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Trend and Cycle Analysis of Unemployment Insurance and the Employment Service

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Trend and Cycle Analysis of Unemployment Insurance and the Employment Service

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Wayne Vroman
Stephen A. Woodbury

December 2004

This report was prepared under terms of a contract between the Urban Institute and the Office of Workforce Security of the U.S. Department of Labor. The W.E. Upjohn Institute for Employment Research was a sub-contractor to the project. The project director was Dr. Wayne Vroman of The Urban Institute who had primary responsibility for coordinating the data assembly and for drafting Chapters 1, 2 and 4. Dr. Stephen Woodbury of Michigan State University and the W.E. Upjohn Institute had primary responsibility for drafting Chapters 3 and 5. Support from the Office of Workforce Security of the U.S. Department of Labor is gratefully acknowledged. In particular, we thank Aquila Branch, our COTR, Dave Balducchi, Wayne Gordon and Steve Wandner for help and encouragement throughout the project and for useful comments on an earlier draft of this report. The conclusions of the report are those of the authors and do not necessarily represent the views of the U.S. Department of Labor, the Urban Institute, Michigan State University, or the W.E. Upjohn Institute.

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Executive Summary

This report traces historical developments in two major DOL programs: State Unemployment Insurance (UI) and the federal-state Employment Service (ES). Developments in the UI program are traced from the late 1940s while ES program activities are traced from the late 1960s. For both programs, the report emphasizes long term trends as well as changes that have occurred over the course of the business cycle. The analysis uses annual data and is conducted at three levels of geographic detail: national, regional and state.

A major objective of the project was to create data files useful for other researchers in studying the UI and ES programs. For both programs, data were assembled to be delivered to DOL and for transmission to archival repositories such as the Employment Data Center at the W.E. Upjohn Institute for Employment Research. Key deliverables for the project were spreadsheets with state, regional and national detail that span extended time periods since World War II.

The report has five main substantive chapters. Chapter 1 provides an overview of recessions in the U.S. since World War II, noting their duration and severity as reflected by changes in the national unemployment rate. It summarizes aggregate developments in UI benefit payments back to 1948. It documents the reduction of the scope of the Federal-State Extended Benefits (EB) program following the downturn of 1980-1983 and the growth in the importance of Temporary Federal Benefits (TFB) programs in subsequent recessions.

Chapter 1 also reviews developments in the labor market related to unemployment occurrences and the average duration of unemployment. A pervasive upward trend in average unemployment duration is documented. Regressions establish that the upward trend in average duration accelerated starting in the early 1980s. Finally, the chapter traces developments in state UI statutes that affect duration in benefit status for workers in the regular UI program. In sum, Chapter 1 provides an overview of important macro and labor market developments that have been impinging upon the UI and ES programs since World War II.

Chapter 2 traces the evolution of UI benefit payments. Because of the importance of unemployment in determining benefit payments, the chapter reviews developments in unemployment in the (former) ten DOL regions since 1967. It then documents the connection between unemployment and UI reciprocity rates and expenditures for UI benefits. The analysis of expenditures covers the regular UI program as well as programs for the long term unemployed who exhaust regular UI benefits.

The federal-state extended benefits (EB) program was established in 1970 to provide automatic extensions of benefits when unemployment rates in the states exceed specified thresholds. Chapter 3 undertakes a simulation analysis of the EB program to examine its performance under alternative trigger mechanisms. It simulates the share of time EB would have been activated during sub-periods of the 1980s and 1990s using

alternative trigger mechanisms. The chapter also examines related questions of targeting benefits on the long term unemployed and the cost of EB payments.

Chapters 4 and 5 focus on the ES program. Chapter 4 provides a historical overview of key ES activities from 1967 to 2001. It conducts an analysis of ES applications and entered employment rates nationwide and in the ten DOL regions. Wide and persistent diversity across regions is documented. The chapter also utilizes regressions to demonstrate that applications and entered employment rates are sensitive to the business cycle (as proxied by the unemployment rate) in all regions.

Chapter 5 conducts a pooled state-year regression analysis of four ES activities: applications, counseling, referral rates and placement rates. A model is specified and fitted using four methods of data measurement: loglinear first differences, loglinear fixed effects, first differences and fixed effects. Strong and positive effects of unemployment on applications are found throughout the analysis. Unemployment also has important negative effects on placement rates. Unionization is found to have generally weak effects on all four ES activities. Some inconsistencies are found in parameter estimates based on different methods of data measurement. The inconsistent findings are suggestive specification errors, possibly omitted variables. Overall, the results pertaining to the effects of unemployment found in Chapter 5 were similar to results found in Chapter 4.

Chapter 6 reviews key research activities of the project and identifies four priority areas for future research. The four areas are the following. 1) Further research into the changing patterns of unemployment occurrences and unemployment duration should be undertaken. 2) More analysis of EB triggers is warranted. A good starting point for this would be to extend the simulation analysis summarized in Chapter 3. 3) There should be an analysis the linkages between the resources devoted to ES administration in individual states and the labor market outcomes linked to ES activities. This analysis would require information not only on the Wagner-Peyser ES administrative allocations to the states but also the amount of state supplementation of federal ES administrative monies. 4) Finally, while the report documented changes in entered employment rates and changes in the mix of placement rates versus obtained employment rates in the ES program, no attempt was made to tie these changes to the evolution of ES administrative structures and/or the contrasts in the one-stop operations across the states. Examining this linkage will be of continuing interest as ES programs strive to provide effective reemployment support for workers who experience new onsets of unemployment.

Introduction

The programs supported by the U.S. Department of Labor (DOL) have as their ultimate objective the promotion of meaningful and useful employment for American workers. This report traces historical developments in two major DOL programs: State Unemployment Insurance (UI) and the federal-state Employment Service (ES). Both programs have operated successfully as federal-state partnerships for more than 60 years. Developments in the UI program are traced from the late 1940s while ES program activities are traced from the late 1960s. For both programs, the report emphasizes long term trends as well as changes that have occurred over the course of the business cycle. The text of the report's five main chapters provides details of past UI support for the unemployed and ES activities designed to enhance the labor market success of job seekers. The analysis uses annual data and is conducted at three levels of geographic detail: national, regional and state.

A major objective of the project was to create data files useful for other researchers in studying the UI and ES programs. For both programs, data were assembled to be delivered to DOL and for transmission to archival repositories. Key deliverables for the project were spreadsheets with state, regional and national detail that span extended time periods since World War II. Important details of the data assembly activities for the UI program are given in Appendix A and for the ES program in Appendix B. Pooled state-year data for both UI and ES activities have been assembled that extend back to 1967.

The report has five main substantive chapters. Chapter 1 provides an overview of recessions in the U.S. since World War II, noting their duration and severity as reflected by changes in the national unemployment rate. It summarizes aggregate developments in UI benefit payments back to 1948. It also reviews developments in the labor market related to unemployment occurrences and the average duration of unemployment. A pervasive upward trend in average unemployment duration is documented. Regressions establish that the upward trend in average duration accelerated starting in the early 1980s. Finally, the chapter traces developments in state UI statutes that affect duration in benefit

status for workers in the regular UI program. In sum, Chapter 1 provides an overview of important macro and labor market developments that have been impinging upon the UI and ES programs since World War II.

Chapter 2 traces the evolution of UI benefit payments across regions. Because of the importance of unemployment in determining benefit payments, the chapter reviews developments in unemployment in the (former) ten DOL regions since 1967. It then documents the connection between unemployment and UI reciprocity rates and expenditures for UI benefits. The analysis of expenditures covers the regular UI program as well as programs for the long term unemployed who exhaust regular UI benefits.

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Chapters 4 and 5 focus on the ES program. Chapter 4 provides a historical overview of key ES activities from 1967 to 2001. It analyzes ES applications and entered employment rates nationwide and in the ten DOL regions. Wide and persistent diversity across regions is documented. The chapter also utilizes regressions to demonstrate that applications and entered employment rates are sensitive to the business cycle (as proxied by the unemployment rate) in all regions.

Chapter 5 conducts a pooled state-year regression analysis of four ES activities: applications, counseling, referral rates and placement rates. A model is specified and fitted using four methods of data measurement: loglinear first differences, loglinear fixed effects, first differences and fixed effects. Strong and positive effects of unemployment on applications are found throughout the analysis. Unemployment also has important negative effects on placement rates. Unionization is found to have generally weak effects on all four ES activities. Some inconsistencies are found in parameter estimates based on different methods of data measurement. The inconsistent findings are suggestive of

specification errors, possibly omitted variables. Overall, the results pertaining to the effects of unemployment found in Chapter 5 were similar to results found in Chapter 4.

The analysis of the report is presented as illustrative of research that can be undertaken with the data assembled in the course of the project. All UI and ES data from the project are available from the Employment Data Center at the W.E. Upjohn Institute for Employment Research (www.upjohninstitute.org). It is anticipated that follow-up research using these data will take place at the U.S. Department of Labor and by its contractors and other labor market researchers.

Chapter 1. Overview of Recessions, UI Benefits and Unemployment Duration

Cyclical swings in economic activity are a prominent feature of the U.S. economy. In the labor market, recessions are characterized by increases in the unemployment rate that reflect increases in unemployment occurrences and increases in the average duration of unemployment spells.

There have been ten recessions in the United States since World War II. While the individual recessions have differed from one another in important ways, e.g., in their severity, duration and the associated rate of inflation, they all have been characterized by a decrease in real economic activity (Gross Domestic Product or GDP). In mid-2003, the economy has started to recover from the most recent decline in real GDP that occurred during the first three calendar quarters of 2001. However, even though the decline in real output was modest, the overall unemployment rate in mid-2003 stood two full percentage points higher than at the end of 2000.

This project documents the cyclical patterns of participation in Unemployment Insurance (UI) and Federal-State Employment Service (ES) programs with particular attention to recessionary periods. The approach to be followed can be described as quantitative-descriptive. This chapter briefly reviews selected aspects of past recessions, summarizes information on unemployment and UI benefit payments, describes developments in unemployment duration and reviews important aspects of the state UI programs that affect UI benefit duration. Later chapters focus on other aspects of UI and ES activities with attention to changes that take place during recessions.

Any contemporary project focused on the labor market and the place of UI and ES activities must recognize the fluid situation of the state ES programs within the larger system of reemployment support, training activities and other forms of worker support that extend beyond the traditional ES role of promoting job matching. The states are at differing stages in developing their own unique approaches to reemployment using one-stop career centers and other initiatives. The ES programs in the individual states have differing and evolving roles. Compared to this, the role of the UI program in providing

passive income support to the unemployed during the most recent downturn has displayed much more continuity with earlier recessions.

