S. and foreign data; and major studies of STC conducted for the Employment Development Department in California, the Canada Employment and Immigration Commission, and the U.S. Department of Labor. Although these studies are broad in scope, there are still large gaps in what is known about the effects of STC on firms, workers, and the economy. This chapter reviews the research on STC programs in the U.S., Canada and Europe and concludes with a discussion of issues for future research.

B. THE TRADEOFF BETWEEN WORK HOURS AND LAYOFFS

Historically, U.S. employers have relied more heavily on layoffs than employers in other industrialized countries. This is at least partially the result of the structure of the UI system in the U.S. which, prior to STC, offered benefit payments to workers who had been laid off, but not to those on hours reductions. In the U.S., the UI system is financed through employer payroll taxes, which are established through experience rating. Under experience rating, employers' past usage of UI determines their rate of UI taxation. It has been suggested that in the absence of STC, imperfections in experience rating exist such that increases in employers' payroll taxes associated with layoffs may be less than the cost to the UI system to pay the laid-off workers' benefits (Feldstein 1976). Hence the number of layoffs which take place, especially temporary layoffs, is correlated with the degree of layoff subsidy provided by the UI system (Topel 1983).

In states which have adopted STC, a layoff subsidy due to incomplete experience rating is still a possibility. In fact, the availability of STC may not change U.S. employers' apparent preference for layoffs over hours reductions during temporary downturns in demand for labor because of the presence of this layoff subsidy (Abraham and Houseman 1993). In the early years of STC use, many states imposed extra taxes or surcharges on employers using STC so that their effective maximum UI tax rate was higher under STC than under regular UI. This would certainly act as an employer disincentive to STC use. While many states have removed these disincentives to STC use, three of the nineteen states with STC legislation have provisions for taxing STC firms more heavily which may improve the degree to which firms are experience rated.[3] However, in these states it is still possible that incomplete experience rating may result in some degree of layoff subsidy for employers choosing that mode of workforce reduction. Hence, in these states employers may still prefer layoffs even though STC is available.

[3]See Chapter IV for further discussion of this issue.

In contrast to the American system of unemployment insurance financing, European unemployment compensation systems generally make no attempt at financing through an experience-rated tax.[4] This is one reason why the rate of layoff in the U.S. is higher than in most European countries (Abraham and Houseman 1993). However, there are a host of other factors which may explain the disparity in layoff usage between the U.S. and other industrialized countries.

In Germany, for instance, the costs of worker training are shared by the firm, the government, and trade organizations. German firms typically spend more on worker training than U.S. firms and therefore have a greater incentive to retain their workers during periods of economic downturn (Abraham and Houseman 1993). Supporting this, Huberman and Lacroix (1996) suggest that STC facilitated employment stability and helped build organizational structure in European industries, and acted as an incentive for workers to acquire multiple skills as well. In times of economic downturn in Europe, jobs are sometimes created by providing incentives for early retirement for workers with long tenure. Newer employees at risk of job loss can then fill these vacated positions provided they have a broad enough set of skills to perform the necessary duties. Therefore, the apprenticeship system in Europe, which promotes a higher degree of skill formation than in the U.S., may also contribute to lower layoff rates. In addition, it has also been suggested that the increased requirements of severance payments, advance notice requirements, and layoff regulations in Europe lead to greater job security there (Van Audenrode 1994). Hence, firms experiencing economic downturns in Europe may be more likely to use STC, rather than layoffs, as a means of reducing labor costs.

In an effort to identify other ways in which the American system of unemployment compensation may encourage layoffs, a body of theoretical literature has developed to examine the tradeoffs between hours reductions and layoffs. To understand the way in which employers' and workers' preferences interact in determining how labor input is reduced during periods of declining labor demand, researchers have modeled employment contracts which draw on the early implicit contracts model of Azariadas (1975). In

[4]For a discussion of characteristics of various European systems of unemployment compensation, see Blaustein and Craig (1977) or Congressional Research Service (1992).

this type of model, workers and employers are assumed to engage in bilateral bargaining that results in an efficient solution in which each party's well-being is optimized given the choice of the other. In its most general form, this model predicts that risk-averse workers prefer hours reductions to layoffs during recessions. Firms' preferences may alter this relationship if fringe benefit costs are so high they make hours reductions less preferable than layoffs. In addition, firms may prefer layoffs if they can change output more easily by reducing employment than by reducing an equivalent number of hours. Contracts models may also take into account UI tax and benefit schedules which can further affect the optimal hours-employment strategy. As discussed above, incomplete experience rating of benefit charges may encourage firms to prefer layoffs. In contrast, firms may prefer hours reductions if hiring and training costs make layoffs unattractive to employers.

Building on this model, some researchers characterize two distinct systems. In an "American" system, UI benefits are assumed to be payable only if workers are fully laid off from the firm. Alternatively, under a "European" system, compensation is available only for reductions in hours worked. By design, the American system favors layoffs whereas the European system favors shortened work weeks as preferred methods for workforce adjustment (Wright and Hotchkiss 1988, Burdett and Wright 1989, and Jehle and Lieberman 1992). The result is that the American practice of subsidizing only layoffs leads to overuse of temporary layoffs, a result which is corroborated in the empirical literature. Similarly, the European practice of subsidizing reduced hours, while bringing back efficient levels of employment because layoffs are averted, leads to inefficiently low numbers of hours worked (Burdett and Wright 1989). This is because the tax system is not experience rated in Europe and employers who utilize STC more heavily are not required to pay out more than other firms in payroll taxes.

Burdett and Wright (1989) focus on the experience rating issue and conclude that the tax side of the system should be the focus of future efforts to model the efficiency of employment levels under STC and layoffs. Without effective experience rating, efficient levels of hours reduction will not be achieved. Other researchers focus on the benefit side of STC use. Van Audenrode (1994), for instance, focuses on the importance of plan generosity in bringing about efficient use of STC.

C. EMPIRICAL LITERATURE ON THE IMPACT OF STC PARTICIPATION ON LAYOFFS

Our discussion of the effect of STC on layoffs has been largely theoretical thus far. While providing the framework for analyzing the tradeoff between hours reductions and layoffs, the theoretical models discussed above are less useful in practical situations. In analyzing data on program participation, researchers have found that firms in both the American and European systems are likely to use some combination of hours reductions and layoffs. The extent to which STC actually averts layoffs is an empirical question that a number of studies have addressed.

A key question in the empirical literature is the degree to which unemployment compensation under STC substitutes for unemployment compensation under the regular UI program (Needels and Nicholson 1996). To characterize this, a layoff conversion rate has been defined which summarizes this tradeoff. A conversion rate of 1.0, for example, implies perfect substitution so that each hour of STC replaces an hour of layoff. Perfect substitution between full-time equivalent workforce reductions in STC and layoffs has been assumed by many researchers. Other researchers attempt to calculate the layoff conversion rate using data from a variety of sources including self reports by firms and matched samples of participating and non-participating firms. A rate greater than 1.0 implies that STC usage led to fewer hours of unemployment compensation than layoffs would have led to, while a rate of less than 1.0 implies that STC led to more hours of unemployment compensation. Layoff conversion rates can also be equivalently calculated with dollars of unemployment compensation rather than hours.

This issue of the layoff conversion rate is particularly important because assumptions regarding it are critical to cost-benefit analyses of STC, since the number of layoffs averted is multiplied by all cost data collected. If researchers incorrectly assume a conversion rate of 1.0, all cost and benefit estimates will be misrepresented. In the following sections, we explore the empirical studies of STC participation on layoffs in Europe, Canada and the U.S.

1. THE EUROPEAN EXPERIENCE

Studies of the effect of STC usage on layoffs in Europe are limited to those which use administrative data, sometimes aggregated up by industry or year. In general, these studies tend to assume a layoff conversion rate of 1.0 and find that STC leads to more flexible workforce adjustments than layoffs would. For example, Vroman (1992) examined how STC affected employment levels in Germany from 1970 to 1991 and found that STC served to stabilize employment in the short-term, but its effects did not necessarily last over time. Using similar methodology and data from France, Abraham and Houseman (1994) reported corroborating conclusions. In fact, these authors found that workforce adjustment was more flexible under STC than layoffs in response to economic downturns in Belgium and Germany as well, under an assumed layoff conversion rate of 0. Although the methodologies used to estimate the extent to which STC averted layoffs in these European countries may have been flawed, the findings from these studies suggest that in Europe, STC is associated with more flexible workforce adjustment than layoffs.

2. THE CANADIAN EXPERIENCE

Although the STC program has been in place longer and more extensively in Europe, more in-depth studies of its effect on layoffs, employers, and employees have been conducted in North America. The structure of labor markets, social policies guiding provision of fringe benefits, and other firm-level regulations differ dramatically between North America and Europe. Hence, discussions of how STC affects layoffs in Europe only indirectly inform the discussion of how STC affects layoffs in the U.S. However, studies of the Canadian Work Sharing program have been conducted and are more directly relevant to the discussion of STC in the U.S.

The Canadian Work Sharing (WS) Evaluation is the most recent evaluation of a program like the U.S. STC program. The evaluation was conducted by Ekos Research Associates, Inc. (1993) under contract to Employment and Immigration Canada and will be referred to throughout the text as the Ekos study. We also refer to an earlier study by the Canada Employment and Immigration Commission (1979).

Ekos surveyed both employers and employees at 620 firms that participated in WS and 460 comparison firms that were eligible for, but did not use, WS. The comparison group was selected through employee files which provided employer identifiers. Comparison firms were screened to ensure comparable distributions with WS firms on a set of key variables.

According to the evaluation report, the Work Sharing program significantly reduced the number of layoffs in the Canadian firms studied. Employers reported that on average, 40 percent of participating firms' workforces would have been laid off in the absence of WS. However, 12 percent of participating employees were in fact laid off after program participation, so the final estimate of layoff aversion is somewhat smaller. Ekos concluded that Work Sharing did not entirely replace layoffs as a method for making workforce adjustments, but did lead to a significantly reduced number of layoffs.

Although suggestive, these findings should be viewed cautiously for two reasons. First, reports of WS usage and layoffs were based on employers' self-reports. In our own study, we found discrepancies between layoff numbers reported by employers and those found in administrative records. It is likely that some of the same problems are present in Ekos' data, and there may be serious reasons to doubt the integrity of the findings. Second, the fact that the comparison group was not a matched sample, meaning that firms in the WS and comparison samples were not matched based on specific characteristics, raises questions about the comparability of the two groups and the attribution of differences between them to the WS program. Although Ekos attempted to ensure similar distributions on a few key variables, some actually differed markedly, undermining the validity of the evaluation.

Even if firms are matched based on a set of key characteristics, differences between participating and comparison firms in their regular UI usage may be found. Thus, in studies using comparison group methodologies, differences in outcomes between participating and comparison firms cannot always be reliably attributed to the WS program. It is therefore important to rely on other types of studies to understand how WS affects layoffs. One methodology we recommend later in this report is case studies

of firms which adopt hours reductions in lieu of layoffs. By examining one case in depth, rather than a large sample of firms simultaneously, we may be able to better understand the effects of WS.

Huberman and Lacroix (1996) use Bell Canada as such a case study. In late 1993, as a result of deregulation in the Canadian telecommunications industry, Bell Canada faced the unusual predicament of experiencing a decline in demand. In the past, employees at the firm experienced job security, high wages, and ample compensation for overtime work. The firm and union's decision to use WS was met with employee resistance which led to reduced productivity and increased absenteeism. In only four months, Bell Canada management reversed its decision to use WS and reconciled itself to using layoffs, as set out by the collective bargaining agreement, for workforce reductions. Hence, in this case, WS was utilized to avert layoffs as a short-term strategy only. Because of employee resistance to WS, Bell Canada management had to make layoffs to cope with the economic changes the firm experienced.

3. THE U.S. EXPERIENCE

Estimates of the effect of STC participation on layoffs in the U.S. are limited to two evaluations: a State of California (1982) evaluation of STC and a more comprehensive evaluation of STC prepared by Kerachsky, Nicholson, Cavin and Hershey (1986) of Mathematica Policy Research (MPR) for the U.S. Department of Labor.

In an attempt to measure the actual conversion rate between STC use and prevented layoffs, MPR compared samples of STC firms and non-STC firms, which were matched based on firm characteristics from administrative data. One of the most important findings from the MPR evaluation was that layoffs continued to be the predominant form of workforce reduction for STC firms in the states they examined. However, STC employers had lower levels of regular UI charges (UI charges not from STC) than comparison employers.[5] This result varied by state, however. In Oregon, hours spent in STC were almost

[5]Administrative data reports UI and STC charges by the firm, rather than the number of layoffs. In most circumstances, UI charges indicate layoffs. Exceptions occur if the firm is a base period employer for an employee laid off by a subsequent employer. In this case, UI charges may not indicate layoffs.

perfectly balanced by fewer hours spent on regular UI, almost precisely the 100 percent substitution effect one would predict with a layoff conversion rate of 1.0. STC firms in California, by contrast, had 29 percent more hours of compensated unemployment than comparison firms, indicating a higher rate of layoff in STC firms than in non-STC firms. In Arizona, STC appeared to avert some, but not all, layoffs. MPR concluded that the layoff conversion rate of 1.0 was not supported by the data, although the results for the three states were inconsistent.

Despite their use of STC, firms in these three states also laid off employees. Even for firms whose workers collected significant amounts of STC benefits, on an hour-for-hour basis workforce reductions were at least five times as great from layoffs than from hours reductions.[6] In other words, employees at firms using STC were still subject to layoffs and in fact, there were higher rates of layoff than STC use. Despite this finding, MPR argued that STC appeared to be used by firms for its intended purpose: to reduce layoffs.

Yet while layoffs were reduced to some degree, the total amount of compensated unemployment, as measured by the combination of STC and UI, was higher for firms that used STC than for firms that used UI exclusively. The total amount of work reduction compensated by UI was lower for STC users than for comparison firms that used only UI. In total, the employees of STC firms spent about 12 percent less time collecting UI benefits than did the employees of comparison firms. MPR estimated that the level of total compensated unemployment for STC firms ranged from 5 to 13 percent higher in the three states examined for STC firms than for comparison firms. MPR theorized that one reason for this finding might be that some firms that use STC would not have had any layoffs in the absence of the program. Many employers, especially in California where the additional compensated unemployment was greatest, may have used STC not as a substitute for layoffs, but as an additional form of workforce reduction.

[6]One drawback of the MPR data is that it does not include information on either layoffs or hours reductions that are not compensated by UI. It is, therefore, possible that hours reductions may be more significant in STC-participating firms than is suggested by the claims data. Conversely, it is also possible that comparison firms are instituting uncompensated hours reductions in which case non-STC firms' compensated hours may be a lower percentage of reduced hours than STC firms' compensated hours.

The MPR study's conclusions about the effectiveness of the STC programs in preventing layoffs have been criticized on a number of grounds. Morand (1990) criticized the methods used to identify a comparison group of non-STC firms. His main argument was that while STC firms, by definition, were experiencing a decrease in demand for labor, non-STC firms may or may not have been experiencing a similar decline. Hence, firms in the comparison group may have been healthier than those in the STC group. The issue of sample selection for the comparison group has also arisen in the context of this evaluation as well and is discussed in detail in Chapter VI.

Another criticism was of MPR's finding of a significant increase in benefit usage under STC, which was interpreted to mean that many employers who used STC would otherwise have used no workforce reductions. Morand argued that because firms, particularly in California, were required to submit affidavits stating that STC was an alternative to layoffs, the finding that STC did not actually substitute for layoffs was unconvincing and should be viewed as suspect.

Finally, Morand insisted that MPR did not provide an accurate assessment of employer participation in the STC programs. MPR stated that STC consistently accounted for less than one percent of all regular state UI payments and involved less than one percent of all employers in each state. Morand, however, claimed that in 1985 in California, STC claims represented six percent of UI claims in September. He claimed that, in the same month, 25 percent of Arizona's UI claims were STC claims. Morand argued that these figures were not merely outliers, but were rather more accurate estimates of program participation. This criticism has remained unfounded elsewhere in the literature.

A number of these criticisms can be linked to potential problems in the matching methodology MPR utilized to draw the comparison sample. If the comparison sample was, for some reason, less likely to use UI than the STC sample, the results regarding the effect of STC on layoffs would be biased upward. This problem is discussed further in Chapter VI of this report.

As discussed in the previous subsection, the difficulties of identifying a valid comparison group suggest that other methods may be useful to examine the effects of STC on layoffs. A case study, for example, provides an in-depth examination of STC usage in one firm. In the U.S., the Motorola Corporation in Arizona provided an interesting case study which was analyzed by St. Louis (1984). Motorola was integral in the establishment of STC in Arizona, lobbying the state to adopt legislation which would allow the company to use UI benefits for employees whose hours had been reduced. While utilizing the program, management reported higher levels of productivity than they had seen in previous periods of layoff activity. In addition, corporate management felt that STC allowed them to save jobs for their employees.[7] However, some employees were less satisfied, indicating that STC shifted their job responsibilities to different tasks and that the firm did have layoffs in the end. This discrepancy between employers' and employees' perceptions was not addressed in the analysis.

D. THE FIRM PERSPECTIVE: COSTS AND BENEFITS ASSOCIATED WITH STC

As discussed in the first section of this chapter, employers face both costs and benefits in using STC in place of layoffs for workforce reductions. All four of the program studies in the U.S. and Canada examined STC from the employer perspective. Overall, it appeared that the benefits that accrued from STC participation outweighed the costs associated with it for participating employers.

1. COSTS ASSOCIATED WITH STC

The potential cost increases to employers associated with STC use in lieu of layoffs includes more administrative work, higher UI tax rates, and more fringe benefits paid. In the MPR study, the most frequently cited primary disadvantage with the STC programs was the burden associated with administering it. The task of forms preparation in particular was considered a drawback by respondents. Findings from earlier studies also support this finding: in the early California and both Canadian studies, the administrative costs associated with STC program participation were found to be important disadvantages.

[7]It is possible that the favorable descriptions of STC by Motorola management occurred because Motorola was integral in getting STC legislation in place in Arizona. To admit that there were problems with it would potentially damage the reputation of the company.

After administrative burden, the drawback most frequently cited by employers in the MPR study was the increase in their UI tax rate. More than half of the participating employers in the MPR study reported that their UI tax rate increased as a result of STC use. However, it is possible that employers not taxed at the maximum rate would have seen increases in their UI tax with layoffs as well. Although employers in the employer survey reported increases in the UI tax rate, MPR found that the difference between STC and comparison firm expenditures on payroll taxes, as reported in the administrative records, were minimal. In addition, the experience rating tax formulas in three of the states examined by MPR led to higher tax rates in the subsequent tax year for both participating firms and those in the comparison group. This was unrelated to the STC program. In contrast to the U.S. experience, firms in Europe and Canada do not experience changes in tax rates as a result of STC participation. In these countries, employers pay a uniform payroll tax which finances the UI system (Cook, Brinsko, and Tan 1995).

Less than five percent of STC participating employers in the MPR study indicated that an increase in fringe benefits was the primary disadvantage associated with STC. The cost associated with providing fringe benefits to employees on reduced hours may be lower in Canada due to the relatively lower cost of maintaining fringe benefits for all employees, especially health insurance which is paid for by the federal government. Although maintaining fringe benefits may lead to higher employer costs, the vast majority of employers opted to retain full fringe benefits for employees on STC, even in the absence of a legislative requirement to do so (Vroman 1990, Kerachsky et al. 1986).

2. BENEFITS ASSOCIATED WITH STC USE

There are a number of benefits which may counterbalance these costs. While most of the negative aspects of the program are monetary, employers report both monetary and nonpecuniary benefits associated with STC. For example, employers in the MPR study reported that keeping valued employees was a major advantage associated with the STC program. This was reiterated in the early California and Canadian studies as well as the Ekos WS Evaluation in Canada. By keeping valued employees through STC, firms were likely to reduce the cost of hiring and training new employees to replace those lost to

layoffs. The early California and Canadian evaluations found significant savings relative to the expected costs of layoffs due to turnover, particularly in the area of training new employees. The 1993 Ekos evaluation found that Work Sharing was associated with lower hiring and retraining costs than layoffs.

Because data regarding the costs of turnover and retraining workers were not typically maintained by individual firms, these evaluations had to create their own models for calculating turnover costs. Assuming a 75 percent recall rate for layoffs, Best (1988) confirmed that there did appear to be savings associated with reduced turnover from STC. However, he cautioned that both the early California and Canadian evaluations suffered from methodological shortcomings in deriving their turnover cost estimates in that they relied on employer reports of cost expectations rather than actual costs.

Another potential financial benefit to employers associated with STC is through lower wages paid. Layoffs tend to differentially affect lower wage employees whose tenure with the firms is typically shorter. By participating in STC, employers may pay out less in wages because employees across the pay scale have their hours reduced. This finding was reported in both the early California and Canadian evaluations, which found that short-term wage and salary expenditures were slightly lower under STC (Best 1988, State of California 1982). More junior employees with lower than average wages and fewer senior employees with higher than average wages were retained than would have been the case under layoffs.

The finding of lower wages associated with STC than with layoffs, although reiterated by Vroman (1990), is criticized in the MPR study as being misleading. According to MPR, the savings associated with lower wages paid may be counterbalanced by lower productivity, assuming wage rates are positively correlated with productivity. Hence, the monetary differences associated with changes in workforce composition are not necessarily savings to be credited to the program.

Although the effect of STC on wages paid is unclear, STC should theoretically lead to reduced total productivity due to a reduction in employees' work hours, particularly the reduced hours of senior employees which would not have been cut under layoffs (Vroman 1990). This would presumably be

mirrored in lower wages paid out. In contrast, individual workers' productivity might improve because they remain attached to the job. Close to 80 percent of employers in the MPR study reported that workers on STC were as productive or more productive than full-time workers. The California evaluation found that 60.4 percent of employers surveyed perceived less work loss with STC than layoffs. In contrast, the case study of Bell Canada discussed previously indicated that among first time STC users in that firm, productivity declined intentionally and significantly. Data from both Canadian evaluations are less conclusive, with some firms experiencing increased productivity and others reporting decreased productivity. Where STC led to increases in productivity, employers perceived that relative gains in work time were caused by increased flexibility to respond quickly to changing conditions, availability of workers when business justified full-time schedules, and general cooperation from employees.

Although Work Sharing firms in the recent Canadian evaluation did not necessarily enjoy higher productivity while using the program, there was evidence that Work Sharing firms returned to full production sooner than those using layoffs. In examining productivity in different ways, the Canadian evaluators reported that WS may improve productivity through increased motivation, morale and employee security. However, due to the sampling problems in choosing a comparison group previously discussed, this finding should be viewed cautiously.

In surveying employers regarding these and other potential benefits associated with the STC program, MPR found that employers ranked their perceived advantages for using the program as follows: retaining valued employees (50.0%); keeping a larger number of employees employed (34.9%); reducing costs associated with hiring/rehiring (15.9%); maintaining employee morale (14.8%); avoiding disruptions to business operations (11.2%); flexibility to adjust employment level to demand (8.9%); allowing employees to retain benefits (5.6%); and other (21.5%).

Despite the costs associated with STC (such as the increase in administrative burden, higher UI tax rates and the potential decline in productivity), overall, employer satisfaction with the STC program has been high. Survey responses from both the early California and Canadian evaluations indicate that 82

percent of participating employers in California (State of California 1982) and 81 percent of participating Canadian employers were satisfied with the STC program (Best 1988). In addition, over 90 percent of employers in both samples reported a willingness to use STC in the future. In 1990 and 1991, the Work Sharing program in Canada was similarly received by employers (Ekos 1993). The major reason given for their willingness to use STC was only indirectly related to economic impacts and work loss. Most STC employers said that they would use it again because they perceived that worker morale was higher with STC than with layoffs.

E. THE EMPLOYEE PERSPECTIVE: COSTS AND BENEFITS ASSOCIATED WITH STC

From the worker perspective, one would expect that both layoffs and STC are unappealing relative to the option of full-time employment. In the absence of this third option, however, workers tend to support the decision to use STC as a means to reduce work time. In the early California evaluation, only six percent of employees reported opposing the program when it was first proposed. Despite their desire to participate in STC over layoffs, employees may be affected negatively as well as positively by the program in a number of ways. There may be institutional effects associated with STC such as changes in job duties, different interactions with government agencies, shifts in employee/employer relations, or changes in union contracts. There may also be quality-of-life effects of STC on employees, on their psychological and physical well-being, that are more difficult to measure but arguably equally important to examine. Only the early California and the two Canadian evaluations interviewed employees and are therefore the basis for the following discussion.

1. MONETARY EFFECTS OF STC ON EMPLOYEES

One of the most important questions is how STC affects employees' compensation through both wages and benefits. In the California study, the average STC employee experienced a 20.8 percent work reduction and maintained nearly all fringe benefits. The result was that employees on STC maintained 92 percent of their original compensation (State of California 1982). This statistic masks some variability in

earnings replacement, however. Lost wages are compensated by the UI system at a much lower rate, particularly for higher paid workers. In comparison to STC, under layoffs some workers maintain 100 percent of their compensation and others lose all earnings. For those who were laid off, UI benefits provided on average 53 percent of take home pay, but all fringe benefits were lost. The result was an average income which was 45 percent of original pay (Best 1988). This average figure has a bit less variability than the comparable figure for STC because laid off workers typically do not span the earnings distribution as comprehensively as workers on STC.

In Canada in the 1980s, the average WS worker had his or her hours reduced by 34 percent, a larger reduction that the average STC worker in California. Despite this, the amount of income employers maintained while using the program was much higher than in California. Employees using WS in the early Canadian evaluation retained 93.5 percent of their total compensation. In comparison, laid off workers maintained 57 percent of their full-time earnings and benefits during the same time period. According to Best (1988), Work Sharing in Canada maintained a higher percentage of employees' income than its American counterpart because of systematic differences in the two countries' UI systems. In Canada, UI payments replaced a much larger proportion of lost earnings than in the U.S.

Employees participating in the Work Sharing program in Canada in the 1990s had slightly worse outcomes than participants in the earlier Canadian evaluation. Although their work week was shortened by a considerably smaller percentage (roughly 15 percent), WS employees maintained an average income of only 81 percent of original pay, while those who were laid off maintained 53 percent of original pay (Ekos 1993). Ekos also reported that worker perceptions of their financial situations varied by the type of workforce reduction. Fifteen percent of those in the WS group reported dissatisfaction with their financial status, while 41 percent of workers in the layoff group reported they were dissatisfied.[8] Hence, although it appears that the financial impact of WS on employees has worsened over time in Canada, employees still tend to perceive that WS provides a more satisfactory income level than layoffs, given some form of workforce reduction.

[8]The layoff group included workers who had been laid off either temporarily or permanently, but may have been recalled

Thus far we have assumed that employees who are on reduced hours through STC actually collect the benefits associated with it. However, a survey of employees in the early California evaluation found that as many as one-fifth of employees who were eligible for STC did not file claims for their UI benefits.[9] Among the reasons given were the short expected duration of hours reduction and an ability to manage finances without the partial benefits (Best 1988). Other reasons, which may be correlated with the two just mentioned, were the difficulties in dealing with the UI system and the stigma associated with participating in a social insurance program.

In addition to directly affecting workers' take home pay, participating in STC may entail possible negative impacts on the pension incomes of workers close to retirement. Because some pensions are automatically prorated in accord with work time or pay levels, STC may detract from an employee's future pension benefits. This is particularly a problem if the pension payment is based on income in the final years of work and the worker is near retirement. The evaluations of STC and WS to date have not estimated the effect of the program on the pensions of employees nearing retirement.

On the financial side, it seems that the majority of STC employees fare better than laid off workers. They maintain more income and benefits than laid off workers and are more satisfied with their financial situations than those on layoff. However, the burden of workforce reductions are spread over a larger group so that more households are impacted, albeit by a smaller amount.

2. NONPECUNIARY EFFECTS OF STC ON EMPLOYEES

In addition to the monetary costs and benefits discussed thus far, nonpecuniary issues are also significant for the evaluation of STC. It has been argued, for example, that because workers remain on the job, STC avoids many of the negative effects of unemployment such as skill erosion and negative physical and psychological effects. Employees in the early California evaluation placed tremendous value on the

[9]For comparison, Blank and Card (1991) estimate an unemployment insurance take-up rate of 66 percent in 1987.

added free time of the shortened work week. On average, morale of employees appeared to be higher with STC than layoffs and many believed that STC was more fair. In addition, employees, union representatives, and employers believed that the use of the California STC program had some positive impacts on employee-employer relations (Best 1988).

Extensive interviews were conducted by Ekos (1993) with employees regarding a variety of outcomes they might attribute to their participation in either layoffs or the Work Sharing program. Employees interviewed in the WS group had participated in the program at some point in time. Those in the comparison group had been laid off either temporarily or permanently, but some had been recalled.

The findings indicated that Canadian employees at WS firms displayed much higher levels of morale, better attitudes toward work and management, superior quality of life, better social relations, and improved psychological and physical well being compared to employees at firms experiencing layoffs. However, Ekos noted that this comparison may have been problematic because of their underlying assumption that employees at firms not experiencing workforce reductions were satisfied with their jobs. They cite evidence (from a different survey) that all workers report some level of dissatisfaction and conclude that WS has little negative effect on non-labor force outcomes for participants. Although difficult to measure, these non-labor force effects of WS, (health and quality of life, maximization of the number of contributing members of society, improved labor relations, maintenance of skill-levels) may have pervasive economic and societal implications.

One of STC's goals is the equal treatment of all employees. It has been suggested that STC helps to provide employment equity gains during periods of economic slowdown. This is achieved by maintaining employment for all workers and overcoming the "last hired, first fired" principle that might otherwise apply to the recipients of employment equity programs such as women and minorities. An important research question is whether the implementation of STC shows evidence of supporting this principle. The first Canadian evaluation and the evaluation of California's STC programs, however, did not find any particular benefits from STC for women and minorities. However, they did find a considerable impact on younger

workers, who are also likely to be differentially affected by layoffs. The MPR study concurred, showing that in general, the demographic composition of STC employees was quite similar to laid off employees in the comparison group. In addition, the demographic composition of laid off employees also reflected the general composition of the workforce within firms. However, MPR found that women were overrepresented among STC participants, but that younger workers were comparatively less likely to participate. Overall, the findings suggest that the affirmative action benefits of STC are limited at best.

In summary, employees in both the U.S. and Canada seem to fare better financially under STC than layoffs. For the most part, they retain higher levels of income than laid off workers and most retain fringe benefits as well. STC employees also seem to have more positive nonpecuniary outcomes than employees on lay off. Although there are some problems comparing employees on work share with those on layoff, it seems that at a minimum, STC and WS do not impose negative effects on non-labor force outcomes of participants, including their physical and psychological well-being. Although STC was touted as spreading the effects of downturns to ethnic and gender groups traditionally underrepresented in layoffs, this was not supported by the data.

F. IMPACT OF STC ON THE UNEMPLOYMENT TRUST FUND BALANCE

In theory, firms' participation in STC should not affect their UI tax rates because experience rating, in which firms' UI tax rates are linked to their past participation in the UI system, would lead to STC charges (as well as UI charges) being recouped from firms in future tax liabilities. However, there is evidence that experience rating is incomplete in some instances, leading the costs associated with STC to not be recouped in the future. This issue is discussed in the context of this study in detail in Chapter VII.

The MPR study addressed the issue of the impact of STC on the Unemployment Trust Fund as well. The authors found that total UI benefits (including both regular UI benefits and STC benefits) were significantly higher during the program period for employers that used STC than for similar employers in the comparison group. The early California evaluation corroborated this, estimating that STC was about

16 percent more expensive than layoffs in one week of use (Best 1988). A number of factors may account for these differences. First, the availability of STC may encourage employers who would not have used layoffs to reduce hours through the program. Second, the number of weeks claimed may be different among STC and laid off employees. STC participants may claim more weeks of benefits because they do not have as much motivation to seek alternate employment options. However, laid off workers may claim more weeks of benefits as well if the layoff recall period lasts a number of weeks. Third, as mentioned previously, because STC affects employees from the entire wage distribution, STC benefits paid may be higher because higher-wage employees are collecting STC benefits. Fourth, some firms subsequently lay off employees who have been collecting STC. The cost of the full UI benefits must then be added to these employees' previous STC benefits, increasing their cost to the UI account (Best 1988). Employees who collect STC and are then laid off might either have lower weekly benefit amounts if they have to establish a second benefit year or be ineligible for benefits if they are below the state's minimum wage credit requirement. Finally, it is possible that differences between comparison group and STC firms are not directly attributable to participation in the STC program. Rather, as mentioned previously, problems in the matching methodology used by MPR in their STC evaluation may have biased the results so that comparison group firms are healthier than their matched STC firms.

These effects on the Unemployment Trust Fund balance are most noticeable during times of extreme economic downturns, which is when STC sees its highest usage. The cost of the STC program to the UI system is marginally higher under normal use and significantly greater during harsh economic downturns (Kerachsky et al. 1986, Best 1988). As economic conditions worsen and work loss increases, the cost of STC relative to layoffs increases notably, particularly when work week reductions are followed by layoffs. If layoffs had been used instead of STC, the number of UI recipients might have dropped over time as employees sought and secured work elsewhere. Where STC is followed by layoffs, UI benefits are likely to be paid out to more people over a longer period of time (Best 1988).

In addition to the higher benefits paid, the MPR study found that the experience rating tax formulas of study states caused many employers in both the participant and comparison groups to pay higher UI tax

rates in the subsequent tax year. This may have occurred as a result of across the board shifts in UI tax rate schedules. However, increases for STC employers were more common, both because STC employers experienced higher total benefit charges and because some of those employers were subject to STC surtaxes (these extra charges have been eliminated in most states).

The combination of average increases in the UI tax rate and the benefits paid by STC employers may have a number of impacts on the Unemployment Trust Fund of the state. In the short-term, additional benefit charges would not affect the UI tax rate, which is based on charges in previous fiscal years. UI tax rates might not accurately reflect UI benefits paid for up to 18 months. Hence, employers using STC could draw down the Unemployment Trust Fund more than employers who do not use STC. However, MPR reported that this drain on the Unemployment Trust Fund may have been partially offset by STC surtaxes. Today, most states do not impose extra surtaxes with STC participation, however, so the drain on the Unemployment Trust Fund may actually be larger than it would have been with these extra charges. In the long-term, the problems are likely to be resolved as the state adjusts employers' UI tax rates to maintain the solvency of the Unemployment Trust Fund. Whether the effect of STC on the Unemployment Trust Fund balances out over time is discussed extensively in Chapter VII of this study.

G. DIRECTIONS FOR FUTURE RESEARCH

Although there have been numerous studies of the effects of STC on a variety of outcomes, many issues have been left virtually untouched. Some of these issues, which are listed below, are addressed in this evaluation.

- ***Why has STC participation remained low among states that have adopted STC legislation?*** This question is perhaps one of the most relevant policy questions given the reported satisfaction with STC among employers and employees. To fully address this issue, comparisons need to be made between participating and nonparticipating employers on a host of measures not included in the administrative data. To a certain extent, we examine this important issue in the survey of state officials discussed in Chapter IV.

- ***Why have only 19 states adopted STC legislation?*** As discussed in the beginning of this chapter, model language for STC legislation was created in 1982. Many states have opted not to adopt it. This important policy issue is analyzed in the survey of state officials in Chapter IV.

- ***By what processes do states adopt STC legislation and firms create and maintain STC plans?*** Although the characteristics of STC firms have been discussed in previous evaluations, there has been no discussion of the process by which STC is adopted in the state and implemented by employers. These issues are addressed in Chapter IV.

- ***How have 15 years of implementation experience in the U.S. affected the ease with which states and firms implement STC?*** In some of the early STC evaluations, researchers noted that problems which occurred, such as the burden associated with processing a new set of forms, are likely to subside over time as officials and employers become more familiar with the program. In Chapter V, we present comparisons of our employer survey findings to those reported in the 1986 MPR study.

- ***To what extent is STC used repeatedly or seasonally?*** This is an important question because STC is intended for short-term use by employers. It was not intended to be used as a means of compensating seasonal workers or to be used over a long period of time. In fact some states have rules prohibiting this type of usage which may or may not be enforced. These issues are discussed in both Chapters IV and VI.

- ***Does STC have more equitable effects than layoffs?*** Although there is some evidence that STC is no more equitable in the demographic composition of affected employees than layoffs, there is for need of further study of this issue, particularly in the U.S. Data presented in Chapter VI address this issue in detail.

- ***Further studies which use alternative methodologies are needed to fully understand the effects of STC on workforce outcomes***. As discussed in this chapter as well as in Chapters VI and VII, the matching methodology of comparing STC and non-STC firms falls short in a number of ways. Future studies should concentrate on other methodologies such as case studies. Ideally we would like to see experimental designs where eligible firms are randomly assigned to STC or non-STC groups. This type of experiment has not yet been attempted.

Attention to these topic areas in this report as well as in future research will contribute to our knowledge of the STC program, its underutilization in the U.S. and the prospects for increasing participation in the future.

IV. STATE ANALYSIS

To implement short-time compensation (STC), a state must first pass legislation adjusting its unemployment insurance laws to allow for the payment of benefits to workers for reduced work week hours. California was the first state to adopt such legislation and implement STC in 1978. In 1982 the U.S. Department of Labor developed and disseminated guidelines and model legislative language to assist other states considering the adoption of legislation to implement STC.[1] Currently, 17 states operate STC programs as part of their overall Unemployment Insurance (UI) system.[2] However, the majority of U.S. states, districts and eligible territories have yet to adopt STC legislation.

In this chapter, we present findings from a survey conducted with representatives from each of the 17 STC states, as well as the 36 states, districts, and territories (including Washington D.C., Puerto Rico, and the U.S. Virgin Islands) that do not operate STC programs. The goals of the survey were: (1) to understand why some states have adopted the program and others have not, (2) to learn how implementation of the STC program varies across states, and (3) to develop recommendations to improve the administration and use of STC.

[1] Federal legislation adopted in 1982 (P.L. 97-248) included guidelines to assure a minimum level of uniformity in STC programs across states. These guidelines encouraged (but did not require) states to include the following provisions in their STC laws: (1) to be eligible the employer plan should specify workweek reductions of at least ten percent, (2) STC payments should be based on a pro-rata portion of the unemployment compensation that would have been payable if the individual were totally unemployed,(3) employee receipt of STC benefits should be limited to 26 weeks in a given 12-month period, (4) employees will not be expected to meet work search requirements, (5) employers should submit a plan to be approved to participate in STC, (6) the employer plan must have the consent of the affected employees' bargaining representative if one exists, and (7) during the four months prior to participation in STC the employer should not have had a reduction in staff in the affected unit of more than ten percent. Although many states adopted some form of provisions 1 through 6, very few states adopted provision 7 of the list above.

[2] Although 17 states operate STC programs, 19 states have adopted them. STC programs were adopted but are no longer operational in Illinois and Louisiana. Illinois' program was established with a three-year sunset clause and was not reauthorized. Louisiana's program is technically still in effect but applications from employers are discouraged and none have participated since 1988.

The survey was conducted between November 1995 and January 1996. As described in Chapter II, survey respondents in each state were either directors of the state unemployment insurance division or individuals identified by the director as the most appropriate to respond to our questions (for example the STC program coordinator). In some states, multiple respondents were surveyed when one respondent was unable to provide all the information needed.