While the changes affecting ES must be acknowledged, these developments have taken place mainly in the years following the enactment of the Workforce Investment Act of 1998. The present project has a strong historical focus and a focus on recessions. In past recessions as in the current recession, the income support role of UI has remained important. Also, the federal policy response to higher unemployment, i.e., enacting a temporary federally-financed program of extended UI benefits, has been similar to that of past recessions. Because of the strong historical element in the current project, the report will not prominently emphasize the changes in ES and one-stop activities. Of course, where these changes are important to the analysis, they will receive proper emphasis.¹

It should also be noted that traditional ideas of the appropriate role of UI payments to cushion the effects of unemployment are also subject to challenge. Because UI payments implicitly endorse wait (or search) unemployment and leave the initiative for securing reemployment mainly with the claimant, some would place greater emphasis on measures to encourage (or even require) more active job search. While this debate is undoubtedly important, it again is less germane in a project that places heavy emphasis on history and earlier recessionary episodes. For purposes of this report, larger payments of UI are viewed positively in easing the hardships caused by unemployment in families and in providing automatic (or built-in) stability to the macro economy.

1.1. Post World War II Recessions

Table 1.1 provides summary details on U.S. business cycles since World War II. It displays important features of ten cyclical episodes dating back to the 1949 recession. The timing of the peaks and troughs in economic activity as determined by the National Bureau of Economic Research (NBER) are shown in columns [1] and [2]. The NBER has official responsibility for dating cyclical turning points. Note that the most recent

¹ One obvious example is the change in placement activities in an environment where job seekers increasingly rely on self-service in using on-line information to secure job matches. The measures of job accession rates will include within the entered employment rates both ES placements and counts of “obtained employment.” Chart 4.2 in Chapter 4 provides a graphic summary of changes in recent years.

recession-recovery episode is incomplete as this report is being written. At the present time (August 2003), the peak and trough have been designated (March 2001 and November 2001 respectively), but the recovery phase to the next peak will probably not be known for a number of years. Thus the tenth cyclical episode is incomplete.

Table 1.1 vividly illustrates that the expansion phases of U.S. business cycles typically last much longer than the contractions. The averages for nine recessions were 59 months for expansions but only 11 months for contractions. The duration of expansions has had much greater variability than for contractions. Three expansions lasted more than 90 months with the recent 1991-2001 expansion lasting a full ten years. An emerging theme of macroeconomic literature is the increased length of the business cycle in recent periods. See, for example, Blanchard and Simon(2001) and McConnell and Perez-Quiros(2000). Evolutionary changes in the economy such as increased reliance on just-in-time inventory policies and the declining importance of the manufacturing sector are often identified as contributing to the changing character of the U.S. business cycle.

The years 1980 to 1982 were unusual in that two recessions occurred within a very short period. Many refer to this period as having back-to-back recessions and treat the two as a single recessionary episode. In the labor market, there was no sustained downward movement of unemployment during the short expansionary period from July 1980 to July 1981. Between December 1979 and November 1982 the unemployment rate increased by five full percentage points, the largest increase for any recessionary period since World War II. In the current project, these two recessions will be treated as single (albeit extended) recessionary episode.

Table 1.1 also shows that peak unemployment rates have varied widely from one recession to the next. Two had peaks of 9.0 percent or higher (May 1975 and November 1982) while three had peaks that were close to 6.0 percent (September 1954, December 1970 and the most recent downturn where the peak was 6.4 percent). From the historical perspective provided by Table 1.1 it is clear that the most recent downturn has been quite mild. Unemployment rates during 2002 and 2003 have averaged some 1.8 to 2.1 percentage points above the lows reached during 2000.

In the NBER methodology for dating business cycles, the unemployment rate is considered a coincident indicator, and it figures prominently in the dating of business

Table 1.1. Summary of Post World War II Business Cycles: Dates, Duration and Maximum Unemployment Rates

Peak [1]	Trough [2]	Peak [3]	Duration of Recession, Months [4]	Duration of Expansion, Months [5]	Highest Unemployment Rate [6]	Highest Unemployment Rate, Percent [7]	Months from Trough to Highest Unemployment [8]
1. November 1948	October 1949	July 1953	11	45	October 1949	7.9	0
2. July 1953	May 1954	August 1957	10	39	September 1954	6.1	4
3. August 1957	April 1958	April 1960	8	24	July 1958	7.5	3
4. April 1960	February 1961	December 1969	10	106	May 1961	7.1	3
5. December 1969	November 1970	November 1973	11	36	December 1970-b	6.1	1
6. November 1973	March 1975	January 1980	16	58	May 1975	9.0	2
7. January 1980	July 1980	July 1981	6	12	July 1980	7.8	0
8. July 1981	November 1982	July 1990	16	92	November 1982	10.6	0
9. July 1990	March 1991	March 2001	8	120	June 1992	7.6	15
10. March 2001	November 2001	NA	8	NA	June 2003	6.3	19
Averages of Nine Recessions			11	59		7.7	3

Source: Business cycle peaks and troughs from the National Bureau of Economic Research. Peak unemployment rates from BLS.

a - Date for this trough estimated by the author. NA - Not applicable as the economic expansion has only recently commenced.

b - Tie between December 1970 and August 1971, each with an unemployment rate of 6.1 percent.

NA - Not applicable as the most recent economic expansion has not peaked as of April 2004.

cycle turning points. It thus provides important information for dating business cycle troughs. For all but two of the recessions summarized in Table 1.1 the period from the month of the cyclical trough to the month of peak unemployment (column [8]) was four or months or less. The two exceptions have been the time intervals between March 1991 and June 1992 and from December 2001 to June 2003. In both periods the recovery was weak in its initial stages and did not generate enough jobs to reduce unemployment quickly. Note that the description of the most recent downturn is subject to change.

While the last two recessions have been mild by historic standards, the early stages of the subsequent economic recoveries have also been quite weak. During 2002 and the early months of 2003 journalists and others have referred to the most recent recovery as a jobless recovery. Based on the two most recent recessions, it may be that the nature of the U.S. business cycle has changed permanently. It appears, superficially at least, that the economy eases into and out of recessions rather than experiencing sharp falloffs in output followed by sharp economic recoveries. With only two recessions during the last 20 years, however, there is not much evidence for drawing robust conclusions about changes in the nature of the U.S. business cycle.

1.2. Aggregate UI Benefit Payments, 1948 to 2002

Unemployment insurance (UI) has been available to eligible claimants during all recessions since World War II. Table 1.2 summarizes annual UI benefit payments over the 55 years from 1948 to 2002. Column [1] shows annual unemployment rates for persons 16 and older while column [2] highlights increases in unemployment rates during each recessionary period. For nine periods it shows the increase in the unemployment rate from the pre-recessionary year. Note that the two official recessions of 1980 and 1982 are treated as a single long recession in the table. The annual average unemployment rates during 1982 and 1983 were nearly four full percentage points higher than for the pre-recession year 1979. More typically, the increases shown in column [2] fall into the range from 1.2 to 2.7 percentage points. Note also that the increases in unemployment during 1990-1993 and 2001-2002 were modest when compared with the increases of most earlier recessions.

Table 1.2. Aggregate UI Expenditures by Year, 1948 to 2002.

Year	Unemployment Rate, Pct.	Increase in U Rate from Pre-Recession Year	Regular State UI Benefits	Federal-State Extended Benefits	Temporary Federal Benefits	Total Benefits, All Three Tiers	Reg UI Benefits/ Total Benefits	EB/ Total Benefits	TFB/ Total Benefits	Increase in Benefits from Pre-Recession Year, Pct.	Total Benefits, Pct. of GDP	Total Benefits, Pct. of Covered Wages
	[1]	[2]	Reg UI [3]	EB [4]	TFB [5]	[3]+[4]+[5] [6]	[3]/[6] [7]	[4]/[6] [8]	[5]/[6] [9]	[10]	[11]	[12]
1948	3.8		0.8	NA	NA	0.8	1.00	NA	NA		0.29	0.82
1949	5.9	2.1	1.7	NA	NA	1.7	1.00	NA	NA	120	0.65	1.85
1950	5.3		1.4	NA	NA	1.4	1.00	NA	NA		0.47	1.33
1951	3.3		0.8	NA	NA	0.8	1.00	NA	NA		0.25	0.71
1952	3.0		1.0	NA	NA	1.0	1.00	NA	NA		0.28	0.78
1953	2.9		1.0	NA	NA	1.0	1.00	NA	NA		0.25	0.69
1954	5.5	2.6	2.0	NA	NA	2.0	1.00	NA	NA	111	0.53	1.48
1955	4.4		1.4	NA	NA	1.4	1.00	NA	NA		0.33	0.91
1956	4.1		1.4	NA	NA	1.4	1.00	NA	NA		0.32	0.84
1957	4.3		1.7	NA	NA	1.7	1.00	NA	NA		0.38	1.00
1958	6.8	2.5	3.5	NA	0.3	3.8	0.92	NA	0.08	120	0.81	2.22
1959	5.5		2.3	NA	0.1	2.4	0.96	NA	0.04		0.47	1.27
1960	5.5		2.7	NA	NA	2.7	1.00	NA	NA		0.52	1.40
1961	6.7	1.2	3.4	NA	0.6	4.0	0.85	NA	0.15	47	0.74	2.02
1962	5.5		2.7	NA	0.2	2.9	0.93	NA	0.07		0.49	1.35
1963	5.7		2.8	NA	NA	2.8	1.00	NA	NA		0.45	1.24
1964	5.2		2.5	NA	NA	2.5	1.00	NA	NA		0.38	1.05
1965	4.5		2.1	NA	NA	2.1	1.00	NA	NA		0.30	0.84
1966	3.8		1.8	NA	NA	1.8	1.00	NA	NA		0.22	0.62
1967	3.8		2.1	NA	NA	2.1	1.00	NA	NA		0.25	0.69
1968	3.6		2.0	NA	NA	2.0	1.00	NA	NA		0.22	0.61
1969	3.5		2.1	NA	NA	2.1	1.00	NA	NA		0.21	0.58
1970	4.9	1.4	3.8	NA	NA	3.8	1.00	NA	NA	81	0.37	1.00
1971	5.9	2.4	4.9	0.7	NA	5.6	0.88	0.12	NA	166	0.49	1.36
1972	5.6	2.1	4.5	0.5	0.5	5.5	0.82	0.09	0.10	160	0.44	1.11
1973	4.9		4.0	0.1	0.0	4.2	0.96	0.03	0.00		0.30	0.76
1974	5.6	0.6	6.0	0.5	NA	6.6	0.92	0.08	NA	57	0.44	1.08
1975	8.5	3.5	11.9	2.5	2.1	16.5	0.72	0.15	0.13	294	1.01	2.58
1976	7.7	2.7	9.2	2.3	2.8	14.2	0.65	0.16	0.19	240	0.78	1.99
1977	7.1	2.2	8.6	1.7	1.2	11.5	0.74	0.15	0.11	175	0.57	1.45
1978	6.1		7.9	0.7	0.0	8.6	0.92	0.08	0.00		0.38	0.87
1979	5.8		8.8	0.2	NA	9.1	0.98	0.02	NA		0.35	0.81
1980	7.1	1.3	14.1	1.7	NA	15.8	0.89	0.11	NA	74	0.56	1.29
1981	7.6	1.8	13.7	1.3	NA	15.0	0.91	0.09	NA	66	0.48	1.11
1982	9.7	3.9	21.3	2.4	1.2	24.9	0.85	0.10	0.05	175	0.76	1.76
1983	9.6	3.8	18.4	1.7	5.4	25.5	0.72	0.07	0.21	182	0.72	1.71
1984	7.5	1.7	13.1	0.0	2.2	15.4	0.85	0.00	0.14	70	0.39	0.94
1985	7.2		14.6	0.0	0.7	15.3	0.95	0.00	0.05		0.36	0.87
1986	7.0		15.8	0.1	NA	16.0	0.99	0.01	NA		0.36	0.85
1987	6.2		14.1	0.1	NA	14.2	1.00	0.00	NA		0.30	0.70
1988	5.5		13.0	0.0	NA	13.0	1.00	0.00	NA		0.25	0.59
1989	5.3		14.1	0.0	NA	14.1	1.00	0.00	NA		0.26	0.61
1990	5.6	0.3	17.8	0.0	NA	17.8	1.00	0.00	NA	27	0.31	0.72
1991	6.8	1.6	25.3	0.3	0.8	26.3	0.96	0.01	0.03	87	0.44	1.04
1992	7.5	2.2	24.9	0.0	13.5	38.4	0.65	0.00	0.35	172	0.61	1.44
1993	6.9	1.6	21.5	0.0	11.8	33.4	0.64	0.00	0.35	137	0.50	1.21
1994	6.1	0.8	21.3	0.1	1.4	22.9	0.93	0.01	0.06	62	0.32	0.78
1995	5.6		21.0	0.0	NA	21.0	1.00	0.00	NA		0.28	0.68
1996	5.4		21.6	0.0	NA	21.6	1.00	0.00	NA		0.28	0.65
1997	4.9		19.5	0.0	NA	19.5	1.00	0.00	NA		0.23	0.55
1998	4.5		19.2	0.0	NA	19.2	1.00	0.00	NA		0.22	0.50
1999	4.2		20.0	0.0	NA	20.0	1.00	0.00	NA		0.22	0.49
2000	4.0		20.2	0.0	NA	20.2	1.00	0.00	NA		0.21	0.45
2001	4.7	0.7	31.4	0.0	NA	31.4	1.00	0.00	NA	55	0.31	0.69
2002	5.8	1.8	41.9	0.2	10.6	52.7	0.80	0.00	0.20	161	0.50	1.12

Source: Unemployment benefits from U.S. Department of Labor, Office of Workforce Security. Benefits in billions of dollars and include reimbursable benefits. Data refer to the 50 states plus the District of Columbia. NA - Not applicable as there was no program in the year.

Columns [3]-[6] display data on UI benefit payments. The data show expenditures for the three “tiers” of UI, i.e., the regular UI program, the Federal-State Extended Benefits (EB) program and temporary federal benefits (TFB). In 2003, regular UI benefits can be paid for up to 26 weeks in all states except Massachusetts and Washington where potential duration is 30 weeks. This first tier of UI is fully financed by payroll taxes levied on employers in the individual states and deposited into state trust fund accounts maintained at the U.S. Treasury. These accounts are the immediate source for regular UI benefits paid to unemployed workers.

In recessions, payouts of regular UI benefits can increase by 100 percent or more. This cyclical responsiveness is intended, and UI is often described as an automatic stabilizer of economic activity. Benefits provide partial wage loss replacement for individuals who experience unemployment. Note in column [3] that payouts of regular UI benefits doubled during every recessionary period except the recession of 1961.

Since the mid 1950s it has been observed that large numbers of recipients of regular UI benefits use up (exhaust) their benefits during recessions. Between 1957 and 1958, for example, the exhaustion rate (exhaustions as a percent of first payments) increased from 23 percent to 31 percent. The phenomenon of high exhaustions was a motive force behind the creation of two additional tiers of UI benefits intended to assist the long term unemployed. One is the Federal-State Extended Benefits (EB) program. The other is the temporary federal benefit (TFB) programs. High exhaustions also have affected benefit duration provisions in the regular UI programs. This latter phenomenon will be examined later in this chapter.

The second tier of UI is the EB program which provides up to 13 weeks of benefits to exhaustees of regular UI benefits. EB was created in 1970 and paid substantial amounts of benefits through the early 1980s. Total payouts of EB exceeded \$5.0 billion during 1975-1977 and again during 1980-1983. Since 1983, however, EB has never paid as much as \$0.3 billion in any single year. This second “tier” has ceased to be an important source of income support to the unemployed. The reasons for the demise of EB are well understood. The triggers that activate EB were modified in the early 1980s making it much more difficult to turn “On” EB. Chapter 3 examines EB triggers in more detail and also describes the changes in the EB trigger mechanism of the early 1980s.

Starting with the recession of 1958 some type of temporary federal benefit (TFB) program has been enacted during each recession. These programs have provided from 13 to 26 weeks of additional entitlements to persons who have used up (exhausted) their eligibility for regular UI and EB. TFB programs since the early 1960s have had full federal financing but the means have differed, e.g., by general revenues, from a federal UI trust fund or by an addition to federal UI payroll taxes. During the two most recent recessions, TFB payments have been the main form of support for exhaustees of regular UI. Payments of TFB exceeded \$10 billion in 1992, 1993 and again during 2002. TFB programs are created through emergency federal legislation, and they operate for only finite periods. The most extensive TFB program was Emergency Unemployment Compensation (EUC) which paid benefits during the 30 months from October 1991 to April 1994. Section 3.1 of Chapter 3 gives a more detailed history of both the EB and TFB programs operative during past recessions.

Columns [7]-[9] display proportionate shares of benefit payments for the three tiers of UI . Prior to 1971 there was just one year (1961) when regular UI benefits did not constitute at least 90 percent of annual benefit payments. After 1971, however, the combined proportions for EB and TFB equaled or exceeded 15 percent of total UI payouts in ten separate years and from 10 to 15 percent in two other years.² In other words, during all recessions since 1970, EB and TFB have constituted an important component of total UI benefit payments. Since EB has become unimportant, it is appropriate to describe UI as now having two not three tiers of benefits available during recessions. Note in column [9] that TFB benefits represented more than one third of the total during both 1992 and 1993. They constituted 20 percent of the total during 2002 even though the TEUC program was effective only from mid-March of 2002.

Column [10] focuses on the response of total benefit payments during the various recessions. It shows the percentage increase in benefit payments from the pre-recession year. For thirteen separate years the increase was at least 100 percent with the largest increases occurring in 1975 and 1976, 294 and 240 percent respectively. This response

² The ten years when the column [7] proportion was 0.85 or lower were 1972, 1975, 1976, 1977, 1982, 1983, 1984, 1992, 1993, and 2002. The proportions were between 0.86 and 0.90 in 1971 and 1980.

was foreseen by the founders of UI. During recessions the increases in benefit payouts provide a modest but self-limiting source of stimulus to the overall economy.

Columns [11] and [12] place UI benefit payments into a comparative context by showing total payouts as a percent of GDP and of total covered wages. Over these 55 years total UI benefits averaged 0.41 percent of GDP and 1.06 percent of wages in UI covered employment. These percentages are much higher during recessions than in other years. For both series, the highest percentage occurred in 1975. It is also clear that the percentages were lower during 1991-1994 and 2001-2002 than in earlier recessions.

Over the period spanned by Table 1.2, UI benefit payments relative to the overall scale of the economy have declined. For example, total benefits averaged 0.44 percent of GDP between 1948 and 1980, but 0.38 percent between 1981 and 2002. The percentage during 1981-2002 was about 14 percent lower than during 1948-1980. The lower percentage obtained despite the fact that average unemployment rates were higher during 1981-2002 than during 1948-1980, i.e., 6.3 percent versus 5.2 percent. During these 55 years the UI recipiency rate has decreased for the regular UI program. The picture for EB is a precipitous decline in importance after 1983.

1.3. Unemployment Duration and Occurrences

In any year the average weekly volume of unemployment can be expressed as the product of the number of unemployment occurrences (new spells) and average duration, with unemployment duration measured in weeks and expressed as a fraction of the year.

(1) $U = O \cdot d$ where

U = weekly unemployment,

O = number of new unemployment occurrences, and

d = mean weeks of unemployment, but expressed as a fraction of 52 weeks.

From expression (1) it can be seen that a given volume of weekly unemployment can be the result of differing combinations of occurrences (O) and duration (d).

Both sides of expression (1) can be divided by the labor force yielding a convenient expression for the unemployment rate.

(2) $U/L = TUR = (O/L) \cdot d = f \cdot d$ where

L = the labor force,

TUR = the unemployment rate (or total unemployment rate) in literature where the TUR is contrasted with the unemployment rate based on unemployment insurance claims, e.g., insured unemployment rate or IUR, and

$f = (O/L)$ = the frequency or rate of unemployment occurrences in the labor force.

The final right-hand term in expression (2) provides a convenient framework for decomposing a given unemployment rate into two components, the rate of occurrences (f) and average duration as a proportion of the year (d). The remainder of this section discusses patterns of f and d observed in time series data from the U.S. economy.

Table 1.3 displays ten series related to unemployment and unemployment duration spanning 53 years from 1950 to 2002. The data are from two sources: the monthly household labor force survey (the Current Population Survey or CPS, in columns [1]-[5]) and UI program data (columns [6]-[10]). For some series, data are not available for all years, e.g., the median duration in column [3] is unavailable for years prior to 1967. All six series showing estimates of average duration are measured in weeks. Because the table has so many annual entries, summaries for five decades appear in the bottom rows. The summaries are averages for the ten year periods from the 1950s through the 1990s.