Interviews with the 17 STC states lasted between one and two-and-a-half hours, and covered a variety of topics including: the decision to adopt STC, STC program procedures and rules, and perceptions of the strengths and weaknesses of the program. In comparison, interviews with the 36 non-STC states and territories were much shorter in duration, lasting 15 to 30 minutes, and focused primarily on the decision not to adopt STC. In both cases, the surveys contained a number of open-ended questions in order to engage the survey respondent in a discussion generating rich data. However, the result of using open-ended questions in the survey is that certain events or perspectives may be undercounted because not all respondents discuss the same set of issues. In our interviews we strove to obtain the most comparable data possible.

This chapter describes the findings resulting from the state survey. Specifically, we discuss:

- why states adopted or did not adopt STC,
- variation in administrative practices and procedures among STC states,
- factors associated with higher employer utilization of STC,
- factors associated with higher costs for administering STC, and
- STC states' overall perceptions of the STC program.

A. THE DECISION WHETHER OR NOT TO ADOPT STC

One of the primary goals of the state survey was understanding what factors contributed to a state's decision to adopt or not adopt STC. This section reviews the findings from the surveys of STC and non-STC states in which representatives were asked to describe how this decision was made in their state.

First, we describe the factors contributing to the decision by some states to adopt STC, then we review the factors contributing to the decision by other states not to adopt the program.

1. WHY STATES CHOSE TO ADOPT STC

As mentioned previously, states have the discretion of deciding whether or not to adopt STC legislation. To date, only one-third of the eligible states have adopted the program. The survey of STC states included a discussion with respondents regarding the factors contributing to the decision to adopt STC legislation. Results from these interviews, presented in Table IV-1, indicate that three key factors contributed to this decision: a perceived need for the program, support from key stakeholders, and perceived advantages of the program.

a. Perceived Need for the Program

STC is designed to provide employers with an alternative to layoffs during economic downturns. Survey respondents from six STC states indicated that a perceived economic need for STC played a significant role in their state's adoption of the program.

For example, in 1982 unemployment rates in Arizona (9.9 percent) and Oregon (11.5 percent) were at five-year highs. In both states, concerns about worker layoffs and the survival of the state's employers resulted in the passage of STC legislation that year. Similarly, in 1988 Kansas was in the middle of an economic slowdown in which many small businesses were perceived to be on the brink of bankruptcy. STC legislation was passed in order to help these businesses survive.

However, for the majority of STC states an economic crisis or recession was not a key factor in the adoption of STC. In fact, when we compared the dates of STC adoption with national recessionary periods in the early 1980s and 1990s, no clear patterns of STC adoption and national business cycle downturns emerged. Further, we compared STC state unemployment rates during the

Table IV-1
FACTORS CONTRIBUTING TO THE DECISION TO ADOPT STC

State	Perception There Was a Need For the Program	Support From Key Stakeholders	Perceived Advantages of the Program
Arizona	U	U	U
Arkansas		U	U
California	U	U	U
Connecticut		U	U
Florida		U	U
Iowa		U	U
Kansas	U	U	U
Maryland		U	U
Massachusetts		U	U
Minnesota		U	U
Missouri		U	U
New York		U	U
Oregon	U	U	U
Rhode Island	U	U	U
Texas		U	U
Vermont		U	U
Washington	U	U	U

Source: Survey of State Officials

years leading up to and just after adoption of STC and found no clear association between high unemployment rates and program adoption. These findings indicate that a perceived economic need can be a factor in a state's decision to adopt STC, but it is not a necessary condition for program adoption.

b. Support from Key Stakeholders

In all of the STC states, support for STC from key stakeholders played a critical role in the adoption of the program. These stakeholders included: employer representatives and business groups, labor groups, legislative representatives, the state employment security agency, and the governor. However, the role specific stakeholders played in this decision varied by state as shown in Table IV-2.

Among the most pivotal stakeholders in the decision to adopt STC were individual employers or employer groups. In 13 of the STC states, employers were one of the key program proponents. Motorola was a particularly strong supporter of STC across the country, lobbying for the program in Arizona, Florida, and Missouri and testifying about their own use of the program.[3]

Support from key legislators also contributed to the passage of STC legislation in almost half the states adopting STC. Similarly, support from the state's employment security agency contributed to the passage of STC in eight STC states. In seven STC states, the governor's support of the program helped pass STC legislation.

Groups representing labor interests played a somewhat smaller role in the passage of STC legislation, acting as an active supporter of the STC program in five of the states adopting the

[3] Survey respondents in Illinois (currently a non-STC state) indicated that Motorola was key to getting STC legislation passed in their state in 1983. However, Illinois' legislation required employers to reimburse the state dollar for dollar for all STC benefits paid out to their employees. As a result of this provision no employers ever participated in the program, and in 1988 legislators allowed the law to expire.

Table IV-2

KEY STAKEHOLDERS SUPPORTING ADOPTION OF STC

State	State UI Entity Or Advisory Council	Employer Representatives	Labor Groups	Legislative Representatives	Governor
Arizona	U	U	U	U	
Arkansas	U	U	U		U
California		U	U[1]	U	
Connecticut	U	U			
Florida		U		U	
Iowa		U			U
Kansas	U				
Maryland	U			U	U
Massachusetts	U	U			U
Minnesota	U	U		U	U
Missouri		U	U	U	
New York				U	
Oregon		U[2]			U
Rhode Island		U	U	U	
Texas		U			
Vermont	U				U
Washington		U			

Source: Survey of State Officials

Notes:

[1] Labor was initially opposed to STC but eventually came to favor the program.

[2] Employers were initially opposed to STC, but eventually came to favor the program.

program. In one of these states, labor initially opposed the program fearing that employers would somehow abuse the program to the detriment of employees.

Only five of the STC states reported any opposition to the STC program. However, respondents in each of these states indicated that opponents moved to a neutral or supportive position toward STC before the legislation was passed.

The role key stakeholders played in the passage of STC legislation varied by state. However no clear patterns emerged to explain why certain stakeholders played a bigger role in the adoption of STC in some states and a smaller role in others. It is likely the variation in stakeholder support for STC depended on each state's political and economic context and the influence of particular stakeholders on the state's legislative process. What is clear is that any opposition to the program had to be addressed before STC legislation could pass.

c. Perceived Advantages of STC

Finally, survey respondents in all STC states indicated that the advantages the STC program offered their states were key factors in the decision to adopt STC. In the majority of STC states, STC was promoted as a doubly beneficial program that helped employers maintain a trained workforce during economic downturns and avoided layoffs for employees. This finding highlights the importance of promoting STC as a program that benefits both employers and employees in passing STC legislation.

2. WHY STATES DID NOT ADOPT STC

The survey of the 36 non-STC states focused on understanding the reasons STC was not adopted in each state. The survey also asked representatives of these states whether they believed their state would consider adopting the program in the future. Results from these interviews indicated that four important factors contributed to this decision: (1) a lack of understanding or information about the STC program, (2) a lack of support or interest in the program from key stakeholders, (3) perceived disadvantages of the program, and (4) a perception the program is unnecessary or inappropriate for their state. These results are presented in Table IV-3 and discussed further below.

a. Lack of Information or Understanding about the STC Program

Because STC is an optional program for states, adoption of the program depends, in part, on a state's awareness and understanding of the program. There are several ways that states could learn about the STC program, including: (1) communication with states that have adopted STC; (2) information and model language disseminated by the U.S. Department of Labor; and (3) various conferences sponsored by the U.S. Department of Labor for state employment security agencies.

Interviews with representatives from five non-STC states indicated that a lack of information or understanding about STC contributed to their state not adopting the program. Furthermore, survey respondents from three states indicated that they were unfamiliar with the STC program. In each of these states, the survey respondent was either the state unemployment insurance division director or assistant director and each had been employed in their position for a number of years. Hence, it is unclear why respondents in these states had not heard of STC. It is possible that the dissemination efforts by the U.S. Department of Labor were not successful in reaching all states.

The responses of two states indicated that a lack of understanding about the STC program contributed to their decision not to adopt STC. In these two states, respondents were unconvinced that STC offered any advantages to the existing partial benefits program.[4] Partial benefits are part of all states' regular unemployment insurance programs and allow workers to collect compensation for reduced work weeks. However, as mentioned in Chapter III, partial benefits differ from STC in that eligibility for partial benefits is dependent on an employee's earnings. Only employees whose gross earnings in a given week are below a fixed dollar amount can collect partial benefits (McCall,

[4]Respondents in these states included an Unemployment Insurance Division Director in one state and a Director of Unemployment Insurance Policy in another.

Table IV-3
FACTORS CONTRIBUTING TO THE DECISION NOT TO ADOPT STC

State	Lack of Information or Understanding about the Program	Lack of Support or Interest from Key Stakeholders	Concern about Perceived Disadvantages of the Program	Perception Program Not Needed or Not Appropriate for State
Alabama		U		U
Alaska	U	U		
Colorado		U		
District of Columbia		U		U
Delaware		U		U
Georgia	U	U		U
Hawaii		U		U
Idaho		U		
Illinois[1]		U	U	
Indiana		U		U
Kentucky		U		
Louisiana[2]		U	U	U
Maine		U	U	
Michigan		U	U	
Mississippi		U		U
Montana		U		U
Nebraska		U		
Nevada		U		U
New Hampshire		U		
New Jersey		U	U	
New Mexico		U		U
North Carolina		U	U	U
North Dakota		U		U

State	Lack of Information or Understanding about the Program	Lack of Support or Interest from Key Stakeholders	Concern about Perceived Disadvantages of the Program	Perception Program Not Needed or Not Appropriate for State
Ohio		U	U	U
Oklahoma		U	U	U
Pennsylvania		U	U	
Puerto Rico	U			U
South Carolina		U		U
South Dakota		U		U
Tennessee		U	U	
U.S. Virgin Islands	U			
Utah		U		U
Virginia		U	U	
West Virginia		U	U	
Wisconsin	U			
Wyoming		U	U	U

Source: Survey of State Officials.

Notes:

[1]Illinois actually adopted the program in 1983, but because of concern regarding the impact STC would have on the Unemployment Trust Fund, all STC employers had to reimburse the state dollar for dollar for the STC benefit paid out to their employees. No employers participated in the program and the legislation was allowed to sunset in 1988.

[2]Louisiana adopted STC in 1986, but applications from employers are discouraged and none have participated since 1988.

1995).[5] While the maximum allowable earnings under partial benefits vary by state, researchers report that a typical worker in manufacturing could work no more than two or three days a week to be eligible for even a small benefit under the partial benefits program. In contrast, earnings are not a condition of eligibility with STC. However, STC does put parameters on the allowable work week reductions, while partial benefits do not.

Respondents in multiple states thus indicated that a lack of understanding or awareness of the program contributed to their state not having considered adoption of STC previously. This result indicates that there may be room for improvement in both the content of the information provided to states about STC and the way this information in disseminated.

b. Lack of Support for the Program from Key Stakeholders

For a state to choose to adopt STC, the program first has to be proposed in the state legislature. There are several parties that have a stake in a state's decision to adopt or not adopt STC legislation and could act as proponents of STC legislation. As discussed previously, these stakeholders include: the state employment security agency or its advisory council, employer representatives, labor groups, and legislative representatives. Survey results indicated that a lack of interest in or support for STC among these key stakeholders played a significant role in the decision not to adopt STC in over 90 percent of the non-STC states (see Table IV-3). The specific stakeholders impacting each state's decision not to adopt STC are identified in Table IV-4.

Among the most influential stakeholders in the decision not to adopt STC was the state employment security agency or its advisory council. Representatives from 11 of the 36 non-STC states indicated that the state employment security agency officials had considered STC, but were not interested in or supportive of the program in their state. Respondents in another nine of the non-STC states indicated that a general lack of interest in the program among all stakeholders contributed to

[5]Under the partial benefits program, employees collect the maximum partial unemployment insurance benefit as long as their earnings fall below a modest weekly earnings disregard. Any earnings over the disregard in a given week are deducted dollar for dollar from their partial benefit compensation.

Table IV-4

LACK OF INTEREST OR SUPPORT FOR STC FROM KEY STAKEHOLDERS

State	State UI Entity or Advisory Council	Employer Representatives	Labor Groups	Legislative Representatives	General
Alabama		U			U
Alaska					U
Colorado		U			U
District of Columbia					U
Delaware	U				
Georgia	U[1]				
Hawaii					U
Idaho			U		
Illinois				U[2]	
Indiana			U		U
Kentucky	U				
Louisiana[3]	U				
Maine	U				
Michigan	U			U[4]	
Mississippi	U				
Montana					U
Nebraska		U	U		
Nevada					U
New Hampshire					U
New Jersey		U	U	U	
New Mexico					U
North Carolina	U	U			
North Dakota	U				

State	State UI Entity or Advisory Council	Employer Representatives	Labor Groups	Legislative Representatives	General
Ohio	U	U			
Oklahoma	U				
Pennsylvania		U		U[5]	
Puerto Rico					
South Carolina	U	U			
South Dakota	U				
Tennessee		U	U	U	
U.S. Virgin Islands					
Utah	U				
Virginia	U				
West Virginia	U				
Wisconsin					
Wyoming	U				

Source: Survey of State Officials.

Notes:

[1]At the time they originally considered the program, they did not fully understand how STC differed from partial benefits. They intend to look at the STC program again to determine if it fits the needs of their state.

[2]Illinois adopted STC in 1983. The legislation was allowed to expire in 1988 after no employers had participated in the program. Participation in the Illinois STC program required employers to reimburse the state for all benefits paid out.

[3]Louisiana adopted STC in 1986, but applications from employers are discouraged and none have participated since 1988.

[4]Legislation has been introduced several times, but they have been unable to pass the bill because of concern by legislators that adopting STC would negatively impact the Unemployment Trust Fund.

[5]Legislation has been introduced several times, but they have been unable to pass the bill because of concern that opening up discussions on UI policy might disrupt current agreement on UI tax rates between the state, employers, and labor groups.

the decision not to adopt STC. An additional five non-STC states indicated that the lack of employer support or impetus for the program contributed to their decision not to adopt the program. Further, four non-STC states indicated that a lack of support or impetus from labor groups contributed to the decision not to adopt STC. Finally, five non-STC states reported that a lack of interest or support on the part of legislators contributed to the decision not to adopt STC.

These findings suggest that a lack of active support for STC among these stakeholders was an important reason why STC was not adopted in the majority of states. For many of these stakeholders, this lack of interest or support stemmed from concern about the potential disadvantages of the program or a belief that the program was not appropriate for their state (both discussed further below). For other stakeholders this lack of support or interest in STC may have been due to a lack of information about the STC program.

c. Perceived Disadvantages of STC

There have been no conclusive studies of the impact of STC on a state's Unemployment Trust Fund or on the administrative burden the program places on state employment security agencies. While we address the impact of STC with regard to these issues later in this chapter and in Chapter VII, states concerned about what they perceived as potential disadvantages of the program had little data with which to assess STC's impact. For 12 of the non-STC states, concerns regarding the potential disadvantages associated with STC were significant factors in their decision not to adopt the program (Table IV-3).

Specifically, respondents in eight of the non-STC states indicated that the state employment security agency or legislators were concerned that STC would put an additional burden on their state's Trust Fund and therefore opposed adoption of STC. As discussed in more detail in Chapter VII, this fear is based on the expectation that the higher-full-time equivalent weekly benefit amounts expected under STC would raise UI expenditures significantly and possibly drain the Unemployment Trust Fund.

State employment security agencies in seven of the non-STC states opposed STC due to concern about the cost of program administration. Concerns about higher costs to administer STC are based on the fact that the federal government reimburses states for the costs to administer their UI programs, but the schedule used to determine the amount they will receive does not account for any extra costs to process complicated claims. Since STC has several administrative requirements that are distinct from regular UI programs (discussed in more detail below) some states anticipated higher costs to administer the program.

Survey findings indicate the need to disseminate additional information to states regarding the cost to administer STC and the impact of the program on the Unemployment Trust Fund. This information may assist states in their decisions about the STC program.

d. Perception that STC was not Needed or Appropriate for State

Finally, survey results indicated that stakeholders in the majority of non-STC states believed that STC was not needed or appropriate for their state (Table IV-3). Two primary responses were given to explain why STC did not meet their state's needs: (1) the state did not have the type of employers that would benefit from STC or (2) the state's existing unemployment insurance programs (including its partial benefits program) sufficiently met the needs of the state's employers and employees.

Not having the "the right type of employers" was reported by respondents in ten states as a key reason their state had not adopted STC, but what states meant by this varied. For example, representatives from several states indicated that manufacturing and industrial employers derived the greatest benefit from STC and that their state's lack of such employers was a primary reason they believed STC was inappropriate for their state. Other states with substantial seasonal and agricultural employment indicated that their employers were not prone to temporary layoffs, but only to regular off-seasons. As a result, they believed that STC would not benefit their states. Finally, respondents in a few states believed that larger employers benefited the most from STC, so having many small firms in their state made STC less attractive. For

example, in Wyoming representatives explained that the fact that 95 percent of Wyoming's employers had fewer than ten employees made STC inappropriate for their state.

Another reason that 13 non-STC states indicated that they had not adopted STC was the belief that their existing unemployment insurance benefits (particularly the partial benefits program) sufficiently met their state's needs. However, as discussed above, some of these respondents indicated that they did not understand how the STC and partial benefits programs differed. Other states indicated that their partial benefits programs were very generous and met the economic needs of workers in their states with reduced work weeks.

Again, this finding points to the need for additional information to be disseminated about STC. Further, it may indicate the need for additional research to determine whether particular employers benefit more from the availability of STC than others and to highlight differences between the partial benefits and STC programs.

e. Would Adoption of STC be Considered in the Future?

When representatives from the 36 non-STC states were asked whether their states would consider adopting the program in the future, respondents in 27 non-STC states indicated that their states would not or would probably not. Respondents in just five states believed their states would consider adopting the program in the future. Representatives from the remaining states were unsure whether the program would be considered. These responses indicate that key stakeholders in the majority of non-STC states are currently uninterested in the program. Given this lack of interest, any new information that might assist states in assessing the benefits of adopting STC should highlight the reasons why states might want to reconsider their decision about STC.

B. VARIATION IN STC PRACTICES AND PROCEDURES

States that adopted STC were encouraged by the U.S. Department of Labor to experiment with the "purpose and intent" of specific administrative rules and procedures they adopted for their STC programs. However, the federal legislation did encourage states to adopt certain provisions to ensure some minimum uniformity among STC programs (U.S. DOL 1987). This section describes how states' STC programs varied in the objectives set for the program, rules and regulations developed, and the administrative procedures adopted. We conclude this section with a discussion of how various practices and procedures for administering STC seem to affect administrative costs and employer participation.

1. OBJECTIVES SET FOR THE STC PROGRAMS

Each state identified a specific set of objectives for implementing STC. The most common objectives for the STC program were: (1) to provide an option to assist employers during temporary economic downturns (identified by ten states), (2) to avoid layoffs for workers (identified by ten states), (3) to keep trained and valuable workers attached to the employer (identified by eight states), (4) to maintain employee benefits (identified by two states), and (5) to improve the overall health of the state's economy (identified by two states). Each of these objectives targets a different stakeholder and reflects the broad stakeholder support each state sought in passing STC legislation. Additionally, the objectives identified by STC states fit well with the general theory behind STC discussed in Chapter III.

2. PROGRAM RULES

In order to meet the objectives identified above and ensure that STC was used as intended, each state developed its own unique set of program rules. The program rules establish limits and define requirements for the employer plan, employer participation, and employee participation. Table IV-5 identifies the specific rules applying to these areas in each STC state. This section describes the variation in these rules and the rationale behind them.

Table IV-5
STC PROGRAM RULES

State	Employer Plan Rules		Employer Participation Rules					Employee Participation Rules	
	Duration of Employer Plan	Union Signature Required	Part-Time Workers Excluded	Seasonal Workers Excluded	Minimum Number of Workers Affected	Reduction In Hours Allowed	Required to Maintain Employee Benefits	Minimum Tenure Required With Employer[9]	Maximum Duration of Benefit Receipt
Arizona	1 year	U			2	10 to 40%		None	26 weeks
Arkansas	1 year	U		[5]	2	10 to 40%	U	None	26 weeks
California	6 months	U			10% of affected unit	10% or more		1 week	No limit
Connecticut	26 weeks	U	U [3]	U	No minimum	20 to 40%	U	None	26 weeks
Florida	1 year	U	U	U	10% of affected unit and at least 2 workers	10 to 40%		1 week	26 weeks
Iowa	26 weeks [1]	U	U	U	No minimum	20 to 50%	U	None	26 weeks
Kansas	1 year	U	U	U[6]	10% of affected unit and at least 2 workers	20 to 40%	U	12 weeks	26 weeks
Maryland	13 weeks [2]	U	U	[5]	Must be saving jobs of 2 full-time equivalent positions	10 to 50%, with special approval they might consider over 50% reduction		3 months	26 weeks
Massachusetts	26 weeks	U		U	2	10 to 60%	U	None	No limit
Minnesota	1 year	U	U	[5]	5	20 to 40%	U[8]	6 months	1 year

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State	Employer Plan Rules		Employer Participation Rules					Employee Participation Rules	
	Duration of Employer Plan	Union Signature Required	Part-Time Workers Excluded	Seasonal Workers Excluded	Minimum Number of Workers Affected	Reduction In Hours Allowed	Required to Maintain Employee Benefits	Minimum Tenure Required With Employer[9]	Maximum Duration of Benefit Receipt
Missouri	1 year	U		U	10% of affected unit and at least 3 workers	20 to 40%		None	26 weeks
New York	1 year	U			5	20 to 60%	U	None	20 weeks
Oregon	1 year	U			No minimum	20 to 40%		6 months	26 weeks
Rhode Island	26 weeks	U	U [4]	U	2	10 to 50%	U[8]	None	26 weeks
Texas	1 year	U	U	U	No minimum	10 to 40%		None	No limit
Vermont	6 months	U	U	U	No minimum	20 to 50%	U	None	1 year
Washington	1 year	U	U	U [6, 7]	No minimum	10 to 50%	U[8]	None	26 weeks

Source: Survey of State Officials.
Notes:
[1] The employer plan was valid for 26 weeks over a two-year period.
[2] The plan was valid for 13 weeks but could be renewed up to four times in one year.
[3] Must have regularly worked over 35 hours per week.
[4] Must have regularly worked over 30 hours per week.
[5] Seasonal workers were not excluded by law, but they were excluded in practice.
[6] Seasonal workers were excluded by law, but this rule was not usually enforced.
[7] Plans were bring made to enforce seasonal exclusions more stringently.
[8] Employers were allowed to pro-rate benefits based on percent time employee works.
[9] These requirements were beyond those required for regular UI participation.

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Employer Plan Rules

All states require employers to submit an employer plan to participate in the STC program. The purpose of the employer plan is to document how STC will be used by each firm, so states can verify that the program is being used as intended. While the states' requirements for employer plans vary in their specifics, employers are typically asked to describe the hours reductions for their employees, the number of employees participating, and whether these employees are covered by any collective bargaining agreement. States review employer plans to ensure that employers comply with various regulations: time limits for which an employer plan is valid, limits on the number of times an employer can submit a new plan, and requirements for obtaining union approval on employer plans submitted. However the specific rules established in these areas vary by state as discussed below.

(1) Time Limits on Employer Plans. All STC states have a rule regulating the amount of time for which an employer plan is valid. The motivation for such a rule is to ensure that employers use the program for temporary economic downturns, and not for on-going labor subsidies. The actual time limits set by STC states for employer plans, as reported in the survey, ranged from 13 weeks to one year, with most states establishing a one-year time limit.

However, in practice these rules do not limit employer participation because once an employer plan expires, states allow employers to submit a new plan for approval or, in some states, renew their existing plan. Only two states (Washington and Iowa) limit the number of times a firm can extend its plan or reapply to participate in STC.[6] In 1996, Washington passed a rule that limits an employer's participation in the STC program to three consecutive 12-month periods, after which an employer must wait 12 months before reapplying. The survey respondent indicated this change arose from concerns regarding the number of employers using the program repeatedly rather than for temporary economic downturns as their law intended (the issue of repeat usage among employers is discussed in detail in Chapter VI). In Iowa

[6] Although Minnesota has no rule limiting the number of times an employer can renew its employer plan, the survey respondent indicated that the state would be unlikely to continue re-approving an employer plan indefinitely.

employers may participate in STC for only 26 weeks in a given two- year period, effectively limiting repeat usage among STC employers. No other states were considering similar rules to limit repeat usage among employers.[7]

(2) Union Sign-off on Employer Plans. Another important rule related to employer plans is the requirement that unions sign off on any plan in which union workers are affected. This provision has been adopted by all STC states and was included in the original STC legislation. It was eliminated as a requirement, however, in 1992.

b. Employer Participation Rules

Each state sets rules and conditions for participation in STC. Examples of such rules include: exclusions for part-time or seasonal workers, a minimum number of employees that must participate, parameters for the allowable percent time employees' hours can be reduced, and requirements that participating employers maintain worker benefits. In general these rules are designed to ensure that employers use the program as intended and to protect employees.

(1) Exclusion of Part-time or Seasonal Workers. A primary objective of STC is to avoid layoffs that would occur in the absence of the program. To ensure that STC is used for this purpose and not to subsidize seasonal or part-time employment, many states have rules preventing employers from using STC for such employees. Part-time workers and seasonal workers are each excluded from participation in STC in ten states.

However, in practice, rules excluding seasonal workers have not been strictly enforced in some states, while other states have prohibited such participation though they have no such rules in place. Specifically, two states with rules designed to exclude seasonal workers allow seasonal workers to participate in the

[7] California considered creating a rule to limit repeat usage, but never moved forward on this idea.

program. Respondents in these states indicated that the rules regarding seasonal workers were somewhat vague and open to interpretation. In one of these states, the rule was being re-written at the time of the survey so that it would more clearly exclude seasonal workers and would be enforced. Conversely, three of the seven STC states with no rule specifically prohibiting seasonal workers exclude these workers in practice. These respondents did not provide an explanation of why no such rule was included in the state's STC program provisions. It is possible that seasonal workers are excluded because firms employing them are more likely to be at the state's maximum UI tax rate and therefore would be less likely to contribute their fair share to the Unemployment Trust Fund if their workers participated in STC.

(2) Minimum Number of Employees Participating. In all, 12 STC states imposed rules requiring that some minimum number of employees or a minimum percent of an employer's affected unit participate in STC. The specific number of employees required varied from state to state, ranging from a minimum of two workers to ten percent of the workforce in the affected unit. States have various definitions for the term "work unit" but the wording is designed to encourage employers to apply the reduction in work hours across groups of employees rather than targeting select individuals for reduced work hours. The most common rule required employers to have a minimum of two workers participating in STC in the affected unit.

(3) Parameters Regarding Reduction in Employee Hours. All STC states established parameters regarding the percent time employers can reduce hours with STC. These parameters vary substantially across STC states. The most popular and most strict allowable reduction is between 20 to 40 percent (five states). Another four STC states allow employers to reduce workers' hours from 10 to 40 percent. The broadest allowable reduction in hours was in California which allows employers to reduce worker hours ten percent or more. In practice, this means that employers in California can actually reduce workers up to 100 percent time. If this happens for more than two consecutive weeks, the worker is moved onto the regular unemployment insurance system.

Presumably, the purpose of establishing work reduction parameters is to ensure that employers are committed to maintaining real employment for their employees and that STC is not just used to postpone inevitable job losses. However, California's liberal parameters may indicate that the state is less concerned about whether or not an employer uses the program for such purposes.

(4) Maintaining Employee Benefits. More than half of the STC states (ten states) required employers to maintain their benefits for participating employees. However, three of these states allowed employers to pro-rate benefits to take into account each employee's reduction in hours. While the remaining seven STC states had no law requiring employers to maintain their employees' benefits, these states reported that most, if not all STC employers maintain benefits voluntarily. This finding is further supported by the responses from the employer survey discussed in Chapter V.

c. Employee Participation Rules

Rules regarding the eligibility of workers to participate in STC were established by most STC states. Among the rules adopted were attachment to the employer for a certain period of time and limits on the time an employee can receive STC benefits.

(1) Employee Tenure Requirement. Many states have rules requiring that employees filing regular UI claims have a certain level of earnings or have worked in the state for a certain period of time before they are eligible to collect claims. In addition to these rules, some STC states (six states) have adopted requirements that STC employees must have been working for the specific STC employer for a given period of time. The specific length of time employees are required to be attached to their STC employer varies from one week to six months.

It is likely that these tenure requirements were adopted to avoid potential abuse of the STC program. Specifically, states that adopted these provisions may have sought to prevent employers from using STC to subsidize their labor costs. By requiring employees to have worked for their employer for a given period of time before being eligible to participate in the STC program, states have limited the ability of employers to subsidize the wages of new part-time employees.

(2) Limits on Duration of Individual Employee Participation. The majority of states set limits on the maximum amount of time an employee can receive STC benefits (14 STC states). The rationale for this rule is to ensure that employees will not exhaust their benefits so that they will still be able to access benefits should they later be laid off by their employer. Another reason for this rule may be concern in some states that employers will place their employees on the STC plan indefinitely as a means of subsidizing the wages of part-time employees. Consistent with the regular UI program, most of these states (11 states) set the maximum allowable time period for an individual to receive STC benefits at 26 weeks.

3. FINANCING THE STC PROGRAM

For the most part, employers participating in STC are charged for the benefits paid out to their employees in the same way they are charged for regular UI benefits. However as shown in Table IV-6, seven of the STC states applied special provisions for employer participation in STC related to financing. Most financial provisions applied to employers with negative account balances (in reserve ratio states) or employers with a calculated tax rate that is higher than the state's maximum tax rate (in benefit ratio states). Most financial provisions were developed out of state concern for the potential impact such employers' participation in STC would have on the state's Unemployment Trust Fund balance (see Chapter VII) and employer concern about not wanting to subsidize STC firms (see Chapter VI). Among the special financing rules applied to such employers were surtaxes, super maximum tax rates, exclusion from participation, and requirements to reimburse the state for all benefits paid.

Surtaxes were added to an employer's current tax rate in one STC state. Arizona charged negative balance employers participating in STC a surtax up to two percentage points higher than the employer's computed tax rate. The amount of the surtax depended on the employer's calculated reserve ratio. If an employer's account remained negative, the account could be subject to the surtax for two years following any STC charges.

Super maximum tax rates are tax rates above the maximum tax rate set for regular unemployment insurance taxes. Florida and Missouri were the only STC states that maintained this provision. In both

states, STC employers with substantial tax liabilities were subject to a super maximum tax rate higher than the state's maximum tax rate for regular UI employers. This higher rate was triggered

Table IV-6
SPECIAL PROVISIONS FOR EMPLOYER PARTICIPATION IN STC

State	Surtax	Super Maximum Tax Rate	Negative Balance Employers Allowed To Participate As Reimbursable[1] Employers	Negative Balance Employers Excluded From Participation In STC[1]	No Provisions
Arizona	U[2]				
Arkansas				U	
California					U
Connecticut					U
Florida		U[3]			
Iowa					U
Kansas				U	
Maryland					U
Massachusetts			U		
Minnesota					U
Missouri		U[4]			
New York					U
Oregon			U		
Rhode Island					
Texas					U
Vermont					U
Washington					U

Source: Survey of State Officials.

Notes: This table reflects the provisions of STC programs as of mid-1996.

[1]Only reserve ratio states can have negative balance employers. Reserve ratio STC states include: Arizona, Arkansas, California, Kansas, Massachusetts, New York, and Rhode Island. In Oregon, a benefit ratio state, employers with inadequate funds are also required to participate as reimbursable employers.

[2]In Arizona, negative reserve ratio STC employers can be charged a surtax of up to 2 percentage points depending on their calculated negative reserve ratio.

[3]In Florida, STC employers whose calculated tax rate is higher than the maximum state UI tax rate can be charged a super maximum tax rate up to 1 percentage point higher than the state's maximum UI tax rate.

[4]In Missouri, STC employers whose calculated tax rate is higher than the maximum state UI tax rate can be charged a super maximum tax rate up to 3.9 percentage points higher than the state's maximum UI tax rate.

when an STC firm's calculated tax rate exceeded the state maximum for regular UI. Firms could be subject to the super maximum if they had used STC at any time during the base period used to calculate tax rates.

Negative balance employers were excluded from STC participation in three states. Another two states made such employers who chose to participate in STC "reimbursable employers." This means that the employer pays the state back dollar for dollar for the STC benefits paid out to their employees. The remaining nine STC states had no special provision to penalize negative balance employers. We discuss the impact of these rules on employer participation later in this chapter.

4. ADMINISTRATIVE PROCEDURES

There are several administrative procedures common to all STC states. First, an employer learns about the program and, if interested, inquires about the program. The employer is sent information about the program and an application to participate (the employer plan). Employers interested in participating in the program submit an employer plan for approval. The state then considers the employer plan for approval, based on its own state-specific eligibility criteria (discussed above). Once approved, initial employee claims are filed. Employee claims are then filed on an ongoing basis as long as the employer has workers participating in the program.

While the general process described above is common for all STC states, the specific practices and procedures states adopt to administer the program vary. This section describes how the administration of STC varies among states at each step, including: (1) publicizing and promoting the program, (2) approving plans, and (3) processing claims.

a. Publicizing and Promoting STC

Since employer participation in STC is voluntary, utilization of STC is in large part dependent on employers' awareness and understanding of the program. The survey of STC states included several questions about the information and outreach efforts states engage in to alert and educate employers about

the STC program. All of the STC states indicated that their efforts to publicize STC were very limited. In fact, respondents in more than half of the states indicated that they conducted no formal outreach or information efforts to promote the STC program, beyond a brief description of STC in their general unemployment insurance handbook distributed to all new employers.

Responsibility for publicizing and distributing information about STC to employers was centralized in all of the STC states. This means that if an employer calls the local unemployment insurance office for information about STC, the request is referred to the central state employment security agency which responds to the inquiry with information and a program application. This also means that most local unemployment insurance offices are not as familiar with their state's STC program.

Table IV-7 summarizes the specific employer outreach and publicity efforts of each STC state. As indicated, 12 STC states have at some time sent fliers to employers to educate them about the program. However, the majority of these states indicated that the mailing was a one-time event that occurred just after the program was adopted in their state. Another four STC states developed public service announcements for radio or television, but those states indicated these announcements did not generate interest from employers. As a result, none of the public service announcements developed are in use.

In terms of ongoing publicity and outreach efforts, three STC states regularly discussed STC in seminars they conduct for employer or labor groups. Another three STC states conducted such seminars at the request of employers. But these required that employers were aware of STC to ask for such a seminar. Other states included articles about STC in their monthly unemployment insurance newsletters, distributed to all employers in the state (three states). An innovative approach to employer outreach was conducted by three STC states that used information from the media and other sources to identify at-risk employers. These employers were then contacted by phone or mail with information about the STC program. Finally, one STC state was in the process of developing a world wide web site with information about all their unemployment insurance programs, including STC.

Table IV-7

PUBLICITY AND EMPLOYER OUTREACH EFFORTS

	Initial or One-time Efforts		On-going Efforts					
State	Fliers Mailed To Employers	Public Service Announcement / Press Release	Regular Seminars With Employer Groups Or Labor Groups	Articles In Monthly UI Newsletter	Contact At-risk Employers	Information On World Wide Web	Seminars On STC By Request	Other
Arizona	U	U	U		U	U[3]		
Arkansas	U[1]						U	
California	U						U	Video on STC available at local UI offices.
Connecticut	U							
Florida	U	U						
Iowa								Some booklets on STC are distributed by request.
Kansas	U	U	U					Pamphlets available at local offices.
Maryland	U				U			
Massachusetts							U	
Minnesota								Information has been sent out informally.

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State	Initial or One-time Efforts: Fliers Mailed To Employers	Initial or One-time Efforts: Public Service Announcement / Press Release	On-going Efforts: Regular Seminars With Employer Groups Or Labor Groups	On-going Efforts: Articles In Monthly UI Newsletter	On-going Efforts: Contact At-risk Employers	On-going Efforts: Information On World Wide Web	On-going Efforts: Seminars On STC By Request	On-going Efforts: Other
Missouri	U		[2]					
New York	U				U			
Oregon								
Rhode Island	U		U	U				
Texas								Pamphlets mailed by request.
Vermont	U			U				
Washington	U[1]	U		U	U			

Source: Survey of State Officials.

Notes: This table reflects the provisions of STC programs as of mid-1996.

[1]This is an on-going effort in that every new employer is mailed a pamphlet.

[2]Information about STC is sometimes discussed during employer seminars.

[3]In the process of implementing this effort.

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Overall, survey respondents in the majority of STC states indicated that most of their STC employers found out about the program through word-of-mouth. This finding is further supported from the results of the employer survey discussed in Chapter V. Other states reported that fliers mailed to employers, employer seminars, information in the UI newsletter, and information in early warning kits distributed to at-risk employers all contributed to increased awareness about STC. However, all states that created public service announcements noted that this outreach effort was unsuccessful.

b. Processing and Approving Employer Plans

In all STC states, employer plan applications were mailed from the state's employment security agency to interested employers. After receiving an application, some employers contacted the state office with additional questions. Employers then submitted their employer plan to the employment security agency for approval. The actual process for approving an employer plan varied from state to state as shown in Table VI-8 and described below.

The requirement for approval of employer plans enabled states to ensure that applicants were in compliance with the state's unique program rules. States varied significantly in terms of the number of individuals and rank of individuals who must sign off on each employer plan. For example, in Texas, employer plans were received by the Tax Department (to verify that the employer was not delinquent in their UI tax contributions), by the Job Service, by the UI Benefits Specialist, and by the UI Director.[8] In contrast, in California the only approval required for an employer plan was that of a plan specialist in the Special Claims Office. Findings from the survey indicate that states are moving towards reducing the number of layers of approval and reducing the rank of the individuals required for approving employer plans. Arizona and Texas were in the midst of this process at the time of the survey, and Vermont had completed it.

[8]At the time of our survey, Texas was in the process of reducing the layers of approval required for employer plan approval, so that the Shared Work Coordinator would be the only person who actually approved the plan.

Table IV-8
EMPLOYER PLAN APPROVAL PROCESS

State	Approvals Required	Average Time From Plan Receipt To Approval	Employer Plans Approved
Arizona	< Tax Unit < Employment Security Agency Administrator	1 day	98%
Arkansas	< Director of Employment Security Division	Not available	100%
California	< Plan Specialist	1-2 days	Not available
Connecticut	< Resource Associate	1 week	99%
Florida	< Unemployment Compensation Examiner < Director of Unemployment Compensation	NA	~ 100%
Iowa	< Tax Department < Special Claims Unit	1-2 days	100%
Kansas	< Benefits Section	Not available	95%
Maryland	< UI Specialist < UI Executive Director	2 days	99%
Massachusetts	< Director Of Control Operations < UI Director	2 days	99%
Minnesota	< Reemployment Insurance Analyst	1-2 days	99%
Missouri	< State Tax Department < Director of UI	1-7 days	100%
New York	< State UI Liability Section Examiner	1-2 days	95%
Oregon	< Benefits Supervisor	Not available	98-100%
Rhode Island	< State Tax Unit < UI Office	Not available	100%
Texas	< Tax Department < Job Services Dept. < UI Benefits Specialist < UI Director	7-10 days	100%
Vermont	< Unit Supervisor	2-3 days	100%
Washington	< Shared Work Reviewer	15 days	99%

Source: Survey of State Officials.
Note: This table reflects the provisions of STC programs as of mid-1996.

A common trend among STC states was the automation of the employer plan approval process. Texas, for example, was developing a computer program to determine whether an employer plan meets the state's eligibility requirements and program rules. Both the reduction in the number of approvals required for employer plans and the automation of the approval process were means for reducing the administrative burden and long-run administrative costs of operating the STC program.