Five of the six duration series convey a common message which is clearly seen in the decade averages at the bottom of Table 1.3. During the most recent two decades, i.e., the 1980s and the 1990s, unemployment duration was systematically longer than during the preceding three decades. This is true for the three household labor force survey (CPS) series (columns [2]-[4]) and for two UI series (columns [6] and [8]). In contrast, note that average potential duration for UI recipients (column [7]) was little changed in the 1980s and 1990s compared to the preceding two decades.

Column [5] provides insight into the increased average duration shown in the CPS data. There has been a large increase in spells of unemployment lasting 27 weeks and longer. These very long duration spells averaged 9.4 percent of unemployment during the 1950s but 16.1 percent during the 1990s. As the prevalence of long duration spells has increased, it has affected the mean (column [2]) in the expected way.

All the duration measures in Table 1.3 are affected by the phenomenon of truncation. The measures are restricted in one or more ways, yielding an estimate that is

Table 1.3. Unemployment Rates and Average Unemployment Duration, 1950 to 2002.

Year	Household Labor Force Survey, CPS					UI Program Data				
	Unem- ployment Rate, Pct. [1]	Mean, Monthly Avg. Dur. [2]	Median, Monthly Avg. Dur. [3]	Mean, Work Exp. Avg. Dur. [4]	Proportion Unemployed 27+ Weeks [5]	Actual Benefit Duration [6]	Potential Benefit Duration [7]	Actual Duration Exhaust. [8]	Exhaustion Rate - Pct. [9]	Act. Dur./ Pot. Dur. = [6]/[7] [10]
1950	5.3	12.1	NA	NA	0.11	13.0	21.1	19.3	35.6	0.62
1951	3.3	9.7	NA	NA	0.07	10.1	21.4	17.9	19.6	0.47
1952	3.0	8.4	NA	NA	0.04	10.4	22.0	19.3	21.2	0.47
1953	2.9	8.0	NA	NA	0.04	10.1	22.1	19.2	18.1	0.46
1954	5.5	11.8	NA	NA	0.09	12.8	22.4	20.0	26.8	0.57
1955	4.4	13.0	NA	12.0	0.12	12.4	22.7	20.3	28.2	0.55
1956	4.1	11.3	NA	12.8	0.08	11.4	23.0	20.0	21.0	0.50
1957	4.3	10.5	NA	13.4	0.08	11.5	23.4	20.5	20.4	0.49
1958	6.8	13.9	NA	15.9	0.14	14.8	23.5	21.7	32.0	0.63
1959	5.5	14.4	NA	13.9	0.15	13.1	23.6	21.7	28.8	0.55
1960	5.5	12.8	NA	14.3	0.12	12.7	24.0	21.4	23.7	0.53
1961	6.7	15.6	NA	14.8	0.17	14.8	23.9	21.8	33.3	0.62
1962	5.5	14.7	NA	14.2	0.15	13.1	23.9	21.6	26.7	0.55
1963	5.7	14.0	NA	14.1	0.14	13.3	24.1	21.6	25.8	0.55
1964	5.2	13.3	NA	13.2	0.13	13.0	24.2	21.9	24.7	0.54
1965	4.5	11.8	NA	11.6	0.10	12.0	24.1	21.3	21.8	0.50
1966	3.8	10.4	NA	10.3	0.08	11.3	24.2	21.1	18.4	0.47
1967	3.8	8.7	2.3	10.1	0.06	11.5	24.5	20.9	18.2	0.47
1968	3.6	8.4	4.5	9.6	0.06	11.6	24.3	21.2	19.5	0.48
1969	3.5	7.8	4.4	9.8	0.05	11.4	24.4	21.4	18.6	0.47
1970	4.9	8.6	4.9	12.5	0.06	12.3	24.6	22.1	20.0	0.50
1971	5.9	11.3	6.3	14.2	0.10	14.4	24.5	22.7	30.8	0.59
1972	5.6	12.0	6.2	13.6	0.12	14.2	24.3	22.7	31.2	0.58
1973	4.9	10.0	5.2	12.1	0.08	13.3	24.3	22.5	27.6	0.55
1974	5.6	9.8	5.2	12.3	0.07	12.6	24.4	22.4	24.5	0.52
1975	8.5	14.2	8.4	16.4	0.15	15.7	24.3	22.4	37.2	0.65
1976	7.7	15.8	8.2	15.9	0.18	14.9	24.0	22.6	37.6	0.62
1977	7.1	14.3	7.0	14.8	0.15	14.2	24.1	22.1	34.2	0.59
1978	6.1	11.9	5.9	13.9	0.10	13.3	24.5	22.5	26.6	0.54
1979	5.8	10.8	5.4	13.4	0.09	13.0	24.2	22.4	24.6	0.54
1980	7.1	11.9	6.5	15.8	0.11	14.8	24.3	22.7	30.5	0.61
1981	7.6	13.7	6.9	15.9	0.14	14.4	24.2	23.0	31.8	0.59
1982	9.7	15.6	8.7	18.2	0.17	15.9	24.3	23.2	35.8	0.65
1983	9.6	20.0	10.1	18.2	0.24	17.4	24.1	23.4	46.9	0.72
1984	7.5	18.2	7.9	16.7	0.19	14.3	23.7	22.8	33.4	0.60
1985	7.2	15.6	6.8	16.1	0.15	14.2	24.1	22.7	30.6	0.59
1986	7.0	15.0	6.9	16.4	0.14	14.5	23.9	22.9	32.0	0.61
1987	6.2	14.5	6.5	16.1	0.14	14.6	23.7	22.7	33.2	0.61
1988	5.5	13.5	5.9	15.3	0.12	13.7	24.1	22.7	28.6	0.57
1989	5.3	11.9	4.8	14.5	0.10	13.2	24.2	22.9	26.1	0.55
1990	5.6	12.0	5.3	15.1	0.10	13.4	24.1	23.1	26.6	0.56
1991	6.8	13.7	6.8	16.9	0.13	15.4	23.9	23.2	34.2	0.64
1992	7.5	17.7	8.7	17.9	0.20	16.2	23.7	23.3	41.3	0.68
1993	6.9	18.0	8.3	18.9	0.20	15.9	23.9	23.4	40.5	0.67
1994	6.1	18.8	9.2	17.2	0.20	15.4	23.7	23.2	49.9	0.65
1995	5.6	16.6	8.3	17.2	0.17	14.7	24.0	23.1	32.8	0.61
1996	5.4	16.7	8.3	17.2	0.17	14.8	24.0	23.2	34.0	0.62
1997	4.9	15.8	8.0	16.8	0.16	14.5	23.9	23.0	33.7	0.61
1998	4.5	14.5	6.7	16.4	0.14	13.8	23.7	22.2	30.8	0.58
1999	4.2	13.4	6.4	16.0	0.12	14.4	23.8	22.2	31.4	0.60
2000	4.0	12.6	5.9	16.1	0.11	13.6	23.9	22.8	31.8	0.57
2001	4.7	13.1	6.8	17.1	0.12	13.7	24.1	22.6	34.1	0.57
2002	5.8	16.6	9.1	NA	0.18	16.4	24.0	23.0	43.6	0.69
Avg.										
1950s	4.5	11.3	NA	NA	0.09	12.0	22.5	20.0	25.2	0.53
1960s	4.8	11.8	NA	12.2	0.11	12.5	24.2	21.4	23.1	0.52
1970s	6.2	11.9	6.3	13.9	0.11	13.8	24.3	22.4	29.4	0.57
1980s	7.3	15.0	7.1	16.3	0.15	14.7	24.1	22.9	32.9	0.61
1990s	5.8	15.7	7.6	17.0	0.16	14.9	23.9	23.0	35.5	0.62

Source: Bureau of Labor Statistics and Office of Workforce Security. Data in weeks except for the unemployment rate, unemployment of 27+ weeks, the exhaustion rate and the ratio of actual to potential duration. Average duration in work experience data derived by the author.
NA = Information not available.

lower than the true duration of unemployment if it were followed to the end of each spell. Some descriptive details of the individual duration measures may be helpful.

The series in columns [2] and [3], the mean and median monthly averages, measure the duration of individual spells of unemployment. If a person experiences two or more spells in a given year, these series show averages based on the duration of each separate spell measured from the onset of unemployment up to the time of the labor force survey. In cases where the spell started in the previous year, duration is still measured from the onset of the spell. The mean and median in columns [2] and [3] are both truncated in that the unemployment spells extend past the point in time when measurement takes place in the labor force survey.

Analyses of unemployment duration find that the escape rate from unemployment is linked to the length of time an individual is unemployed. The longer a person is unemployed the more likely he or she will remain unemployed in the following week. Thus for a given week, those measured as unemployed include a disproportionate representation of persons with long spells. This phenomenon, termed duration dependence, is manifest in Table 1.3 in the relative magnitudes of the means and medians. The means (column [2]) are uniformly much higher than the medians (column [3]), with mean/median ratios falling into the range between 1.7 and 2.5 for 35 of the 36 years where both averages are displayed (all but 1967).

Column [4] of Table 1.3 shows estimates of mean duration based on work experience data. These data come from March supplements to the CPS which ask questions about unemployment during the preceding calendar year. The data combine information on all yearly spells in the estimate of unemployment duration. In recent years, 20 to 30 percent of those reporting unemployment in a given year have two or more spells. The truncation in these duration data arises from the CPS survey question that restricts unemployment experiences to the 52 weeks of the preceding year.

Mean duration in work experience data was estimated using tabular summaries of unemployment duration arranged as interval data.³ The means were derived starting in 1955 when the tabular data on duration were first available.

³ The micro data record reported weeks of unemployment duration only for 1975 and later years.

Unemployment duration in the work experience data provide estimates of annual duration summing across all spells of unemployment. Averages for the 1980s and 1990s fall into the 16-17 weeks range and are higher than the averages from the 1960s and 1970s. The increase between the 1970s and the 1980s was especially large at 2.4 weeks. Thus, all four series based on the CPS (columns [2]-[5]) show longer average unemployment duration during the past two decades than in earlier periods.

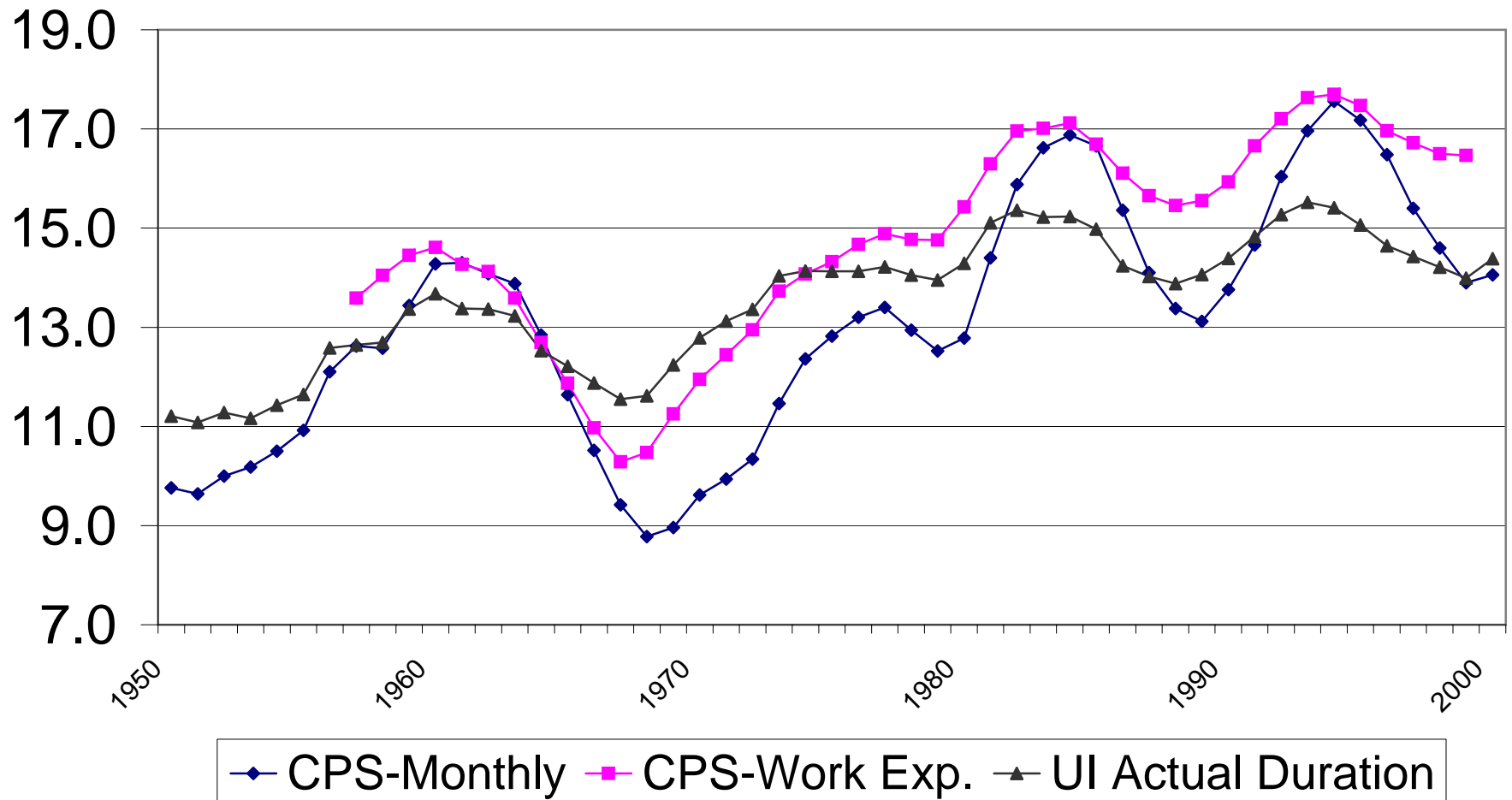
Average duration in unemployment insurance data also increased during the 1980s and 1990s. The measurement of average actual duration (column [6]) should be noted. It is the ratio of weeks compensated during the year to first payments for that year. While actual duration increased in these UI data from 12.0 weeks in the 1950s to 14.9 weeks in the 1990s, there was little change in UI potential duration (column [7]). The annual averages between 1960 and 2002 all fall into the range between 23.7 to 24.6 weeks. The potential duration of benefit eligibility in the UI program (measured at the start of unemployment spells for those monetarily eligible) has not changed much since 1960.⁴ Over the same period, actual duration for exhaustees (column[8]) has increased somewhat, but the increase between, say, the 1960s and the 1990s has been much less than in CPS data, e.g., 1.6 weeks in column [8] compared to 3.9 weeks in column [2].

The final duration-related measures in Table 1.3 are the UI exhaustion rate (final payments as a ratio to first payments) and the ratio of actual to potential benefit duration shown in columns [9] and [10] respectively. During the 1990s, the average exhaustion rate of 35.5 percent was a full ten percentage points above the exhaustion rate of the 1950s. The increase in the UI exhaustion rate can be seen as a consequence of longer average benefit duration coupled with potential benefit duration which has not changed since 1960. During the 1980s and 1990s somewhat more than one third of recipients exhausted their UI benefits. Actual duration relative to potential duration (column [10]) has increased along with the exhaustion rate.

To help summarize long term developments in unemployment duration, two summary charts were prepared. Chart 1.1 displays centered five year averages of three unemployment duration indicators in national data, respectively columns [2], [4] and [6] of Table 1.3. Five year averages were used to reduce the variation present in the

⁴ Average potential duration did increase during the 1950s. This is examined later in the chapter.

Chart 1.1. Average Unemployment Duration, Centered Five Year Averages, 1950 to 2000



underlying annual data, a reflection of the sensitivity of unemployment duration to the business cycle.

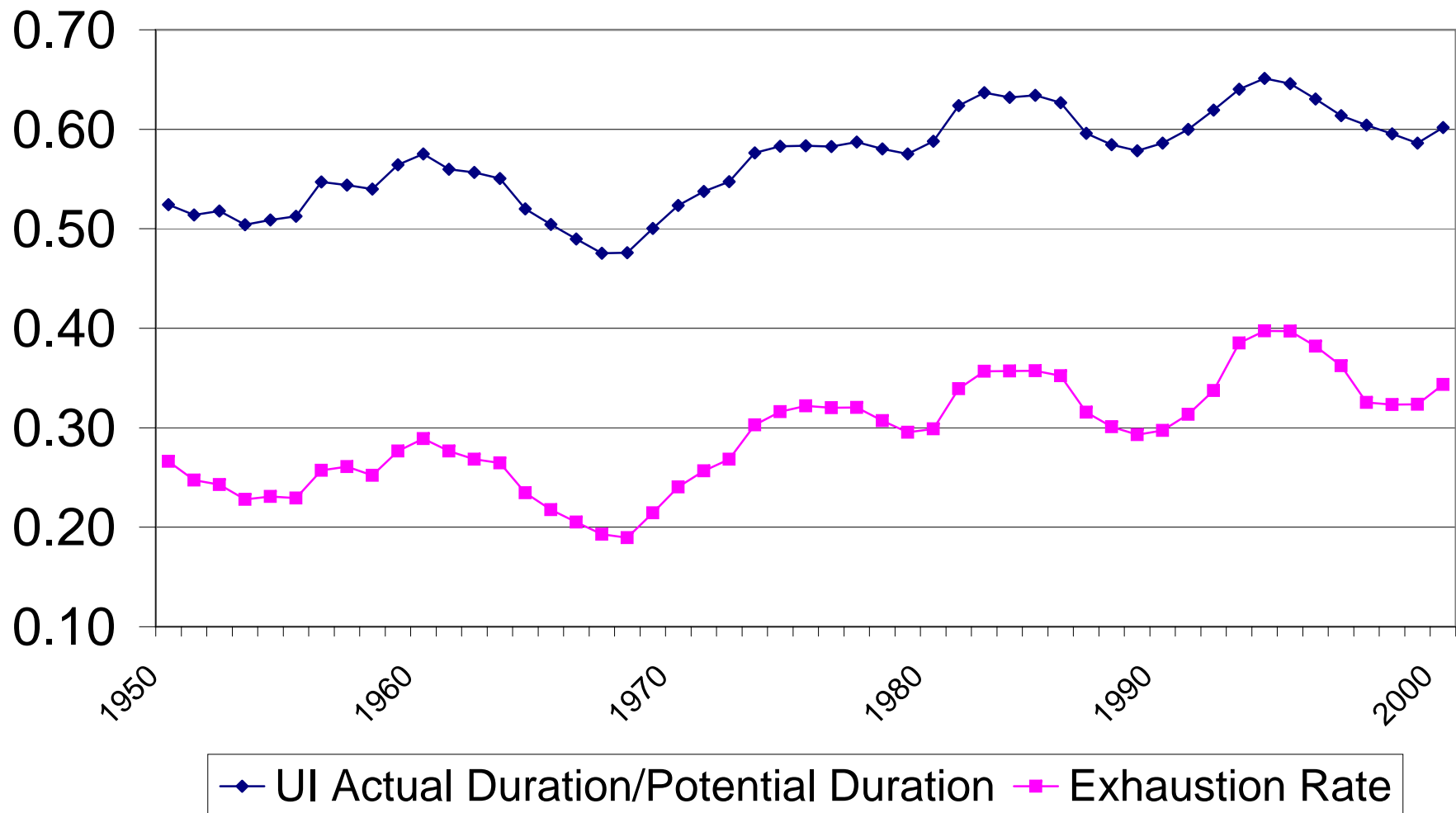
Two features in Chart 1.1 should be noted. 1) All three duration measures increase when viewed over the full period and when traced from the late 1960s. 2) Both CPS measures are somewhat higher in the 1990s than in the 1980s while UI actual duration was at about the same level during these two most recent decades. People report a lengthening average unemployment duration during the 1990s compared to the 1980s in the CPS, but their average duration in UI benefit status was almost unchanged, i.e., 14.7 weeks for 1980-1989 versus 14.9 weeks for 1990-1999. While the UI duration measure did not increase much between the two most recent decades, the exhaustion rate data suggest that long duration spells among UI recipients have increased over the last four decades. Perhaps the increase in long duration spells was offset by an increase in short duration spells yielding similar overall averages for the 1980s and the 1990s. These comments repeat earlier observations about the data displayed in Table 1.3.