At the time of our survey, the average time for employer plan approval is between one and seven days for STC states. Only four states indicated that the time from receipt of an employer plan to plan approval lasted longer than one week. Respondents from all STC states indicated that between 95 and 100 percent of employer plans were approved.

c. Processing Claims

Once an employer plan has been approved, the employer is notified and the process of setting up initial claims begins. In 13 STC states, the state employment security agency assisted the employer and employees in filing initial claims.[9] In the other four STC states, the local unemployment insurance office handled this responsibility. In six STC states, state employment security agency representatives made site visits to participating employers to set up these initial claims.

After the initial STC claim has been filed, claims must be filed for participating employees on an ongoing basis. As shown in Table IV-9 the states varied significantly in terms of their procedures for processing ongoing claims. For example, nine STC states required that ongoing claims be filed on a weekly basis, while the remaining eight STC states required that ongoing claims be filed bi-weekly.

Responsibility for submitting on-going claims was delegated to employers in some states and to workers in others. In over half of the STC states, the employer was responsible for completing ongoing employee claims and for obtaining each employee's signatures before submitting the claim by mail or fax (in some states). This process of regularly obtaining employee signatures could be

[9] Employers have to help set up these initial employee claims because they must verify the employees' work week reductions.

Table IV-9
VARIATION IN ADMINISTRATIVE PROCEDURES
FOR PROCESSING ON-GOING CLAIMS

State	Frequency Claims Must Be Filed	Employee Signature Required For On-going Claims	Employer Submits On-going Claims	Automated Processing Of Claims
Arizona	Bi-weekly		U	[4]
Arkansas	Weekly	U	U	
California	Weekly	U		
Connecticut	Weekly	U	U	U
Florida	Bi-weekly	U	U[2]	
Iowa	Weekly	U		U
Kansas	Weekly		U	U
Maryland	Weekly	U	U	U
Massachusetts	Weekly	U	U	
Minnesota	Bi-weekly	U		
Missouri	Bi-weekly		U	
New York	Bi-weekly	U	U	
Oregon	Weekly	U	U	
Rhode Island	Bi-weekly		U	
Texas	Bi-weekly	U[1]	U	[4]
Vermont	Weekly		U	
Washington	Bi-weekly	U[1]	U[3]	[4]

Source: Survey of State Officials.

Notes: This table reflects the provisions of STC programs as of mid-1996.

[1]Both Texas and Washington were automating their STC claims process, and as a result employee signatures will not be required for on-going claims.

[2]Florida was planning improvements to its processing of claims and planned to allow either the employer or employee to file the on-going STC claims.

[3]Washington was implementing a voice automated system for employees to file their own STC claims.

[4]These states were setting up a voice response automated system through which claims could be filed and payments processed.

administratively burdensome for employers, especially among employers with large number of employees participating. As a result, five STC states have developed a process whereby the employer still submits the ongoing claims, but they are only required to obtain employees' signatures for the initial STC claim filed. Since employers do not have to obtain their employees' signatures for the ongoing claims, these claims can be submitted by computer disk, fax, or through a voice automated system. Finally, in three STC states workers submitted their own ongoing STC claims and were required to obtain their employer's signature on each claim.

Automated processing of STC claims was another trend among STC states and is part of a larger movement to automate all UI claims processing.[4] Although many states have automated the processing of their regular UI claims, only four states (Connecticut, Iowa, Kansas, Maryland) had automated their processing of STC claims at the time of the survey (another three STC states were in the process of automating their STC claims processing). This meant that in 13 states data from employee claim forms were manually entered into a computer in order to process STC benefits. This process is highly labor intensive. For those states that have automated their STC claims processing, employers submit ongoing claims by phone, through an automated voice response system, or by computer diskette. Computer programs then automatically determine each employee's benefit amount and process their check, substantially reducing the administrative burden of processing STC claims.

Ongoing claims were processed by the employment security agency in over 75 percent of the STC states. However, as part of their automation efforts, Arizona, Texas and Washington expected to switch from a centralized to decentralized processing of ongoing claims, by utilizing their local unemployment offices for this purpose. In contrast, California planned to change its processing of ongoing claims from a decentralized to a centralized approach as a result of a new system in which all employee claims are filed by mail.[5] After these changes take effect, ten STC states will be processing ongoing claims centrally,

[4] The U.S. Department of Labor recently issued grants to a number of states to help automate the processing of unemployment insurance claims.

[5] Until recently STC employees in California had to file their initial claims in-person at the local unemployment insurance office.

compared to seven STC states that process ongoing claims in local offices. Of the seven STC states that have or were planning to implement automated processing for ongoing claims, all but one had a decentralized system.

5. FACTORS AFFECTING EMPLOYER PARTICIPATION

Employer participation in STC has historically represented a relatively small proportion of all potential employer participants. However, employer participation still varies significantly from state to state. As such, one of the goals of the state survey was to determine whether particular rules and procedures established by STC states seem to impact the level of employer participation in STC.

To conduct this analysis, we asked state survey respondents to provide us with STC employer participation statistics, using 1994 as the base year for comparison. The only participation data all states were able to provide for this analysis were the number of employers with approved STC plans that year. However, it is likely that some of these employers did not have any employees participating in the program during that year.

The data reported by state respondents indicated that in 1994, the raw number of employers participating in STC ranged from one employer in the state of Iowa, to 2,070 in California. In order to compare participation across states we developed a relative measure of employer participation by dividing the number of employers participating in STC in 1994 in each state by the number of employers subject to unemployment insurance taxes in 1994 in that state.[6] Using this measure, we found that employer STC participation rates in 1994 ranged from 0.4 percent in Washington to 0.0 percent in Iowa. These results are further documented in Appendix A.

[6] The total number of employers covered by UI in each state was the best available measure to derive relative levels of employer participation. The number of employers with UI claims filed against them in each state in 1994 was not available.

We grouped states into three relative employer participation levels: high (states with employer participation representing over 0.1 percent of all employers in the state subject to unemployment insurance taxes),[7] medium (states with participation ranging from 0.03 percent to 0.09 percent of employers), and low (states with employer participation representing less than 0.03 percent of employers). We determined that five states had relatively high levels of employer participation, five states had moderate levels of employer participation, and seven states had relatively low levels of employer participation (see Appendix A). We then cross-tabulated these measures of employer participation with various program rules and procedures to determine if any patterns emerged. It is important to note that the findings resulting from this analysis are just correlations, and should not be interpreted as causal relationships. With that caveat in mind, this section describes the findings from our analysis.

a. Impact of Publicity Efforts

One of the factors most strongly associated with higher employer participation was the extent to which the state engaged in publicity and employer outreach efforts (see Appendix B). Each of the five states with the highest levels of employer participation had engaged in both one-time outreach efforts (such as sending out flyers to all employers to announce the program) and ongoing outreach efforts (such as regular articles in their unemployment insurance newsletter to all employers). Some of these states also made efforts to involve their local offices in outreach efforts, by producing materials for them to distribute to or share with employers, such as pamphlets and informational videos.

[7] Though participation by 0.1 percent of all the employers in a given state may not appear to be a high proportion, this is a relative measure and participation of greater than 0.1 percent of employers in the STC program is high relative to other STC states.

Among the seven states with the lowest employer participation levels only two indicated that they had ever engaged in mailing STC information to employers and only one had any ongoing efforts for outreach beyond providing information to employers on request.

Further support for the idea that outreach efforts affect employer participation levels comes from some of the state survey respondents. When asked to discuss recent trends in participation two state respondents attributed their state's slight decline in STC participation since the early 1990s to a lack of employer outreach. Conversely, one state (Washington) actually reported that their participation numbers have been growing and attributed this growth to an increase in their employer outreach activities.

b. Exclusion of Seasonal Workers

An interesting finding from the analysis is the association between exclusion of seasonal workers from participation in STC and lower employer participation. (See Appendix C.)[8] Among the five states with the highest rates of employer participation, none actively enforced exclusions of seasonal workers. In contrast in six of the seven states with the lowest employer participation, seasonal workers were actively excluded from STC participation. This finding may indicate that employers with seasonal workers were utilizing STC in states without provisions prohibiting their participation. However, we can not verify that the seasonal use of STC was common, or how such employers might be using the program (for temporary economic downturns or on an on-going basis to subsidize their employees' wages). This finding may highlight an area for further research.

[8] At the time of the survey both Washington and Kansas indicated that there were state laws excluding seasonal workers from participating in STC, but that these laws were not actively enforced. However, Washington also indicated that they were in the process of tightening up their laws and planned to enforce them more rigorously.

c. Age of the Program

Another factor associated with the level of employer participation in STC appears to be the age of the program (see Appendix C). Of the five states with the highest level of employer participation, four were among the oldest STC programs (adopted prior to 1986). This is not surprising given that the majority of state survey respondents indicated that word-of-mouth was the primary means through which their STC employers heard about the program. Of the seven states with the lowest relative participation levels, only one adopted STC before 1985.

d. Role of the Economy

From the state survey we obtained anecdotal evidence indicating that improvements in a state's economic health may reduce employer participation in STC. As part of the state survey, respondents were asked to discuss any recent trends regarding employer participation. Of the 13 states providing responses to this question, nine states indicated that there had been a decline in the number of employers participating in their state since the early 1990s. Several of those states attributed this decline to the improving economy.

e. Impact of Special Tax Provisions

We compared states' tax penalties and provisions for certain types of employers with employer participation rates to see if we would find any association between the two (see Appendix C). To our surprise, we found no clear relationship between these penalties or provisions and employer participation rates. For example, among the five states with the highest participation, two states had special tax provisions that might be expected to reduce participation: Arizona imposed a surtax on negative balance employers; and Kansas prohibited participation by such employers.

However, more extreme provisions may indeed be associated with lower employer participation, as demonstrated by Illinois (currently a non-STC state). As mentioned above, Illinois

adopted the STC program in 1983, but because of concern that participation in the program would negatively affect employers' experience ratings, the state included provisions in the law that made all STC employers participate as reimbursable employers. This provision acted as a major disincentive to participation in the program and no employers ever participated in the program. The result was that the legislature allowed the program to expire in 1988.

Our inability to establish a clear association between employer participation and special tax provisions may be due to confounding factors, such as the variation in employer outreach among states. We return to this subject in Chapters V and VII, using data from a survey of employers and state administrative records.

f. Other Factors Considered

Our analysis found no clear association between any administrative procedures and the level of employer participation. Specifically, whether the program was administered centrally or in a more decentralized manner did not seem to impact employer participation (though including local offices in the outreach efforts seemed to have a positive impact on participation, as described above). Nor did automation of the processing of ongoing claims seem to affect the level of employer participation. Finally, we found no clear relationship between the level of support the state employment security agency expressed for continuing the STC program and the level of employer participation.

Similarly, the administrative burden placed on employers and employees did not appear to impact employer participation in the program. There was no clear association between the level of effort involved

in ongoing claims and participation rates among STC states. This was surprising given that employers in many states identified the administrative burden of using STC as a disadvantage associated with STC usage (see Chapter V).

Further, we compared employment by industry in each STC state with employer participation and found no patterns that might suggest a relationship between the type of employment in a state and the use of STC. We also compared the work hours reductions allowed in each state with employer participation and found no clear patterns to indicate an association.

6. FACTORS AFFECTING THE ADMINISTRATIVE COST OF STC

One of the primary concerns of states considering adopting STC is the potential cost of administering the program. Therefore, another goal of the state survey was to better understand the factors affecting the administrative costs of STC. Because collecting actual program cost data from each of the STC states was beyond the scope of this study, we relied on anecdotal evidence from state respondents to examine administrative costs. We did ask states for any analysis they had conducted to examine the issue of cost, but none had investigated this issue systematically. We recognize the limitations of such data and include this information only to provide some idea about the factors contributing to administrative costs.

Specifically, we asked survey respondents whether the administrative cost of STC was higher on a per claim basis than the cost to administer regular unemployment insurance claims. However, because there are more STC claims for an equivalent workforce reduction, the data cannot be used to compare full-time equivalent workweek reductions.

Respondents in 11 states indicated that the administrative costs for STC on a per claim basis were higher than the cost to administer regular unemployment insurance claims. These respondents explained that the administrative costs for STC were higher primarily because STC claims are processed by hand, while the processing of regular UI claims in their states are processed through an automated system.

It may be significant then, that none of the four states that have fully automated their STC claims processing responded that STC was more administratively costly than regular UI on a per claim basis. In fact, two of these automated STC states indicated that administrative costs for STC on a per claim basis were actually lower than regular unemployment insurance claims. They explained that STC costs were lower because: (1) STC claimants do not visit the unemployment insurance office on a regular basis as regular UI claimants are required to do, and (2) the agency does not have to monitor STC claimants to ensure they are participating in job search, as they have to for regular UI claimants. The respondents from the remaining two automated STC states indicated that the costs of administering STC and regular UI claims were relatively equal. These survey results indicate that automating the processing of STC claims can significantly reduce the cost of administering the STC program, bringing these costs in line with or actually below the cost of administering traditional unemployment insurance claims.

C. STC States' Overall Perceptions of the Program

The survey of STC states included some general questions for respondents regarding their overall perception of the STC program in their state. Topics covered included: the degree to which STC has achieved its objectives, the usefulness of additional guidance on STC from the U.S. Department of Labor, recommendations for states considering adopting STC, and the level of support for continuing the STC program within the state. This section summarizes these findings.

1. The Degree to Which STC has Achieved its Objectives

As discussed earlier in this chapter, STC states identified several objectives for their STC program: (1) to provide an option to assist employers during temporary economic downturns, (2) to avoid layoffs for workers, (3) to keep trained workers attached to the employer, (4) to maintain employee benefits, and (5) to improve the overall health of the state's economy. When asked whether the state's STC program had met its objectives, ten STC states indicated that the STC program had met its goals and seven states indicated the program had somewhat met its goals.

Respondents reported that the primary barriers to meeting STC goals were: failure to adequately publicize the program, and low employer utilization of the program. Almost half of the STC states indicated that a lack of resources (both staff time and funding) limited their ability to engage in publicity and employer outreach activities. Five additional STC states indicated that they were not engaging in any outreach efforts out of fear that increasing utilization of the program would exceed their capacity to process STC claims (none of the states that expressed this concern had automated the processing of STC claims). Finally, four states indicated that they were not engaging in publicity efforts because advertising the program was not a priority of the agency.

2. THE USEFULNESS OF ADDITIONAL GUIDANCE ON STC FROM THE U.S. DEPARTMENT OF LABOR

Respondents were specifically asked whether their state would be interested in receiving any additional guidance or assistance from the U.S. Department of Labor. Several suggestions were made by respondents, including the following: provide technical assistance to states to improve program promotion to employers and/or supply states with marketing materials (three states); disseminate "best practices for STC" that are gleaned from other STC states, so that states can improve their own STC programs (three states); and provide additional funding to states to help them pay for marketing efforts and other administrative costs (three states). Finally, respondents in four states specifically stated they wanted no additional guidance from the U.S. Department of Labor.

3. RECOMMENDATIONS FOR STATES CONSIDERING ADOPTING STC

In general, respondents' recommendations for states considering STC were quite positive. Five STC states recommended the program enthusiastically to any state considering the program. However, six states suggested that if a state adopts the program they should make sure to promote it properly among employers. Other recommendations addressed the need for care in establishing STC-related tax provisions (two states), automated claims processing (two states), and the benefits of a simplified program (two states).

4. LEVEL OF SUPPORT FOR CONTINUING THE STC PROGRAM

In 12 STC states there was enthusiastic support for continuing the program. Another four states indicated that there was a moderate level of support in their state for continuing the program. Only one state indicated that there was no support for the program from the state employment security agency. The respondent in this state indicated that STC charges were not adequately experience-rated, and that the cost of administering the program was too high.

D. CONCLUSIONS

The STC State Survey was designed to address three issues: (1) why some states have adopted STC, while others have not, (2) how implementation of STC has varied across states, and (3) how administration and utilization of STC can be improved. Findings with regard to each of these areas are summarized below.

In our examination of why states adopted or did not adopt STC, four key factors emerged: (1) whether key stakeholders (including representatives from the state's employment security agency, legislators, employers, labor groups, or the governor) knew of and understood the program, (2) whether stakeholders perceived a need for the program, (3) whether there was support for STC among the stakeholders, and (4) the weight stakeholders placed on perceived advantages and disadvantages of the program. Where stakeholders had concerns about the program that were not addressed or where there was a lack of interest or knowledge about STC among stakeholders, STC was not adopted.

Survey results indicated that a number of features are consistent across STC programs. All STC states adopted rules regulating employer plans, employer participation, and employee participation. For example, all states required employers to submit an employer plan describing the work hours reductions expected and the number of employees participating in the program. Further, when participating workers were covered by a collective bargaining agreement, the consent of the bargaining representative was required by all STC states.

The specific provisions of many STC rules varied significantly by state. This variation was related to the states' interpretations of the intent of the program and concerns about its impacts. For example, some states sought to exclude certain types of employers from participating in the program, such as those with seasonal employment, because of concern that the program would be used to subsidize labor costs.

Other states adopted special tax provisions for negative balance employers out of concern about the effect of STC on the Unemployment Trust Fund.

Survey results indicated that the majority of states had no active outreach efforts to educate employers about the program. Most states had engaged in initial information efforts at the time the program was originally adopted, but since then had never actively publicized the program. Respondents indicated that this was due to a lack of funds for such efforts, and for some states, a concern that they would not be able to handle an increase in claims that might be generated from any publicity about the program.

A possible increase in the number of STC claims was of less concern to states that had automated their processing of STC claims. Several states had already automated their processing of STC claims and others were in the process of doing so. A number of states were also engaged in efforts to reduce the number of approvals required in the initial approval of STC employer plans. Both of these trends reflect a desire by states to reduce the administrative burden of the STC program. Further, anecdotal evidence suggests that states with automated claims processing found STC much less costly to administer than states where claims are processed manually.

Although employer participation in STC was very low in all states, we found an association between levels of employer participation in STC and the extent to which a state engaged in outreach and publicity efforts. Further, states that actively excluded seasonal workers from the program also had lower employer participation. We also found that the longer the program had been in existence, the more likely it was to have higher employer participation rates. Finally state respondents reported that depressed economic conditions in the state were associated with increased employer participation, a finding consistent with the original purpose of STC programs.

Our comparison found no association between special tax provisions and employer participation, though limited data suggested the possibility that more extreme tax provisions, such as requiring negative balance employers to reimburse STC claims dollar for dollar, greatly discouraged participation. We also

found no association between administrative procedures and employer participation, a surprising finding given that employers surveyed mentioned that the administrative burden associated with STC was a key disadvantage to participation (see Chapter V).

States did have several suggestions for improvements to STC programs. Several states identified areas for additional assistance to be provided by the U.S. Department of Labor, including additional funding and technical assistance to help to publicize the program and improve administrative practices. These ideas are discussed in more detail in Chapter VIII.

Overall, STC continued to have strong support among states that had adopted the program. Respondents in the majority of STC states indicated that STC had succeeded in achieving the states' objectives for employers that utilized the program. However, many respondents acknowledged that the low utilization of the STC program by employers prevented the program from fully achieving their states' objectives.

V. SURVEY OF STC EMPLOYERS

Based on a survey of employers who used STC in 1992, this chapter addresses two of the four major goals of this evaluation: (1) to describe and analyze the practices and perspectives of STC employers, and (2) to identify lessons for improving the administration and use of STC. The STC employer survey was designed to provide information on employer perceptions of STC that cannot be obtained from administrative records or other data sources. It is a rich source of information on employers' experiences with the STC program, their views of the advantages and disadvantages of STC utilization, and their perceptions of the effects of STC on workforce outcomes. In addition, the employer survey data is crucial in understanding how information about the program is obtained and disseminated and whether employers who utilize the program feel it is a viable alternative to other workforce reduction strategies, such as layoffs.

This chapter presents data collected in phone surveys of firms in California, Florida, Kansas, New York and Washington. The firms were identified through administrative records as having employees who participated in STC in 1992.[1] We surveyed 511 employers that had STC plans approved in 1992; 57 of these employers did not respond to questions regarding STC usage.[2] Hence, the estimates reported in this chapter are based on survey responses from a maximum of 454 firms in the five states examined. A description of the sample selection criteria for the survey and the survey methodology are also presented in Chapter II. Basic characteristics of employees at the surveyed firms, as well as a description of those of employees who used STC, are provided in Chapter VI.

[1]This survey was intended to capture employers' perceptions about STC. Hence, we surveyed only STC participating firms. In Chapters VI and VII, comparisons are made to non-STC firms using data from administrative records.

[2]These employers did not answer the STC portion of the survey either because they were unaware of program usage at the firm or because they did not know enough about the program to respond.

With a few exceptions, data are presented separately for each of the five states surveyed. Where sample sizes are too small to provide meaningful results, the data are aggregated. Measures of statistical significance are not included uniformly on the tables, but are rather noted in the text where appropriate. This allows us to make comparisons between individual states or specific groups of states rather than comparing each state to the aggregate of the other four. In this analysis, comparisons of each state to the other four states in total are not necessarily meaningful since the aggregate group represents only a sample of the states which have STC legislation. However, in comparing states it is useful to statistically quantify the degree to which their characteristics differ in key instances. Where it is noted, statistical significance is assigned at the .10 level ($p<.10$) using a t-test to compare the estimates.

A. CHARACTERISTICS OF SAMPLE FIRMS

Table V-1 presents average characteristics of surveyed firms in each of the five states examined. The top panel presents firms' average financial characteristics and their provision of fringe benefits. On average, sample firms had been in business between 22 and 39 years and had between 10 and 155 million dollars of median sales. Between one-third and one-half of the firms showed a profit in 1992 and roughly one-third lost money in 1992. The majority of firms in all states offered health insurance benefits, but half or fewer offered retirement plans. In firms that offered these two fringe benefits, most employees were eligible to receive them.

As shown in the second panel of Table V-1, surveyed firms had between 35 and 73 employees on average. In all states except Florida, the largest share of employees was comprised of production, semi-skilled or unskilled workers. The rest of the workers in these states were split among management, professional and technical, or clerical employees. In Florida, however, a third of employees in sample firms were professional or technical workers and another third were production, semi-skilled or unskilled. In comparing these to national occupational distributions, our sample had higher concentrations of production, semi-skilled or unskilled workers and management, and lower

Table V-1
MEAN CHARACTERISTICS OF STC PARTICIPATING FIRMS

	California	Florida	Kansas	New York	Washingto
Financial Characteristics					
Years in business (mean)	28.2	21.9	31.8	38.6	30.4
Total sales (median, $ millions)	155.0	95.0	90.0	95.3	10.0
Had profit (%)	42.2	35.6	42.1	43.2	48.0
Broke even (%)	28.9	22.0	26.3	19.3	22.0
Had loss (%)	28.9	42.4	31.6	37.5	30.0
Offered health benefits (%)	91.1	78.0	86.2	95.4	90.1
Offered retirement plan (%)	96.5	96.7	96.9	92.7	97.8
Of firms with health benefits, percent eligible employees	49.0	34.1	50.0	39.6	41.0
Of firms with retirement plan, percent of eligible employees	94.2	97.3	93.5	84.0	98.6
Employee Characteristics					
Number of employees (mean)	72.9	46.9	73.0	35.2	56.7
Management (%)	17.6	19.4	13.8	14.3	17.5
Professional or technical (%)	19.1	33.8	14.6	21.0	19.7
Clerical (%)	21.9	16.3	11.7	15.6	14.4
Production, semi-skilled, unskilled (%)	41.4	31.7	60.0	49.0	48.4
Employees covered by collective bargaining (%)	6.8	2.2	5.0	15.2	4.0
Wages and Hours					
Hourly wage for professional or technical employees ($)	27.845	21.22	14.01	18.03	17.75
Hourly wage for clerical or sales employees ($)	12.81	15.39	8.16	10.34	10.86
Hourly wage for production, semi-skilled or unskilled employees ($)	11.91	12.89	8.25	17.05	9.71
Offered overtime (%)	64.2	56.6	82.8	72.0	88.8
Wages higher than industry average (%)	24.2	20.3	16.3	11.8	18.2
Wages lower than industry average (%)	3.2	10.9	7.0	14.0	14.5
Wages about the same as industry average (%)	72.6	68.8	76.7	74.2	67.3
Weekly hours for non-management (mean)	39.9	39.9	40.0	39.2	40.1
Had seasonal variations in work hours (%)	32.4	26.2	37.9	61.1	33.3
Had hours of temporary work in average week (%)	52.6	100.0	53.6	100.0	15.7
Sample size	**101**	**84**	**58**	**109**	**101**

Source: Survey of STC Employers.
Note: Sample sizes varied considerably across characteristics due to missing data. Those reported indicate the maximum number of respondents which could vary by as much as 73 in California, 56 in Florida, 31 in Kansas, 67 in New York, and 63 in Washington.

concentrations of clerical and sales workers.[3] The high concentration of STC firms in manufacturing has been reported in previous studies (see Chapter III). With the exception of New York, few firms in each state were covered by collective bargaining agreements. In New York, 15 percent of employers reported there were such agreements in place.

The bottom panel of Table V-1 presents data on employee wages and workweek hours. In all five states, professional or technical workers had the highest hourly wage and in California, professional and technical workers had higher wages than similar workers in other states.[4,5] More than half of employers in each state paid overtime wages, with close to 90 percent of employers in Washington doing so. In California, one quarter of firms reported that these wages were higher than the industry average, but in New York, only 12 percent of employers reported this to be the case. In fact, more employers in New York reported that their wages were lower than industry average, although the share was not statistically different from the share reporting higher than average wages.

Whether firms had seasonal variation in their workforces may have affected the extent to which they used STC. For example, Florida, Kansas and Washington had provisions which prohibited firms from using STC with seasonal workers, however non-seasonal workers at the same firms would be eligible.[6] As shown in bottom panel of Table V-1, STC-participating firms in all five states reported substantial use of seasonal workers. Between one-quarter and one-third of firms in California, Florida, Kansas, and Washington reported some seasonal variation in their workforce. However, in New York, employers were two times more likely to report seasonal variation than in other states (this difference was statistically significant). Findings presented in Chapter VI show that New York had high rates of repeat usage as well, potentially indicating that STC was attractive to firms with seasonal workforce fluctuations either for off-season use or use with non-seasonal workers.

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[3]National figures were tabulated from the 1993 Annual Demographic File of the Current Population Survey, which examines individuals' employment during 1992.

[4]Wage data was obtained through a series of questions on rates of pay and the time period to which the pay referred. There appeared to be some misinterpretation of the series of questions because a significant share of errors were uncovered. Although the wage data have been corrected where possible, they should be viewed cautiously.

[5]In comparing these wage data with data tabulated from the 1993 Annual Demographic File of the Current Population Survey, it seems that the reported wages from Clerical/Sales and Production/Semi-Skilled/Unskilled workers were very similar to national averages. The average reported wage for Professional or Technical workers in our sample was approximately 25 percent higher than the average national wage for that occupation group.

[6]Although excluded by law in Washington, data from the Survey of State Officials indicated that this law was not always enforced.

Temporary workers are also ineligible for STC benefits at their place of temporary employment. Firms which use temporary workers may be choosing that workforce reduction strategy in place of STC and would thus be likely to have a smaller share of employees using STC. In Florida and New York, all firms surveyed indicated they hired at least one hour of temporary work per week. In Washington, only 16 percent of firms indicated they used temporary workers.

B. HOW EMPLOYERS HEARD ABOUT STC

The STC program in the United States has not been utilized to the same extent that similar programs have been used in European countries. Data presented in Chapter IV indicate that fewer than one percent of U.S. firms utilize STC. Low participation rates in the U.S. may reflect the fact that employers lack information about the availability and specific aspects of the program. To examine this issue, we surveyed firms regarding their initial source of contact about STC and whether they had difficulty obtaining information about the program.

As shown in the first four rows of Table V-2, employers reported initially hearing about STC from a variety of sources. In Kansas, New York and Washington, close to one-half of firms responded that they first heard about STC in a mailed notice from the state agency, and in California and Florida, roughly 30 percent of employers reported learning about STC in this way. Combining this marketing tool with other direct communications from a state agency (row two of Table V-2), between 45 and 60 percent of firms reported hearing about STC from the state. Clearly state communications have reached employers at these firms, indicating the important role of the state in marketing STC.

Table V-2

SOURCES FROM WHICH STC FIRMS INITIALLY HEARD ABOUT PROGRAM

Source %	California	Florida	Kansas	New York	Washington
Mailed notice	30.7	29.4	45.8	40.2	42.1
Other direct communication from agency	14.7	16.2	16.7	19.5	18.4
From other employers or trade association	18.7	27.9	27.1	15.9	21.1
Other word-of-mouth or informal source such as family or friend	36.0	26.5	10.4	24.4	18.4
Percent had difficulty obtaining information	2.0	7.1	0.0	1.8	4.0
Sample size	**102**	**84**	**58**	**109**	**101**

Source: Survey of STC Employers.

Note: Sample sizes varied considerably across characteristics due to missing data. Those reported indicate the maximum number of respondents which could vary by as much as 27 in California, 16 in Florida, 10 in Kansas, 76 in New York, and 25 in Washington.

Despite this, the largest share of California employers reported the more informal medium of word-of-mouth from people outside the industry as the source from which they heard about STC (this share differed significantly from the share hearing from other sources). Employers in Florida and Kansas reported that communications from other employers or trade associations were also major sources of information about the program.

The source of initial contact regarding STC seems to be linked to the age of the company. Tabulations not shown in Table V-2 indicate that only eight percent of very young firms, those in business five or fewer years, reported hearing about STC from a state mailing. However, close to one-third of mid-aged firms (those in business 6-10, 11-20, or 21-40 years) and almost half of firmly established firms (those in business longer than 40 years), reported initially hearing about STC from a state mailing (both these differ significantly from younger firms). A more common source of initial contact among firms in business five or fewer years is other employers or trade associations. Close to three-fifths of these firms heard about STC in that way while fewer than one-quarter of older firms (in business more than five years) reported hearing about STC from other employers or trade associations (this difference is statistically significant).

Data from the Survey of State Officials presented in Chapter IV corroborate these findings. For example, the California state respondent indicated that in the past, flyers had been sent out with tax forms, but that it had been many years since a new mailing was sent out. Similarly, Kansas did a one-time mailing at the inception of the program in 1988 and has done no follow up mailing since then. This suggests that participating firms in these two states may have been likely to hear about STC from more informal communications. Respondents in the other three states indicated more contact with employers in recent years. Florida did an update mailing in 1991 and New York reported outreach efforts to at-risk firms. Washington reported having sent out ongoing mailings as well as other outreach through the UI newsletter and contacts with at-risk firms.

Despite the fact that employers in at least three states did not receive a mailing in the past five years, very few STC employers reported having any difficulty obtaining additional information about STC. Still, a substantial minority of firms reported that their initial source of information regarding STC was through informal contacts with sources outside the industry. This may indicate that state marketing efforts are so comprehensive that their effects are starting to trickle down to newer firms through word-of-mouth in the industry. As time passes and more firms become aware of STC, marketing efforts by the state may become largely unnecessary. However, the fact that some firms do not report receiving mailings or other communications from the state may indicate that state marketing efforts are not reaching some firms in need. It is reassuring that even these harder-to-reach employers reported that they had little difficulty obtaining information if they needed it.

C. EMPLOYER UTILIZATION OF STC

Table V-3 presents tabulations showing the extent to which employers utilize the STC program. Among participating firms, roughly one-half of employees used STC in an average week. However, 23 to 40 percent of employers reported that the number of employees participating varied over the course of the year. Hours were reduced, on average, between 23 and 29 percent, but between one-third and one-half of firms reported fluctuations in the percentage reductions in 1992 as well. These data suggest that a substantial portion of employers took advantage of the STC program's flexibility to adjust the number of workers employed and the hours they worked. It is therefore possible that the STC program is more effective than layoffs in accommodating short-term shifts in employers' demand for labor because it offers more flexibility in both the percent reduction and the share of employees participating. Layoffs offer flexibility only in the share of employees laid off.

Table V-3

EXTENT OF STC PARTICIPATION

Extent of STC Participation (%)	California	Florida	Kansa	New York	Washington
Employees participating in a typical week	50.4	57.6	61.9	49.6	59.3
Employees participating at any time in 1992	54.2	60.5	64.4	57.2	72.5
Experienced fluctuations in number of participants	32.2	23.3	39.6	23.1	30.9
Average reduction in employee hours	23.3	28.7	26.3	27.4	28.4
Experienced fluctuations in hours reduction	32.6	50.7	44.4	32.2	51.7
No change in fringe benefits	96.5	92.6	100.0	98.0	98.9
Sample size	**90**	**77**	**54**	**99**	**94**

Source: Survey of STC Employers.

Note: Sample sizes varied considerably across characteristics due to missing data. Those reported indicate the maximum number of respondents which could vary by as much as 12 in California, 9 in Florida, 5 in Kansas, 19 in New York, and 11 in Washington.

Although substantial shares of firms' workforces were reduced in an average week, the overwhelming majority of STC participating firms in all five states reported that there was no reduction or elimination in employee fringe benefits associated with STC participation. In fact, Kansas, New York, and Washington had regulations in their STC legislation prohibiting employers from cutting fringe benefits when employees were placed on STC.[7] In California and Florida, where there is no such law, 95 percent of employers reported that their employees lost no fringe benefits when they participated in STC. It therefore seems the rule, rather than the exception, that employees who used STC kept their benefits during their periods of reduced hours.

[7]Employers in Washington had the option of pro-rating fringe benefits to the number of hours worked which could lead to reduction in, but not elimination of, these benefits.

D. EMPLOYERS' VIEWS OF STC

Employers' views of STC may weigh heavily when the decision to participate is being made. Table V-4 reports potential advantages associated with STC usage, or reasons for participating, that firms considered prior to their STC utilization in 1992. Table V-5 presents similar tabulations for characteristics of STC that firms viewed as potential disadvantages. As discussed previously, all these employers eventually participated in the program despite the potential disadvantages they cited. The numbers reported in both tables correspond to the percent responding that the characteristic was "Important" given the alternative choices of "Somewhat Important" or "Not Important."

Most of the potential advantages listed in Table V-4 appeared to be important to employers in deciding to use STC. In particular, retaining valued employees was pinpointed by the vast majority of employers in all five states as being an important potential advantage of STC. Giving employees more free time was the advantage cited least often by employers, although 75 percent of employers in Kansas responded that it was important to them.

A small share of employers in each state reported that other benefits not listed were potentially important to them as well. Included in these other benefits were factors such as balancing out work load and letting employees learn about their rights. Also reiterated in slightly different terms was the notion that STC allowed employers to avoid layoffs and therefore retain a larger portion of their workforce.

Table V-4

POTENTIAL ADVANTAGES WITH STC PARTICIPATION

Potential Advantages In Using STC (%)	Employers responding that factor is "Important" relative to being either "Somewhat Important" or "Not Important"				
	California	Florida	Kansas	New York	Washington
Offers flexibility in adjusting employment to demand	90.6	86.6	98.2	91.6	85.0
Retains valued employees	96.9	96.4	96.4	97.2	98.0
Avoids disruption in business/production process	88.7	84.3	91.1	90.6	88.0
Reduces costs of hiring/re-hiring	86.5	81.9	92.9	88.8	83.7
Employees retain fringe benefits	87.8	75.6	92.9	88.8	87.1
Employs more employees	88.7	91.5	98.2	95.3	79.0
Maintains employee morale	78.1	88.9	89.3	86.7	85.0
Gives employees more free time	28.9	35.4	75.0	45.3	29.6
Other benefits	2.0	6.0	1.7	7.3	2.0
Sample size	**98**	**83**	**57**	**107**	**101**

Source: Survey of STC Employers.

Note: Sample sizes varied considerably across characteristics due to missing data. Those reported indicate the maximum number of respondents which could vary by as much as 15 in California, 4 in Florida, 1 in Kansas, 3 in New York, and 6 in Washington.

Overall, employers more frequently cited the potential advantages associated with STC than potential disadvantages. As shown in Table V-5, the most frequently cited potential disadvantage with STC participation was an increase in the UI tax rate. In all states, participation in the UI system, including STC, has the potential to increase the UI tax rate. One way this may happen is that states may impose across the board increases in the UI tax rate in response to a threat to the solvency of the Unemployment Trust Fund. Thus employers could perceive that an increase in UI taxes resulted from STC participation, although their tax increase would also have occurred if employees had filed for regular UI benefits instead. An increase of this sort has occurred in recent years in New York, which has increased its tax rate each year since the early 1990s. Alternatively, because the

UI tax rate is based in part on the dollar value of total UI benefits paid out to employees, which may increase when workers file STC claims, STC charges have the potential to increase the UI tax rate more than regular UI charges would have. Because more weeks of benefits may be claimed with STC than with UI, this would potentially lead to a larger increase in charges with reduced hours than with layoffs. This would in turn lead to a greater increase in the UI tax rate. Furthermore, an hour of STC may be more expensive to the firm than an hour of UI because more high wage employees are likely to participate in STC than UI. This would also lead to an increase the UI tax rate.

Table V-5

POTENTIAL DISADVANTAGES WITH STC PARTICIPATION

Potential Disadvantages in Using STC (%)	Employers Responding that Factor is "Important" Relative to Being Either "Somewhat Important" or "Not Important"				
	California	**Florida**	**Kansas**	**New York**	**Washington**
Higher UI tax rate	28.1	48.8	25.5	46.7	28.7
Higher fringe benefit costs	11.4	26.3	15.1	17.3	18.3
Program rules inflexible	0.0	9.9	1.9	7.5	3.1
Benefit period too short	2.1	7.3	1.9	13.5	4.1
Administrative burden	11.5	19.5	10.7	17.8	10.1
Union opposition	0.0	0.0	3.5	1.9	1.0
Worker opposition	3.1	6.2	7.0	6.5	1.0
Higher turnover	12.4	17.1	17.5	20.4	11.0
Inefficiency in production process	8.2	23.2	10.9	19.6	14.1
Other disadvantages	2.0	8.3	5.2	12.8	4.0
Sample size	**99**	**82**	**57**	**108**	**100**

Source: Survey of STC Employers.

Note: Sample sizes varied considerably across characteristics due to missing data. Those reported indicate the maximum number of respondents which could vary by as much as 11 in California, 2 in Florida, 4 in Kansas, 4 in New York, and 8 in Washington.

Although the issue of increased employer UI tax rates drew the most responses as a potential disadvantage, less than half of employers in each state responded that it was potentially important to them. In fact, in California, Kansas, and Washington, states with relatively high STC participation rates, less than 30 percent of employers felt that the increase in the UI tax rate was an important potential disadvantage of STC.[8] This differed statistically significantly from New York and Florida in which closer to half of employers surveyed felt that an increase in the UI tax rate was an important disadvantage.

Although not reported in Table V-5, an additional 23 percent of employers in Washington and close to 15 percent of employers in other states reported that an increase in the UI tax rate was a "Somewhat Important" potential disadvantage. In total, between one-half and three-quarters of employers in all states placed some level of importance on the role of the UI tax rate in deciding to use STC.

It seems that firms found their tax rate increases a greater potential burden than higher fringe benefit costs associated with program use. Although the monetary difference between increases in the UI tax rate and increases in fringe benefits is not revealed by these data, our results suggest that employers were less concerned about increased compensation to employees than increased tax payments. This may be because increased tax payments, which may last for a number of years, are likely to last longer than increases in fringe benefits, which last only as long as workers are on reduced hours.

In responding to other potential disadvantages listed, employers in Florida and New York, states with relatively low STC participation rates, tended to place greater weight on the importance of many of the disadvantages listed. In particular, employers in these two states were more likely than employers in California, Kansas, or Washington to respond that the administrative burden and inefficiency in the production process associated with STC participation were potential disadvantages (this difference was statistically significant). Data from the state survey supported this finding. While employers in Florida, Kansas, New York, and Washington are responsible for filing claims, employees in California are responsible for this task (employers in California are responsible for completing only a portion of the claims form). In addition, although in Florida, New York, and

[8]Participation rates were calculated from information provided by respondents to the state survey, discussed in Chapter IV. Although the terms "relatively low" and "relatively high" are utilized to discuss STC participation rates among firms, note that none of these rates exceeds one percent and are thus all low in absolute terms.

Washington, employee signatures are required on an ongoing basis to utilize STC, in Kansas employee signatures are not required on an

ongoing basis. Furthermore, Kansas has an automated claims system which decreases administrative burden and Washington is also working toward full automation of claims filing.

Less than 15 percent of firms in each state reported other disadvantages associated with STC. Firms reporting other disadvantages cited the length of time it took to file and receive benefits (a few employers reported the agency lost forms), the lack of understanding about the program at the local agency, the fact that new employees may be ineligible for UI or STC, and the low level of weekly benefit amounts.[9] Employers also used this "other" category to reiterate their concerns about the amount of red tape incurred in filing for benefits and maintaining their employer plans.

E. EMPLOYERS' EXPERIENCES WITH STC PARTICIPATION

Although employers reported potential advantages and disadvantages that may have affected their program participation in 1992, it is likely that their actual experiences with STC during that year will shape their utilization in the future. In responding to questions regarding their actual experiences with STC, employers' responses were consistent with their responses regarding the potential advantages and disadvantages.[10] Although fewer than half the employers responded that a UI tax rate increase was a potential disadvantage, Table V-6 shows that more than half the employers in four of the five states reported that their UI tax rate actually increased as a result of STC participation. Florida and New York, the two states in which a higher shares of employers felt this was potentially an issue, had the largest share of employers reporting an actual UI tax rate increase. Employers in these two states were also the most likely to report that the UI tax rate increase was large and, particularly in New York, that it was a serious drawback. Data from the state survey support this finding for Florida. Florida had a supermaximum tax rate by which STC participation led to a potentially higher maximum UI tax rate under

[9]This question may have been confusing to employers as these other potential disadvantages appear to be actual program experiences.

[10]It is possible that the potential advantages and disadvantages listed in Tables V-4 and V-5 were affected by employers' actual experiences which is why they were consistent with the findings in Table V-6.

STC than was possible with regular UI. In addition, data presented in Table V-1 showed that Florida firms tended to be smaller and less likely to be profitable than firms in other states. This may indicate that these firms felt the burden of a UI tax rate more heavily than larger and more profitable firms. New York, however, had provisions which did not differ from California, Kansas, or Washington in the treatment of STC

employers in calculating the UI tax rate. New York did have a substantial UI tax increase for all employers throughout the early 1990s and it is possible that employers in New York associated this increase in the UI tax rate with STC, although it was not directly related to the program. In Florida, at least, it seems that employers' concerns about increases in the UI tax rate due to STC participation were warranted.

Table V-6

STC EMPLOYERS' EXPERIENCES WITH SPECIFIC ASPECTS OF THE PROGRAM

Employer Experiences (%)	California	Florida	Kansas	New York	Washington
UI tax rate increased as a result of participation	56.5	84.1	34.0	64.8	55.7
UI tax increase was large	30.3	45.3	11.8	52.9	25.9
UI Tax increase was a serious drawback	21.2	29.1	11.1	39.6	15.4
Firm would have laid off employees (or) laid off more employees if had not participated in STC	77.2	89.6	94.4	95.9	88.8
Reduced turnover increased productivity or profits	87.5	83.5	92.9	92.1	87.0
Administrative tasks associated with program were burdensome	13.8	18.5	3.6	19.4	10.1
The program was too restrictive	3.2	7.6	1.9	15.3	5.1
Sample size	**98**	**81**	**56**	**103**	**101**

Source: Survey of STC Employers.

Note Sample sizes varied considerably across characteristics due to missing data. Those reported indicate the maximum number of respondents which could vary by as much as 65 in California, 28 in Florida, 39 in Kansas, 82 in New York, and 75 in Washington.

Close to the same share of employers in Florida and New York reported that the administrative tasks associated with STC were burdensome as reported that administrative burdens were a potential disadvantage. However, it seems that the issue of increased turnover was not as problematic as firms feared it might be. STC

could be associated with higher turnover if employees are concerned about the health of the firm and choose to find other employment rather than be subject to reduced hours in the short-term and potential layoff in the future. While close to 20 percent of employers in Florida, Kansas, and New York reported that high turnover was a potential disadvantage, close to 90 percent (84 percent in Florida) reported that reductions in turnover led to increased productivity or profits. The majority of firms in the other states also reported that reduced turnover led to increased productivity or profitability.

One reason firms used STC was to avoid laying off employees. While the employer survey was not designed to estimate the impact of STC on firms' layoff activities, questions were posed to discuss this issue with employers qualitatively. As shown in Table V-6, the vast majority of employer respondents in all five states felt their firms would have had more layoffs than actually occurred if they had not participated in the STC program.[11] This is not to say that layoffs did not actually occur. Analyses of UI claims activity, presented in Chapter VI, indicated that firms participating in STC had significant non-STC UI charges, even in quarters when STC was utilized. This suggests that although employers believed that STC reduced layoffs, it did not eliminate them.

However, data on employer counts of layoffs in the employer survey is suspect. There were a number of cases in which employers responding to the employer survey reported no layoffs, but administrative records for those firms showed UI charges in the same time period. To explore why this occurred, we conducted follow-up calls with nine employers who reported no layoffs in the survey, but showed UI charges in the administrative data.

Although our sample was small, it produced at least three reasons for discrepancies between counts of layoffs in the employer survey and administrative data. First, some respondents indicated that their original answers were incorrect because they were based on their recollection of layoff activity in 1992. Once personnel files were consulted, the respondents realized that there were indeed layoffs during that year. Second, some respondents provided layoff information for a different entity than the one reported in the administrative records. In these cases, the employer or manager reported no layoffs at their branch, but layoffs could have occurred at

[11]The survey question from which these data were taken asks, "If your company had not participated in the program at that time, do you think your company would had laid employees off (or) laid off more employees than you actually did?" It is debatable whether employers responded that STC averted layoffs at the time of program participation or that STC averted layoffs in general. We have interpreted responses as the former.

other branches which were included in the administrative records. Third, several respondents did not label as layoffs some work separations that resulted in UI claims. This could happen for a number of reasons. If an employee leaves one job for a second, and is then laid off, the first employer may be liable for some portion of UI charges associated with this layoff. These charges would not be reported as layoffs by the firms we surveyed, but would show up in the administrative records as UI charges. In addition, there could have been a timing mismatch in which a layoff occurred in 1991, but the UI claim was not filed until 1992. Finally, separations which were considered voluntary

by the employer but were followed by employee UI claims may not have been reported to us as layoffs. Similarly, temporary workers who were not eligible for UI benefits sometimes filed UI claims anyway.

The data gathered from these follow-up calls indicate that there may have been plausible reasons for discrepancies between UI charges and employer reports of layoffs. Although some of this was clearly due to reporting errors by employers, other discrepancies were legitimate differences in how layoffs were defined by the respondent. We return to this issue of layoff definition in Chapter VI.

F. FUTURE STC USAGE BY PARTICIPATING EMPLOYERS

The vast majority of employers reported that they would be likely to use STC to avoid layoffs in the future. Table V-7 shows that at least 97 percent of employers in California, Kansas, and Washington would use STC in place of layoffs in the future. Employers in Florida were least likely to indicate they would use STC in the future, but over 80 percent responded they would do so. When asked about the reasons for this, employers reported that all the factors listed in Table V-7, with the possible exception of giving employees more free time, were reasons for using STC in the future.

Table V-7
STC PARTICIPATING FIRMS' VIEWS OF STC USAGE OVER LAYOFFS IN THE FUTURE

Employer Views of STC (%)	California	Florida	Kansas	New York	Washington
Likely to use STC over layoffs in future	96.7	83.3	98.2	92.9	96.7
Reasons for using STC over layoffs in future					
Flexibility in adjusting employment to demand	96.7	95.5	91.1	100.0	90.4
Retain valued employees	100.0	95.6	100.0	100.0	100.0
Avoids disruption in business/production process	97.8	92.6	96.4	99.0	90.4
Reduces costs of hiring/re-hiring	97.8	86.8	98.2	99.0	91.4
Employees retain fringe benefits	96.8	80.9	92.9	98.0	91.6
Employs more employees	95.7	95.6	100.0	100.0	89.1
Maintains employee morale	95.6	95.6	100.0	100.0	84.8
Gives employees more free time	48.0	53.1	78.2	79.0	46.5
Sample size	**94**	**78**	**56**	**100**	**96**

Reasons for Not using STC Over Layoffs in Future (%)	All states
Increases UI tax rate	63.0
Higher fringe benefits	29.6
Program rules inflexible	18.5
Benefit period too short	7.4
Administrative burden	37.0
Union opposition	0.0
Worker opposition	11.1
Higher turnover	11.1
Inefficiency in production process	33.3
Sample size	**27**

Source: Survey of STC Employers.

Note: Sample sizes varied considerably across characteristics due to missing data. Those reported indicate the maximum number of respondents which could vary by as much as 19 in California, 14 in Florida, 1 in Kansas, 4 in New York, and 10 in Washington.

Most notably, one hundred percent of employers in four of the five states felt that retaining valued employees was a reason for using STC over layoffs in the future. In two states, one hundred percent of employers felt that employing more employees and maintaining employee morale were also important reasons.

A total of 27 firms indicated they would not be likely to use STC over layoffs in the future. Over 90 percent of these firms reported that they would have had more layoffs than actually occurred if they had not used the program, indicating that STC may have helped these firms avoid layoffs to some degree. In addition, only 12 percent reported they found the program restrictive and fewer than half reported that the administrative tasks associated with STC were burdensome. These findings seem incompatible with the choice of layoffs over STC in the future. However, 80 percent of these employers reported that their UI tax rate increased with STC program participation. A perception that STC increases employers' UI tax rates seems to be correlated with employers' claims to avoid STC utilization in the future.

G. EMPLOYEE AND UNION REACTIONS TO STC

As discussed in Chapter IV, all states required firms to get union approval for STC plans when a collective bargaining agreement was in place. Hence, employee and union perceptions of STC are important in evaluating the effects of the program. Although we did not comprehensively survey employees and union representatives, we did ask employers to discuss the opinions of these groups regarding their STC experience. These results must be viewed with considerable caution, coming as they do from employers rather than employees.

The top portion of Table V-8 shows employer reports of employees' views of the STC program after it was utilized by the firm. In all five states, the majority of employers felt their employees viewed the program favorably (either highly favorable or moderately favorable). In addition, in all five states fewer than ten percent of employers felt their employees were opposed to the program. Hence, employers perceived that this program had the support of their employees.

Table V-8

EMPLOYER REPORTS OF EMPLOYEE AND UNION VIEWS OF STC

Employee Reaction to STC Usage (%)	California	Florida	Kansas	New York	Washington
Highly favorable	37.6	24.4	55.6	53.7	42.4
Moderately favorable	40.9	56.4	37.0	27.4	39.1
Neutral	19.4	15.4	3.7	13.7	10.9
Moderately opposed	2.2	2.6	3.7	2.1	5.4
Highly opposed	0.0	1.3	0.0	3.2	2.2
Sample size	**93**	**78**	**54**	**95**	**92**

Union Reaction to STC Usage	All States
Highly favorable	61.5
Moderately favorable	11.5
Neutral	19.2
Moderately opposed	3.8
Highly opposed	3.8
Sample size	**26**

Source: Survey of STC Employers.

Note: Sample sizes varied considerably across characteristics due to missing data. Those reported indicate the maximum number of respondents which could vary by as much as 19 in California, 14 in Florida, 1 in Kansas, 4 in New York, and 10 in Washington.

Fewer employers responded to our questions regarding union views of the program.[12] In total, only 26 firms responded, so results shown at the bottom of Table C-8 are presented for all states in aggregate. There is a

[12]This is largely because few firms surveyed had unionized employees.

potential for union opposition to the program on the grounds that it violates rules of seniority and tenure which determine which employees are laid off first. STC treats employees similarly regardless of seniority or tenure (i.e., all employees are cut back by a certain percent, not just less senior ones), potentially conflicting with union principles. Despite this potential concern, the perception among firms that responded was that unions were largely in favor of the program. Less than ten percent of firms responding about unions indicated that unions were opposed to STC participation. However, the low response rate to this question may indicate bias in the response in that employers who were at odds with their unions may not feel comfortable reporting union perceptions.

To examine the question of union support for STC in greater detail, we also contacted a handful of labor leaders in each of the five states surveyed. The individuals we spoke to were typically members of a state labor council. These calls indicated broad support for STC among unions. Labor leaders described STC as an important tool for preventing layoffs and thereby preserving union jobs. Most respondents indicated support for the program among the rank and file as well as among union leadership. The only criticism of the program cited was its administrative burden. Several of the individuals we spoke with complained about the need to file forms, and delays in processing of claims. Although our respondents were not a representative sample of union officials, overall they supported STC and believed that STC benefited workers.

H. COMPARISON TO FINDINGS FROM A PREVIOUS SURVEY OF STC EMPLOYERS

An employer survey similar to the one used here was also administered for the 1985 evaluation of STC performed by Mathematica Policy Research (Kerachsky et al. 1986).[13] The survey instrument used for the current evaluation was similar to the MPR survey instrument and some comparisons can be made over the ten year time period. Note that of the three states examined in the MPR evaluation, only California was also examined in this evaluation. Therefore, the STC employers we surveyed were a very different group than were surveyed for the earlier study. Despite these differences, a number of comparisons can be made.

[13]Employers surveyed by MPR were asked about their STC experience in 1982.

Both the MPR study and our survey examined employer responses regarding employee and union views of the STC program. The findings were roughly similar over the period. In the current survey, more employers reported that their employees were neutral regarding the STC program, and slightly more reported that their employees were opposed to it. However, employers in the current survey also reported slightly more union satisfaction with the program than those in the earlier survey did. Overall, there were no drastic shifts in employer reports of union and employee views of the program.

In responding to their perceptions of STC, employers in the MPR study responded that retaining valued employees and keeping a larger number of employees employed were the two most important advantages associated with STC participation. As discussed previously, the advantage of STC cited most frequently by the current sample of employers was retaining valued employees. Keeping more employees employed was also cited by the majority of employers as an advantage, but it does not stand out as an advantage over others listed.

Employers surveyed by the earlier MPR survey were most concerned with the administrative burden associated with STC usage. This was the disadvantage cited most frequently and an increase in the UI tax rate was the second most frequently cited disadvantage. This contrasts with the current findings. Overwhelmingly, an increase in the UI tax rate was seen by our sample of employers as the primary disadvantage associated with STC usage. Administrative burden, although also noted by many as a disadvantage, no longer stands out as the primary issue. Interestingly, employers in the earlier study were less concerned about increases in the UI tax rate, but two of the three states examined had provisions for special tax increases related to STC. In the current study, only Florida employers were subject to an additional tax increase associated with STC, but employers in all five states were more concerned about an increase in the UI tax rate than the administrative burden associated with the program (a statistically significant difference for all five states).

In the earlier study, 55 percent of employers stated their UI tax rate increased with STC participation. In this study, 61 percent of employers reported such an increase. In addition, in the MPR study, 27 percent of

employers reported that the administrative tasks associated with STC were burdensome while in our sample, only 14 percent of employers found them burdensome. Similarly, one-fifth of employers surveyed

by MPR reported that the program was too restrictive, but in our sample, fewer than one out of ten employers reported feeling this way.

Hence, there were differences between these two samples in both the advantages and disadvantages cited as well as actual program experiences. There were a number of factors which may have led to these differences. First, it may be that the different sample of states utilized for this study led to differences in employer responses. Program rules in the states in the earlier evaluation may have made the UI tax rate a less prominent issue than it was in the five states we examined. Second, the advent of automated claims processing reduces the burden associated with administrative tasks. Because of this, firms in our sample may have been less likely to cite administrative burden as a problem. As of 1992, Kansas was fully automated and both Washington and California reported that they were in the process of becoming automated with respect to the processing of STC claims. None of the three states surveyed by MPR had automated processing in 1982 when the survey was conducted. Finally, changes due to a decade of program experience may have led to changes in both employers' perceptions of and experiences with STC as well as a smoothing of the STC participation process at the state level. As firms experiment with the program and learn about the other firms' experiences, their concerns may shift. Similarly, as state administrators became more knowledgeable about the program and the process of application became easier, the burden on participating firms most likely decreased.

I. CONCLUSION

The STC Employer Survey informs this evaluation by providing data on STC-participating employers' experiences with the program, their views about specific aspects of it, and their likelihood to participate in the future. The findings indicate that there was widespread satisfaction with the STC program among participating employers. It should be noted, however, that less than one percent of employers in the five states surveyed actually use the program. Although employers expressed satisfaction with the program, they were still a small

share of all employers and, as discussed later in Chapter VI, it seems that these firms were a self-selected group which had characteristics very different from those of other firms in each state.

Firms reported initially hearing about STC from a variety of sources, including a substantial share from informal sources outside of the industry. They also reported having little difficulty obtaining information regarding the program. Employers reported that a number of advantages with the STC program were important, however the most frequently cited one was the ability to retain valued employees during economic downturns. More employers reported potential advantages associated with STC than potential disadvantages. Among the potential disadvantages, the most frequently cited was an increase in the UI tax rate. Employers in Florida, a state with provisions that enabled the UI tax rate to increase with STC participation, were the most likely to cite this disadvantage.

Corroborating this finding, more than half the employers in four of the five states examined reported that their UI tax rate did increase with STC participation. Despite this increase, the majority of employers reported they would be likely to use STC over layoffs in the future. Eighty percent of employers who were not likely to use STC in the future responded that their UI tax rate increased with STC participation.

The main disadvantage associated with STC participation by the current sample of employers differed from that cited by employers in the 1985 MPR study. Findings from the earlier evaluation showed that the burden of increased administrative tasks was the primary disadvantage cited by employers. The advent of automated processing and experience with the program may have made these tasks less burdensome.

VI. WORKFORCE ADJUSTMENT PATTERNS BY STC FIRMS

In the previous chapter, we documented the perceptions and experiences of firms that participated in the short-time compensation (STC) program in five states. We highlighted employers' views on the program, such as their perceptions of the advantages and disadvantages of STC and the flexibility with which they could make workforce adjustments. Central to much STC legislation, and to policy intent on the appropriate use of STC, is the premise that STC should primarily (or exclusively) be used to avert layoffs. Firms may be able to achieve several advantages associated with layoff avoidance by reducing the workweek of many employees, rather than laying off a small subset of employees.

This chapter focuses on the compensated unemployment of STC firms to determine to what degree those that participated in STC programs used both STC and layoffs, what types of workers STC participation affected, and how the workforce reductions at firms that used STC might compare with the reductions at firms that have not used STC. We examine several workforce reduction patterns associated with STC usage in 1992. Section A examines the composition of unemployment insurance (UI) and STC usage by firms that used STC in 1992. From this analysis, we can assess the overall magnitude of workforce reductions and the degree to which STC employers continued to use layoffs as the primary method of implementing such reductions. In Section B, we look at repeat usage of STC. Policy analysts historically have been concerned that repeated UI usage may lead to subsidization across firms or industries; therefore, we document both the extent of STC repeat usage and the characteristics of firms that used STC over many quarters. Section C documents the effects of STC on subgroups of employees to assess the program's effectiveness in preserving the jobs of people that benefit from affirmative action legislation. In Section D, we document our attempts to examine what workforce reductions might have looked like in the absence of STC. This section details our unexpected finding that, despite our best efforts

to match these two groups, STC firms appear to be systematically different from a comparison group of non-STC firms. As a result of this finding, the observed differences between the groups' workforce reduction patterns must be cautiously interpreted. We present our conclusions in Section E.

A. PATTERNS OF WORKFORCE ADJUSTMENT AT STC FIRMS

As companies need to adjust their workforce, because of temporary declines in product demand, they have several strategies from which to choose. Firms may: (1) put workers on temporary layoff; (2) reduce employee workweeks (either with or without STC); (3) use attrition, early retirement incentives, or voluntary leave programs; or (4) choose to maintain their workforce at its level prior to the economic downturn. The choices made will depend on the relative costs and benefits associated with each strategy. For example, if training costs are particularly expensive, firms may be more inclined to use strategies that will retain employees. In this section, we examine firms' decisions regarding two of these choices: (1) layoffs and (2) STC. We provide information as to what degree firms that used STC also relied on layoffs as a mechanism for workforce reduction.

As the primary analysis variables, we used dollars of compensated unemployment charged to firms. In principle, one might want to measure changes in total hours and employment in response to STC use, not simply changes in total charges, since some workweek reductions may not be compensated. Such data, however, are not maintained in state administrative records and were unavailable for this study. Our analysis is in line with past research findings that focus on compensated hours of unemployment, usually drawn from administrative records. Although use of the compensated data sheds light on a number of important policy questions (such as the effect of STC adoption on overall expenditures under the UI system), the extent to which these data accurately reflect changes in total hours and employment is not known.

To verify the results of this analysis, we examined the effects of STC use on hours of compensated unemployment (see Appendix E). Because previous studies have found that STC tends to be more

expensive than UI on an equivalent-hours basis (since STC tends to serve higher-wage employees), analysis of hours reductions could shed additional light on the effects of STC. It is unclear whether using measures of charges or hours is preferred. Although hours trade-offs often are theoretically thought to be the more appropriate measure of the firms' workforce reductions than charges, firms may decide their workforce reduction strategies on the basis of productivity-adjusted hours. That is, firms may take into account that workers have both different productivity levels and compensation packages, so a straight "hours-for-hours" trade-off between STC and UI may be inappropriate. For this reason, and because hours reductions are less precisely measured in our data and require slightly greater imputations, we present our analysis of compensated unemployment charges in this chapter and show similar analysis of hours in Appendix E. Appendix E shows that the hours analysis confirms the charges analysis here.

We normalized the compensated unemployment charges by a measure of total payroll to help control for the wide variance in total employment among employers in the study. The normalization was achieved by dividing benefit charges by an estimate of full-time-equivalent payroll in 1991. We use 1991 as our base year for normalization to ensure that our normalization is exogenous to compensated unemployment in our study year, 1992.[1] Consequently, normalization provides a convenient metric to compare firms of different sizes.

Our treatment measure is whether a firm had STC charges in 1992. Although this definition differs slightly from that used to construct the sample, which defined STC firms as firms that had STC plans approved in 1992, Appendix E shows that results are not sensitive to the slight change in treatment definition.

[1]We added twice the sum of 1991 UI benefits and 1991 STC benefits to 1991 payroll to adjust for workforce reductions in 1991 to get a measure of full-time-equivalent payroll in 1991. We therefore have assumed a 50 percent compensated unemployment replacement ratio. We also tried using average state-specific replacement ratios, available from published sources, but this did not alter the results.

Table VI-1 presents compensated unemployment charges at STC firms. The numbers presented are mean normalized levels of charges for 1991, 1992, and 1993, and by charge type (UI, STC, or both).[2,3] For example, the number "0.936" for normalized UI charges in 1992 for California firms, indicates that the UI benefits paid to workers from these STC firms were, on average, about 0.9 percent of the firms' 1991 payroll. The number "1.497" for normalized total charges for California's firms indicates that UI and STC charges together were 1.5 percent of normalized payroll. Put in dollar terms, this translates into an average total charges in 1992 of nearly $132,000 per firm in California.[4] The bottom panel of Table VI-1 indicates average charges over all three study years.

Three general patterns emerge from Table VI-1. First, STC firms had high levels of UI charges, both generally and compared to their STC charges. The bulk of firms' charges were not STC charges, but UI charges. For STC firms, the average percentage of total charges in 1992 attributable to UI unemployment ranged from 62 percent in Florida to 78 percent in Washington. For every dollar of STC benefits charged to a firm, on average, between $1.64 and $3.64 was charged for regular UI. STC firms therefore relied heavily on regular UI, while simultaneously using STC. This finding, which is very similar to that from the previous Department of Labor (DOL) sponsored evaluation of STC programs (Kerachsky et al. 1986), suggests that many firms that used STC relied on this program as only one component of a total workforce reduction strategy.[5]

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[2]We excluded from the sample those firms that had a substantial portion of their 1991 data missing. We also excluded from the analysis a few firms that had outliers for their charges. These outliers appeared to be caused mainly by inaccurate firm size measures for 1991.

[3]Although there may be instances in which a firm is charged for UI benefits paid to a worker when that firm did not lay off the worker (such as when there are multiple base period employers), we expect that most charges are because of layoffs by the firms for which we have data. Although we have some suggestive evidence (discussed in Chapter 5) that firms do not consider all separations for which they are charged to be "layoffs," we expect that UI agencies would consider the overwhelming majority of these separations to be layoffs.

[4]A few very large firms are responsible for this high mean value. The median value was only about $13,000. In states besides California, mean 1992 total charges ranged from about $43,000 to $95,000. Median charges ranged from about $14,000 to $22,000.

[5]A similar analysis using compensated hours of unemployment suggests that employees at STC firms spent between 2.10 and 4.55 hours on UI for every hour on STC. We would expect that STC charges comprise a larger proportion of total compensated unemployment charges than STC hours would of total hours, since the weekly benefit

Table VI-1
AVERAGE COMPENSATED UNEMPLOYMENT CHARGES, STC FIRMS, BY STATE
(Percentages of 1991 Payroll, Unless Otherwise Stated)

Characteristics	California	Florida	Kansas	New York	Washington
1991					
Normalized UI Charges	0.871	1.426	0.915	1.335	3.543
Normalized STC Charges	0.277	0.359	0.343	0.400	0.368
Normalized Total Charges	1.149	1.785	1.258	1.735	3.911
Percentage of Total Charges that Are UI Charges	79.424	84.060	77.536	71.393	90.275
1992					
Normalized UI Charges	0.936	1.825	1.681	2.339	3.695
Normalized STC Charges	0.561	0.847	0.759	0.878	1.022
Normalized Total Charges	1.497	2.672	2.440	3.217	4.717
Percentage of Total Charges that Are UI Charges	63.304	62.078	69.030	65.146	78.456
1993					
Normalized UI Charges	0.788	0.935	1.366	1.783	3.633
Normalized STC Charges	0.331	0.181	0.258	0.639	0.893
Normalized Total Charges	1.120	1.116	1.624	2.421	4.359
Percentage of Total Charges that Are UI Charges	74.999	79.442	85.169	69.354	81.856
All Years (1991, 1992, 1993)					
Normalized UI Charges	0.865	1.395	1.321	1.811	3.301
Normalized STC Charges	0.390	0.462	0.453	0.636	0.593
Normalized Total Charges	1.255	1.858	1.774	2.447	3.894

amounts (WBAs) associated with STC are hypothesized to be higher than the WBAs for UI. We find this pattern in four of the five states.

Table VI-1 (continued)

Characteristics	California	Florida	Kansas	New York	Washington
Percentage of Total Charges that Are UI Charges	73.091	71.357	73.568	68.934	82.115
Sample size	**431**	**191**	**90**	**441**	**314**

Source: State administrative records.

Note: Samples restricted to firms in business throughout 1991 and 1992. Because sample sizes vary slightly per charges measure, and because of rounding, the sum of normalized UI charges and normalized STC charges in a year may not equal normalized total charges in a year. All charges variables are normalized by an approximation of payroll at full employment in 1991. See text for further details.

A second finding is that compensated unemployment levels varied dramatically across our five study states. Most notably, the levels of compensated unemployment charges in Washington were much higher than those in the other states. Total normalized charges in 1992 for Washington firms were around 4.7 percent of firms' 1991 payrolls, while total normalized charges in 1992 ranged from 1.5 to 3.2 in other states.[6] This finding is surprising since Washington did not have the highest statewide unemployment rate in 1992. The higher level of charges appears to be because Washington firms had much higher normalized UI charges, while Washington's STC charges were only slightly higher. We can only speculate on the source of these state differences; it may be that firms that used STC in Washington were disproportionately drawn from the population of firms that experienced a high degree of economic distress. In contrast, California had low levels of total charges compared with other states, even though it had the highest

[6]The numbers reported for Washington are on benefits paid to claimants; numbers for the other states are benefits charged to firms. We use benefits paid because we could not completely distinguish between STC benefits charged and UI benefits charged to the firm. The ratio of mean total benefits charged to mean total benefits paid was 0.92; the ratio of medians was 0.87. Noncharging of benefits, therefore, could only explain a small portion of the differences between Washington and other states.

statewide unemployment rate of our study states. Because California's STC program was more established than those in other states (and potentially more well known among all firms), firms that used STC (and, therefore, also their matched comparison firms) may have been more representative of all firms in the state than STC firms in other states.

A third finding shown in Table VI-1 is that firms that used STC in 1992 also had STC charges in other years. Because STC plans can begin and end at any time in each of the study states, subject to state approval and state limitations on the duration of plans, some of this "spillover" of 1992 STC usage into other years is to be expected. In the next section, we examine this pattern more fully, to assess the extent to which firms that use STC do so repeatedly.

B. REPEAT STC USE

The previous section examined the levels of compensated unemployment in 1991, 1992, and 1993 by firms that used STC in 1992. Notably, we found firms that used STC in 1992 also had sizable STC usage in other years. In this section, we examine the extent to which firms in our STC sample used STC repeatedly over time.

Chapter IV discusses program administrators' perspectives on STC repeat usage. From that analysis, we concluded that repeat usage has not necessarily conflicted with the legislative intent of the STC program, just as repeat UI usage is within the scope of the regular UI program. During our study period, none of these five states legally restricted firms' ability to renew STC plans. Since then, however, the state of Washington enacted a rule that requires firms to be off STC for 12 months after three years of usage before becoming eligible for new usage. In 1995, California considered legislation restricting repeat usage, but no action was taken. So, although legal restrictions are the exception, it appears that some states are becoming increasingly sensitive to potential problems associated with repeat STC usage.

We supplement the analysis in Chapter IV with analysis of our administrative data for 1991, 1992, and 1993 to gauge what percentage of the STC firms were repeat users and to examine whether firms that used STC extensively differed from firms that used STC less often. To measure repeat usage, we categorized STC firms (firms that used STC in 1992) into three groups on the basis of whether they had STC charges in (1) between 1 and 4 quarters, (2) between 5 and 8 quarters, or (3) between 9 and 12 quarters during the years 1991, 1992, and 1993 combined. Although these cutoffs do not capture all the variety in plan usage, they are useful in approximating the number of plans, or plan renewals, that firms may have had.[7]

When interpreting repeat usage patterns one caveat should be kept in mind. We cannot tell from these administrative data whether firms that used STC over many quarters were renewing existing plans or implementing new plans (either with the same or different workers). If firms' work units experienced temporary demand shocks at different points in a business cycle, firms may have had more than one plan effective concurrently or consecutively.

Table VI-2 shows the distribution of STC firms in each state across these three categories. These distributions varied considerably by state. In New York, for example, nearly half of firms used STC between 9 and 12 quarters. Over 80 percent of New York's STC firms used the program for more than four quarters. This suggests that New York had many firms with either more than one plan over time, or plan renewals. At the other extreme, only five percent of STC firms in Florida used STC in nine or more quarters. In California, Kansas, and Washington, approximately 12 to 16 percent of firms used STC in nine or more quarters.

[7]STC plans in each state except California can last for up to one year; one plan, if used continuously, may therefore generate charges for up to five quarters. In California, plans can last for six months; charges from one plan may span over three quarters.

Table VI-2

PATTERNS OF REPEAT USAGE OVER 12 QUARTERS, 1991 THROUGH 1993, BY STATE

	California	Florida	Kansas	New York	Washington
Percentage of Firms that Had STC Charges in:					
1 to 4 quarters	42.7	63.4	52.2	19.5	48.4
5 to 8 quarters	45.0	31.4	32.2	35.8	39.2
9 to 12 quarters	12.3	5.2	15.6	44.7	12.4
Total sample size	**431**	**191**	**90**	**441**	**314**

Source: State administrative records.

Two possibilities might be proposed for the widely varying repeat usage patterns across states. First, differing administrative practices and regulations of the STC program in our five states may have restricted firms' abilities to use STC repeatedly. These limitations may occur through either explicit or implicit restrictions on repeat plans or plans for seasonal workers. (This possibility is discussed in Chapter IV.) Second, firms for which STC was most appropriate (because of firm-specific production technologies, employment relations, or internal administrative practices) may have been concentrated in states with high repeat usage. For this to explain state differences, however, repeat-usage firms must have different characteristics from nonrepeater firms.

Table VI-3 contains breakdowns of firm characteristics by three repeat-usage categories. In every state except Florida, firms that used STC most repeatedly were larger on average than firms that used STC less regularly. This pattern may occur because (1) larger firms put work groups on STC at different points in the business cycle, (2) STC was more appropriate for larger firms because STC better fits their existing

production policies, or (3) STC usage required fixed costs that were easier for firms to bear when the costs were spread over a greater number of employees. Although

Table VI-3

PATTERNS OF REPEAT USAGE OVER 12 QUARTERS, 1991 THROUGH 1993, BY STATE

	Number of Quarters with STC Charges				Number of Quarters with STC Charges				Number of Quarters with STC Charges			
	California				Florida				Kansas			
Firm Characteristics	**All**	**1 to 4**	**5 to 8**	**9 to 12**	**All**	**1 to 4**	**5 to 8**	**9 to 12**	**All**	**1 to 4**	**5 to 8**	**9 to 12**
Mean Firm Size	380	69	248	1,932	191	152	298	32	107	87	120	147
Median Firm Size	33	21	37	69	21	20	26	17	58	45	73	82
Mean Normalized UI Charges, 1992	0.936	0.944	0.927	0.943	1.825	1.889	1.710	1.737	1.681	1.309	1.774	2.740
Mean Normalized Total (UI and STC) Charges, 1992	1.497	1.290	1.743	1.317	2.672	2.574	2.695	3.710	2.440	1.796	2.863	3.724
Mean Normalized Total UI Charges, 1991 Through 1993	0.865	0.835	0.899	0.841	1.395	1.340	1.541	1.191	1.321	1.093	1.437	1.844
Mean Normalized Total (UI and STC) Charges, 1991 Through 1993	1.255	1.047	1.463	1.215	1.858	1.630	2.185	2.649	1.774	1.339	2.081	2.601
Percentage of Firms in:												
Mining/construction/agriculture	4.9	4.9	5.2	3.8	13.6	14.9	11.7	10.0	7.8	6.4	6.9	14.3
Nondurable manufacturing	10.7	6.0	15.5	9.4	7.9	6.6	8.3	20.0	20.0	19.1	24.1	14.3
Durable manufacturing	46.6	41.8	47.9	58.5	32.5	33.1	35.0	10.0	47.8	48.9	41.4	57.1
Transportation/communication	0.9	0.5	1.0	1.9	2.6	2.5	1.7	10.0	1.1	0	0	7.1
Wholesale trade	7.4	8.7	7.2	3.8	6.8	7.4	3.3	20.0	3.3	4.3	3.4	0
Retail trade	2.1	1.1	2.6	3.8	6.3	5.8	8.3	0	2.2	2.1	3.4	0
Fire	5.8	8.7	4.1	1.9	0.5	0	1.7	0	1.1	2.1	0	0
Services	21.1	27.7	16.0	17.0	29.8	29.8	30.0	30.0	16.7	17.0	20.7	7.1
Missing	0.5	0.5	0.5	0	0	0	0	0	0	0	0	0
Sample size	**431**	**184**	**194**	**53**	**191**	**121**	**60**	**10**	**90**	**47**	**29**	**14**

Firm Characteristics	Number of Quarters with STC Charges				Number of Quarters with STC Charges			
	New York				Washington			
	All	1 to 4	5 to 8	9 to 12	All	1 to 4	5 to 8	9 to 12
Mean Firm Size	46	13	16	85	90	82	80	154
Median Firm Size	18	9	13	40	20	20	17	49
Mean Normalized UI Charges, 1992	2.339	1.420	2.160	2.883	3.695	3.625	3.936	3.210
Mean Normalized Total (UI and STC) Charges, 1992	3.217	2.252	3.222	3.633	4.717	4.427	5.191	4.352
Mean Normalized Total UI Charges, 1991 Through 1993	1.811	1.010	1.665	2.278	3.301	3.252	3.391	3.209
Mean Normalized Total (UI and STC) Charges, 1991 Through 1993	2.447	1.411	2.408	2.930	3.894	3.597	4.162	4.207
Percentage of Firms in:								
Mining/construction/agriculture	11.1	10.5	9.5	12.7	4.5	3.9	5.7	2.6
Nondurable manufacturing	11.8	11.6	11.4	12.2	7.6	5.9	8.9	10.3
Durable manufacturing	30.6	18.6	21.5	43.1	39.2	40.8	34.1	48.7
Transportation/communication	1.8	2.3	1.9	1.5	2.9	5.3	0.8	0
Wholesale trade	6.3	10.5	8.2	3.0	11.1	9.2	15.4	5.1
Retail trade	10.2	14.0	12.7	6.6	9.9	10.5	9.8	7.7
Fire	2.3	2.3	3.8	1.0	0.6	0.7	0.8	0
Services	25.4	29.1	30.4	19.8	22.6	21.1	23.6	25.6
Missing	0.5	1.2	0.6	0	1.6	2.6	0.8	0
Sample size	**441**	**86**	**158**	**197**	**314**	**152**	**123**	**39**

Source: State administrative records.

larger firms did use STC repeatedly more frequently than small firms, there were still many small firms that appeared to use STC between 9 and 12 quarters.

Table VI-3 also contains information on the mean normalized charges of firms in different usage categories. Our concern here is that because repeat-usage firms have much higher levels of charges, repeat STC usage might impose a drain on the Unemployment Trust Fund. Repeat STC usage, therefore, might generate long-term subsidies to firms or industries for which STC usage is most feasible. Patterns varied widely across states. In California and Washington, firms that used STC more extensively did not have higher levels of normalized UI charges in 1992 (or higher total charges) than low-usage firms. This suggests that once adjustments for firm size were made, charges did not necessarily increase as repeat usage increased in these states. In contrast, Kansas and New York UI charges in 1992 for high-usage firms were more than double the charges for low-usage firms. In California and Washington, firms that used STC moderately (between five and eight quarters) had the highest normalized total charges in 1992. Adding STC charges into the analysis widens the gap in normalized charges more in Kansas and slightly decreases it in New York. In these two states, high-usage STC firms had much greater workforce reductions than low- or moderate-usage firms.

By contrast, in Florida, extremely high levels of STC usage in 1992, by the small number of repeat-usage firms, increased total (UI and STC) charges substantially above total charges for low-usage firms. In fact, these few firms used STC more than they did regular UI, which is contrary to our finding for the entire sample of STC firms. It may be that Florida's more effective experience rating for STC firms with high levels of total charges deterred firms with less critical needs for STC from participating in the program.

Two additional patterns should be noted. First, in all instances, firms that used STC more than four quarters had higher levels of total charges than did firms that used STC four or fewer quarters. In Kansas and New York, repeat STC users tend to have higher UI charges than non-repeaters. As we discuss more fully in Section D, the high UI levels observed at firms that participated in the STC program cannot be attributed to STC participation; similarly, these high UI levels (and their effects on the Unemployment Trust Funds) are correlated with repeat STC usage but probably not caused by repeat STC usage. Therefore, firms with repeated use of STC tended, over time, either to be in less healthy condition than were firms that

used STC less, or to rely on compensated hours of unemployment to a greater extent because of firm-specific structural reasons. No causality can be drawn from this finding; however, it may suggest that firms facing the most severe workforce adjustment needs used STC. Second, in every state but New York, normalized STC charges were a larger part of all charges for moderate- or high-usage firms than for low-usage firms. Moderate- and high-usage firms not only had more STC plans (or plan renewals) over three years than did low-usage firms, but also, on average, relied more heavily on STC for their workforce reductions.