The increase in the UI exhaustion rate apparent in Table 1.3 seems to reflect the increase in actual UI duration relative to potential UI duration. The latter (column [7]) has remained relatively stable. The ratio of actual UI duration to potential duration is plotted in Chart 1.2, again with the data measured as five year averages. Note that the ratio of actual to potential duration was much higher in the last two decades than in the first three decades in the chart. During the 30 years between 1950 and 1979 the ratio equaled or exceeded 0.60 just five times (column [10]) while it equaled or exceeded 0.60 in 15 of the final 23 years.⁵ The time series pattern of the exhaustion rate in Chart 1.2 is remarkably similar to that of the actual duration/potential duration ratio. The exhaustion rate equaled or exceeded 0.30 in just eight of the 30 years between 1950 and 1979, but it equaled or exceeded 0.30 in 20 of the 23 years between 1980 and 2002.

A final noteworthy development in the years covered by Table 1.3 arises from considering both unemployment duration, the focus of the preceding discussion, and the overall unemployment rate. Note in column [1] that the average unemployment rate during the 1970s (6.2 percent) was somewhat higher than the average during the 1990s

⁵ Using a threshold of 0.55, the threshold was equaled or exceeded in 14 of the 30 years between 1950 and 1979, but then it was equaled or exceeded in all 23 years between 1980 and 2002.

Chart 1.2. UI Actual Dur./Potential Dur. Ratio and Exhaustion Rate, Centered Five Year Averages, 1950 to 2000



(5.8 percent). Despite the lower unemployment of the 1990s, the duration measures in Table 1.3 all indicate that duration was longer during the 1990s than during the 1970s.

Since the unemployment rate was previously shown in relationship (2) to be the product of the occurrence rate (f) and average duration (d), the pace of unemployment occurrences would also seem to have been evolving. The following paragraphs examine data on unemployment occurrences in more detail.

Table 1.4 displays several series that are helpful in understanding changes in patterns of unemployment occurrences. Columns [1]-[3] display standard data on the unemployment rate, average unemployment and the labor force based on the monthly averages from the CPS. As with the preceding Table 1.3, the data span the 53 years from 1950 to 2002 with decade averages shown in the bottom rows. Note that the labor force during the 1990s was twice as large as during the 1950s.

Columns [4] and [5] show two estimates of the annual number of unemployment occurrences, column [4] from monthly data and column [5] from the March work experience supplements. Both estimates were derived. Each month the CPS asks questions about the duration of unemployment and the shortest interval in published data is less than five weeks. Summing these counts for each of twelve months yields the annual estimate of unemployment occurrences appearing in column [4]. This estimate does not capture very short spells that both start and end between successive months of the survey. Because consistent measurement has been followed in the CPS, any errors from the omission of short spells would be present in all years covered by Table 1.4. The annual estimates of new spells averaged about 35 million per year during the 1990s.

Column [5] shows work experience estimates of new spells. The March work experience supplement to the CPS asks about all spells of unemployment during the previous year. Responses are coded into three categories: one, two and three or more. It has been assumed that the average for the 3 or more category has been a constant 3.2 for all years. The series in column [5] was derived under this assumption.⁶

⁶ Note that this measure pertains to spells. One can also count the number who reported any unemployment during the year for years extending back to 1955. The work experience duration data shown previously in column [4] of Table 1.3 pertain to duration across all spells. However, the CPS question on the number of occurrences was different between 1955 and 1958 than the question that has been used since 1959 (recording only one and two or more spells rather than one, two and three or more spells). For the 1955-1958 period it has been assumed that the average number for those with two or more spells was 2.6.

Table 1.4. Unemployment Rates and Rates of Unemployment Occurrences, 1950 to 2002.

Year	Unem- ployment Rate, Pct.	Average Unem- ployment	Civilian Labor Force	New Spells Monthly Data-a	New Spells Work Exp. Data-b	Unemp. Frequency f-Mon. = [4]/[3]	Unemp. Frequency f-WExp. = [5]/[3]	Job Loser Unemp.	Temp. Layoff Unemp.	Job Loser Share of Unemp. = [8]/[2]	T Layoff Share of Unemp. = [9]/[2]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
1950	5.3	3,288	62,208	17,400	NA	0.280	NA	NA	NA	NA	NA
1951	3.3	2,055	62,017	14,124	NA	0.228	NA	NA	NA	NA	NA
1952	3.0	1,883	62,138	13,620	NA	0.219	NA	NA	NA	NA	NA
1953	2.9	1,834	63,015	13,704	NA	0.217	NA	NA	NA	NA	NA
1954	5.5	3,532	63,643	19,260	NA	0.303	NA	NA	NA	NA	NA
1955	4.4	2,852	65,023	16,020	16,718	0.246	0.257	NA	NA	NA	NA
1956	4.1	2,750	66,552	16,944	15,219	0.255	0.229	NA	NA	NA	NA
1957	4.3	2,859	66,929	16,896	18,574	0.252	0.278	NA	NA	NA	NA
1958	6.8	4,602	67,639	21,036	22,306	0.311	0.330	NA	NA	NA	NA
1959	5.5	3,740	68,369	19,020	19,321	0.278	0.283	NA	NA	NA	NA
1960	5.5	3,852	69,628	20,628	21,834	0.296	0.314	NA	NA	NA	NA
1961	6.7	4,714	70,459	21,672	23,256	0.308	0.330	NA	NA	NA	NA
1962	5.5	3,911	70,614	19,956	23,709	0.283	0.336	NA	NA	NA	NA
1963	5.7	4,070	71,833	21,012	21,713	0.293	0.302	NA	NA	NA	NA
1964	5.2	3,786	73,091	20,364	21,703	0.279	0.297	NA	NA	NA	NA
1965	4.5	3,366	74,455	19,536	18,888	0.262	0.254	NA	NA	NA	NA
1966	3.8	2,875	75,770	18,876	17,133	0.249	0.226	NA	NA	NA	NA
1967	3.8	2,975	77,347	19,608	17,146	0.254	0.222	1,229	394	0.413	0.132
1968	3.6	2,817	78,737	19,128	16,435	0.243	0.209	1,070	334	0.380	0.119
1969	3.5	2,832	80,734	19,548	17,338	0.242	0.215	1,017	339	0.359	0.120
1970	4.9	4,093	82,771	25,668	21,541	0.310	0.260	1,811	675	0.442	0.165
1971	5.9	5,016	84,382	26,940	22,998	0.319	0.273	2,323	735	0.463	0.147
1972	5.6	4,882	87,034	26,904	22,248	0.309	0.256	2,108	582	0.432	0.119
1973	4.9	4,365	89,429	26,688	21,284	0.298	0.238	1,694	472	0.388	0.108
1974	5.6	5,156	91,949	31,248	26,888	0.340	0.292	2,242	746	0.435	0.145
1975	8.5	7,929	93,775	35,280	29,841	0.376	0.318	4,386	1,671	0.553	0.211
1976	7.7	7,406	96,158	34,128	29,499	0.355	0.307	3,679	1,050	0.497	0.142
1977	7.1	6,991	99,009	35,028	28,180	0.354	0.285	3,166	865	0.453	0.124
1978	6.1	6,202	102,251	34,380	26,762	0.336	0.262	2,585	712	0.417	0.115
1979	5.8	6,137	104,962	35,400	26,035	0.337	0.248	2,635	851	0.429	0.139
1980	7.1	7,637	106,940	39,540	30,751	0.370	0.288	3,947	1,488	0.517	0.195
1981	7.6	8,273	108,670	41,388	34,251	0.381	0.315	4,267	1,430	0.516	0.173
1982	9.7	10,678	110,204	46,596	38,528	0.423	0.350	6,268	2,127	0.587	0.199
1983	9.6	10,717	111,550	42,840	34,006	0.384	0.305	6,258	1,780	0.584	0.166
1984	7.5	8,539	113,544	40,200	31,460	0.354	0.277	4,421	1,171	0.518	0.137
1985	7.2	8,312	115,461	41,976	30,535	0.364	0.264	4,139	1,157	0.498	0.139
1986	7.0	8,237	117,834	41,376	30,065	0.351	0.255	4,033	1,090	0.490	0.132
1987	6.2	7,425	119,865	38,952	26,990	0.325	0.225	3,566	943	0.480	0.127
1988	5.5	6,701	121,669	37,008	25,442	0.304	0.209	3,092	851	0.461	0.127
1989	5.3	6,528	123,869	38,088	25,464	0.307	0.206	2,983	850	0.457	0.130
1990	5.6	7,047	125,840	39,180	29,134	0.311	0.232	3,387	1,028	0.481	0.146
1991	6.8	8,628	126,346	41,760	30,860	0.331	0.244	4,694	1,292	0.544	0.150
1992	7.5	9,613	128,105	40,512	30,817	0.316	0.241	5,389	1,260	0.561	0.131
1993	6.9	8,920	129,200	39,144	29,170	0.303	0.226	4,848	1,115	0.543	0.125
1994	6.1	7,996	131,056	32,736	26,804	0.250	0.205	3,815	977	0.477	0.122
1995	5.6	7,404	132,304	32,400	25,536	0.245	0.193	3,476	1,030	0.469	0.139
1996	5.4	7,236	133,943	31,596	23,727	0.236	0.177	3,370	1,021	0.466	0.141
1997	4.9	6,739	136,297	30,456	22,292	0.223	0.164	3,037	931	0.451	0.138
1998	4.5	6,210	137,673	31,464	20,044	0.229	0.146	2,822	866	0.454	0.139
1999	4.2	5,880	139,368	30,816	18,403	0.221	0.132	2,622	848	0.446	0.144
2000	4.0	5,692	142,583	30,696	18,292	0.215	0.128	2,517	852	0.442	0.150
2001	4.7	6,801	143,734	34,236	21,387	0.238	0.149	3,476	1,067	0.511	0.157
2002	5.8	8,378	144,863	34,716	NA	0.240	NA	4,607	1,124	0.550	0.134
Avg.											
1950s	4.5	2,940	64,753	16,802	NA	0.259	NA	NA	NA	NA	NA
1960s	4.8	3,520	74,267	20,033	19,916	0.271	0.270	NA	NA	NA	NA
1970s	6.2	5,818	93,172	31,166	25,528	0.334	0.274	2,663	836	0.451	0.141
1980s	7.3	8,305	114,961	40,796	30,749	0.356	0.269	4,297	1,289	0.511	0.153
1990s	5.8	7,567	132,013	35,006	25,679	0.266	0.196	3,746	1,037	0.489	0.138

Source: Bureau of Labor Statistics. Columns [2]-[5] and [8]-[9] in thousands. 'a' - Estimated as 12 times unemployment of less than five weeks.
b - Estimated by author using an estimate of 3.2 spells for persons reporting 3 and more spells in the year.