We conclude, therefore, that repeat STC usage is not consistently related to UI behavior across states. In some states, firms that repeatedly used STC had much higher UI charges than did low-usage firms. In other states, STC repeat usage did not seem to be associated with either higher or lower UI charges; but firms that used STC repeatedly generally used STC for larger parts of their workforce reductions than did nonrepeaters. Florida had the starkest pattern of all states, but we cannot definitively conclude the causes of this pattern. In that state, the few firms that used STC between 9 and 12 quarters averaged the highest level of STC usage, with charges approaching two percent of 1991 payroll.

The bottom panel of Table VI-3 shows the distribution of firms across industries. In every state except Florida, firms that used STC in at least nine quarters were somewhat more likely to be in durable manufacturing than were firms that used STC less. A smaller percentage of firms in the service industry fell into the heavy STC usage group than into the low STC usage group. (Firms in the durable manufacturing and service industries accounted for between 55 and 70 percent of the STC sample in each state.) Nondurable manufacturing firms seemed most likely to use STC between five and eight quarters in several of the states. The distributions of industrial composition across our three repeat-usage categories were statistically different from each other only in California and New York.

In Florida, very few firms used STC at least 9 quarters out of 12, and these firms were very small on average. Only one of these ten firms was in durable manufacturing. This is lower than the percentage of firms for the low-repeat category. We caution against drawing any strong conclusions about this, however, because of the small sample size. Overall, the most important observation regarding repeat usage in Florida is that firms in that state were much less likely to use STC repeatedly than were firms in other states. The

fact that Florida STC users may be subject to a "super maximum" tax rate may explain part of this behavior, although we cannot definitively determine this.

To conclude, it appears that the extent to which firms used STC repeatedly varies substantially by state, with New York having the highest percentage of repeaters and Florida the lowest. In general, firms that used STC most extensively were larger than average and more likely to be in durable manufacturing. Low-repeat users were more likely to be in service industries. In three of our study states, repeaters had higher levels of charges than nonrepeaters, even after firm size adjustments were made. From this descriptive analysis, it does not seem that the wide variation in repeat usage across states can be explained by differences in firm-specific characteristics.[8] State administrative practices, or characteristics of the recession in each state, may have played a larger role in generating these differences.

C. EFFECTS OF STC USE ON SUBGROUPS OF EMPLOYEES

One of the theoretical advantages of STC is that firms may be more likely to retain certain groups of employees (such as minorities, women, or younger workers) who are likely to be "first fired" when layoffs are implemented. In this section, we examine whether STC differentially impacted employees of different demographic groups. To do so, we looked at the characteristics of employees who became new UI or STC claimants at STC firms in 1992, our focal year.

When we examined age, gender, and racial/ethnic compositions, we tested whether there was a difference between the distributions of new STC claimants at STC firms and new UI claimants at STC firms. If a statistical difference between these two groups was found, it might either be that individual firms were selectively putting certain types of workers on STC (rather than laying them off) or that workers with different demographic characteristics were concentrated in work units or occupations for which STC was relatively more appropriate than layoffs. For this analysis, we could not distinguish between these two types of motivations.

[8]To verify these findings, we used ordered logistic analysis to regress the number of quarters with STC charges on tax rate categories, industry categories, and normalized charges variables. We could detect no consistent pattern in the sign or significance of the relevant coefficients.

Table VI-4 presents an analysis of age and gender distributions of new UI and STC claimants at STC firms. For each type of comparison, we used a measure of statistical difference that considered the entire distribution of new (UI or STC) claimants, rather than considering only one isolated age group or one racial/ethnic group.[9] Asterisks in the table cells indicate whether the distributions of new claimants across demographic categories were different from one another. Layoffs tend to affect the youngest age ranges disproportionately; STC may have encouraged workforce reductions to be spread across all age and tenure ranges. The age distributions of new STC claimants, however, were not statistically different from the age distributions of new UI claimants in any of the five states. Although we discuss a few patterns in the data, the nonsignificance of these results should be kept in mind. In three of the five states (California, Kansas, and Washington), individuals aged 25 or less were a slightly larger fraction of new UI claimants than of new STC claimants. In Florida and New York, individuals aged 25 or less made up a smaller proportion of the new UI claimants than their proportion in the new STC claimant population.

Since pensions are often based on earnings in the several years immediately prior to retirement (Best 1988), there has been some concern that participation in STC (and the reduced hours this entails) may reduce the pensions of workers approaching retirement. However, the oldest age range was a larger percentage of individuals laid off than of individuals on STC in four of the five states. These percentage differences, like those for the youngest age ranges, were minor. They suggest, however, that STC may not have been as attractive a workforce reduction strategy to firms that wanted to reduce labor input of older workers (potentially because their marginal value of production was less than their wages) or to older workers (who may have had a greater preference for full-time leisure compared to STC than younger workers).

[9]We used Pearson's χ^2 test of statistical significance. This test examines whether the observed distribution of characteristics across age or racial/ethnic categories was statistically different from the expected distribution, where the expected distribution is defined as the distribution for the pooled group of claimants.

Table VI-4

AGE AND GENDER COMPOSITION OF NEW STC AND UI CLAIMANTS AT STC FIRMS, BY STATE, FOR 1992

	California		Florida		Kansas		New York		Washington	
	New STC Claimants	New UI Claimants	New STC Claimants	New UI Claimants	New STC Claimants	New UI Claimants	New STC Claimants	New UI Claimants	New STC Claimants	New UI Claimants
Percentage in 1992 Who Were:										
Under age 16[a]	0.3	0.1	0.1	0	NA	NA	NA	NA	0.1	0
Age 16 to 25[a]	12.0	14.8	8.6	7.9	11.3	16.4	25.2	23.2	10.8	15.1
Age 26 to 40	50.8	52.5	51.4	50.1	52.8	52.3	42.3	42.2	52.6	53.9
Age 41 to 60	33.7	29.4	35.4	35.3	33.1	28.6	27.6	26.5	34.1	27.4
Over age 60	3.1	3.2	4.5	6.6	2.8	2.7	4.8	8.0	2.4	3.6
Percentage in 1992 Who Are										
Female	36.0	34.4	40.5	31.3	31.6	30.0	38.3	32.4*	32.3	27.3
Sample size	**301**	**348**	**178**	**160**	**82**	**86**	**397**	**366**	**236**	**284**

Source: State administrative records.

Notes: Pearson's Chi-Squared (P^2) testing was used to compare groups. Asterisks indicate that the distribution of characteristics for new UI claimants in STC firms is significantly different from the distribution of characteristics of new STC claimants in STC firms.

[a]The data from Kansas and New York do not have a category for percentage of new UI or STC recipients under age 16. Instead, these data have a category for percentage of new UI or new STC claimants under age 25.

NA = not applicable.

*This difference between the STC and non-STC average charge is significantly different from zero at the .10 level, two-tailed test.
**This difference between the STC and non-STC average charge is significantly different from zero at the .05 level, two-tailed test.

***This difference between the STC and non-STC average charge is significantly different from zero at the .01 level, two-tailed test.

In every state, women comprised a larger percentage of new STC claimants than of new UI claimants, although about two-thirds of claimants overall were men. It may be that women either were in occupations that had production technologies more conducive to STC usage, or that they were more amenable to participation than were men because they had different demands for nonwork time and/or for income. This difference was statistically significant only in New York, although it was also large in Florida and Washington.

Overall, the age and gender differences found are extremely small and generally do not support the claim that greater STC use protected the jobs of the young or women. Although we have highlighted some of the patterns across the states, most of these patterns can not be statistically distinguished from patterns that may occur by chance.

As with women and the young, minority group members might also be expected to have received employment-preserving benefits because they may be more likely to have been employed for a shorter amount of time. Table VI-5 presents similar analyses of racial/ethnic compositions to those of age in Table VI-4. Table VI-5 compares the race/ethnicity of STC and UI claimants at STC firms. Although data were collected from all five states, analytical comparisons for Kansas and Washington cannot be made, since these states do not consistently record the race/ethnicity of STC claimants. These states had an unusually high fraction of new STC claimants with unknown race/ethnicity, compared with new UI claimants. We therefore discuss results for only three states—California, Florida, and New York.[10]

In none of these three states was the racial/ethnic distribution of new STC claimants different from that of new UI claimants. In two of these three states (California and Florida), non-Caucasians were slightly more likely to be new UI claimants than STC claimants. In each case, the percentage differences were small. If these patterns had been significantly different from one another, the finding

[10]On average, 64 percent of new STC claimants in each firm in Kansas, and 31 percent in Washington, were of an unknown race/ethnicity. The percentages of new UI claimants in Kansas and Washington who were of unknown race/ethnicity were 9 and 12 percent, respectively. New York data, to a lesser extent, have a similar problem, since New York does not have complete information for both new STC and new UI claimants. Although we discuss results for New York here, caution should be used in drawing conclusions from these results.

Table VI-5

RACIAL/ETHNIC COMPOSITION OF NEW STC AND UI CLAIMANTS AT STC FIRMS, BY STATE, FOR 1992

	California		Florida		New York	
Percentage in 1992 Who Were:	**New STC Claimants**	**New UI Claimants**	**New STC Claimants**	**New UI Claimants**	**New STC Claimants**	**New UI Claimants**
African American	1.2	3.7	8.3	11.1	6.2	8.1
Asian or Pacific Islander	14.8	12.1	2.1	2.7	1.0	0.6
Caucasian	55.4	52.7	77.2	74.2	65.6	67.4
Hispanic	27.3	28.0	12.1	11.3	6.4	7.8
Native American	0.2	0.3	0.3	0.2	0	0
Unknown	1.0	3.1	0.2	0.6	20.8	16.1
Sample size	**301**	**348**	**178**	**160**	**397**	**366**

Source: State administrative records.

Note: Pearson's Chi-Squared (P^2) testing was used to compare groups. Asterisks in the fields for new STC claimants for STC firms indicate that the distribution of characteristics for new STC claimants in STC firms is significantly different from the distribution of characteristics of new UI claimants in STC firms.

*This difference between the STC and non-STC average charge is significantly different from zero at the .10 level, two-tailed test.
**This difference between the STC and non-STC average charge is significantly different from zero at the .05 level, two-tailed test.
***This difference between the STC and non-STC average charge is significantly different from zero at the .01 level, two-tailed test.

would have supported the claim that, to a small extent, STC helped preserve jobs for minorities. In New York, we find the opposite result: laid-off employees were weakly (and insignificantly) more likely to be Caucasian than were STC employees.

In Appendix F, we expanded our analysis of the demographic characteristics of workers who were on either UI or STC. We attempted to make adjustments to the data in Table VI-5 to correct for the high fraction of claimants with unknown race/ethnicity in Kansas and Washington. We also compared administrative data on STC and UI participants' characteristics to the characteristics of employees reported by the firms in the employer survey. Finally, we compared the characteristics of workers on UI at STC firms to workers on UI at similar firms that did not use STC. This was done to determine if the two types of firms used the regular UI system differently. In all these tests, we could detect no statistically significant differences in the racial/ethnic distributions of participants.

In conclusion, we find very little evidence to support the hypothesis that youths, women, and minorities benefit significantly from STC's job preservation capacity. Although we have pointed out a few of the (nonsignificant) patterns, this discussion should not be construed to suggest that the data support claims that STC saves significant numbers of jobs for minorities, women, or the young. To the extent that STC saves *any* jobs for workers, minorities, women, and the young also benefit—but not significantly differently from other workers. These findings are not surprising, since other researchers (for example, Kerachsky et al. 1986) also did not find affirmative action impacts of STC.

D. COMPARISON OF FIRMS THAT USED STC WITH FIRMS THAT DID NOT

A primary topic of concern for both researchers and policymakers is the extent to which STC reduces layoffs. If STC reduces layoffs on an hour-for-hour basis, for example, STC may alleviate many of the problems associated with layoffs (such as the financial distress for workers' families and the recall and hiring costs associated with the business cycle upturn). In contrast, if STC does not reduce layoffs, then none of these benefits is realized. To determine how many layoffs are

averted by STC, we have used a comparison set of firms—firms that did not use STC—to help answer the question, "If STC were unavailable, how many layoffs would firms that used STC have had?" By comparing the compensated unemployment outcomes between STC firms and comparison firms, we hoped to determine how much compensated unemployment charges would have differed had STC been unavailable. What we conclude from this analysis, instead, is that firms that used STC were dramatically different from other firms, even firms that were apparently the same on observable criteria. Furthermore, these differences cannot plausibly be attributed to participation in STC. In essence, our comparison between firms that used STC and firms that did not does not allow us to answer the question, "How many layoffs would STC firms have had?" This comparison, however, provides some surprising insights into the nature of firms that participate in the STC program.

Sections 1 and 2 present our comparative analysis. Section 1 contains the analysis of the levels of normalized charges at STC and non-STC firms and differences in the occurrence of mass layoffs at STC and non-STC firms. Section 2 contains results from regressions that help to control for firm-specific differences. Section 3 presents our interpretation of these surprising findings.

1. COMPARISONS BETWEEN USERS AND NONUSERS OF STC

To examine whether STC reduces unemployment by reducing UI usage or, alternatively, increases effective unemployment by encouraging partial layoffs, we compared the compensated unemployment experiences of STC employers and non-STC employers. As in previous sections, we examined the levels of compensated unemployment charges at firms in each year.[11] We also use two definitions of mass layoffs to compare the frequency of mass layoffs at STC and comparison firms.

a. Levels of Compensated Unemployment

Table VI-6 presents the same normalized charges measures for STC firms as reported in Table VI-1, but it also includes normalized charges for our comparison sample firms. As discussed in Chapter II, the

[11] Appendix E confirms that similar results are found when comparisons of compensated hours on unemployment are made.

comparison firms were chosen to be similar to STC firms on three characteristics thought to be important in predicting compensated unemployment behavior.[12] Despite this careful matching process, the difference in charges between STC and non-STC firms in 1992 was quite dramatic. Table VI-6 shows that total (UI and STC) charges were much larger at STC firms than at comparison firms.[13] In Florida and Kansas, STC firms had statistically *higher* UI charges than their comparison firms. This finding immediately casts doubt on our ability to draw causal inferences about STC-comparison firm differences by using our comparison sample as a pure control sample. That is, the total charges incurred by STC firms in 1992 were so much larger than those by comparison firms, it is unlikely the differences can be attributed to STC usage. If we did assume that the differences were due to STC, this would imply that STC usage actually *increased* layoffs. It appears instead that firms that used STC may have been systematically different in ways we could not measure—such as their long-term financial health, the nature or extent of the economic downturn they faced, or their different historical reliance on workforce reductions.

Noting that we chose our samples based on 1992 behavior, we also examined 1991 and 1993 outcomes. STC firms' UI charges in 1991 were statistically indistinguishable (although slightly higher in every state but New York) from non-STC firms' UI charges in each state. The much higher (and strongly significantly different) STC charges by STC firms in 1991, however, resulted in much higher (and significantly different in four of five states) total charges by STC firms, suggesting that STC firms may have had different workforce reduction strategies from their non-STC counterparts even

[12]As discussed in Chapter II, we matched STC firms—chosen to be all firms with STC plans established in 1992 in Florida, Kansas, and Washington and a subset of those firms in California and New York—to a comparison sample of firms which did not have STC plans established in 1992, on the basis of UI tax rates, industry classifications, and number of employees. Because firms that had plans established in 1992 were not necessarily the firms that used STC in 1992, we redefined our treatment status variable to equal one if a firm had STC charges in 1992 and zero, if not. Appendix D shows that this matching process successfully minimized differences in several observable firm-specific characteristics. Appendix E also shows that the change in the treatment definition did not substantively affect our results.

[13]From the previous DOL-sponsored STC evaluation, estimates of the increase in aggregate compensated unemployment for STC firms in Arizona, California, and Oregon compared with matched comparison firms ranged from 5 to 16 percent (depending on the model specification). By state, these estimates ranged from 1 percent to 29 percent (Kerachsky et al. 1986).

Table VI-6

AVERAGE COMPENSATED UNEMPLOYMENT CHARGES, STC AND NON-STC FIRMS, BY STATE

	California		Florida		Kansas		New York		Washington	
Characteristics	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**
1991										
Normalized UI Charges	0.871	0.791	1.426	1.284	0.915	0.762	1.335	1.501	3.543	3.470
Normalized STC Charges	0.277	0.007***	0.359	0.036***	0.343	0.027***	0.400	0.009***	0.368	0.039***
Normalized Total Charges	1.149	0.798**	1.785	1.320**	1.258	0.788***	1.735	1.510*	3.911	3.508
Percentage of Total Charges that Are UI Charges	79.424	98.531	84.060	98.773	77.536	98.387	71.393	99.433	90.275	98.519
1992										
Normalized UI Charges	0.936	0.964	1.825	1.153***	1.681	1.206**	2.339	2.297	3.695	3.907
Normalized STC Charges	0.561	0.000***	0.847	0.000***	0.759	0.000***	0.878	0.000***	1.022	0.000***
Normalized Total Charges	1.497	0.965***	2.672	1.153***	2.440	1.206***	3.217	2.297***	4.717	3.907***
Percentage of Total Charges that Are UI Charges	63.304	100.034[a]	62.078	100.000	69.030	100.000	65.146	100.000	78.456	100.000
1993										
Normalized UI Charges	0.788	1.009***	0.935	1.088	1.366	1.137	1.783	1.810	3.633	4.298*
Normalized STC Charges	0.331	0.131***	0.181	0.021***	0.258	0.040***	0.639	0.016***	0.893	0.084***
Normalized Total Charges	1.120	1.140	1.116	1.108	1.624	1.177*	2.421	1.826***	4.359	4.383

	California		Florida		Kansas		New York		Washington	
Characteristics	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**
Percentage of Total Charges that Are UI Charges	74.999	92.423	79.442	99.564	85.169	98.894	69.354	98.438	81.856	97.039

Characteristics	California		Florida		Kansas		New York		Washington	
	STC	Non-STC	STC	Non-STC	STC	Non-STC	STC	Non-STC	STC	Non-STC
All Years (1991, 1992, 1993)										
Normalized UI Charges	0.865	0.922	1.395	1.177*	1.321	1.035**	1.811	1.847	3.301	3.341
Normalized STC Charges	0.390	0.046***	0.462	0.019***	0.453	0.022***	0.636	0.008***	0.593	0.034***
Normalized Total Charges	1.255	0.967***	1.858	1.196***	1.774	1.057***	2.447	1.855***	3.894	3.375**
Percentage of Total Charges that Are UI Charges	73.091	96.916	71.357	99.018	73.568	98.851	68.934	100.556[a]	82.115	97.565
Sample size	**431**	**721**	**191**	**231**	**90**	**106**	**441**	**559**	**314**	**378**

Source: State administrative records.

Notes: Samples restricted to firms in business throughout 1991 and 1992. Because sample sizes vary slightly per charges measure, and because of rounding, the sum of normalized UI charges and normalized STC charges in a year may not equal normalized total charges in a year. All charges variables are normalized by an approximation of payroll at full employment in 1991. See text for further details.

[a]Firms occasionally have negative STC (or UI) charges for a year. In these instances, the percentage of total charges that are UI charges may appear greater than 100 percent.

*This difference between the STC and non-STC average charge is significantly different from zero at the .10 level, two-tailed test.
**This difference between the STC and non-STC average charge is significantly different from zero at the .05 level, two-tailed test.
***This difference between the STC and non-STC average charge is significantly different from zero at the .01 level, two-tailed test.

before 1992.[14,15] Because of the nature of the STC program itself, firms that used STC may have been different from other firms in ways that are important, but not measured in our data.[16]

For firms in some states, however, it appears that STC and comparison firms may have had similar recoveries from the 1992 downturn. In 1993, the gap in total charges between STC and non-STC firms disappeared in three of the five states. In California, Florida, and Washington, higher STC usage levels at STC firms are almost exactly offset by lower UI usage levels. In Kansas and New York, STC firms still had UI charges that were similar to the comparison firms' charges, so total (UI and STC) charges remained significantly higher.

2. Frequency of Mass Layoffs

To further investigate the relationship between STC and layoffs, we examined the use of mass layoffs by STC and non-STC firms. We hypothesized that, although STC did not reduce total compensated unemployment, it might reduce the frequency of mass layoffs. Mass layoffs are of particular concern because of effects upon the communities and labor markets in which they occur. Federal legislation, such as the Worker Adjustment and Retraining Notification (WARN) Act and the Title III of the Job Training Partnership Act (JTPA), recognize the negative effects of mass layoffs and distinguish them from layoffs that affect a smaller number of workers.

We also examined mass layoffs to determine whether STC firms were less economically healthy than comparison firms. Our previous results indicated that STC firms had higher total compensated unemployment than comparison firms. We sought to determine whether this trend also was reflected in the

[14]This finding is consistent with our analysis of repeat usage in Section B.

[15]Using the 1992 UI tax rate as one of the matching variables helped control, in part, for differences in 1991 charges because 1991 benefits charged through June 30, 1991, were used to calculate 1992 UI tax rates.

[16]We discuss potential alternative research methodologies in Chapter VIII.

frequency of mass layoffs. If STC firms were more likely than comparison firms to have used mass layoffs, this would tend to support our finding that STC firms were systematically different from comparison firms.

To investigate the relationship between STC usage and mass layoffs, we considered all new UI claimants in a calendar year in our data as "layoffs" and used two definitions of "mass layoffs." For the first definition, we adapted the definition from the WARN and EDWAA legislation. We defined a mass layoff (Definition I) as a situation in which, during a calendar year, either (1) more than 33 percent of the workforce was laid off and at least 50 employees were involved, or (2) more than 500 employees were laid off. EDWAA legislation (and this definition) focuses on large-scale layoffs that would most likely have a significant effect on local labor markets. Even if STC users and nonusers were likely to have equal percentage workforce reductions, the STC sample would have a higher percentage of firms meeting the mass layoffs criteria if STC firms were larger on average (since Definition I mass layoffs involve a minimum of 50 employees).

Since both STC legislation and our analysis focus on firms, rather than local economies, we modified this definition. Definition II designates mass layoffs as situations in which, during a calendar year, a firm laid off more than 33 percent of its workforce. This definition weighs equally the structural adjustment at small firms that had large-percentage reductions in their workforce with larger firms that had big workforce reductions. Although substantially more firms were eligible to meet the criterion to be counted as having a mass layoff (Definition II), a threshold of 33 percent still implies that firms may have undergone major structural adjustments.[17]

Using these two definitions, Table VI-7 examines whether STC firms were more likely than comparison firms to have mass layoffs. Table VI-7 contains the percentages of firms in 1991, 1992, and 1993 that had a mass layoff according to each of these two definitions. We also include statistics

[17]We cannot distinguish between permanent layoffs and layoffs from temporary, or seasonal, downturns. We therefore may be misclassifying some firms that had one or more short-term layoffs (involving a large percentage of employees) as having had a mass layoff. Because STC and comparison firms were matched on industry, we do not expect that this bias would be different for our two samples.

Table VI-7

MASS LAYOFFS BY STC AND NON-STC FIRMS, BY STATE

	California		Florida		Kansas		New York		Washington	
	STC	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**
Percentage of Firms that Had Mass Layoffs (Definition I) in:										
1991	5.6	1.3***	5.2	3.0	14.4	2.8***	2.3	1.6	5.1	1.9**
1992	3.5	0.4***	5.2	5.2	5.6	3.8	3.9	0.7***	3.5	1.9
1993	1.9	0.6*	2.1	5.2	5.6	0.9*	0.9	1.1	3.5	1.1**
Any year (1991, 1992, 1993)	7.7	1.7***	9.4	7.8	17.8	5.7***	5.0	2.5**	8.3	3.2***
Percentage of Firms that Had Mass Layoffs (Definition II) in:										
1991	19.3	16.8	32.5	26.0	30.0	17.9*	15.2	15.6	28.3	23.8
1992	11.5	13.1	36.6	28.6*	24.4	17.0	20.8	14.7**	34.4	21.4***
1993	5.6	9.9***	21.5	25.1	15.6	15.1	6.7	10.3**	25.2	25.9
Any year (1991, 1992, 1993)	26.2	30.2	58.1	51.9	43.3	34.9	30.6	29.2	55.7	45.5***
Sample size	**431**	**721**	**191**	**231**	**90**	**106**	**441**	**559**	**314**	**378**

Source: State administrative records.

Note: Samples restricted to firms in business throughout 1991 and 1992. The workforce is defined as the full-employment number of workers in 1991. We assumed all new UI claimants are claimants on layoff, although this assumption may not be valid in some cases.

Definition I = 1, when either (1) more than 33 percent of the workforce was laid off and at least 50 employees were involved, or (2) more than 500 employees were laid off during a calendar year, and 0 otherwise. Definition I is adapted from the definition for a substantial layoff in the Economic Dislocation and Worker Adjustment Assistance Program regulations.

Definition II = 1, when more than 33 percent of the workforce was laid off in a given year, and 0 otherwise.

*This difference between the STC and non-STC average charge is significantly different from zero at the .10 level, two-tailed test.
**This difference between the STC and non-STC average charge is significantly different from zero at the .05 level, two-tailed test.
***This difference between the STC and non-STC average charge is significantly different from zero at the .01 level, two-tailed test.

on the percentages of firms that had a mass layoff (according to each definition) in at least one of the three study years.

Not surprisingly, a higher percentage of firms had mass layoffs according to Definition II than according to Definition I. As explained previously, this is because small firms' workforce reductions (even if they are large in proportion to the number of employees at the firm) do not involve enough people to be considered a mass layoff according to Definition I.

According to Definition I and for most comparisons, STC firms were more likely to have had mass layoffs than were comparison firms. (Although the pattern is clear, these differences are not always statistically significant.) For example, almost eight percent of our California STC sample had mass layoffs (Definition I) in at least one of our three study years, whereas less than two percent of our California comparison firms had mass layoffs. In Kansas, the difference between STC and non-STC firms is even more dramatic, with almost 18 percent of STC firms having had a mass layoff (Definition I) in at least one of the study years, compared with 6 percent of comparison firms.

Some of the difference between STC and comparison firms' use of mass layoffs (Definition I) may be due to differences in the samples' firm sizes. Even after eliminating the requirement that a layoff involve at least 50 people (Definition II), STC firms generally were slightly (but often insignificantly) more likely to have had mass layoffs. Since STC firms *also* had STC workforce reductions, at least in 1992, the total workforce adjustment at STC firms, through workweek reductions as well as layoffs, was often quite substantial.

This analysis of raw data supports our evidence in Table VI-6 that STC firms were more likely to undergo large-scale workforce reductions than were their matched comparison firm counterparts. We conclude that STC firms tended to have both higher average levels of UI charges and higher frequencies of mass layoffs (although these differences were not always statistically significant). Our findings support the interpretation that STC firms were different from comparison firms in ways that were not adequately

controlled for in the matching process. Both large- and small-size firms tended to have high levels of worker separation, even while these firms were participating in the STC program.

3. Descriptive Regressions

While the review of raw statistics in the previous section suggests a startling difference between STC users and nonusers, we used ordinary least squares (OLS) to help minimize the chance that these patterns are caused by firm-specific differences related to STC participation. Table VI-8 presents the results of 20 separate regressions of charges on our STC indicator variable and other covariates—four specifications per state and five states.[18] Two of the four regressions per state used 1992 UI charges as the dependent variable. The other two regressions used 1992 total (UI plus STC) charges as the dependent variable. In addition to the STC indicator variable, each regression included measures of firm size (firm size and its square), UI history (indicator variables for which quintile of the samples' distribution each firm's 1992 tax rate was in), and industry (indicator variables for one-digit standard industrial classification [SIC] codes). For ease of presentation, the coefficients for these control variables are not given. Presented coefficients are the regression coefficients times 100.

We explored whether STC usage was associated with significantly lower UI usage in 1992 by testing if the coefficients for the STC indicator variable are statistically significantly negative. The first row of numbers in Table VI-8 shows that this coefficient is negative (but insignificant) in California and Washington. In every other state, it appears that STC firms have *higher* levels of UI in 1992 than non-STC firms, even after controlling for several firm-specific characteristics. In Florida and Kansas, these coefficients are statistically significant. For example, STC firms in Florida have 1992 normalized UI charges almost 0.6 percentage points higher than comparison firms. As noted earlier, no economic theory predicts that STC usage leads to higher UI usage. These findings, like those in Table VI-6, suggest that STC firms' workforce reduction needs were very different from the matched comparison sample firms' needs. Hence, the coefficients for the STC indicator variable may be picking up the correlation between STC usage and UI usage rather than a causal relationship.

[18] Our STC indicator variable equals one if a firm had STC charges in 1992 and zero otherwise.

Table VI-8
COEFFICIENTS FOR REGRESSIONS OF UI AND TOTAL CHARGES ON THE STC INDICATOR VARIABLE

(Coefficients Times 100)

	California	Florida	Kansas	New York	Washington
Regression of 1992 UI Charges					
STC indicator	-0.082	0.573***	0.378*	0.051	-0.168
STC indicator	-0.094	0.554***	0.487**	0.223	-0.075
Lagged UI charges	30.081***	17.357***	34.713***	38.283***	43.888***
Lagged STC charges	3.957	26.423	-36.998*	-27.495	-36.272*
Regression of 1992 Total Charges (UI and STC)					
STC indicator	0.511***	1.368***	1.195***	0.935***	0.951***
STC indicator	0.419***	1.298***	1.194***	0.868***	0.856***
Lagged UI charges	31.811***	20.778***	33.569***	36.030***	41.394***
Lagged STC charges	33.335***	61.038***	-2.466	32.776	17.763
Sample size	**1,152**	**421**	**196**	**1,000**	**692**

Source: State administrative records.

Note: Twenty separate regressions of charges on our STC indicator variable and other covariates--four specifications per state and five states--are presented. Our STC indicator variable equals one if a firm had STC charges in 1992 and zero otherwise. Two of the four regressions per state used 1992 UI charges as the dependent variable. The other two regressions used 1992 total (UI plus STC) charges as the dependent variable. In addition to the STC indicator variable, each regression included measures of firm size (firm size and its square), UI history (indicator variables for which quintile of the samples' distribution each firm's 1992 tax rate was in), and industry (indicator variables for one-digit standard industrial classification [SIC] codes). For ease of presentation, the coefficients for these control variables are not given. Presented coefficients are the regression coefficients times 100.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

One of the primary factors expected to affect the level of compensated unemployment is firms' financial health. Because direct information on firms' financial health was not readily available, we used (normalized) lagged measures of UI and STC charges as measures of financial health in 1992.[19] Table VI-8 also presents coefficients from regressions including lagged UI and STC charges. The coefficients for lagged UI charges are extremely large and highly significant in each state. In all states, we find that higher levels of UI charges in 1991 were associated with higher levels of UI charges in 1992. In California, for example, a 10 percentage point increase in 1991 normalized UI charges would be associated with a 3 percentage point increase in 1992 normalized UI charges. Therefore, the 1991 UI charges do improve the predictive power of the regression specification, and their coefficients are consistent with the belief they can, at least partly, proxy for firm financial health.

Coefficients for the lagged STC charges are less likely to be statistically significant, and three of the five states have negative coefficients. We cannot infer from this regression specification whether STC usage in 1991 reduced 1992 UI usage (in the three states with negative coefficients) because total 1992 charges were lower or because STC usage in 1991 was associated with STC usage in 1992.

After the addition of lagged charges to proxy for firm financial health, the coefficient estimates for the STC indicator variable were virtually unchanged, suggesting, to the extent that lagged charges serve as a proxy for financial health, that the inclusion of measures of financial health in 1991 did not affect our findings. Although lagged charges measures are not perfect measures of financial health, this finding suggests that prior compensated unemployment usage cannot adequately explain the pattern observed with STC participation.

STC firms, with higher average UI charges in 1992 than non-STC firms, almost definitionally had higher total (UI plus STC) charges. To assess the magnitude of the difference between total charges at

[19]Lagged annual measures of UI and STC charges are clearly imperfect measures of financial health, but they are the best measures available. Dramatically improving the fit of the regression, they imply that UI (and STC) usage is serially correlated.

STC and non-STC firms, we performed regressions with total charges as the dependent variable. The rest of Table VI-8 supports conclusions from the analysis of raw data. In every state, total charges in 1992 for STC firms were statistically significantly higher than those for non-STC firms, even when controlling for observable characteristics. When lagged UI and STC charges are included, estimates suggest that total charges (as a percentage of 1991 payroll) averaged between 0.4 and 1.3 percentage points higher for STC firms than for non-STC firms.

STC firms had higher levels of total charges in 1991, compared to the non-STC firms, primarily because they had STC charges and *not* because they had higher levels of UI charges (see Table VI-6). Although we have included lagged STC charges in our model, we suggest caution in interpreting the sign and significance of the coefficients. Just as STC users in 1992 appear to have been systematically different from nonusers, STC users and nonusers in 1991 may have been very different from one another.

Appendix E shows several of our many checks on the sensitivity of our regression results to our model specification. Because charges under STC usage may be higher on average than charges for an identical amount of workforce reductions using layoffs, we examined whether the effects of STC on UI and total compensated *hours* were similar to those for *charges*. We also examined whether changes in the treatment definition, changes in sample restrictions, and an alternative model specification affected our results. In all instances, our conclusions were similar. STC sample firms did not have lower UI charges in 1992 compared to comparison sample firms, and they consistently had much higher levels of total charges. We therefore conclude that comparisons between firms that used STC and firms that did not may be akin to comparing apples with oranges. Firms in our STC sample appeared to be substantively different from firms that were carefully matched on observable characteristics.

4. INTERPRETATION

Chapter II describes how we matched firms that participated in state STC programs to those which were similar on several characteristics (firm size, industry, and UI tax rate) but did not participate in STC.

The matching process was rigorously implemented, but could be based only on those firm-specific characteristics that were recorded in UI records. Theoretical predictions were that UI usage at STC firms would be equal to or lower than UI usage at nonparticipating firms. Total (UI and STC) usage might increase, remain the same, or decrease, depending on the extent to which STC usage reduced UI usage. If unobserved differences between firms in the STC sample and the comparison firms were relatively small, then we could infer that differences between the two samples in compensated unemployment usage, measured by dollar charges or hours of compensated unemployment, were attributable to participation in STC.

What we observed, in fact, was that STC firms had systematically and significantly higher levels of UI charges (and frequency of mass layoffs) in most states. Total compensated unemployment usage, consisting of both UI and STC workforce reductions, was therefore substantially higher at STC firms than at non-STC firms. In two of the five states, average total charges at STC firms were more than twice as high as average total charges at comparison firms. We consistently found qualitatively similar results in our five study states, even after extensive checks on the robustness of the sample to changes in treatment definitions and sample restrictions.

We know of no reasons why UI usage might *increase* when STC is used. The fact that we observed apparent "increases" in UI use implies that the measured STC/non-STC firm differences cannot be causally linked with STC participation. Although we can only speculate on the reasons for these anomalous results, it appears that firms using STC during 1992 were systematically different from those that did not. STC firms were not representative of all firms in each of our study states; they also were different from other firms within the same industry, with approximately the same number of employees, and with similar unemployment insurance usage histories (measured by the UI tax rate).

Although unexpected, this finding sheds important light on the nature of STC usage and future directions for STC research. As pointed out in Chapter II, typically less than one percent of all firms in our

study states used STC in 1992—a year that was the trough of the recession in many parts of the country.[20] These firms that chose to use STC appear, from administrative records, to have experienced a much greater need (or proclivity) for workforce reductions than apparently similar firms. They also, on average, appear to find STC advantageous for much less than half their total workforce adjustments.

E. CONCLUSIONS

In this chapter, we used administrative data from five states to examine the workforce adjustment patterns of STC firms, the characteristics of firms which used STC repeatedly, and the characteristics of UI and STC claimants at STC firms. We also investigated the workforce adjustment outcomes of STC firms compared with similar firms that did not use STC. From these analyses, we can draw several conclusions:

- ***STC firms relied heavily on UI to reduce their workforces.*** Average percentages of all charges that were UI charges by STC firms in 1992 ranged from 62 percent in Florida to 78 percent in Washington. Even though STC may be advantageous for some firms, these firms typically rely on STC for much less than half their total workforce adjustments.

- ***Sizable portions of STC firms used STC repeatedly over a three-year period.*** The extent of repeat users varied dramatically by state. In Florida, only five percent of STC firms used STC between 9 and 12 quarters. In New York, in contrast, 45 percent of firms used STC this frequently. Firms that used STC repeatedly were more likely to be large firms and in manufacturing, although the characteristics of repeaters varied considerably. Repeat usage was not consistently related to UI behavior across states. In some states, firms that used STC repeatedly had higher UI charges than nonrepeaters. In other states, there was not a significant or systematic difference in UI usage between repeaters and nonrepeaters.

- ***Consistent with virtually all other studies of STC usage, we did not find significant effects of STC usage on particular employee groups such as minorities, women, or young adults.*** We compared the characteristics of STC and UI claimants at STC firms and did not find significant differences. To the extent that STC preserves *any* jobs, affirmative

[20]STC usage is typically considered countercyclical, with usage higher during more severe economic downturns. Despite this, one of our considerations for choosing our five study states was to include states that had different recession experiences. Kansas's unemployment rate, for example, was about half California's rate.

action subgroups also benefit. We could find no evidence, however, that they benefit disproportionately from STC usage.

- ***Firms that participated in STC during 1992 appear to have been systematically different from firms that did not.*** Firms that used STC during the last recession, which in total represented less than one percent of all firms in our study states, appeared to have had much greater needs or tendencies for workforce reduction than other firms. In some instances, average workforce reductions, through both UI and STC, were twice as large at STC firms than at firms that were similar on several characteristics but did not use STC. Because these differences are too large to attribute to STC usage, firms that chose to use STC may either have undergone more severe economic downturns than did nonparticipating firms or have had some other unobserved characteristics that made large-scale compensated unemployment usage attractive.

VII. EFFECTS OF SHORT-TIME COMPENSATION ON THE UNEMPLOYMENT TRUST FUND

In this chapter, we examine how firms' participation in the short-time compensation (STC) program may have affected Unemployment Trust Fund balances. Whether STC poses a significant drain on overall UI resources has been a recurrent concern since the program's inception. Initially, many states instituted surtaxes for firms that used STC because of the widespread fears that the higher full-time-equivalent weekly benefit amounts expected under STC would significantly raise UI expenditures. In addition, there were concerns that STC programs might be considerably more expensive to administer than traditional UI programs (Best 1988, page 40). When participation in the program proved to be lower than anticipated (and when per-firm costs were found to be modest), these surtaxes were largely eliminated. Still, as shown in Chapter IV, a few of the states that offer the STC option have retained special tax provisions that affect program participants. Concerns about the financial cost of the program continue to play a role in deterring states that have the program from actively promoting it and in making other states hesitant to adopt STC. This chapter sheds some light on the issue by examining the connections between firms' UI and STC charges and the UI taxes that they pay.

To understand the connection between firms' participation in STC and the impact of that participation on Unemployment Trust Funds, it is important to understand how the UI financing system operates. In the United States (unlike many other countries), firms are "experience-rated." That is, the tax rates that firms pay are determined, in part, by the extent to which their workers have previously collected UI benefits. In an idealized setting in which both UI and STC charges are fully accounted for, adoption of an STC program should not have any significant effect on Trust Fund balances. Charges incurred, under either UI or STC, should be fully recouped from firms as future tax liabilities.

Several possibilities, however, may lead to departures from this idealized situation. For example, systematic differences in the effectiveness with which firms are experience-rated could affect the degree to which these costs are recouped in future periods. Such differences might arise because of differences in the extent to which benefits paid are actually charged to firms or because of the way in which the mechanics of states' experience-rating formulas operate in practice.[1] Of potentially greater empirical significance is the possibility that certain "high-cost" firms may disproportionally opt to participate in the STC program. For example, if the set of firms that makes use of STC is primarily composed of firms that are not effectively experience-rated (perhaps because the firms are already at the maximum tax rate so charges cannot increase their tax rates further), the program could have a negative effect on the Trust Fund, even if UI and STC benefits were treated identically in state tax policies. Other systematic differences between STC firms and all firms (such as in their average size) could also affect the overall performance of the Trust Fund.

This chapter, which explores these issues, is divided into four major sections. Section A begins with a description of firms' overall net impact on Trust Fund balances during the study period. Here, we are particularly interested in evaluating any potential differences between STC and non-STC firms; however, we also look at more general determinants of the fiscal impact of firms on the Unemployment Trust Fund. In Section B, we address the question of experience-rating and the extent to which firms' current UI and STC charges may have affected their future tax liabilities. Section C combines the analyses of the prior sections by examining the amount of time it will take firms that incurred additional UI or STC charges in 1992 to pay these off through additional tax collections. Results of such simulations are intended to provide rough estimates of the long-term impact that the STC program may have on the Unemployment Trust Fund. Section D summarizes our findings and offers conclusions about the connection between STC usage and the Unemployment Trust Fund.

[1]In this chapter, we do not address the possibility of differential charging of UI and STC benefits because noncharged benefits are, by definition, not attributable to the actions of the firm itself.

A. FIRMS' NET IMPACT ON THE UNEMPLOYMENT TRUST FUND

In Chapter VI, we showed that STC firms experienced higher total charges to their UI tax accounts during the 1991-1993 period. In this section, we combine this finding with information about the UI taxes that firms paid to assess the net financial impact that these firms had on states' Unemployment Trust Funds.[2]

Throughout our presentation, we will compare the charge/tax relationship of firms that used STC during 1992 to matched firms that did not. Because the samples of STC and comparison firms may have been affected by various selectivity biases (as we discussed in detail in Chapter VI), the results of such simple comparisons should be treated cautiously. Negative Trust Fund impacts of STC use in 1992 may be exaggerated because combined UI and STC charges were larger for STC firms (who possibly suffered more severe economic circumstances) and because the taxable payrolls of such firms may have been lower than they otherwise would have been.[3] Thus, we believe that the simple STC comparison differences reported here probably represent upper-bound estimates of the true impacts of the program. That is, the actual contemporaneous effect of STC participation on the Unemployment Trust Fund may not be as negative as the figures here suggest.

Given this caveat, Table VII-1 presents our most basic summary measures of firms' immediate impacts on states' Unemployment Trust Funds. To compute that table, for each firm we subtracted combined UI and STC charges from current tax liabilities to arrive at a measure of the firm's "net current impact." Then, as for the computations of workforce adjustments in Chapter VI, net impacts

[2]Throughout this chapter, we use UI tax liabilities as our measure of UI taxes paid. We also have information on firms' actual UI tax contributions, and this closely resembles the liabilities information. We chose to focus on the latter both because we were not specifically interested in UI tax delinquencies and because use of the liabilities data permitted a more explicit connection to the tax rate (t) that firms faced through the identity : tax liabilities = t (taxable wage base).

[3]The time path of taxable payrolls over recessionary periods actually may be complex, primarily because of the low ceiling on individual workers' wages. For example, layoffs late in the year may have little influence on taxable payrolls for the entire year. Alternatively, layoffs early in the year followed by new hires later in that same year may raise the ratio of taxable to total payroll.

Table VII-1

FIRMS' NET UNEMPLOYMENT TRUST FUND IMPACTS, BY YEAR AND STATE

Characteristics	California		Florida		Kansas		New York		Washington	
	STC	Non-STC	STC	Non-STC	STC	Non-STC	STC	Non-STC	STC	Non-STC
1991										
Mean net impact	-0.468***	-0.058	-1.286***	-0.778	0.056***	0.409	-1.010***	-0.682	-2.358**	-1.778
Median net impact	-0.209	0.154	-0.655	0.092	0.179	0.569	-0.593	-0.136	-1.539	-0.773
Percentage of firms with negative net impacts	63.7***	36.7	72.8**	62.0	43.3***	22.6	70.0***	53.7	76.1***	62.2
1992										
Mean net impact	-0.657***	0.092	-1.554***	-0.134	-0.964***	0.012	-2.106***	-0.953	-2.663***	-1.615
Median net impact	-0.331	0.270	-0.655	0.055	-0.349	0.252	-1.513	-0.110	-1.886	-0.526
Percentage of firms with negative net impacts	65.6***	34.3	72.8***	45.0	65.6***	37.3	85.7***	53.4	82.3***	58.1
1993										
Mean net impact	-0.058**	0.265	0.351	0.169	-0.154	0.080	-0.838***	-0.126	-2.000	-1.615
Median net impact	0.216	0.447	0.549	0.240	0.222	0.253	0.252	+0.463	-1.278	-0.439
Percentage of firms with negative net impacts	41.4***	29.8	33.0	31.4	45.6	34.9	53.9***	38.2	66.1***	56.2
1991 through 1993										
Mean net impact	-1.183***	0.299	-2.490***	-0.743	-1.062***	0.501	-3.953***	-1.760	-7.021***	-4.992
Median net impact	-0.622	0.521	-1.473	-0.211	-0.879	0.753	-3.042	-0.468	-5.223	-2.804
Percentage of firms with negative net impacts	63.5***	38.4	77.5***	54.1	48.7	27.6	81.3***	55.6	86.1***	68.2
Sample size	**430**	**717**	**191**	**229**	**90**	**106**	**434**	**547**	**310**	**365**

Source: State administrative records.

*The difference between STC and non-STC firms is significant at the .10 level, two-tailed test.
**The difference between STC and non-STC firms is significant at the .05 level, two-tailed test.
***The difference between STC and non-STC firms is significant at the .01 level, two-tailed test.

were "normalized" by the firm's 1991 full-time-equivalent payroll to control for the large variance in sizes of the firms in our sample. Finally, the resulting "normalized current impact" figures were multiplied by 100 so they would be in percentage terms. Thus, a normalized net current impact of, say, &1.0 means that during the period, the firm's total charges exceeded total tax liabilities by one percent of the total 1991 payroll.[4] In general, we would expect the mean impact of firms in both the STC and comparison groups to be negative during the study period. By design, Unemployment Trust Funds are intended to experience negative impacts during recession years (such as 1992), with these losses being made up during periods of business expansion. Because the firms in our sample were from industries that were probably harder hit by the recession than typical firms in the study states, these are precisely the firms that would be the most likely to have overall negative current impacts on Unemployment Trust Funds.

Table VII-1 shows that, during the primary study year of 1992, the mean values of firms' net current impacts varied among the states and across STC categories between slight positive impacts (for non-STC firms in California and Kansas) and large negative impacts in excess of &2.5 percent of 1991 payroll (for STC firms in Washington). In all states, net current impacts for STC firms in 1992 were significantly more negative than for non-STC firms. Mean differences between STC and non-STC firms were approximately &1.0 percent in Kansas, New York, and Washington, somewhat smaller than this in California, and largest in Florida. Keeping in mind the potential difficulties with such comparisons, these figures suggest that, as an upper bound, STC firms in 1992 had a single year negative impact on the Unemployment Trust Fund of approximately one percent of 1991 payroll.

For 1991, the pattern of short-term Trust Fund impacts was similar to what it was in 1992, although perhaps not quite as negative. In general, STC firms had impacts that were approximately 0.5 percentage points more negative than did firms in the comparison sample. Our analysis in Chapter VI suggested that much of this difference arose from the greater likelihood that STC firms also had STC charges in 1991 than was the case for firms in the comparison group. Again, these differences in the 1991 base year suggest caution in drawing causal conclusions from simple differences between the STC and comparison samples.

[4]These figures can be put in perspective by noting that total UI benefits and taxes average between about 0.6 and 1.1 percent of *total* payrolls in our study states. Thus, negative balances of &1.0 percent could constitute a major impact on Trust Funds if they were experienced by large numbers of firms.

In 1993, the patterns of net current impacts were not so consistent. Although, in most cases, STC firms (as defined by their 1992 participation in the program) had a slightly more negative (or less positive) impact on Unemployment Trust Funds than did non-STC firms, in many cases these differences were not statistically significant. In the remarkable turnaround in Florida (perhaps as a result of the "super maximum" tax rate that applies to STC firms in that state), STC firms in 1993 actually contributed proportionally more to that state's Unemployment Trust Fund than did non-STC firms.

Still, the performance during 1992 tended to dominate the performance over the entire observation period. Combined net current impacts during all of 1991-1993 were, on average, at least 1.5 percent more negative for STC firms than for non-STC firms. In the short run, therefore, 1992 STC participants did appear to put a significantly greater strain on the Unemployment Trust Funds than did firms in the comparison group in all of the states represented in our sample. Given the low rates of participation in the program however, it is unlikely that these negative impacts amounted to much in the aggregate. Rough calculations suggest that the total negative impacts of all STC firms in 1992 amounted to no more than about 0.5 percent of total spending for unemployment compensation in any state.[5]

Table VII-1 also examines whether the average figures discussed previously provide an accurate picture of Trust Fund impacts or whether they may have been heavily influenced by a few outliers. In general, these results suggest that the negative current impact of STC users was widely shared among these firms. For example, the figures on the median values of the net current impact variable yielded almost the same result as did the average figures, though the precise values differ somewhat. The 1992 data also show that, in all states, STC firms were significantly more likely to have had a negative impact on the Trust Fund than were firms in the comparison group. Similar, though slightly smaller, STC-comparison differences were recorded in 1991 and (to an even lesser extent) in 1993.

In a further effort to examine firms' net impacts on Unemployment Trust Funds during the study period, we ran a series of simple regressions using our net impact measure as a dependent variable. Table VII-2 presents a brief summary of these regressions. As with the descriptive results in Table VII-1, these regressions also illustrate a consistent pattern of negative impacts for STC firms relative to firms in the

[5]This calculation is based on the participation rates reported in Chapter IV (which range between 0.1 and 0.4 percent) and on the observation that negative net balances for STC firms in 1992 were approximately the same percentage of total payrolls as were UI taxes for all firms.

comparison sample during the year 1992. Controlling for industry, firm size, and initial UI tax status, these negative net current impacts again amounted to approximately one percent of 1991 full-time-equivalent payroll in Kansas, New York, and Washington, with somewhat larger negative impacts in Florida, and smaller ones in California. Although the absolute values of the STC-comparison differences in net current Trust Fund impacts were reduced a bit by controlling for UI charges in the 1991 base year, the overall picture was only slightly changed by these additions.[6] Regressions of net Trust Fund impacts over the entire 1991-1993 period confirm that most of the negative effect occurred in 1992. STC-comparison differences were also negative in 1991 and 1993 in all states except Florida, however.

An examination of the detailed regressions used to develop Table VII-2 offered additional insights about the determinants of firms' net Trust Fund impacts during the study period. In none of the regressions was the coefficient of either of our firm size variables (either individually or in combination) significantly different from zero, thereby suggesting that our normalization procedure seemed to work reasonably well. In many states there were significant industry effects. The most persistent of these were significantly less negative Trust Fund effects for the retail trade and miscellaneous service industries. Given the presumption that durable goods industries are usually more affected by recessionary circumstances, it was somewhat surprising that we also estimated that
being in nondurable manufacturing had a positive effect on the firm's net Trust Fund position. The estimated effects of other industrial attachments or of the firm's initial tax rate ranking had no clear pattern across the study states, however.

[6]For the regressions reported in Table VII-2, lagged UI and STC charges were used to control for pre-1992 conditions. Substantially similar results were obtained when the 1991 net impact variable was used instead. In interpreting the coefficients for the lagged charge variables in Table VII-2, it is important to keep in mind that these normalized charges average in the 0.01-0.02 range. The coefficient for STC charges in California of &42.80 therefore, implies that an increase of STC charges by 0.01 in 1992 (that is, one percent of 1991 payroll) would increase the firm's negative Trust Fund impact in 1992 by about 0.428 percent in that year.

Table VII-2

COEFFICIENTS FOR REGRESSIONS ON NET TRUST FUND IMPACT

	California	Florida	Kansas	New York	Washington
Regression of 1992 Net Impact on STC Dummy					
STC dummy	-0.776***	-1.484***	-1.066***	-1.151***	-1.195***
Regression of 1992 Net Impact on STC Dummy and Lags					
STC dummy	-0.661***	-1.335***	-1.042***	-1.109***	-1.032***
Lagged UI charges	-18.7***	-39.5***	-40.0***	39.9***	-43.5***
Lagged STC charges	-42.8***	-93.5***	-4.33	-22.7	-16.6
Regression of 1991-1993 Net Impact on STC Dummy					
STC dummy	-1.495***	-1.508***	-1.750***	-2.193***	-2.297***
Regression of 1991-1993 Net Impact on STC Dummy and Lags					
STC dummy	-1.496***	-1.172***	-1.473***	-1.878***	-1.601***
Lagged UI charges	-111.4***	-147.4***	-123.9***	-151.8***	-170.6***
Lagged STC charges	-149.6***	-218.7***	-77.2*	-126.1***	-80.7***
Sample size	**1147**	**420**	**196**	**981**	**675**

Source: State administrative records.

Note: All charges variables are normalized by an approximation of full-time payroll in 1991. For each firm, we add 1991 UI and STC charges, adjusted by state- and year-specific replacement rates, to total payroll in 1991 to approximate of full-time payroll. The STC dummy variable equals one if the firm had STC charges in 1992 and is zero otherwise. Controls for firm size and its square, one-digit industry dummy variables, and tax rate categories are included in all regressions.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

B. UI TAX RATES DURING THE STUDY PERIOD

Although they may pose some short-term strain on states' Trust Funds, the negative impacts reported in the previous section need not represent a long-term problem if UI charges are ultimately recouped through the operations of states' experience rating formulas. To study this possibility, we looked at the UI tax rates that the firms in our samples paid during the study period, and at how those tax rates changed over time. Implicitly we assumed that changes in the tax rate were the primary way in which negative Trust Fund impacts might be recouped through experience rating. Other possible ways by which Trust Fund impacts might have been recouped (such as through favorable long run changes in the UI taxable wage base) were implicitly assumed to be held constant in our modeling.[7] Therefore, in this section we look in detail at firms' tax rate experiences.

Table VII-3 reports simple tabulations on UI tax rates that were in effect during the three study years. Although, on average, all of the rates were increasing over the 1991-1993 period, the table shows clear evidence that experience-rating had a significant influence on the observed changes. Whereas there were no differences between STC and comparison firms in their UI tax rates in 1991, by 1992 modest differences had become apparent.[8] These differences continued to widen in 1993,

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[7]Mathematically, the firm's normalized net impact (*NI*) is given by :

$$NI = t(TW) - C,$$

where t is the firm's UI tax rate, TW is its taxable wage base, and C is current period UI charges. Dividing this equation by 1991 full-time-equivalent payroll (F) yields :

$$NI/F = t(TW/F) - C/F,$$

where NI/F represents the normalized net balance figures reported in Table VII-1 and C/F represents the normalized charges reported in Chapter VI. Under our assumption that TW/F and C/F are unresponsive to the firm's experiences (e), we have:

$$\partial(NI/F)/\partial e = (TW/F)\partial t/\partial e.$$

We used this general approach to the experience rating issue throughout the rest of our analysis.

[8]To understand precisely how charges may influence firms' tax rates, it is important to understand the accounting periods that the states in our sample used. Tax rates reported are in effect for a calendar year and are determined in part by charges in the previous *fiscal* year ending June 30. Hence, 1991 charges accrued only through June 30 can affect firms' 1992 tax rates. Similarly, 1992 charges accrued only through June 30 together with the remaining 1991 charges determine firms' 1993 tax rates. Because we do not have data on 1994 tax rates, we cannot explicitly examine how charges in the second half of 1992 may have been experience-rated.

Table VII-3

FIRMS' UI TAX RATES, BY YEAR AND STATE (Percent)

	California		Florida		Kansas		New York		Washington	
	STC	Non-STC	STC	Non-STC	STC	Non-STC	STC	Non-STC	STC	Non-STC
1991										
Mean UI tax rate	2.153	2.077	1.550	1.395	2.848	2.757	2.531	2.653	2.885	2.858
Median UI tax rate	2.000	1.800	1.200	1.000	3.220	3.130	2.500	2.600	2.900	2.900
Maximum UI tax rate	5.400	5.400	5.800	5.800	4.240	4.240	5.700	5.700	5.420	5.420
1992										
Mean UI tax rate	3.037***	2.812	3.354***	2.762	3.141**	2.805	3.912	3.927	3.037	2.996
Median UI tax rate	3.100	2.900	3.200	2.700	3.460	3.110	3.700	3.700	3.100	3.100
Maximum UI tax rate	5.400	5.400	6.400	6.400	5.700	5.500	6.000	6.000	5.420	5.420
1993										
Mean UI tax rate	4.308***	3.786	4.788***	3.204	3.462***	2.789	5.675***	5.349	3.441**	3.243
Median UI tax rate	4.600	3.800	5.700	3.100	3.540	3.110	5.900	5.550	3.500	3.300
Maximum UI tax rate	5.400	5.400	6.400	6.400	6.300	5.800	7.000	7.000	5.420	5.420
Mean Rates of Change										
Mean change, 1991-1993	2.155***	1.709	3.239***	1.809	0.614***	0.320	3.138***	2.707	0.556*	0.385
Mean change, 1992-1993	1.271***	+0.974	1.434***	0.442	0.321**	-0.159	1.768***	1.425	0.403**	0.247
Sample size	**431**	**721**	**191**	**231**	**90**	**106**	**440**	**552**	**314**	**378**

Source: State administrative records.

*The difference between STC and non-STC firms is significant at the .10 level, two-tailed test.
**The difference between STC and non-STC firms is significant at the .05 level, two-tailed test.
***The difference between STC and non-STC firms is significant at the .01 level, two-tailed test.

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partly as a result of states beginning to use 1992 charges in their experience-rating formulas. By 1993 STC firms paid average tax rates that were significantly higher than those paid by firms in the comparison group in all of the study states. This differential was largest in Florida—amounting to over 1.5 percentage points. One explanation for this outcome is the "super maximum" tax rate that applies to firms that use STC in that state (see Chapter IV).[9] A fairly large differential (0.7 percentage points) was also observed in 1993 in Kansas, though in this case there seems to be no special statutory provisions explaining the result.[10]

The fact that STC firms experienced larger average tax rate increases between 1992 and 1993 than did firms in the comparison group is explained mainly by the experience rating of the additional benefits paid to these firms' workers. This differential effect resulted in an increasing compression of tax rates paid by the STC firms nearer to the state maximum. The compression (the smaller gap between tax rates paid and state tax rate maximum) was especially noticeable in California, Florida, and New York where most firms in these states were affected. Median tax rates for STC firms increased from less than half the state's maximum in 1991, to approximately 85 percent of the maximum in 1993.[11]

Table VII-4 provides a further examination of these 1992-1993 tax rate changes, using the same regression specifications used in Chapter VI. The first line in the table reports mean tax rate changes between 1992 and 1993 for all the firms in our samples, whereas the second reports the mean difference in changes between STC and non-STC firms. In the third and fourth lines in the table, we show how the estimated difference in tax rate changes experienced by STC and non-STC firms is affected by controlling for various variables. The results in line three include controls for firm size, its square, one-digit industry dummy variables, and initial tax rate category. Results in the fourth line of Table VII-4 also include normalized 1991 UI and STC charges as additional controls. In general, the results reported in the table show that tax rate increases for STC firms were significantly larger than for firms in the comparison group both in the raw (unadjusted) data and in all of the regression results. Controlling for differences in firms'

[9]This super maximum rate in Florida was 6.4 percent in 1993. A few firms in our comparison group also paid this rate because of STC use in prior years, though the frequency of this rate was much greater for firms that we categorize as STC participants (see Table VII-3).

[10]The higher maximum recorded for STC firms in Kansas in Table VII-3 appears to be an outlier explained by factors unrelated to the STC program.

[11]Indeed, in these states, observed tax rate changes, especially for STC firms, may have been restrained by prevailing tax rate maxima. Some of our regression estimates reported in Appendix G support this possibility.

initial economic circumstances (as measured by their 1991 UI and STC charges) reduced these estimated differential rates of tax increase only slightly.

To examine further the determinants of the changes in tax rates experienced by the firms in our sample, and how these may have been affected by different experience rating procedures in the states, we ran a series of regressions intended to approximate those procedures. Appendix G reports a sample of the results from these regressions. Briefly, those results seemed to be consistent with *a priori* expectations of how experience rating operates. In all the states in our sample, tax rate changes were quite responsive to current charges. Prevailing state maxima operated to mitigate the effects of charges on tax changes, although providing a precise modeling of this effect proved difficult. Finally, and perhaps most important, the experience rating regressions showed that, on average, STC charges tended to be somewhat better experience-rated than regular UI charges. Hence, our findings on tax rates suggested that the additional charges incurred by STC firms tended to set in motion a sequence of events that would eventually cause those charges to be repaid through higher taxes. The next section examines ways of placing some bounds on these repayment rates.

C. TRUST FUND SIMULATIONS

Were the tax rate increases illustrated in the previous section sufficient to recoup the extra strains on the Unemployment Trust Fund by STC firms in 1992? Providing a precise answer to this question requires that a number of assumptions be made about how firms' UI tax rates and UI charges might evolve in the years beyond 1992. Both the design of the present evaluation, and various shortcomings in the data available, prevent us from attempting such a precise answer. We were, however, able to provide some rough estimates of how states' UI tax systems may have recouped 1992 UI and STC charges. In general, we conclude that these charges probably were recouped in a relatively short period. This fact, combined with the very low participation rates in the STC program, suggests that the impact of the program on the Unemployment Trust Fund as a whole in 1992 was relatively minor.

Table VII-4

ANALYSIS OF CHANGES IN UI TAX RATES, 1992-1993

	California	Florida	Kansas	New York	Washington
Mean Change, All Firms (Percent)	+1.085	+0.891	+0.139	+1.577	+0.318
Mean Difference in Tax Rate Change, STC - Non-STC (Percent)	+0.297***	+0.992***	+0.337**	+0.343***	+0.156**
STC/Non-STC Difference, Adjusted by Regression	+0.353***	+1.218***	+0.424***	+0.306***	+0.168***
STC/Non-STC Difference Adjusted by Regression, with 1991 Charges	+0.292***	+1.226***	+0.353***	+0.325***	+0.122**
Sample size	**1,152**	**422**	**196**	**992**	**692**

Source: State administrative records.

Note: Tax rate differences adjusted by regression were measured using a dummy variable that took the value one if the firm had STC charges in 1992 and zero otherwise. Controls for firm size and its square, one-digit industry dummy variables, and tax rate categories are included in all regressions. 1991 normalized UI and STC charges were included in the regressions reported in line 4.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

Table VII-5 illustrates our basic results. To construct that table we calculated, for each firm, the ratio of various measures of its 1992 charges impact on the Unemployment Trust Fund to the effective increase in taxes it experienced between 1992 and 1993.[12] This calculation resulted in a measure of the number of years that it would take for the Trust Fund to recoup 1992 charges as a result of the tax rate increases. Two measures of 1992 impact were used: (1) STC charges alone; and (2) the comprehensive Trust Fund impact (total taxes minus total charges), the variable that we described in connection with Table VII-1. The first measure implicitly took the view that STC charges themselves were all that had to be recouped through the UI tax system, whereas the second took the view that it was the overall fiscal drain on the fund that needed to be recouped.[13] Because not all of the 1992 Trust Fund impact is attributable to STC, for the second measure, the comparison between STC firms and firms in the comparison group would seem to be the most pertinent (keeping in mind the potential selectivity involved in the STC group).

To understand the meaning of the figures in Table VII-5 consider the following example. Suppose that STC benefits in 1992 amounted to one percent of the firm's baseline (1991) payroll. Assume also that the firm experiences a 0.5 percentage point increase in its UI tax rate between 1992 and 1993 and that the firm's taxable wages amounted to 40 percent of payroll in 1991. Then we would calculate an "effective" tax rate increase of 0.2 percent of total 1991 payroll (0.5×0.4) and estimate that it would take five years (1/0.2) to recoup STC benefits paid through this increased tax rate.

Looking first at the STC charges alone, it appears that the tax rate increases experienced by STC firms between 1992 and 1993 were sufficient to recoup these expenditures in rather short order. In the three states with the biggest tax increases (California, Florida, and New York) it would have

[12]As in footnote 7, effective tax rate changes were computed by multiplying the actual tax change times the fraction of the firm's total wages that were taxable under the UI system. In practice this meant that the "effective" tax rate changes (taxes as a percent of *total* payroll) were between approximately one-third and one-half of the values reported in Table VII-3.

[13]Another way of looking at these different approaches would be that the first implicitly assumes that the "layoff conversion" rate associated with STC usage was zero; that is, that STC charges incurred have no effect on UI charges. Hence this might be considered to be an upper bound impact of the STC program in isolation. Under this interpretation, a lower bound impact would be zero; STC charges would be completely offset by reductions in UI charges. Use of the comprehensive net balance variable, on the other hand, focuses on the overall fiscal impact of each firm on the Trust Fund.

Table VII-5

SIMULATED TRUST FUND RECOUPMENTS
(Years to Repay 1992 STC Charges and Net Impacts from 1992-1993 Tax Rate Increases)

	California		Florida		Kansas		New York		Washington	
	STC	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**
1992 STC Charges Only										
Mean years to repay	1.87	---	1.89	---	6.38	---	2.09	---	2.99	---
Median years to repay	0.64	---	0.75	---	1.87	---	1.10	---	0.93	---
Years for 90 percent of firms to repay	4.76	---	3.45	---	22.19	---	4.36	---	7.06	---
Total 1992 Negative Impact										
Mean years to repay	2.61***	1.12	2.53**	1.41	9.46*	6.46	5.24***	3.20	10.79	11.46
Median years to repay	0.94	0.00	1.78	0.33	3.54	1.51	2.64	0.25	6.27	5.08
Years for 90 percent of firms to repay	5.95	3.25	6.03	2.77	20.84	19.88	13.45	8.73	20.62	17.25
Sample size	**408**	**648**	**140**	**144**	**54**	**45**	**425**	**528**	**183**	**166**

Source: State administrative records.

*The difference between STC and non-STC firms is significant at the .10 level, two-tailed test.
**The difference between STC and non-STC firms is significant at the .05 level, two-tailed test.
***The difference between STC and non-STC firms is significant at the .01 level, two-tailed test.

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taken the median firm at most one year to repay its STC charges out of increased taxes. More than 90 percent of all STC firms would have repaid their charges in less than five years. For Washington, repayments would have taken a bit longer, but the general picture in that state mirrors the other states' experiences fairly well. Only in Kansas were the tax rate changes of such small magnitudes that STC charges would have taken some time to be repaid, especially for those firms that experienced the smallest tax rate increases.[14]

In the bottom half of Table VII-5 we examine recoupment of the entire negative impact (measured as tax collections minus charges) that firms had on the Unemployment Trust Fund in 1992. Looking first at the comparison firms, the figures show that these negative impacts were quickly recouped in California and Florida. Large changes in UI tax schedules in those states clearly had their intended effects. 1992 net impacts were also fairly quickly recouped in New York, though in this case a significant minority of firms posed a long term drain on the fund. Because the tax rate increases in Kansas and Washington were much smaller, we estimated that it would have taken a much longer time to recoup 1992 charges. Absence of a major increase in tax schedules in those states suggests that such recoupment was not a high priority.

In all of the states except Washington, estimated recoupment periods of 1992 impacts for STC firms were significantly longer than for firms in the comparison sample. This is the pattern that might have been expected given our earlier findings that: (1) most charges during 1992 were charges for regular UI, even for firms in the STC sample; and (2) STC firms did not have significantly lower UI charges than did firms in the comparison group. Still, differences between the STC and comparison firms were not substantial, especially considering the absence of any STC charges for firms in the comparison group.[15] Again,

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[14]Firms that experienced no tax rate increases were omitted from the calculations in Table VII-5, thereby explaining the somewhat smaller sample sizes in the table. In principle, firms with no tax rate increase would take "infinitely long" to repay any negative balances incurred. A more appropriate view, however, may be that such firms are in a stable long term equilibrium in which all benefits charged will ultimately be recouped. In any event, inclusion of these firms (with some modestly large estimated recoupment period) in the table would not have significantly changed the median figures in the table, except in the case of Kansas—the state with the healthiest economy in our sample. For that state, medians would have been increased significantly because of the large number of firms that experienced no change in tax rate.

[15]For the median recoupment period for net balances for comparison firms in California, the reported figure (0.0) indicates that the median comparison firm had a positive net balance in 1992.

therefore, the findings in Table VII-5 suggest that the overall drain that participation in STC posed for the Unemployment Trust Funds was relatively modest and fairly short-lived.

To provide additional insights on this conclusion, we explored a number of additional ways for quantifying the connections between 1992 UI and STC charges and potential future UI tax collections. Our most important such simulations started from the recognition that many of the tax rate increases used in the calculations in Table VII-5 came as a result of changes in state tax schedules, not from the impact of experience-rating of individual firms. A rough estimate of the effect of the "extra" tax rate increases that STC firms incurred because of experience-rating alone is provided by looking at the differential tax rate increases between STC and comparison firms. Table VII-4 shows that this differential was approximately 0.3 percentage points in California, Kansas, and New York, a bit smaller in Washington, and much larger in Florida. This change alone would have allowed 1992 STC charges to have been repaid in approximately three years. It would have allowed the average STC firm's entire negative Trust Fund impact in 1992 to have been repaid in about eight years.[16] Of course, such a calculation is very rough and is not tied precisely to empirical estimates of the extent to which benefits are actually experience-rated. Use of our more detailed econometric approximations of states' experience-rating formulas (see Appendix G) suggested that recoupment periods for STC firms may have been a bit longer than these figures, averaging in a 7- to 14-year range.[17] These estimates may overstate actual recoupment periods, however, because of the simplifying assumptions made in our approximations. Overall, we conclude that the presumption that states' experience-rating formulas will permit STC charges to be recouped over a reasonable time period is largely correct, though providing precise estimates of recoupment periods is subject to a number of uncertainties.

D. CONCLUSIONS

[16]The approximate calculations proceed as follows: weighting the additional tax increase of 0.3 percentage points by the fraction of taxable in total wages (about 0.4) gives an "effective tax increase" of 0.12 percentage points. That rate would "repay" STC charges of 0.4 percent of 1991 payroll in somewhat more than three years and a negative Trust Fund impact of &1.0 percent in somewhat more than eight years.

[17]Estimated recoupment periods for Washington were much longer than for other states. Some possible reasons for this finding are discussed in Appendix G.

C***Both STC and comparison firms had negative financial impacts on the Unemployment Trust Fund in 1992. In all states, the average impact of STC firms was significantly more negative, however.*** This differential impact was approximately one percent of 1991 payroll in Kansas, New York, and Washington. In California, the differential was only slightly more than half that size, whereas in Florida the negative impact amounted to almost 1.5 percent of 1991 payrolls.

C***On average, all firms in the sample experienced large increases in their UI tax rates between 1991 and 1993. Tax increases tended to be significantly greater for the firms in the STC sample, however, probably because of states' experience-rating procedures.*** The tax increases were especially large in California, Florida, and New York, and arose primarily as a result of legislated and recession-induced changes in tax rate schedules. Such differential tax increases amounted to approximately 0.3 percentage points in California, Kansas, and New York, and were a bit smaller in Washington. In Florida, differential tax rate increases were much larger, primarily as a result of the "super maximum" that applies to Florida firms that used STC. Regression results for each of the states suggested that STC benefits may have been somewhat more effectively experience rated than UI benefits, although these estimates of effective experience-rating were not very precise.

C***Simulation results suggested that STC benefits paid in 1992 were fairly quickly recouped by state Trust Funds through higher UI tax rates.*** Although estimates of the time to repayment depended on the precise assumptions made, figures in the 2- to 3-year range characterized most states. Somewhat longer recoupment periods (in the 7- to 14-year range) were estimated when only tax rate increases arising from experience-rating *per se* were used in the simulations.

VIII. CONCLUSIONS AND LESSONS LEARNED

In the 30 months of research leading up to this report, Berkeley Planning Associates and Mathematica Policy Research collected a great variety of data on short-time compensation (STC) programs. We interviewed employment security officials in every state, surveyed a sample of employers who have participated in STC, and collected unemployment insurance administrative records from several states. Our analyses of these data have generated a great variety of findings, which were presented in earlier chapters of this report. In this chapter we present our main findings together, and explore their lessons for policy makers at the state and federal levels.

A. CONCLUSIONS

In summary, we conclude that:

(1) The adoption of STC programs by states is being slowed by an absence of clear support from various stakeholders, and by a variety of lingering concerns about the program;

(2) Among states that have adopted STC, the basic design of the program is fairly consistent, although specific rules vary;

(3) Several states have developed practices that show promise for reducing the ongoing costs and administrative burden of STC;

(4) Employer participation in STC is low, but the reasons for low participation remain unclear;

(5) Employers who have used STC are generally satisfied with the program;

(6) A substantial portion of STC firms use the program repeatedly;

(7) Among firms that have used STC, layoffs remain the primary workforce reduction strategy;

(8) Consistent with prior studies, STC does not appear to disproportionately benefit ethnic and racial minorities or women; and

(9) As it currently operates, STC does not appear to threaten the solvency of state Unemployment Trust Funds.

We discuss these findings in more detail below, and conclude this report with a discussion of their lessons for policy makers.

(1) The adoption of STC programs by states is being slowed by an absence of clear support from various stakeholders, and by a variety of lingering concerns about the program.

Currently, only 17 of the 53 states and jurisdictions in the unemployment insurance system have functioning STC programs. Our survey of state officials pointed to several factors that help explain why additional states have not adopted the program. Most significantly, where STC has been adopted, it has been largely due to the efforts of key stakeholders, including representatives from the state employment security agency, legislators, employers, labor groups, and the state governor. For STC to be adopted, stakeholders need to be aware of the program and understand how it operates, perceive a need for the program that is not met in the current unemployment insurance program, and consider the advantages of the program to outweigh its disadvantages. Stakeholders committed to the passage of STC rarely face opposition, and when these conditions have been met, STC has received strong support. More commonly, however, lack of knowledge about the program, or perceptions by potential stakeholders that it was unnecessary or was not advantageous, have limited the support for its adoption.

(2) Among states that have adopted STC, the basic design of the program is fairly consistent, although specific rules vary.

Our survey of state officials indicated that there were a number of consistent features across STC programs. All STC states adopted rules regulating employer plans, employer participation, and employee participation. All states required employers to submit an employer plan describing the work hour reductions expected and the number of employees participating in the program. Further, when participating workers were covered by a collective bargaining agreement, the consent of the bargaining representative was required by all STC states. Nearly every state established limits on the length of an STC plan, although in most cases plans could be renewed indefinitely. States also set limits on employee participation, restricting STC use to employees meeting certain tenure requirements, and disallowing participation for individual employees beyond a fixed point, typically 26 weeks. The specific provisions of many of these rules varied across states. Ten states allowed twelve-month plans, six allowed six-month plans, and one limited plans to thirteen weeks. Maximum work hour reductions permitted by states ranged from 40 to 100 percent. The greatest differences among states, however, arose in their exclusions of certain types of employers from participation in STC. Ten states had statutes or regulations to exclude seasonal employers, out of concern that the program would be used to subsidize labor costs, but seven statutes had no such provisions. Three states also adopted special tax provisions for negative balance employers out of concern about the effect of STC on the Unemployment Trust Fund. Three states limited repeat participation by firms for similar reasons. Our research suggests that these exclusions have the potential to greatly affect STC participation, and may be partly responsible for variations in participation rates among states.

(3) Several states have developed practices that show promise for reducing the ongoing costs and administrative burden of STC.

Responses from the survey of state officials indicated that some employment security agencies were concerned with the cost of administering STC. Though an analysis of the administrative costs of STC was beyond the scope of this study, it appeared that there were wide variations in the cost of administering the

program. Of four states that had automated the processing of STC claims (Connecticut, Iowa, Kansas, Maryland) none cited administrative costs as a concern, and two found STC claims less expensive to administer than regular UI claims.

Some states had also modified their STC programs to reduce the administrative burden of the program. The primary administrative burden, for both employers and employees, was the filing of claims. Most states required the signatures of both of these parties on weekly or bi-weekly STC claims, but five states (Arizona, Kansas, Missouri, Rhode Island, Vermont) had simplified this process by eliminating the requirement that employees sign their ongoing claims. Further, three states (Arizona, Texas, Washington) had moved to a voice automated system for filing ongoing claims, eliminating the need for the collection of signatures. Where implemented, these efforts appeared to have increased the ease of STC usage.

(4) Employer participation in STC is low, but the reasons for low participation remain unclear.

STC has failed to attract substantial interest among employers. In a majority of states with STC programs fewer than one hundred employers participate in any given year, and in no state does more than one percent of employers participate. After nearly 20 years of experience with STC in the United States, the program remains substantially underutilized relative to its extensive usage by employers in European countries. Our conversations with state employment security agency officials suggested that a lack of information about the program may be partially responsible for the current low levels of participation. Further, they suggested that many employers were unaware of STC, and that states have limited means for promoting the program. Some evidence exists that improved marketing of STC can raise participation levels, but such strategies have not been systematically tested.

(5) Employers who have used STC were generally satisfied with the program.

In surveying employers from five states that used STC in 1992, we found that over 90 percent indicated they would use STC over layoffs in the future. The reason cited most frequently for this was the

ability to retain valued employees by using STC. Employing a larger number of employees and maintaining employee morale were also cited as key reasons for using STC over layoffs in the future. In spite of this overwhelming support for the program, some employers did report dissatisfaction. The most reported disadvantage associated with STC was an increase in the UI tax rate. More than half of employers surveyed reported that their UI tax rate actually increased with STC participation. In Florida, where STC employers face a higher potential maximum tax rate than non-STC employers, 84 percent of employers reported an increase in taxes. Close to half of Florida respondents identified higher taxes as a serious drawback to STC.

(6) A substantial portion of STC firms used the program repeatedly.

Although STC is often thought to be most appropriately used for averting layoffs during temporary economic downturns, we found that many firms used STC repeatedly. Repeat usage varied dramatically by state. In Florida, for example, only five percent of STC firms used the program in nine or more of the twelve quarters for which we collected data, while in New York almost half of STC firms did so. Firms that used STC repeatedly were more likely to be large firms and in manufacturing, although the characteristics of repeaters varied considerably. Repeat usage was not consistently related to layoff behavior across states. In some states, firms that used STC repeatedly had higher regular UI charges than nonrepeaters. In other states, there was not a significant or systematic difference in UI usage between repeaters and nonrepeaters. We could not distinguish whether firms that used STC repeatedly were renewing plans over time or establishing new plans for different groups of workers. State administrative practices, or characteristics of the recession in each state, may have played a role in generating these differences.

(7) Among firms that have used STC, layoffs remained the primary workforce reduction strategy.