NA - Information not available.

For the earliest years when the two estimates of occurrences can be compared they are quite similar, e.g., averages of 20.0 million and 19.9 million respectively during the 1960s. However, in moving towards the present, the two series increasingly diverge with the work experience estimates being consistently lower than the monthly estimates. Their respective averages for the 1990s were 35.0 million and 25.7 million. No explanation for this divergence has been uncovered. In earlier comparisons between the monthly data and the work experience data on unemployment (Akerlof and Main (1980)) the two series when combined with their respective duration estimates were found to yield similar aggregate estimates of total unemployment. For this report, we note that substantial differences have emerged between the two estimates of new spells of unemployment and that work experience data now suggest lower overall unemployment.

Columns [6] and [7] show estimates of annual rates of unemployment occurrences using the preceding two series on new spells, each divided by the annual labor force shown in column [3]. Since the estimates use the identical labor force series, all differences arise from differences in the estimates of new spells. Note the obvious cyclical pattern in both series, e.g., the increases during 1970-1971, 1974-1975 and 1980-1982. Then note the smaller increases during 1990-1992 and 2001-2002. The cyclical pattern for the past two downturns seems quite different from that of earlier recessions.

Since all of the differences in the two estimated rates of new spells arise from differences in their numerators, the decade averages at the bottom of Table 1.4 show an increasing divergence. Note that the averages for the 1960s were both about 0.27. Then for the 1970s and 1980s the average occurrence rate based on the monthly data increases to 0.33 and 0.36 while the rate in work experience data remains stable at roughly 0.27. Both series show a sharp decrease in the rate of new unemployment spells during the 1990s with reductions in the 0.07-0.09 range.

While the two series agree in showing a reduction in the rate of occurrences during the 1990s, the average in the monthly data is similar to averages from the 1950s and 1960s whereas the work experience average is by far the lowest for the four decade averages shown in Table 1.4. This contrast between the two series presents a problem of interpretation. For the monthly data in column [6], the 1990s average suggests a return to

rates of new occurrences observed in both the 1950s and 1960s. For the work experience data, the rate of occurrences during the 1990s is more than seven full percentage points (or roughly one fourth) less than the averages for each of the preceding three decades. This data puzzle would seem worthy of further analysis.

One important contrast between monthly data and work experience data on unemployment is that detail on the reason for unemployment is present in monthly data but absent from work experience data. There are four main “reason” for unemployment categories: job losers, job leavers, labor force reentrants and new entrants. Job losers are further divided into persons on layoff and “other” job losers. Among the four “reason” categories, unemployment duration is consistently highest for job losers. Among job losers, unemployment duration is consistently higher among “other” job losers than for those on layoff. The latter contrast is hardly surprising since most on layoff will eventually return to the same job where they worked prior to becoming unemployed. This reemployment option is usually not available for “other” job losers.

Columns [8]-[11] of Table 1.4 present summary information on reason for unemployment as reported in monthly CPS data. The annual averages of job losers and those on layoff appear in columns [8] and [9] respectively while their shares of total unemployment are shown in columns [10] and [11]. Because these data are available only since 1967, just three decades of experiences are summarized in the table’s bottom lines.

Note how the job loser share (column [10]) increases during recessions, e.g., 1974-1975, 1980-1983, 1991-1993 and 2001-2002. This pattern reflects the increased number of employer-initiated separations typical of recessions. Those terminated during recessions are disproportionately eligible for UI benefits and the ratio of beneficiaries to unemployment also increases. These patterns have been observed in all business cycles.

The reason-for-unemployment data in Table 1.4 also show interesting trends. Recall that the average unemployment rates were quite similar for the 1970s and 1990s, in fact, somewhat lower during the 1990s. Yet, note in column [10] that the average job loser share during the 1990s was higher than during the 1970s, e.g., 0.489 in the 1990s compared to 0.451 during the 1970s. At the same time, there was no important contrast in the share of the unemployed who were on layoff. The shares (column [11]) were 0.141

during the 1970s and 0.138 during the 1990s. In other words, all of the increase in the job loser share between the 1970s and the 1990s was concentrated among “other” job losers.

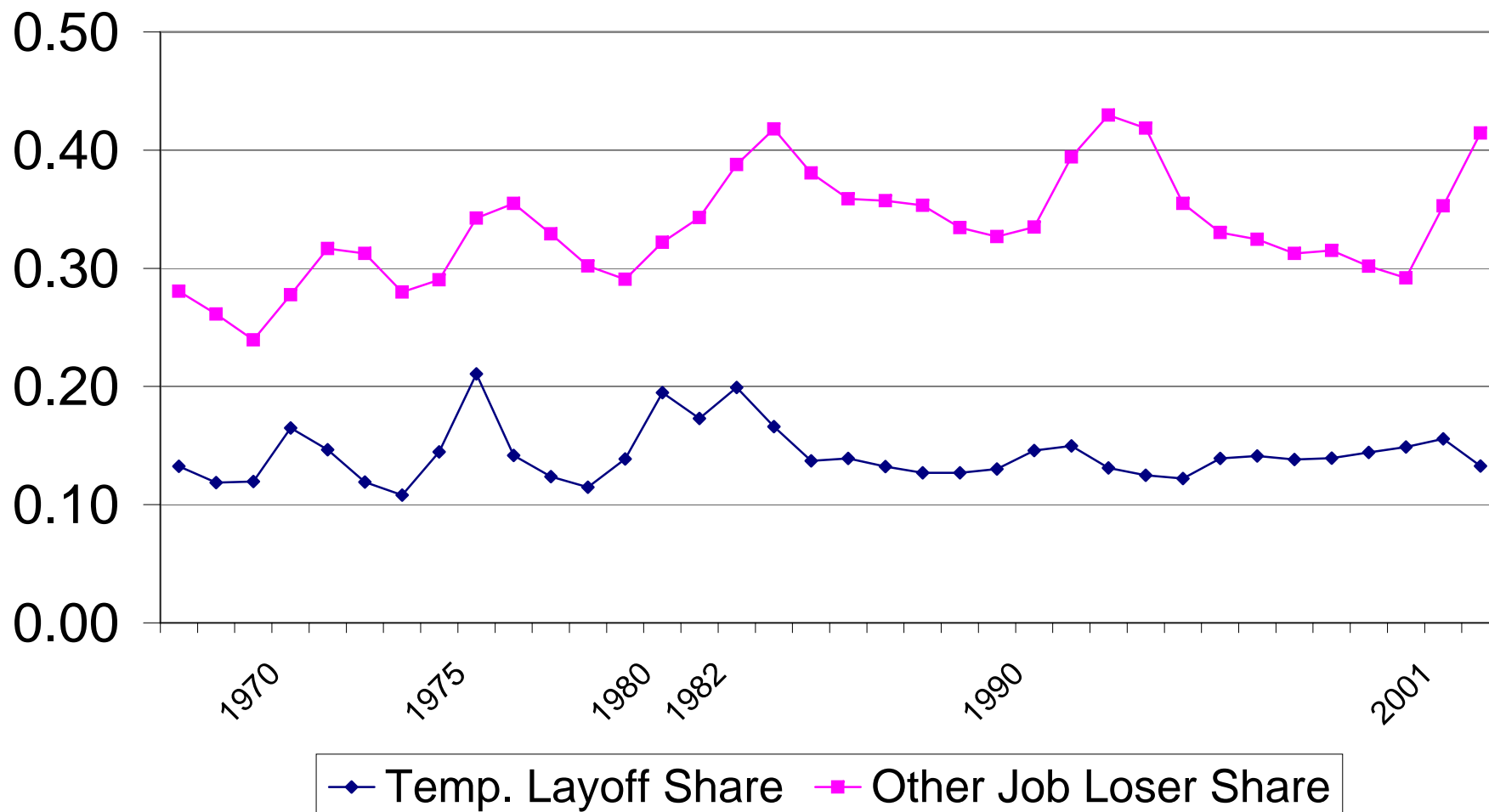
These data on reason for unemployment may provide an important clue as to the increases in unemployment duration apparent in several series in Table 1.3. Employer-initiated permanent terminations from jobs have become relatively more important as a “reason” for unemployment during the past 36 years. The affected workers experience longer spells of unemployment than others, and they are numerous enough to affect measures of average unemployment duration.⁷ In UI programs where potential benefit duration has not changed significantly since 1960, the effect of this change is to increase average UI actual benefit duration and cause an increase in the benefit exhaustion rate.

Chart 1.3 gives a visual summary of how the job loser share of unemployment has been evolving since the late 1960s. The chart plots the two components of the job loser proportion whose sum is shown in column [10] of Table 1.4, i.e., the temporary layoff share (column [11]) and the other job loser share (column [10] less column [11]). The time legend at the bottom of the chart shows years when the temporary layoff share peaked as a proportion of unemployment during each recession since 1970, including the double dip recession of 1980-1983. Note that three of the peaks are close to 0.20 (1975, 1980 and 1982). In contrast, there is little evidence of a major increase in temporary layoff unemployment (as a proportion of all unemployment) during 1990-1991 or 2001. Employers placed much less reliance on temporary layoffs during these two most recent downturns than previously.

Next in Chart 1.3, observe the cyclical patterns for the other job loser proportions. In particular, note that the peaks in these proportions generally occur later in the recession than the temporary layoff peaks, e.g., 1971-1972, 1975-1976, 1982-1983, 1991-1993 and 2002. Note also that the peaks were much higher during the three most recent recessionary periods (above 0.40 for at least one year) than for the two earlier recessions. Finally, observe that the long expansions of the 1980s and 1990s were characterized by persistently high levels of the other job loser proportions. Between 1967 and 1979 seven

⁷ Consider the following data from 2002. Overall, 18.3 percent of the unemployed had spells of 27 weeks or longer (recall Table 1.3). Among those on temporary layoff the corresponding percentage was 5.5 percent while among “other” job losers it was 23.5 percent. See Employment and Earnings, (January 2003), Table 29, page 196.

Chart 1.3. Temporary Layoff and Other Job Loser Shares of Unemployment, 1967 to 2002



of 13 were less than 0.30 whereas between 1980 and 2002 just one of 23 was less than 0.30. That single year, 2000, was the final year of a decade long expansion which reduced the unemployment rate to 4.0 percent, the lowest rate since the late 1960s. Chart 1.3 provides strong visual evidence that the nature of job losses (employer-initiated separations) has evolved with an increasing share being permanent separations and a reduced share being temporary layoffs.