Firms that participated in the STC program had high levels of UI charges compared to their STC charges, and these firms relied on this program as only one component of a total workforce reduction strategy. Among firms that used STC, the average percentage of total charges in 1992 attributable to UI ranged from 62 percent in Florida to 78 percent in Washington, suggesting that, on average, between $1.64 and $3.64 was charged for regular UI for every dollar of STC benefits charged to a firm. These STC firms also experienced higher UI charges than comparison firms that had similar UI tax rates, number of employees, and industry, but that did not use STC. These results suggest that the STC firms might have experienced greater economic distress than the matched non-participating firms. In some instances, total compensated unemployment, measured as the sum of STC and UI charges, was twice as large at firms that used STC than at the comparison firms.

(8) Consistent with prior studies, STC does not appear to disproportionately benefit ethnic and racial minorities, the young, or women.

One of the main proposed advantages of STC is that workforce reductions are spread more evenly among workers compared to layoff usage. Several groups of workers (minorities, women, and young adults) have been hypothesized to benefit from STC because they are expected in the absence of the program to be laid off disproportionately. When we compared the characteristics of STC and UI claimants at STC firms, we did not find any support for this hypothesis. To the extent that STC preserves *any* jobs, minorities, women, and young adults benefit. We could find no evidence, however, that they benefit disproportionately from STC usage.

(9) As it currently operates, STC does not appear to threaten the solvency of state Unemployment Trust Funds.

Because all states base a firm's UI tax rate on prior unemployment claims experiences, in theory the payment of benefits under STC should pose no added strains on Trust Fund balances. Our results generally supported this theoretical prediction--that is, we found that STC benefits were at least as fully

experience-rated as were other UI benefits. Hence, although STC firms imposed substantial negative impacts on Unemployment Trust Funds during 1992, they also incurred sharply higher UI tax rates as a result of these claims. Overall, our simulation results suggested that these higher tax rates would recoup firms' negative impacts quickly. In part, however, this quick recovery resulted from shifts in overall tax schedules in addition to the effects of the experience-rating of individual firms. It is possible that Trust Fund impacts could be more serious if STC participation rates were much higher and overall shifts in tax schedules were constrained.

B. LESSONS LEARNED FROM THIS STUDY

As described above, our evaluation of short-time compensation programs generated a number of important research findings. Many of these findings have significant implications for policy makers, both at the state and federal levels. In concluding this report we explore the implications of our research for both of these groups.

1. LESSONS FOR STATES

Only 17 of 53 states and jurisdictions currently operate STC programs. Our research points to several issues that states contemplating adoption may wish to consider. In addition, our research suggests a number of lessons for states seeking to reduce the administrative burden of existing STC programs, or to increase employer participation. As preface to these lessons, we note that our research provides no clear guidance on the merits of expanding STC usage. This evaluation was not designed to measure the net benefit of STC to states, and we defer to state policy makers on the question of whether STC participation should be increased.

Among the top concerns of stakeholders in states considering adoption of STC was the impact the program will have on their Unemployment Trust Funds. This study provides new information that should help address these concerns. Although we have not conclusively demonstrated that STC does not impact

Unemployment Trust Funds negatively, our evidence suggests that in most cases STC claims are as effectively experience-rated as regular UI claims. This finding was evident even in the absence of special surtaxes or super-maximum tax rates for STC, suggesting that such provisions may not be necessary. Indeed, several states that once required special surtaxes for STC use have since eliminated them. Since higher taxes may discourage employer participation, states seeking to increase STC usage may wish to reconsider their need for special tax provisions.

States adopting STC, and states that plan to revise existing programs, may also wish to streamline their operations. To reduce administrative costs, states should consider integrating STC into existing or pending automated claims processing systems. To reduce administrative burden, for employers and employees as well as employment security agency staff, states may also wish to simplify their STC claims filing processes. Reducing administrative costs and burden has the potential to produce multiple benefits for STC programs. Employers may be more inclined to participate in STC, and state staff will be better prepared to handle increases in claims activity.

Subtleties in STC eligibility rules may also affect employer participation. In states where seasonal employers are excluded from the program, participation rates tend to be lower. Limits on the renewal of STC plans by employers may also affect participation negatively. We recognize that states enforcing these provisions have sound policy purposes for doing so. Seasonal exclusions have been enacted out of concern that STC might be used to subsidize seasonal employment, and limits on repeat usage exist to insure that STC is used for temporary downturns only. States adopting such provisions may also wish to consider their potential effects upon employer participation in STC.

By eliminating special surtaxes, reducing administrative burden, and adopting flexible eligibility rules, states may reduce the disincentives of participation in STC. Our research noted, however, that STC participation remained low even in states with the most employer-friendly programs. For states interested in increasing STC participation, more proactive measures may be necessary. Past efforts to promote, or market, STC by states point to several possibilities. In a number of states we spoke with, the inception of

the STC program was accompanied by a one-time mailing to employers. States reported that these mailings were successful in raising awareness of the program, but their effects on participation appear to have been short-lived. These results are consistent with the lessons of mass marketing, which relies on repeated exposures of a product or service to establish consumer awareness. As commercial advertisers have learned, one-time notices rarely have lasting effects. States seeking to increase participation in STC may wish to develop more ongoing means of promoting their programs.

Because past efforts to market STC to employers have been quite limited, we can not guarantee that participation will be raised by better promotion of the program. The reasons for low employer utilization of STC are poorly understood, and employer awareness may be only one factor in this result. Even with increased marketing, whether by direct mailings, advertisements, or other means, participation levels may remain low. States might supplement such activities with investigations of the reasons why employers have not participated in STC. Research on the needs of these potential customers is the foundation of successful marketing. This role may seem unfamiliar to state employment security agencies, which need not rely on promotion to assure participation in their major programs, such as unemployment insurance. Other programs housed in state employment security agencies, such as the Employment Service, may have more experience reaching out to employers, and state STC programs may wish to investigate the possibility of seeking their assistance with promotion. Employment security agencies may also find it difficult to implement an STC marketing strategy in the face of competing priorities. We acknowledge these challenges, but without increased efforts to identify and respond to employer concerns with STC, participation levels are likely to remain low.

2. LESSONS FOR DOL

P.L. 102-318, which mandated this evaluation, also called for the Department of Labor "to provide technical assistance and guidance [to states] in developing, enacting, and implementing" short-time compensation programs. In addition, the legislation advised DOL "to submit such additional reports on the implementation of short-time compensation programs as the Secretary deems appropriate." In this section

we discuss these two options–technical assistance and additional examinations of STC–and suggest paths which DOL may wish to pursue in the future.

3. TECHNICAL ASSISTANCE

DOL responded to Congressional directions to offer guidance to states by producing and distributing a Short Time Compensation Handbook in 1987. This volume included model language for state STC statutes, the text of legislation passed by states with existing STC programs, and summaries of STC research results. As indicated by our survey of state employment security agency officials, many states relied on this volume in designing their STC legislation. A majority of states pointed to DOL's model legislative language as the basis for their own STC laws.

Our interviews with state officials indicated that further guidance from DOL is warranted. Many of the state officials we spoke with requested such guidance explicitly. The most prominent area in which assistance was requested was the marketing of the program. Employment security agencies are not accustomed to marketing their programs and have had difficulty promoting STC to employers. Although we have no direct evidence that better marketing of the program to employers would increase STC participation, there is ample room for states to pursue such a strategy. Two options for federal assistance in marketing efforts include the development of a technical assistance guide and the creation of a demonstration project testing STC marketing strategies. A demonstration attempting to saturate a local market with STC advertising, for example, could provide a useful test of the hypothesis that low employer awareness is a major obstacle to increased participation. DOL may also wish to solicit further input from states on their STC marketing needs.

Employment security agencies in several states also demonstrated a need for assistance in the streamlining of STC operations. While a number of states have successfully automated their STC programs, many others still process claims manually, leading to higher administrative costs and a corresponding reluctance to promote the program. There appears to be great potential for information

sharing among states on this and other aspects of STC program operations. DOL might support such communication through sponsorship of a national conference or round table of STC states, or the development of a guide to best practices. DOL could also increase communication by encouraging the creation of an Internet newsgroup or mailing list dedicated to STC issues, similar to those already coordinated by the Unemployment Insurance Information Technology Support Center.

As part of any effort to expand the STC program, DOL would be well advised to consider the objections cited by non-STC states. As revealed by our survey of state officials, non-STC states are concerned that STC would negatively impact their Unemployment Trust Fund, and that it would be too expensive to administer. Our research results address both of these issues. While states are concerned about the potential impact of STC on Unemployment Trust Funds, our research suggests that STC benefits appear to be quickly recouped through higher UI tax rates, and the long-term impacts on Trust Funds seem to be negligible. Our survey of officials in states where STC is operational provide evidence that concerns about the administrative costs of STC may also be overstated. When STC is automated, the administrative costs of the program can be comparable to or less than the costs of the regular UI program. If DOL wishes to encourage the adoption of STC by additional states, our findings may help to overcome such objections.

DOL may also wish to consider a new strategy for raising interest in the STC program. Our investigations of STC's beginnings in states where it is available identified business and labor representatives as key agents in the adoption of STC legislation. The strong support of at least one of these groups was a basic ingredient in many of the adoption stories we heard. When both business and labor were involved, adoption was typically quick and uncontroversial. Raising awareness of STC among business and labor representatives, perhaps through contacts with national organizations representing these groups, could be a useful element of any strategy to promote adoption of the program.

Major increases in STC participation, however, may require more substantial intervention at the federal level. Greater adoption of STC by states and better marketing to employers can increase

awareness of the program, but the incentives for employer participation remain quite limited. STC can increase the flexibility of the production process, and decrease hiring costs after cyclical downturns, but employers continue to prefer layoffs to STC in most situations. To prevent layoffs on a larger scale, some rethinking of the underlying incentives and costs of employer participation in STC may be warranted.

When reviewing the incentive structure of STC, policy makers may also wish to consider new uses for the program. Notably, it has been suggested that STC can be most useful to workers as a means for lengthening the post-layoff adjustment period. Workers facing permanent layoffs would receive STC for up to a year, during which they would continue to work part-time while simultaneously participating in training or conducting job searches. STC would thus extend the available adjustment period from twenty-six weeks (the maximum benefit period for regular UI) to a year or longer. Used in this manner, STC's purpose shifts from layoff prevention to employment transition. Our research offers no assessment of this use of STC, but it has attracted increasing attention from proponents of the program in recent years, and may be worth further investigation.

4. FUTURE RESEARCH

Although the present study responds directly to the Congressional mandate to evaluate STC, many important questions remain about this program. Some of these questions preceded this study, such as the questions of the impact of STC on the Unemployment Trust Fund and the effects of STC on reducing layoffs. As detailed elsewhere in this report, our responses to these questions cannot be deemed final, and the questions merit further attention beyond this evaluation. In trying to address these issues our research has also generated new questions that bear further investigation beyond this evaluation. Most prominent among these are the questions of repeat STC usage and the differences between STC and non-STC firms. We discuss research approaches for addressing all of these questions below.

The impact of STC use on the layoff behavior of firms and the Unemployment Trust Fund remains uncertain, despite our efforts to address these questions. Employers who have participated in STC

programs represent a very small fraction of all firms, and appear to be systematically different from other employers, even those with whom they share many basic characteristics. Comparisons between STC and non-STC firms thus reveal more about the relative health of such firms than about the effects of participation in STC. This result, as detailed in Chapters VI and VII, indicates that comparison methodologies are insufficient for addressing these important policy issues.

How might these issues then be addressed? When comparison studies are inadequate, a standard research response is to conduct a classic experiment. One can envision an experiment in which, on a random basis, only half of all qualified STC applications were accepted. At some future point in time employers with accepted plans would be compared to employers whose plans had not been accepted, and differences between the two groups could be reliably attributed to participation in the STC program. Such an experiment would likely face a variety of operational obstacles, such as small sample sizes and the necessity for a long follow-up period, but could be conducted with almost no new data collection beyond what is already contained in state administrative records.

Although an experiment is the most likely way to avoid biases in analysis of the effects of STC, there are also ways that a comparison methodology might be improved to decrease potential bias. Collecting better data on the economic health of firms, either through publicly available data sources or through more extensive surveys might provide additional control variables for statistical analyses. Collecting data for a longer period of time, both before and after STC participation, might likewise aid analyses. Given the self-selected nature of STC samples, however, we question whether these types of additional data would eliminate all bias in estimates of the effects of STC on layoff usage and on the Unemployment Trust Fund. A randomized experiment may be the only way to reliably estimate the impacts of STC.

The most significant new issues raised by our research are repeat usage and the differences between STC and non-STC employers. As usually described, STC is designed to assist employers during cyclical downturns. Our research found that many employers maintain STC plans for several consecutive quarters,

or even years. We also found that STC employers are systematically different from non-STC employers. STC employers appear to be much less healthy in economic terms than their non-STC counterparts.

These results suggest that STC is being used by different employers, and in different ways, than it was originally conceived. Firms that use STC face exceptionally difficult economic circumstances, and many employers use the program for extended periods, instead of for cyclical downturns. Policy makers may wonder whether such uses of STC fulfill its original legislative intent, and three states have established restrictions on repeat STC use for this very reason. Repeat usage and the concentration of STC usage among less healthy employers may also raise concerns about cross-firm UI subsidies. Our research neither supports nor refutes this hypothesis, but further research may be warranted to investigate these phenomena.

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Table A-1

1994 EMPLOYER PARTICIPATION IN STC

State	Number Of Employers Participating[1]	Number Of All Employers Subject To UI Taxes In State	Rate Of Participation In STC As a Proportion Of All Employers Subject To UI Taxes	Level Of Employer Participation In STC (High/Med/Low)[2]
Arizona	204	87,069	0.23%	H
Arkansas	3	14,680	0.02%	L
California	2,070	772,574	0.27%	H
Connecticut	42	92,677	0.05%	M
Florida	99	334,547	0.03%	M
Iowa	1	65,032	0.00%	L
Kansas	71[3]	61,415	0.12%	H
Maryland	22	117,754	0.02%	L
Massachusetts	9[3]	149,102	0.00%	L
Minnesota	18	109,197	0.02%	L
Missouri	64	132,854	0.05%	M
New York	445	432,621	0.10%	H
Oregon	14	87,434	0.02%	L
Rhode Island	27[3]	32,578	0.08%	M
Texas	54	351,584	0.02%	L
Vermont	14	19,347	0.07%	M
Washington	652	161,033	0.40%	H

Source: Survey of State Officials.

Notes:

[1]The number of employers participating is based on state reports of the number of employers with STC plans approved.

[2]States were grouped by level of employer participation based on the rate of employer participation calculated with high (0.1% participation or higher); medium (participation rates from 0.03 to 0.09%); and low (participation rates at or below 0.02%).

[3]1994 numbers not available. Number provided is for 1995.

Table B-1

ASSOCIATIONS BETWEEN EMPLOYER PARTICIPATION RATES AND STC STATE PUBLICITY EFFORTS

Initial or One-Time Efforts				Ongoing Efforts					
Level Of Employer Participation In STC (High/Med/ Low)[1]	State	Fliers Mailed To Employers	Public Service Announcement/ Press Release	Regular Seminars With Employer Groups Or Labor Groups	Articles In Monthly UI Newsletter	Contact At-risk Employers	Information On World Wide Web	Seminars On STC By Request	Other
H	Washington	U[2]	U		U	U			
H	California	U						U	Video on STC available at local UI offices.
H	Arizona	U	U	U		U	U[4]		
H	Kansas	U	U	U					Pamphlets available at local offices.
H	New York	U				U			
M	Rhode Island	U		U	U				
M	Vermont	U			U				
M	Connecticut	U							
M	Missouri	U		[3]					
M	Florida	U	U						
L	Arkansas	U[1]						U	
L	Maryland	U				U			
L	Minnesota								Information has been sent out informally.
L	Oregon								
L	Texas								Pamphlets mailed by request.
L	Iowa								Some booklets on STC are distributed by request.
L	Massachusetts							U	

Source: Survey of State Officials.

Notes:

[1]States were grouped by level of employer participation based on the rate of employer participation calculated with high (0.1% participation or higher); medium (participation rates from 0.03 to 0.09%); and low (participation rates at or below 0.02%).

[2]This is an on-going effort in that every new employer is mailed a pamphlet.

[3]Information about STC is sometimes discussed during employer seminars.

[4]In the process of implementing this effort.

Table C-1

ASSOCIATIONS BETWEEN EMPLOYER PARTICIPATION AND SEASONAL WORK EXCLUSIONS, AGE OF THE PROGRAM, AND SPECIAL PROVISIONS FOR EMPLOYER PARTICIPATION

Level Of Employer Participation In STC (High/ Med/Low)[1]	State	Excludes Seasonal Workers	Year STC Adopted	Special Provisions for Employer Participation in STC				
				Surtax	Super Maximum Tax Rate	Negative Balance Employers[2] Allowed To Participate As "Reimbursable" Employers	Negative Balance Employers[2] Excluded From Participation In STC	No Provisions
H	Washington	U[3, 4]	1983					U
H	California		1978					U
H	Arizona		1982	U[6]				
H	Kansas	U[3]	1988				U	
H	New York		1985					U
M	Rhode Island	U	1991					
M	Vermont	U	1985					U
M	Connecticut	U	1992					U
M	Missouri	U	1987		U[7]			U
M	Florida	U	1983		U[8]			
L	Arkansas	[5]	1985				U	
L	Maryland	[5]	1984					U
L	Minnesota	[5]	1994					U
L	Oregon		1982			U		
L	Texas	U	1985					U
L	Iowa	U	1992					U
L	Massachusetts	U	1988			U		

Source: Survey of State Officials.

Notes:

[1]States were grouped by level of employer participation based on the rate of employer participation calculated with high (0.1% participation or higher); medium (participation rates from 0.03 to 0.09%); and low (participation rates at or below 0.02%).

Table C-1 (continued)

Notes:

[2]Only reserve ratio states can have negative balance employers. Reserve ratio STC states include: Arizona, Arkansas, California, Kansas, Massachusetts, New York, and Rhode Island. In Oregon, a benefit ratio state, employers with inadequate funds are also required to participate as reimbursable employers.

[3]Seasonal workers excluded by law, but this rule is not usually enforced.

[4]Washington state is currently tightening their laws and this exclusion will be enforced more stringently.

[5]Seasonal workers are not excluded by law, but they are excluded in practice.

[6]In Arizona, negative reserve ratio STC employers can be charged a surtax of up to 2 percentage points depending on their calculated negative reserve ratio.

[7]In Missouri, STC employers whose calculated tax rate is higher than the maximum state UI tax rate can be charged a super maximum tax rate up to 3.9 percentage points higher than the state's maximum UI tax rate.

[8]In Florida, STC employers whose calculated tax rate is higher than the maximum state UI tax rate can be charged a super maximum tax rate up to 1 percentage point higher than the state's maximum UI tax rate.

Appendix D

THE COMPARISON SAMPLE SELECTION

Appendix D

THE COMPARISON SAMPLE SELECTION

For much of our analysis in Chapter VI, we analyzed a set of firms that participated in STC in 1992. We received data on all firms in business in 1992 in each of our five study states.[1] In Florida, Kansas, and Washington, we chose all firms with STC plans in 1992 to be in our STC sample. In California and New York, we chose random subsamples of firms to ensure we would have at least 500 firms per state. For the last analytical section in Chapter VI, we also analyzed administrative data on a set of firms that did not use STC in 1992, as well as data from our STC sample, to assess how the workforce adjustment patterns of firms that used STC differed from similar firms that did not use STC. This appendix provides details on the statistical matching process used to generate our comparison samples and information on the quality of our matches. Section A describes the matching procedure; Section B presents descriptive results.

A. STATISTICAL MATCHING PROCEDURE

Our goal in using a statistical matching process to generate a comparison sample of firms that did not use STC was to choose a set of firms that were as similar as possible to our STC sample. Our sampling strategy used data on UI tax rates, firm size, and Standard Industrial Classification (SIC) codes to pair firms that established STC plans in 1992 with firms that had similar characteristics but did not establish STC plans in 1992.[2] As described below, the SIC code was of primary importance in our matching process, since it governed the set of firms eligible to be matched to our STC sample. That is, to match with a particular STC firm, we considered non-STC firms with similar UI tax rates and numbers of employees among firms within the same three-digit SIC code. If no suitable matches were found, we expanded our search to include firms with similar UI tax rates and numbers of employees among firms within the same two-digit SIC code. We felt that matching firms on the basis of industry was particularly important because firms in the same industry are more likely to experience similar economic shocks during business downturns.

[1]New York provided us with data on all firms with at least five employees in 1992. This restriction was imposed because firms with fewer than five employees were not eligible for STC plan approval in New York. Since one of our criteria for choosing comparison firms is firm size, this limitation did not pose a problem for the quality of our matches.

[2]The UI tax rate was defined as the tax rate for the 1992 calendar year, effective January 1, 1992. The firm size used was the firm size on January 1, 1992 (or on the date nearest to then, according to records maintained by the state UI offices).

They may, therefore, be more likely to be in similar economic health than firms not in the same industry. In addition, firms in the same three-digit SIC code may be more likely to have similar production processes and organizational structures than firms not in the same industry. Although matching on industry could not guarantee similarity between STC and non-STC firms, we expected that controlling for industry would be an important method to improve match quality on unobservable firm-specific characteristics.

Our matching process had several steps. First, we sorted both STC and non-STC firms according to their three-digit SIC codes. Second, we divided the range of firm size and UI tax rate values into quintiles on the basis of the STC employer universe (or STC samples, in California and New York). Using these quintile categories, we assigned each STC and non-STC firm to firm size and tax rate cells. We thus had 25 possible cells for *each* three-digit STC—five categories of firm size and five categories of tax rate.

There were two possibilities for cells with STC firms in them: (1) there were at least as many comparison firms in the cell as there were STC firms in that cell, or (2) there were fewer comparison firms in the cell than STC firms. In the first case, we used a distance minimization procedure (explained below) to find the best comparison matches among the non-STC firms in the corresponding cells (the "pool" of potential comparison firms). In the second case, we used our distance minimization procedure while requiring only a match at the two-digit SIC level, after excluding firms matched at the three-digit SIC level. The two possible situations applied to these firms as well: (1) there were at least as many comparison firms as STC firms in the cell, or (2) there were not enough comparison firms to match with STC firms. For the first case, once again, we performed distance minimization. For the second, we performed distance minimization between the remaining nonmatched STC firms and the comparison firms in neighboring cells. The neighboring cells were those cells in adjacent quintiles for tax rate and firm size. We therefore performed our distance minimization procedure iteratively (first at the three-digit SIC level, then at the two-digit SIC level, then with neighboring cells) until all STC firms had comparison firm matches.[3] We performed the matching process separately for each state.

[3]Firm size or tax rate data were missing for some firms in our STC and non-STCsamples. For these STC firms, we matched on the basis of available data. These firms were included in the sample even though the matches were of lower quality. In California, because about 15 percent of firms had missing match data, we increased our target sample size from about 500 to 600.

Distance minimization involved weighting the deviations in characteristics between one (STC) firm and all potential comparison firms. The distance between an STC firm, say *STC1*, and a comparison firm, firm, *COMPi*, was defined as:

$$(1) \quad D_i = \left\{ \frac{|EE_{STC1} - EE_{COMPi}|}{s_{EE}} + \frac{|TXRATE_{STC1} - TXRATE_{COMPi}|}{s_{TXRATE}} \right\}, \; i \in \{1,\ldots,N\},$$

where N is the number of non-STC firms in the pool of potential comparison firms, EE_{STC1} represents the number of employees in STC firm 1, EE_{COMPi} represents the number of employees in non-STC firm i, $TXRATE_{STC1}$ represents the UI tax rate for STC firm 1, $TXRATE_{COMPi}$ represents the UI tax rate for non-STC firm i, and s_{EE} and s_{TXRATE} represent the standard deviations of firm size and tax rate for all firms in the state, respectively. The absolute differences in firm characteristics are divided by the standard deviations to develop unit-free measures of differences. This normalization also ensured that differences in one of the two measures (tax rate or number of employees) did not get dwarfed because the measure had a large variance for the entire sample of non-STC firms.

The distance between each STC firm and each potential comparison firm was calculated. The firm chosen to be the comparison firm match for an STC firm was the firm the shortest distance away from the STC firm:

$$(2) \quad \min_i D_i, \; i \in \{1,\ldots,N\}.$$

There may have been more than one STC firm in a cell (of a two- or three-digit SIC code, a firm size quintile, and a tax rate quintile). When two or more STC firms had the same non-STC firm as their best match, the comparison firm was paired with whichever STC firm was the shortest distance away. The second-best matches for any "losing" STC firms were determined. We iteratively checked to see if these comparison firms were best matches for other STC firms and paired firms until all STC firms were matched with comparison firms.

Two modifications were made to the matching procedure on a state-by-state basis to improve the match quality. The use of quintile cutoffs for the cells meant that the largest STC firm would only be able to match with equal or smaller comparison firms (or comparison firms with equal or lower tax rates). To allow for the possibility that the best matches for the largest STC firms might be with comparison firms that were slightly larger, we expanded the highest quintile to include some larger non-STC firms. We also divided the highest quintile into two or more ranges, depending on the underlying distribution of the data. We did this because the distribution for firm size was generally highly skewed, so the range of the highest quintile for firm size was quite large. Therefore, in practice, up to 40 cells were used for matching in some states.

B. RESULTS OF THE MATCHING

Table D-1 provides statistics on the quality of the firm matches. The matching process generally worked well. Correlations between STC and matched comparison firms on firm size and tax rate were high, and most firms had matches in the same three-digit industry. The statistics show that the likelihood of finding good matches in the small states was lower than in California and New York. The most challenging part of the matching process was to find matches very close to the same firm size as STC firms in the smaller states. In some situations, we visually inspected the highest end of the firm-size distribution when unsatisfactory matches were found using our algorithm. Chapter II shows the characteristics of the STC firms and their matches, and supports the claim that the matches were quite good overall.

Appendix E addresses one remaining issue relating to the matching process—that we changed our definition of which firms were STC firms after completing the matching process. Appendix E shows that this adjustment to our treatment definition did not alter the substantive findings from our analysis of STC and comparison firms. Chapter VI presents our findings and interpretations of them.

Table D-1

DESCRIPTIVE STATISTICS FOR MATCH QUALITY, ALL STATES

Match Characteristic	California[a]	Florida[b]	Kansas	New York[c]	Washington[d]
Correlation Between Number of Employees in Matched Firms	0.98	0.84	0.70	0.97	0.79
Number (Percentage) of Matches with Distance at Least 2.5	19 (3.8)	26 (12.3)	10 (9.8)	23 (4.6)	20 (5.4)
Number (Percentage) of Matches at the Three-Digit SIC Level	474 (93.5)	174 (82.1)	65 (63.7)	477 (94.5)	326 (87.2)
Number (Percentage) of Matches at the Two-Digit SIC Level	27 (5.3)	20 (9.4)	28 (27.5)	27 (5.3)	44 (11.8)
Number (Percentage) of Matches at Neighboring Cells Level	6 (1.2)	18 (8.5)	9 (8.8)	1 (0.2)	4 (1.1)
Correlation Between Tax Rates in Matched Firms	0.99	0.98	0.98	0.99	0.98
Mean Distance Between STC and Comparison Match	0.55	1.26	1.30	0.52	0.64
Number of Matched Pairs of Firms	507	212	102	505	374

Source: State administrative records.

Notes:

[a]The 507 firms in California were selected from among 5,143 firms with STC plans in 1992 using sampling stratified by the number of employees and one-digit SIC code. There are 100 matches in California that are excluded from this table since the STC and comparison firms did not have complete information upon which a match could be made (that is, they were missing information on the number of employees or the tax rate).

Table D-1 (continued)

[b]There are eight matches in Florida that are excluded from this table since the STC and comparison firms did not have complete information upon which a match could be made (that is, they were missing information on the number of employees or the tax rate).

[c]The 505 firms in New York were selected from among 737 firms with STC plans in 1992 using sampling stratified by the number of employees and one-digit SIC code. Only firms with at least five employees are eligible for participation in STC; comparison firms with fewer than five employees, therefore, were excluded from the pool of potential comparison employers.

[d]There are nine matches in Washington that are excluded from this table since the STC and comparison firms did not have complete information upon which a match could be made (that is, they were missing information on the number of employees or the tax rate).

Appendix E

SENSITIVITY CHECKS OF THE CHAPTER VI REGRESSIONS

In Chapters VI and VII, we observed differences in the compensated unemployment behavior of STC firms and non-STC firms. Because STC firms' normalized charges were in many cases much larger than the charges of the matched comparison firms, we suggested in the conclusion to Chapter VI that the two groups of firms may have faced very different workforce reduction needs. Here, we extend the Chapter VI analysis to see if these results are sensitive to (1) use of hours instead of charges as our dependent variable, (2) changes in treatment definition, (3) modification in the comparison sample restrictions, and (4) use of an alternate model specification. Each of these model extensions is discussed, respectively, in four subsections of this appendix. We conclude that our overall findings—that STC firms may have faced very different workforce reduction needs from their matched counterparts—are not sensitive to these model changes.

A. USE OF COMPENSATED HOURS INSTEAD OF CHARGES AS THE DEPENDENT VARIABLE

In Chapter VI, we used a measure of (normalized) compensated charges on unemployment as our primary unit of analysis. One might expect, however, that firms might make their workforce adjustment decisions on the basis of how much of the hours reduction should be through UI or STC, rather than by how much of the total charges should be through UI or STC, since firms may not precisely know the benefit amounts claimants would be eligible for. Analyzing the hours of (normalized) compensated unemployment can therefore be an important supplement to the analysis of charges in Chapter VI.

Table E-1 presents information similar to that in Table VI-6 of Chapter VI, except the outcome measure is compensated hours on UI or STC instead of charges.[1] Our normalized hours measure can

[1]Data on UI usage was provided as the number of person-weeks at each firm in each quarter. From all states except California, data on STC usage were quarterly full-time-equivalent weeks or hours on STC. (California provided quarterly data on weeks on STC and on the average percentage workweek reduction.) The normalization for hours is similar to the normalization for charges. We add the 1991 full-time-equivalent time on unemployment to 1991 annual employment. Time on unemployment includes both STC and regular UI. This constructed measure of 1991 full employment is the

loosely be interpreted as the "firm-specific unemployment rate." That is, normalized hours represent the workforce reduction from full employment at the firm. Although we constructed our hours and charges variables similarly, there are two main reasons why the levels of compensated hours were higher than the charges levels. First, individuals on compensated unemployment received benefits that are only a fraction of their usual earnings. Thus, we expect normalized hours to be a multiple of normalized charges, where the multiple is one divided by the replacement rate. As an example, suppose a firm reduced its workforce by 1 percent. Normalized hours would therefore be 1 percent, but normalized charges would only be 0.5 percent, assuming a replacement rate of 50 percent. A 40 percent replacement rate, in contrast, would have generated normalized charges of 0.4 percent.[2] Second, firms are not always charged the full cost of the benefits received by their employees on layoff or STC. Multiple base-period employment and the reason for separation are the primary reasons firms may not be fully charged, but other reasons (such as participation in emergency, extended, or disaster relief benefit programs) exist.[3] Our hours data may include full weeks of compensated unemployment, even if the sample firms were not fully charged for the compensation because the claimant had multiple base-period employers.

The general patterns found in Table VI-6 of Chapter VI also exist in Table E-1. STC firms' workforce reductions, through both UI and STC, were substantially higher in 1992 than their non-STC counterparts. In every state except New York, the percentage of all charges that were STC charges was higher than the percentage of all compensated unemployment hours that were STC hours—a finding consistent with the belief that STC hours are more expensive than UI hours. We therefore conclude that descriptive analyses of hours and compensated charges suggest similar conclusions.

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denominator for the hours variables. Additional adjustments to include waiting periods before collecting unemployment do not affect the results.

[2]STC is often thought to have a lower replacement rate than regular UI, because higher-paid workers participate in STC, whereas layoffs are concentrated among the least senior workers. Because we know of no estimates of the difference in replacement rates between STC and layoff participants, and because our data do not address this issue, we assumed for our normalization process that the replacement rates for STC and non-STC firms, and for UI and STC hours, were the same.

[3]In contrast, a firm may be charged even if it is not the separating employer if a laid-off worker received wages from the firm during the base period.

Table E-2 presents regression results using normalized full-time-equivalent hours as our dependent variable. As for Chapter VI regressions, we included controls for industry, firm size, and UI tax rate. For ease of interpretation, the coefficients from the regressions are multiplied by 100. The significant coefficient for Florida (2.450) in the regression of 1992 UI hours on the STC indicator variable, for example, suggests that STC firms had 2.5 percent higher normalized UI hours than did comparison firms. (Coefficients for hours regressions are expected to be much larger than coefficients for charges regressions, since compensated hours are not deflated by wage replacement rates.) As in the Chapter VI charges regressions, coefficients for lagged UI hours are highly significant. These results are similar to the results in Table VIII-8 of Chapter VI using normalized charges as the dependent variable, with few exceptions. For example, in New York, the STC indicator variable coefficient is now highly significant, while it was not for charges.

Since it is not plausible that STC usage *increased* UI usage, this pattern supports the claim that STC participants were a self-selected group of firms that have greater needs for workforce reductions than comparison firms. In all states, STC usage was significantly associated with higher total compensated hours. Not surprisingly, the coefficients for the STC indicator variables are much larger in the total hours regressions than in the UI hours regressions. Again, results are consistent with the Chapter VI conclusions. STC firms' compensated hours were so much larger than comparison firms' hours that we cannot attribute this difference to participation in STC.

B. CHANGES IN THE SAMPLE DEFINITION

The sample of non-STC firms was chosen on the basis of their similarity in characteristics to the STC firms from among all firms in our five study states that did not have STC plans established in 1992. More precisely, the matched non-STC firms had numbers of employees, UI tax rates, and industry classifications similar to the STC sample in 1992. The matching process therefore was used to help ensure that the characteristics of the two samples—firms which used STC and firms that did not—were as similar as possible on observable characteristics. As shown in Appendix B, the matching process successfully selected non-STC firms that were similar to STC firms on the characteristics matched.

The treatment definition used for the analyses in Chapters VI and VII, however, was different from the treatment definition in the matching process. Because none of the five states could provide information for the matching process on which firms that had STC plans had actually *used* their STC plans, the matching process relied on an imperfect measure of the treatment. The universe of firms that had STC *plans established* in 1992 in Florida, Kansas, and Washington were chosen to the be in the STC samples; a subset of firms with STC *plans established* in 1992 in California and New York became those states' STC samples. Firms that had STC plans established in 1992 may not have been the same set of firms that had STC charges that year. Firms may have had plans established in 1991 and used those plans in 1992. Alternately, firms that had plans established in 1992 may have chosen not to use those plans, either in 1992 or at all.

The underlying assumptions for changing the treatment definition are that (1) plan *filing* is a relatively costless administrative procedure, and (2) plan *usage* is the precise outcome we want to measure. Given that one of the primary goals of STC is to reduce layoffs, plan usage (and not plan filing) is the mechanism for accomplishing this goal. Although plan filing may signal both knowledge and interest in the STC program, the employment adjustment patterns of plan filers include firms that used STC, firms that relied on layoffs exclusively, and firms that ultimately did not need to reduce their workforces at all.

The difference between these two treatment definitions is not trivial. The percentage of firms that had STC plans established in 1992 and that did *not* have STC charges in 1992 ranged from 15 percent in Florida and New York to 38 percent in California. Of those firms that were selected to be in our comparison sample—that is, firms that did not establish STC plans in 1992—between 4 percent in New York and 12 percent in California had STC charges in 1992.

This section examines the effects of changing the treatment definition of our sample. Instead of using our revised treatment definition which categorized firms on whether they had STC charges in 1992, we use the original treatment definition which categorized firms on whether they had STC plans established in 1992. Instead of interpreting STC usage as the treatment, as we did in Chapter VI, this analysis considers

STC plan approval as the treatment and might more effectively use our matching process to control for observable differences between STC and non-STC firms.

Tables E-3 and E-4 are similar to Table VIII-8 in Chapter VI and Table E-2 in this appendix. Regressions in Table E-3 use normalized charges as the dependent variable; Table E-4 regressions use normalized hours. The only analytical difference between these two sets of tables is that Tables E-3 and E-4 use the original treatment definition: firms that had plans established in 1992 are in the STC sample and firms that did not are in the comparison sample. The results of 20 regressions are presented. Controls for tax rate, industry, and firm size were included in all regression specifications, but we only present the coefficients of our variables of primary interest.

For both Tables E-3 and E-4, coefficients are similar in sign and significance to those presented earlier. In general, STC sample firms did not have lower UI charges or hours, on average, than non-STC sample firms (except for firms in California), even after including controls for 1991 UI and STC usage. STC firms in every state, on average, had significantly higher levels of total (UI plus STC) charges. Therefore, we conclude that firms that had STC plans established had higher workforce reductions than firms that did not, even if they did not use those plans. As noted in Chapter VI, STC firms had such high UI charges, relative to non-STC firms, that we cannot infer that STC usage (a relatively small amount of total charges) was responsible.

We conducted another examination of the effects of changing the treatment definition. Because firms that switched treatment status in our categorization (either from non-STC status to STC status, or vice versa) may bias our STC/non-STC comparisons, we restricted our sample to firms that did not switch treatment definition status and whose matched firms likewise did not switch status. That is, firms in the restricted STC sample were firms that (1) had STC plans established in 1992, (2) used those plans (had STC charges), and (3) were paired with comparison firms that had neither STC plans established in 1992 nor STC charges in 1992.[4]

[4]In addition, both the STC firm and its matched comparison firm could not have been excluded from our sample for other reasons—that is, we had to have enough observations on them to ensure reliability in the data.

Tables E-5 and E-6, analyzing normalized charges and hours, respectively, contain our now-standard regression specifications using this more restricted sample. With these restrictions imposed, sample sizes dropped dramatically in California and, to a smaller extent, in other states. The reason for the large reduction in sample size in California is that about 40 percent of firms with STC plans established in 1992 did not use their plans. The story from these regressions is similar to the story in Chapter VI—total compensated charges (and hours) were so much higher at STC firms than at non-STC firms that it seems implausible to ascribe the compensated unemployment patterns to participation in the STC program.

C. SAMPLE CONSTRUCTION

One criticism of the previous study (Kerachsky et al. 1986) was that firms that were in the comparison sample may not have had any UI charges in the study year (Morand 1986). The concern was that firms that did not have any UI charges could not be comparable to STC firms, which definitionally used STC as a workforce reduction strategy. Although we believe the proper analysis comparing firms with STC charges to firms without STC charges should include comparison firms without UI charges—since "no layoffs" and "no UI charges" is a valid choice for firms if STC were unavailable—we present an analysis comparing STC firms to a limited subsample of our full comparison sample—including only non-STC firms with UI charges in 1992.

Tables E-7 and E-8 present this analysis for charges and hours, respectively. Not surprisingly, the coefficients for the STC indicator variable in the regressions of normalized UI charges on the STC indicator variable, and our usual control variables, are more likely to be negative. This pattern occurs because we have excluded the relatively healthy firms from the comparison sample, thereby narrowing the gap in UI charges between the STC firms and comparison firms. In California, New York, and Washington, STC firms had statistically significant lower levels of UI charges than did comparison firms. In California and New York, on average, STC firms have charges about 0.3 percentage points lower than comparison firms *that had at least some UI charges*. In Washington, the negative coefficient is much larger in magnitude—STC firms' charges were estimated to be almost 1 percentage point lower. When we regress total charges on our STC indicator variable, however, our usual controls (and lagged UI and STC charges

in some specifications), the coefficients for the STC indicator variable are all positive, and significant in four of our five states. STC firms' total (UI and STC) charges are estimated to be between 0.27 and 1.1 percentage points higher than comparison firms, even after eliminating comparison firms that had no charges in 1992 from the sample.

Implementing this exclusionary restriction may help eliminate some of the selection bias discussed in Chapter VI and this appendix, but it is also, in a sense, constructing a methodology from the data (rather than using the data to test a hypothesis). Eliminating comparison firms that did not have UI workforce reductions from the sample does not completely eliminate the self-selection problem, because STC firms still have (insignificantly) higher UI charges in two of the five states.

D. MODEL SPECIFICATION

Our Chapter VI analysis and the analysis in Sections A and B of this appendix do not exploit the matching process to its fullest statistical advantage. That is, the ordinary least squares (OLS) regression procedures used do not pair each STC firm with its matched non-STC firm.[5] We present analysis here that uses the matching characteristic of the sample.

Although the matching process was successful in finding comparison firms similar to STC firms, it was limited in its ability to perfectly match the characteristics of STC firms to non-STC firms. For example, there may have been instances in which no firms in the universe of potential comparison firms were identical to the STC firms when measured by industrial classification, firm size, and UI tax rate. STC and non-STC firms may therefore have been slightly different from one another, and a "differencing" regression analysis can be used to take advantage of the statistical gains from matching. In Chapter VI, we modeled the level of normalized charges by our STC and non-STC samples as:

[5]In the latter part of Section A, we limited the sample on the basis of whether STC firms and their matched comparison firms switched treatment status, but we did not directly pair the firms in the regression.

(1) $\quad = \alpha + \beta X_i + \gamma STC_i + \epsilon_i, \; STC_i \in \{0,1\},$

where *i* denotes firm *i* (either an STC or non-STC firm), STC_i equals one if the firm is in the STC sample and zero otherwise, and (represents the effect of STC participation on the outcome measure. X_i denotes firm characteristics such as the UI tax rate, firm size and its square, and the industrial classification; $,_i$ is an unobserved, normally distributed random-error term. In Chapter VI, we focused on the sign and significance of the STC_i coefficients and concluded that the state-specific STC_i coefficients were being driven by unobservable differences between STC and non-STC firms rather than by participation in the STC program.

Alternatively, we could model the differences in our STC and non-STC samples as:

(2) $\quad Y_i - Y_j = \beta(X_i - X_j) + \gamma + (\epsilon_i - \epsilon_j),$

where *i* denotes STC firm *i* and *j* denotes its matched comparison firm *j*. The dependent variable is the difference between the STC firm's normalized charges (or hours) and its matched comparison firm's normalized charges. Similarly (X_i & X_j) represents the difference between each STC firm and its matched comparison firm in observed firm-specific characteristics expected to be related to observed normalized charges (or hours).[6] Because (STC_i & STC_j) equals 1 for all pairs of firms, the coefficient on a constant in this regression (() can be interpreted as the STC impact.

Tables E-9 and E-10 present the results of this model estimation. Sample sizes reported are pairs of firms, so they are much smaller than the sample sizes reported in Table E-6.[7] As explained earlier, the

[6]We made two modifications to our control variables for the differencing regressions. In our usual regressions, we used indicator variables for the tax rate quintiles as controls to allow for nonlinear effects of tax rates on the dependent variables. We also used one-digit SIC codes instead of three-digit SIC codes to help ease interpretation of the coefficients and to save degrees of freedom in our OLS estimation. For the tax rate controls in the differencing regressions, we used differences in the levels of tax rate, rather than the quintiles. For the industrial controls in the differencing regressions, we used an indicator variable that equaled one if the STC firm and its comparison firm were in the same three-digit industry and zero if they were not.

[7]We limited the pairs of firms in this analysis to pairs that met the criteria in the latter part of Section A.

coefficient on the constant term is analogous to the coefficient for the STC indicator variable in our other regression specifications. Similar to our other specifications, however, we must conclude that self-selection into the STC program is a strong possibility because STC firms have significantly higher UI charges than their matched comparison firm counterparts in all but one state, even when pairwise comparisons are made.

E. CONCLUSIONS

In this appendix, we showed three different sensitivity tests to determine if our conclusions in Chapter VI about the different workforce reduction patterns between STC and non-STC firms are robust to changes in treatment definition, comparison sample restrictions, and model specification. In each instance, we concluded that our results, and interpretations of the results, hold up. Because STC usage is a relatively small percentage of all charges by the STC sample, it is unlikely that STC usage can explain STC firms' substantially higher level of total charges in 1992. It appears that firms that used STC (or even firms that filed for plans but did not use them) have very different unobserved characteristics than nonusers (or nonfilers). We cannot determine to what extent, if any, STC usage reduced layoff usage because the firms that used STC in our sample had much higher UI usage on average than their matched counterparts. Alternate research methodologies, such as case studies or experiments, might be better able than the comparison methodology to estimate UI-reduction effects of STC.

Table E-1

COMPENSATED UNEMPLOYMENT HOURS, STC AND NON-STC FIRMS, BY STATE

	California		Florida		Kansas		New York		Washington	
Characteristics	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**
1991										
Normalized UI Hours	4.932	4.381	6.453	5.302*	3.817	3.095	3.946	4.013	9.528	8.342*
Normalized STC Hours	1.388	0.049***	1.497	0.170***	0.757	0.053***	2.968	0.043***	0.730	0.080***
Normalized Total Hours	6.320	4.430***	7.958	5.472***	4.574	3.148**	6.914	4.055***	10.258	8.423***
Percentage of Total Hours that Are UI Hours	79.768	98.552	85.264	98.666	81.901	98.993	58.830	99.296	91.786	98.821
1992										
Normalized UI Hours	4.793	4.668	8.644	5.693***	8.506	6.391*	7.075	5.881***	9.989	9.248
Normalized STC Hours	2.159	0.000***	3.542	0.000***	1.617	0.000***	6.580	0.000***	1.923	0.000***
Normalized Total Hours	6.827	4.669***	11.709	5.693***	9.606	6.391***	13.655	5.881***	11.757	9.248***
Percentage of Total Hours that Are UI Hours	67.806	99.980	69.419	100.000	79.499	100.000	52.473	100.000	81.975	100.000
1993										
Normalized UI Hours	3.759	3.899	4.059	4.099	5.970	5.125	4.612	4.381	8.649	9.066
Normalized STC Hours	1.176	0.339***	0.830	0.123***	0.559	0.060***	2.962	0.057***	1.660	0.167***
Normalized Total Hours	4.793	4.238	4.893	4.164	6.529	5.185	7.573	4.438***	9.784	9.225
Percentage of Total Hours that Are UI Hours	78.715	93.037	82.164	99.173	89.947	99.277	59.480	98.207	84.342	97.421

Table E-1 (continued)

Characteristics	California		Florida		Kansas		New York		Washington	
	STC	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**
All Years (1991, 1992, 1993)										
Normalized UI Hours	4.537	4.800	6.597	5.121***	6.098	4.870*	5.211	4.796	9.511	9.373
Normalized STC Hours	1.628	0.130***	1.956	0.098***	0.978	0.038***	4.170	0.033***	1.438	0.083***
Normalized Total Hours	6.165	4.930***	8.522	5.220***	7.075	4.908***	9.381	4.829***	10.948	9.456***
Percentage of Total Hours that Are UI Hours	73.439	96.080	77.188	98.842	81.631	99.346	54.884	98.858	86.005	98.057
Sample size	**415**	**682**	**191**	**230**	**89**	**106**	**424**	**543**	**307**	**373**

Source: State administrative records.

Note: Samples restricted to firms in business throughout 1991 and 1992. Because sample sizes vary slightly per hours measure, and because of rounding, the sum of normalized UI hours and normalized STC hours in a year may not equal normalized total hours in a year. All hours variables are normalized by an approximation of workforce at full employment in 1991. See text for further details.

*This difference between the STC and non-STC average charge is significantly different from zero at the .10 level, two-tailed test.
**This difference between the STC and non-STC average charge is significantly different from zero at the .05 level, two-tailed test.
***This difference between the STC and non-STC average charge is significantly different from zero at the .01 level, two-tailed test.

Table E-2

COEFFICIENTS FOR REGRESSION OF HOURS ON THE STC INDICATOR VARIABLE

(Coefficients Times 100)

	California	Florida	Kansas	New York	Washington
Regression of 1992 UI Hours					
STC indicator	0.038	2.450***	1.675	1.224***	0.656
STC indicator	0.078	2.401***	1.763*	2.037***	0.802
Lagged UI hours	30.928***	40.880***	104.908***	32.030***	34.158***
Lagged STC hours	-16.054*	-3.296	-50.765	-27.142***	-57.332**
Regression of 1992 Total Hours (UI and STC)					
STC indicator	2.180***	5.455***	2.829***	7.682***	2.554***
STC indicator	1.851***	5.350***	2.722***	6.553***	2.334***
Lagged UI hours	30.310***	36.201***	101.403***	21.275***	32.611***
Lagged STC hours	17.894*	7.118	-21.618	39.471***	-2.541
Sample size	**1,091**	**416**	**194**	**966**	**676**

Source: State administrative records.

Note: For a detailed explanation to interpret the coefficients, see Chapter VI. Controls for firm size and its square, one-digit industry indicator variables, and tax rate categories are included in all regressions.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

Table E-3

COEFFICIENTS FOR REGRESSION OF CHARGES ON THE STC PLAN INDICATOR VARIABLE

(Coefficients Times 100)

	California	Florida	Kansas	New York	Washington
Regression of 1992 UI Charges					
STC dummy	-0.225***	0.411**	2.477**	0.138	0.276
STC dummy	-0.203	0.387**	0.546*	0.322*	-0.110
Lagged UI charges	29.605***	17.212***	33.821***	38.582***	43.865***
Lagged STC charges	6.073	28.624	-36.806*	-30.691***	-35.615*
Regression of 1992 Total Charges (UI and STC)					
STC dummy	0.168*	1.073***	1.149***	0.888***	0.610**
STC dummy	0.121	0.997***	1.111***	0.829***	0.568**
Lagged UI charges	32.169***	20.512***	31.840***	26.297***	41.757***
Lagged STC charges	43.858***	64.808***	3.454	40.439***	22.125
Sample size	**1,152**	**416**	**194**	**1,000**	**692**

Source: State administrative records.

Note: For a detailed explanation to interpret the coefficients, see Chapter VI. Controls for firm size and its square, one-digit industry indicator variables, and tax rate categories are included in all regressions.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

Table E-4

COEFFICIENTS FOR REGRESSION OF HOURS ON THE STC PLAN INDICATOR VARIABLE

(Coefficients Times 100)

	California	Florida	Kansas	New York	Washington
Regression of 1992 UI Hours					
STC indicator	-0.312	1.639**	2.277**	1.435***	0.162
STC indicator	-0.119	1.651***	2.119**	2.145***	0.529
Lagged UI hours	30.947***	41.254***	103.986***	32.582***	34.447***
Lagged STC hours	-14.735*	2.229	-51.743	-25.552***	-54.989**
Regression of 1992 Total Hours (UI and STC)					
STC indicator	1.149***	4.045***	3.308***	6.924***	1.683***
STC indicator	0.964***	3.980***	2.977***	5.670***	1.634***
Lagged UI hours	30.989***	37.002***	100.220***	23.370***	33.438***
Lagged STC hours	26.350***	18.333	-19.152	53.741***	3.303
Sample size	**1,091**	**416**	**194**	**966**	**676**

Source: State administrative records.

Note: For a detailed explanation to interpret the coefficients, see Chapter VI. Controls for firm size and its square, one-digit industry indicator variables, and tax rate categories are included in all regressions.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

Table E-5

COEFFICIENTS FOR REGRESSION OF CHARGES ON THE STC INDICATOR VARIABLE

(Sample of Firms that Did Not Change Treatment Status)

	California	Florida	Kansas	New York	Washington
Regression of 1992 UI Charges					
STC indicator	-0.110	0.544***	0.393	0.049	-0.410
STC indicator	-0.073	0.574***	0.487*	0.233	-0.306
Lagged UI charges	4.841	22.925***	34.721***	45.905***	29.335***
Lagged STC charges	-10.825	-13.872	-21.680	-17.813	-24.506
Regression of 1992 Total Charges (UI and STC)					
STC indicator	0.597***	1.320***	1.323***	0.964***	0.782**
STC indicator	0.592***	1.292***	1.280***	0.896***	0.647**
Lagged UI charges	6.284	27.341***	31.972**	43.001***	26.510***
Lagged STC charges	3.822	21.067***	13.160	40.328*	27.452
Sample size	**502**	**336**	**132**	**814**	**444**

Source: State administrative records.

Note: For a detailed explanation to interpret the coefficients, see Chapter VI. Controls for firm size and its square, one-digit industry indicator variables, and tax rate categories are included in all regressions.

STC firms included in the sample are firms that had STC plans in 1992, had STC charges in 1992, and had matched comparison firms that did not have STC charges in 1992. Comparison firms included in the sample are firms that had neither STC plans nor STC charges in 1992 and had matched STC firms that had STC charges in 1992. If an STC firm or its matched comparison firm were excluded from the sample because of insufficient data or a change in treatment status because of the definition change, both firms were excluded from the sample.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

Table E-6

COEFFICIENTS FOR REGRESSION OF HOURS ON THE STC INDICATOR VARIABLE

(Sample of Firms that Did Not Change Treatment Status)

	California	Florida	Kansas	New York	Washington
Regression of 1992 UI Hours					
STC indicator	-0.245	2.102***	1.582	1.241***	-0.277
STC indicator	-0.074	2.387***	1.522	1.941***	0.062
Lagged UI hours	22.290***	42.902***	115.131***	43.460***	31.684***
Lagged STC hours	-10.082	-48.748***	-16.143	-22.030***	-47.735*
Regression of 1992 Total Hours (UI and STC)					
STC indicator	2.396***	5.328***	3.551***	8.126***	1.987***
STC indicator	2.576***	5.558***	3.290***	6.883***	1.865**
Lagged UI hours	24.440***	42.149***	109.593***	27.848***	28.835***
Lagged STC hours	-10.491	-40.986*	9.943	42.411***	6.554
Sample size	**532**	**330**	**130**	**764**	**436**

Source: State administrative records.

Note: For a detailed explanation to interpret the coefficients, see Chapter VI. Controls for firm size and its square, one-digit industry indicator variables, and tax rate categories are included in all regressions.

STC firms included in the sample are firms that had STC plans in 1992, had STC charges in 1992, and had matched comparison firms that did not have STC charges in 1992. Comparison firms included in the sample are firms that had neither STC plans nor STC charges in 1992 and had matched STC firms that charges in 1992. If an STC firm or its matched comparison firm were excluded from the sample because of insufficient data or a change in treatment status because of the definition change, both firms were excluded from the sample.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

Table E-7

COEFFICIENTS FOR REGRESSION OF CHARGES ON THE STC INDICATOR VARIABLE, EXCLUDING FIRMS WITH NO CHARGES

(Coefficients Times 100)

	California	Florida	Kansas	New York	Washington
Regression of 1992 UI Charges					
STC indicator	-0.312***	0.301	0.228	-0.291*	-0.928***
STC indicator	-0.301***	0.279	0.363	-0.101	-0.670**
Lagged UI charges	30.900***	36.508***	30.510***	36.089***	41.523***
Lagged STC charges	4.650	26.917	-40.702**	-25.326	-40.084**
Regression of 1992 Total Charges (UI and STC)					
STC indicator	0.277***	1.081***	1.022***	0.583***	0.168
STC indicator	0.208**	1.008***	1.054***	0.524***	0.198
Lagged UI charges	32.702***	46.638***	28.946***	33.641***	33.220***
Lagged STC charges	34.598***	61.746***	-6.664	35.446	20.199
Sample size	**993**	**375**	**183**	**907**	**631**

Source: State administrative records.

Note: We excluded from the samples any comparison firms that did not have UI charges in 1992. For a detailed explanation to interpret the coefficients, see Chapter VI. Controls for firm size and its square, one-digit industry indicator variables, and tax rate are included in all regressions.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

Table E-8

COEFFICIENTS FOR REGRESSION OF HOURS ON THE STC INDICATOR VARIABLE, EXCLUDING FIRMS WITH NO HOURS

(Coefficients Times 100)

	California	Florida	Kansas	New York	Washington
Regression of 1992 UI Hours					
STC indicator	-1.142***	1.298*	0.975	0.351	-1.069*
STC indicator	-0.880***	1.353**	1.335	1.213**	-0.607
Lagged UI hours	29.837***	45.160***	100.891***	29.185***	30.650***
Lagged STC hours	-15.832***	-6.661	-54.835	-26.300***	-60.728**
Regression of 1992 Total Hours (UI and STC)					
STC indicator	1.057***	4.243***	2.085**	6.724***	0.795
STC indicator	0.840**	4.238***	2.247**	5.566***	0.811
Lagged UI hours	28.820***	39.683***	97.201***	17.538***	25.544***
Lagged STC hours	19.769***	3.685	-25.644	40.816***	1.576
Sample size	**945**	**378**	**182**	**877**	**618**

Source: State administrative records.

Note: We excluded from the samples any comparison firms that did not have UI hours in 1992. For a detailed explanation to interpret the coefficients, see Chapter VI. Controls for firm size and its square, one-digit industry indicator variables, and tax rate categories are included in all regressions.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

Table E-9

COEFFICIENTS FOR REGRESSION OF THE DIFFERENCE IN CHARGES ON THE DIFFERENCES IN MATCH CHARACTERISTICS

(Coefficients Times 100)

	California	Florida	Kansas	New York	Washington
Regression of the Difference in 1992 UI Charges					
Constant	-0.107	0.587***	0.366	-0.023	-0.679**
Constant	-0.083	0.611***	0.616*	0.169	-0.303
Lagged difference in UI charges	8.467	19.623**	42.427***	45.401***	12.663**
Lagged difference in STC charges	-4.132	-6.715	-31.844	-24.111	-45.298**
Regression of the Difference in 1992 Total Charges (UI and STC)					
Constant	0.619***	1.415***	1.487***	0.902***	0.557*
Constant	0.595***	1.373***	1.560***	0.844***	0.675**
Lagged difference in UI charges	6.336	24.886***	42.257**	41.861***	10.749*
Lagged difference in STC charges	10.648	31.987	3.088	32.965	6.601
Sample size (Pairs of firms)	**251**	**168**	**66**	**407**	**222**

Source: State administrative records.

Note: For a detailed explanation to interpret the coefficients, see the text. Controls for firm size and its square, one-digit industry indicator variables, and tax rate categories are included in all regressions.

STC firms included in the sample are firms that had STC plans in 1992, had STC charges in 1992, and had matched comparison firms that did not have STC charges in 1992. Comparison firms included in the sample are firms that had neither STC plans nor STC charges in 1992 and had matched STC firms that had STC charges in 1992. If an STC firm or its matched comparison firm were excluded from the sample because of insufficient data or a change in treatment status because of the definition change, both firms were excluded from the sample.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

Table E-10

COEFFICIENTS FOR REGRESSION OF THE DIFFERENCE IN HOURS ON THE DIFFERENCES IN MATCH CHARACTERISTICS

(Coefficients Times 100)

	California	Florida	Kansas	New York	Washington
Regression of the Difference in 1992 UI Hours					
Constant	-0.261	2.306***	1.047	-1.024**	-0.538
Constant	-0.277	2.830***	2.105*	1.981***	0.047
Lagged difference in UI Hours	22.255***	31.180***	123.713**	48.356***	11.174
Lagged difference in STC hours	3.132	57.131**	-23.579	-29.680***	-69.066**
Regression of the Difference in 1992 Total Hours (UI and STC)					
Constant	2.500***	5.819***	3.340**	8.036***	1.758**
Constant	2.476***	6.258***	4.169***	7.047***	1.849**
Lagged difference in UI hours	22.476***	32.000***	122.201***	33.390***	8.992
Lagged difference in STC hours	0.640	-47.424	4.170	34.577	-13.217
Sample size (Pairs of firms)	**266**	**165**	**65**	**382**	**218**

Source: State administrative records.

Note: For a detailed explanation to interpret the coefficients, see the text. Controls for firm size and its square, one-digit industry indicator variables, and tax rate categories are included in all regressions.

STC firms included in the sample are firms that had STC plans in 1992, had STC hours in 1992, and had matched comparison firms that did not have STC hours in 1992. Comparison firms included in the sample are firms that had neither STC plans nor STC hours in 1992 and had matched STC firms that had STC hours in 1992. If an STC firm or its matched comparison firm were excluded from the sample because of insufficient data or a change in treatment status because of the definition change, both firms were excluded from the sample.

*Significantly different from zero at the .10 level, two-tailed test.
**Significantly different from zero at the .05 level, two-tailed test.
***Significantly different from zero at the .01 level, two-tailed test.

Table F-2 presents demographic characteristics of new UI claimants in 1992 for STC and non-STC firms in each state. Similar to the results in Chapter VI, there was no statistically significant difference between the age distributions of laid-off employees at STC firms and those at non-STC firms. We therefore discuss some of the patterns found in the data, although we caution that these differences are not large enough to be distinguished from chance variability in the data.

The age and gender differences between individuals laid off at STC firms and those laid off from non-STC firms were quite small (except for the gender difference in Kansas). Individuals age 25 or younger were a larger percentage of individuals who were laid off than of individuals who were on STC in three of the five states. In every state, the oldest group of individuals—those over age 60—was a slightly larger percentage of laid-off individuals at STC firms than at non-STC firms. In Kansas, women were 30 percent of those laid off at STC firms and only 20 percent of those laid off at non-STC firms. It is unclear what to conclude from this difference, given that it appears that the percentage of women who were laid off at non-STC firms was unusually low (rather than that the percentage of women who were laid off at STC firms was unusually high). This pattern may have resulted because of Type I statistical error; that is, this unusual result may have resulted because of "random noise" rather than because of an underlying, systematic phenomenon.

Next, we compared the racial/ethnic characteristics of individuals on layoff at STC firms to those at non-STC firms to examine if STC firms used layoffs differently than did their non-STC counterparts. Table F-3 shows the racial/ethnic distributions of new UI claimants at STC and non-STC firms. These comparisons contain a problem similar to the one in Chapter VI (and addressed in Section A): not every state collected racial/ethnical characteristics of claimants, so some states reported a large percentage of claimants of "unknown" race/ethnicity. Only Washington's distributions were statistically significantly different from one another, but it is clear that this difference is attributable to the high percentage of new claimants of unknown race/ethnicity at STC firms. In two of the four other states, individuals laid off at STC firms were more likely to be Caucasian than were individuals laid off at UI firms; the remaining two states had the opposite patterns. In Kansas, African Americans were a greater percentage of individuals laid off at non-STC firms than at STC firms (7.6 percent compared to 2.9 percent), but that STC firms had

a much higher degree of UI claimants of "unknown" race suggests we need to adjust the data for the high degree of missing.

Similar to the analysis in Section A, the data were adjusted to correct for the high percentage of claimants with "unknown" race/ethnicity. Table F-4 shows results from this adjustment. The statistically significant difference between UI claimants at STC and non-STC firms in Washington disappeared, and no other state had statistically different claimant racial/ethnic distributions. Unsurprisingly, the difference between the percentage of African Americans who were laid off at non-STC firms and the percentage laid off from STC firms in Kansas narrows.

We conclude that the characteristics of claimants who were laid off from STC firms and from non-STC firms were not detectably different from one another. This finding is unsurprising since (1) the bulk of benefit recipients from STC firms are UI recipients; and (2) demographic groups typically are concentrated in particular occupations, and these occupations may be differentially affected by the business cycle.

Table F-1

ADJUSTED RACIAL/ETHNIC COMPOSITION OF NEW STC AND UI CLAIMANTS AT STC FIRMS BY STATE, FOR 1992

Percentage in 1992 Who Were	California		Florida		Kansas		New York		Washington	
	New STC Claimants	New UI Claimants	New STC Claimants	New UI Claimants	New STC Claimants	New UI Claimants	New STC Claimants	New UI Claimants	New STC Claimants	New UI Claimants
African American	1.2	3.5	8.1	10.8	0.2	4.8	8.1	9.0	0.2	1.4
Asian or Pacific Islander	14.7	12.7	1.9	2.7	0	0.5	0.8	0.3	2.2	1.9
Caucasian	57.2	54.6	77.8	75.0	90.8	91.7	84.2	82.8	94.8	92.8
Hispanic	26.6	29.0	12.0	11.3	9.1	1.8	6.9	7.9	2.5	3.0
Native American	0.2	0.3	0.2	0.2	0	1.2	---	---	0.3	0.9
Sample size	**268**	**309**	**175**	**157**	**11**	**19**	**165**	**147**	**105**	**154**

Source: State administrative records.

Note: Pearson's Chi-Squared ($?^2$) testing was used to compare groups. Asterisks in the fields for new STC claimants for STC firms indicate that the distribution of characteristics for new STC claimants in STC firms is significantly different from the distribution of characteristics of new UI claimants in STC firms.

Firms that reported having more than 10 percent of their new claimants as of "unknown race/ethnicity" were excluded from the analysis. The race/ethnic compositions of firms that were coded as having between 0 and 10 percent of their new claimants as of "unknown race/ethnicity" were adjusted. The adjustment was to divide the reported percentages for known race/ethnic categories by (100 percent minus the reported percentage of new claimants whose race/ethnicity was unknown).

* Significantly different from zero at the .10 level, two-tailed test.
** Significantly different from zero at the .05 level, two-tailed test.
*** Significantly different from zero at the .01 level, two-tailed test.

Table F-2

AGE AND GENDER COMPOSITION OF UI CLAIMANTS AT STC AND NON-STC FIRMS BY STATE, FOR 1992

	California		Florida		Kansas		New York		Washington	
	Non-STC	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**
Percentage of New UI Claimants in 1992 Who Were:										
Under Age 16[a]	0.3	0.1	0.2	0	.	.	.	.	0.4	0
Age 16-25[a]	19.8	14.8	7.2	7.9	16.3	16.4	24.6	23.2	16.5	15.1
Age 26-40	49.6	52.5	50.6	50.1	62.7	52.3	43.2	42.2	52.7	53.9
Age 41-60	27.7	29.4	35.9	35.3	19.2	28.6	26.8	26.5	26.9	27.4
Over Age 60	2.6	3.2	6.1	6.6	1.8	2.7	5.4	8.0	3.5	3.6
Percentage of New UI Claimants in 1992 Who Are Female	34.8	34.4	33.0	31.3	19.7**	30.0**	33.4	32.4	25.5	27.3
Sample size	**499**	**348**	**183**	**160**	**91**	**86**	**421**	**366**	**277**	**284**

Source: State administrative records.

Note: Pearson's Chi-Squared ($?^2$) testing was used to compare groups. Asterisks indicate that the distribution of characteristics for new UI claimants in STC firms is significantly different from the distribution of characteristics of new UI claimants in non-STC firms.

[a]The data from Kansas and New York do not have a category for percentage of new UI or STC recipients under age 16. Instead, these data have a category for percentage of new UI claimants under age 25.

* Significantly different from zero at the .10 level, two-tailed test.
** Significantly different from zero at the .05 level, two-tailed test.
*** Significantly different from zero at the .01 level, two-tailed test.

Table F-3

RACIAL/ETHNIC COMPOSITION OF NEW UI CLAIMANTS AT STC AND NON-STC FIRMS BY STATE, FOR 1992

	California		Florida		Kansas		New York		Washington	
Percentage of New UI Claimants in 1992 Whose Race/Ethnicity Was	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**	**Non-STC**	**STC**
African American	3.3	3.7	10.2	11.1	7.6	2.9	10.1	8.1	1.7***	1.5
Asian or Pacific Islander	8.1	12.1	2.2	2.7	2.9	0.9	1.2	0.6	3.0***	2.1
Caucasian	55.0	52.7	71.7	74.2	84.7	83.6	63.4	67.4	87.1***	80.7
Hispanic	29.1	28.0	15.6	11.3	2.6	3.2	8.9	7.8	5.7***	2.6
Native American	0.9	0.3	0.3	0.2	0.7	0.5	0	0	1.9***	0.8
Unknown	3.6	3.1	0	0.6	1.6	8.9	16.4	16.1	0.9***	12.3
Sample size	**499**	**348**	**183**	**160**	**91**	**86**	**421**	**366**	**277**	**284**

Source: State administrative records.

Note: Pearson's Chi-Squared ($?^2$) testing was used to compare groups. Asterisks indicate that the distribution of characteristics for new UI claimants in non-STC firms is significantly different from the distribution of characteristics of new UI claimants in STC firms.

* Significantly different from zero at the .10 level, two-tailed test.
** Significantly different from zero at the .05 level, two-tailed test.
*** Significantly different from zero at the .01 level, two-tailed test.

Table F-4

ADJUSTED RACIAL/ETHNIC COMPOSITION OF NEW UI CLAIMANTS AT STC AND NON-STC FIRMS BY STATE, FOR 1992

Percentage of New UI Claimants in 1992 Whose Race/Ethnicity Was	California		Florida		Kansas		New York		Washington	
	Non-STC	STC	Non-STC	STC	Non-STC	STC	Non-STC	STC	Non-STC	STC
African American	3.3	3.5	10.2	10.8	7.3	4.8	11.3	9.0	1.6	1.4
Asian or Pacific Islander	8.7	12.7	2.2	2.7	3.2	0.5	1.1	0.3	3.0	1.9
Caucasian	57.5	54.6	71.8	75.0	86.3	91.7	78.1	82.8	87.9	92.8
Hispanic	29.5	29.0	15.6	11.3	2.5	1.8	9.5	7.9	5.7	3.0
Native American	0.9	0.3	0.3	0.2	0.7	1.2	---	---	1.9	0.9
Sample size	**454**	**309**	**183**	**157**	**85**	**19**	**245**	**147**	**270**	**154**

Source: State administrative records.

Note: Pearson's Chi-Squared ($?^2$) testing was used to compare groups. Asterisks indicate that the distribution of characteristics for new UI claimants in non-STC firms is significantly different from the distribution of characteristics of new UI claimants in STC firms.

Firms that reported having more than 10 percent of their new claimants as of "unknown race/ethnicity" were excluded from the analysis. The race/ethnic compositions of firms that were coded as having between 0 and 10 percent of their new claimants as of "unknown race/ethnicity" were adjusted. The adjustment was to divide the reported percentages for known race/ethnic categories by (100 percent minus the reported percentage of new claimants whose race/ethnicity was unknown).

* Significantly different from zero at the .10 level, two-tailed test.
** Significantly different from zero at the .05 level, two-tailed test.
*** Significantly different from zero at the .01 level, two-tailed test.

Appendix G

EXPERIENCE-RATING SIMULATIONS

In Chapter VII, we showed that both STC firms and comparison firms had negative short-run financial impacts on Unemployment Trust Funds during 1992, but that the longer term impacts were significantly moderated by increases in the UI tax rates that firms pay. One short-coming of that analysis is that it may have confounded two different reasons for the observed tax rate changes: (1) tax increases that arise from the experience-rating of the charges incurred by individual firms, and (2) shifts in the entire tax rate schedule resulting from state-wide levels of benefit payment activity. In this appendix, we seek to disentangle these two effects. Our reason for doing so is based on the presumption that only tax rate changes of the first type (those arising from experience-rating) should enter into calculations that address the long-term financial impact of STC. Legislated changes in tax schedules occur more or less independently of the STC program and should not enter into the evaluation.

A. MODELING EXPERIENCE-RATING

To assess the extent to which UI and STC charges affected firms' tax rates, we attempted to model the experience-rating process. Because this was not a primary goal of this project, however, our modeling efforts were quite modest, consisting mostly of regressing the 1992-1993 change in firms' UI tax rates on the charges that determine this change. Because all of the states in our sample use a fiscal year of July 1-June 30 as the basis for subsequent calendar year tax rate determinations, a first step was to reclassify our UI and STC charge data on a fiscal year basis. Again, charges were normalized by firm size (that is by the 1991 full-time-equivalent payroll) to control for the extreme heterogeneity in our sample. Results for the simplest of these experience-rating regressions are reported in the top half of Table G-1. In general, these regressions show that both UI and STC charges were effectively recouped in all of the study states. The coefficients of the charge variables were positive and significantly different from zero in all cases except for UI charges in Florida (where the coefficient was not significantly different from zero) and New York (where the coefficient had a "perverse" negative sign). In all cases, coefficients for STC charges exceeded those for UI charges, implying that firms with such charges are at least as effectively experience-rated as are those

participating in the regular UI program. Although we had expected that charges would have a larger impact on tax rates in the two benefit ratio states in our sample (Florida and Washington) than in our reserve ratio states, that did not, in fact, seem to be the case. Indeed, with the exception of Washington, the coefficients for STC charges were remarkably similar across the states.[1]

One potential difficulty with the estimates of equation 1 is that changes in the tax rate are constrained by prevailing state maxima. Hence, the relationship between charges and tax rate increases may be nonlinear. We examined a number of potential specifications that take this nonlinearity into account. Results for the most straight-forward of these are reported as equation 2 in Table G-1. For this equation we simply entered a variable (GAP) representing the difference between a state's maximum tax rate and the rate the firm actually paid in 1992.[2] The square of this variable was also included in the equation in an effort to further capture nonlinearility. In general, it was expected that the sign of the coefficient of the GAP variable would be positive (firms with tax rates closer to the maximum would, *ceteris paribus*, be likely to experience smaller tax rate increases), but that GAP^2 could have any sign, depending on the specifics of the tax formula.[3]

Results of adding the GAP variables to the experience-rating regression were generally quite successful. The coefficient of the GAP variable itself was significantly positive in all states except Kansas. More important, the coefficients of the UI and STC charge variables were increased by this addition, in some cases by a substantial magnitude. In qualitative terms, however, the results for equation 2 closely resembled those for equation 1: coefficients for STC charges always exceeded those for UI charges with results being broadly similar across all states except Washington. Again, there was no evidence in the

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[1]Interpretation of the numerical size of these coefficients requires some care. A coefficient of, say, 25 means that each one percent increase in normalized charges increases the UI tax rate by 0.25 percent. Since only approximately 40 percent of wages is subject to UI taxes, this would constitute an "effective" tax increase of 0.10 (.25 x .40) percent of payroll. Hence it would take 10 years to "pay off" the one percent increase in charges from increased tax collections in the future, *ceteris paribus.*

[2]Mean values for GAP ranged between 2.34 percent (Washington) and 3.34 percent (Kansas). Mean values for this variable were slightly smaller for STC firms than for comparison firms.

[3]We also tried several methods in interacting the GAP variables with the STC and UI charges (as would seem to be required given the nature of the interaction between these variables), but the resulting estimates proved to be quite unstable and unsuitable for our later simulation procedures.

regressions of greater responsiveness of tax rates to charges in the benefit-ratio states (Florida and Washington).

Although the experience-rating regressions in Table G-1 were generally successful in indicating that charges do indeed raise tax rates, these clearly did not exhaust the potential ways in which interactions between charges and tax rates might be modeled. We believed, however, that the results were sufficiently accurate to use in simulations.

B. TRUST FUND SIMULATIONS

In order to estimate the extent to which experience-rating induced tax increases might aid in the recoupment of UI and STC charges, we used equation 2 from Table G-1 to predict tax rate changes on a firm-by-firm basis. Our first computations were done for STC benefits alone. Because we wished to analyze charges and tax liabilities on a basis that was normalized by 1991 payrolls, the estimated tax changes as a results of 1992 STC charges were adjusted by each firm's taxable wage base to arrive at an "effective" tax increase; that is, the increase in taxes now stated as a percent of total 1991 payroll. Finally, actual STC charges were divided by these effective tax rate changes to arrive at an estimated recoupment period.[4] Summaries of this variable are reported in the top half of Table G-2. Recoupment periods averaged in the 7- to 14-year range for all states except Washington. These periods are substantially longer than the periods reported in the body of Chapter VII (see Table VII-5), thereby suggesting that a significant portion of the large tax rate increases used to estimate the prior recoupment periods resulted from shifts in tax rate schedules themselves, rather than from experience-rating *per se*. Still, because the inaccuracies inherent in our simple approximations to states' experience-rating formulas are likely to understate the true extent of tax rate increases, the results support the general conclusion that STC benefits are paid off in relatively short order through the operations of these formulas. To the extent that STC usage deters regular UI usage, true recoupment periods might be even lower.

[4]Notice that this procedure assumes that the coefficients in Table G-1 (which are based on fiscal year charges) can be applied to 1992 calendar year charges as well. Also, because STC charges appear in both the numerator and denominator of the recoupment period estimates, this calculation can be greatly simplified in practice.

The lower half of Table G-2 applies a similar methodology for computing recoupment periods for STC firms' negative balances in 1992. For these simulations, tax rate changes arising from both UI and STC charges in 1992 were predicted using equation 2 in Table G-1. These were then used to calculate how long it would take for STC firms to pay off the negative balances they incurred in 1992. Results for these calculations mirrored those for STC charges alone—average recoupment periods clustered around 10 years with much shorter periods being estimated for Kansas and longer periods for Washington. In most cases, net balance recoupment periods were estimated to be somewhat shorter than those for STC alone, thereby illustrating the importance of the experience-rating of regular UI benefits themselves. The findings provide further confirmation that the negative Trust Fund impacts arising from STC firms during recessionary periods are relatively short-lived.[5]

[5]Additional simulations (not reported) suggest only minor differences between matched pairs of STC and comparison firms in the recoupment periods for 1992 negative balances.

Table G-1

EXPERIENCE RATING REGRESSIONS DEPENDENT VARIABLE: 1992-1993 TAX RATE CHANGE

	California (1.09)[a]	Florida (0.89)	Kansas (0.14)	New York (1.58)	Washington (0.35)
Equation 1					
FY92 STC Charges	22.76***	19.07*	28.94***	26.73***	6.21**
FY92 UI Charges	15.98***	5.35	19.23***	-7.69**	4.27***
Constant	0.90***	-0.22**	-0.22**	1.66***	0.15***
R^2	0.08	0.02	0.16	0.03	0.05
Std. Error	0.83	1.71	0.89	1.33	0.85
F	50.3***	3.0*	17.9***	15.8***	15.4***
Equation 2					
FY92 STC Charges	28.17***	27.66***	30.51***	29.75***	9.64***
FY92 UI Charges	20.54***	18.07***	24.87***	2.20	6.97***
GAP	0.87***	0.49***	-0.35	0.78***	0.32***
GAP^2	-0.13***	-0.01	0.09**	-0.07***	0.02
Constant	-0.37***	-0.66***	-0.22	-0.07	-0.85***
R^2	0.25	0.19	0.32	0.14	0.39
Std. Error	0.75	1.55	0.81	1.26	0.68
F	100.0***	24.8***	22.0***	38.5***	104.3***
Sample size	**1,152**	**422**	**196**	**992**	**648**

Source: State administrative records.

Note:
[a]Mean 1992-1993 Tax Rate Change.

*Significantly different from zero at the .10 level of significance.
**Significantly different from zero at the .05 level of significance.
***Significantly different from zero at the .01 level of significance..

G-5

Table G-2

ESTIMATED RECOUPMENT PERIODS FROM EXPERIENCE-RATING (STC FIRMS ONLY)

	California	Florida	Kansas	New York	Washington
1992 STC Charges					
Mean	13.50	12.01	7.88	11.98	19.11
Median	12.87	11.49	7.42	11.27	18.63
90th Pct[a]	26.30	17.16	11.22	17.00	23.64
Sample Size	**418**	**188**	**89**	**432**	**302**
1992 Net Balance					
Mean	9.36	9.60	4.44	13.60	13.90
Median	8.43	9.20	3.76	12.73	14.16
90th Pct[a]	17.49	16.08	8.49	24.56	22.93
Sample size	**277**	**138**	**59**	**211**	**247**

Source: State administrative records.

Note:

[a]Figures refer to the number of years by which 90 percent of all firms would have recouped STC charges of 1992 net balances.