Since workers on temporary layoff experience shorter spells than those who experience permanent job loss, the mix of unemployment by reason has been evolving within the broad category of job losers. This probably reflects the confluence of several factors. Three candidates are: 1) a change in employer personnel practices with less commitment to long term employment relationships (just-in-time workers to go along with modified inventory practices), 2) a greater degree of competition in (domestic and international) product markets with an attendant reduction in economic rents (returns above those needed to attract resources) within businesses and 3) a declining importance of sectors such as manufacturing that traditionally have placed heavy reliance on temporary layoffs in making cyclical workforce adjustments. Whatever the explanation, however, the changes have been accompanied by a decrease in the rate of new unemployment occurrences. The estimated rates of occurrences appearing in columns [6] and [7] of Table 1.4 were both lower during the 1990s than during the 1980s.

Thus the data in columns [8]-[11] of Table 1.4 point back to the question of increased unemployment duration. This question is examined in the next section using multiple regression analysis. The purpose of the regressions was to document the timing and the size of changes in average unemployment duration using a statistical procedure to hold constant the effects of the business cycle.

1.4. Regression Analysis of Unemployment Duration

The regression analysis tested alternative hypotheses about the nature and timing of changes in unemployment duration using data for the years 1950 to 2002. Use of the lengthy time period permitted testing of several alternative specifications. The analysis utilized nine different variables related to unemployment duration and three different

variables to control for the effects of the business cycle. Three alternative specifications for the change unemployment duration were tested. The product of all the various alternatives is 81 individual regression equations. Before summarizing the findings, some added comments about the specifications of the regressions are probably appropriate.

In annual data, unemployment duration is known to lag many other variables related to the business cycle. Years when real output expands rapidly and unemployment declines from its cyclical peak are often characterized by unemployment duration that is not only high but actually higher than in the previous year, e.g., 1976, 1994 in column [2] of Table 1.3. This “fact” about unemployment duration over the business cycle affects the way the variable that controls for the business cycle enters the analysis. In the regressions to be summarized here, the cyclical control variables enter both for the current year and with a one year lag.

The choice of cyclical control is also important to note. Three variables were tested: 1) the CPS unemployment rate, 2) the deviation of real GDP from capacity real GDP and 3) the index of capacity utilization published by the Federal Reserve Board. The latter two are capacity utilization indices that decrease during recessions. For the real GDP utilization, capacity output was estimated by interpolating between cyclical peaks when the economy was operating close to (or even above) its normal capacity.⁸ Utilizing the latter two measures also ensures that the results are not unduly affected by a problem of simultaneity. Four of the duration measures were derived from the same labor force survey (the CPS) that is the source for the estimates of the unemployment rate. Thus the CPS-based duration measures are not independently derived from the cyclical control variable in regressions where the latter is the CPS unemployment rate. Having alternative cyclical controls provides an assurance of greater reliability in the findings.

The three cyclical control variables do not trace out identical patterns through time. For the years of interest, 1950 to 2002, the three pairwise simple correlations between the three series all fell into the range between 0.75 and 0.78. Thus each exhibited considerable independence from the other two during these years. More important, this independence allows the regressions to yield differing estimates of the effects of the trend

⁸ Capacity real GDP was below actual real GDP in six years: 1952, 1953, 1966, 1968, 1969, and 1973. Estimates for years prior to 1990 were obtained from staff of the Congressional Budget Office. Data from 1990 were estimated by the principal investigator assuming three percent annual growth in potential GDP.

and/or shift variables on unemployment duration due to potentially differing effects of the cyclical control variables used in the regressions.

To test for a time-dependent change in average duration, three alternatives were explored. The first was a linear trend that commenced in 1950. This assumes the evolution of average duration has been occurring smoothly during the 53 years between 1950 and 2002. The second tested for an acceleration of the trend in 1981. This variant allows for the trend rate of change to accelerate (or decelerate) starting in 1981 relative to the 1950-1980 period. The choice of 1981 is arbitrary, but several earlier analysis of UI reciprocity have pinpointed the early 1980s as the period when major changes in reciprocity occurred. The concern with dislocated workers also started in this period and the periodic CPS supplements that focus on worker dislocation date from 1984. The first dislocated worker supplement had a look-back to 1980, i.e., a five year retrospective period for measuring permanent job losses. The third alternative was a dummy variable test for a one-time shift in average duration with the dating of the shift being 1981. From some of the duration series shown earlier in Table 1.3 it appears there was a discontinuity in duration between the 1980s and 1990s when compared to decades. This dummy variable specification allows for an explicit test for a discontinuity starting in 1981.

To help ensure that the findings were not dependent on any single measure of unemployment duration, the regressions were fitted using nine duration-related variables. Four were from the CPS and were displayed earlier in columns [2], [3], [4], and [5] of Table 1.3. Five were from the UI reporting system, and four were displayed previously in columns [6], [8], [9] and [10] of Table 1.3. The fifth is the ratio of the actual duration for UI exhaustees to potential benefit duration, i.e., the ratio of column [8] to column [7] in Table 1.3. Since the latter five measures are all derived from the UI reporting system, there is no possibility of simultaneity between these duration measures and the CPS unemployment rate when the latter is used as the cyclical control.

Table 1.5 provides a summary of the regressions showing adjusted R^2 s for the full set of 81 equations. Because even this limited detail (one summary statistic per regression) is so extensive, two kinds of summaries are also included. An average across the nine dependent variables for each specification appears in the bottom row of Table

Table 1.5. Explanatory Power of Alternative Regressions Explaining Unemployment Duration

Duration Measure	Labor Force Survey - CPS Unemployment Rate			Capacity Utilization Real GDP			Capacity Utilization Federal Reserve Index		
	T50	T50,T81	D81	T50	T50,T81	D81	T50	T50,T81	D81
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
CPS - Mean	0.659	0.898	0.704	0.866	0.864	0.828	0.662	0.662	0.670
CPS - Median - a	0.663	0.859	0.527	0.825	0.869	0.807	0.603	0.590	0.563
CPS - Work Experience - b	0.753	0.945	0.769	0.914	0.912	0.821	0.832	0.856	0.811
CPS - Proportion 27+ Weeks	0.677	0.882	0.695	0.866	0.864	0.805	0.677	0.671	0.665
UI Duration - c	0.856	0.907	0.797	0.790	0.809	0.715	0.804	0.801	0.778
UI Duration for Exhaustees - c	0.933	0.934	0.903	0.912	0.928	0.878	0.913	0.917	0.897
UI Duration/ UI Potential Dur.	0.733	0.888	0.739	0.747	0.743	0.674	0.768	0.764	0.739
UI Dur. Exhaustees/ UI Potential Dur.	0.825	0.852	0.784	0.809	0.817	0.700	0.813	0.815	0.726
UI Exhaustion Rate	0.623	0.807	0.610	0.674	0.668	0.581	0.728	0.729	0.680
Average for Nine Regressions	0.747	0.886	0.725	0.823	0.830	0.757	0.756	0.756	0.725

Source: Regressions fitted at the Urban Institute with duration data from BLS and the UI reporting systems. Estimation period is from 1950 to 2002 unless otherwise noted. Duration measured in weeks or as a ratio to UI potential duration. For each row, the best fits and second best fits are highlighted. a - 1968 to 2002 b - 1955 to 2001 c - UI potential duration also included as a regressor.

1.5. Also, the equations with the highest and the second highest adjusted R^2 's in each row are highlighted by bordering and shading respectively.

Three findings are noteworthy in Table 1.5. 1) The fits are best when the cyclical control is the CPS unemployment rate (columns [1], [2] and [3]). This holds not only for the CPS-based duration variables but also for the UI-based duration variables. In many rows, however, fits using capacity utilization based on real GDP (columns [4], [5] and [6]) are nearly as good. 2) Holding constant the effects of the business cycle, the evolution of average duration between 1950 and 2002 was more a trendwise phenomenon than a one-time shift that occurred during the early 1980s. Even though most of the dummy variable tests were significant (in the regressions underlying columns [3], [6] and [9]), the fits were generally less satisfactory than the fits using T50 or T50 with T81. None of the regressions with dummy variable tests has the highest or second highest adjusted R^2 for any of the nine dependent variables (rows). 3) The preponderance of evidence suggests the trend towards increased average unemployment duration did accelerate in 1981 compared to the trend between 1950 and 1980. Of the 27 pairs of comparisons possible in Table 1.5, the adjusted R^2 was higher in 17 instances when T81 was included along with T50. In many situations the differences in fit were very modest, but in eight equations the R^2 increased by at least 0.05 when T81 was added. Average duration has been increasing at a more rapid pace since 1981 than previously.

These regression findings provide statistical support for the patterns of average duration by decade observed previously in Table 1.3. Moving towards the present from 1950, unemployment duration has been increasing, and there is evidence that the rate of increase accelerated starting in 1981.

How large have the trendwise changes been? Using the regressions whose R^2 's are summarized in Table 1.5, the changes in predicted values were computed for the 50 year period from 1950 to 1999. The total trendwise change was the sum of two products: the coefficient for T50 times 30 (the effect of the trend from 1950 to 1980) and 19 times the net coefficient of T50 plus T81 (the effect of the combined trends from 1981 to 1999). These are the estimated effects of the trends derived by holding constant the effects of the business cycle control variables.

The exercise was done for four average duration series: the CPS mean, the CPS work experience mean, UI duration and UI duration for exhaustees. The total 50 year change was then calculated as a percentage of the mean duration for the entire period. For the CPS-based means, the range of estimated changes (increases) was from 1.84 to 5.11 weeks, and the simple average of the percentage increases was 25.1 percent. For the UI-based means the changes were smaller. The range of estimated increases in these data was from 1.45 weeks to 3.01 weeks, and the simple average of the percentage changes was 12.3 percent. Across both groups of means, the largest changes were derived from regressions using real GDP capacity utilization as the cyclical control while the smallest increases were derived using the CPS unemployment rate as the cyclical control.

While there were large estimated differences in the size of the trendwise increases in average duration, there was no disagreement among the various regressions in the direction of the estimated change. Every data series pointed to significantly longer average unemployment duration at the end of the period compared to 1950. The size of the trendwise increases implies that a typical spell of unemployment in 1999 was some 1.8 to 5.1 weeks longer than in 1950 and that regular UI benefits lasted on average 1.5 to 3.0 weeks longer in 1999 than in 1950. While individual readers may disagree as to the social significance of these evolutionary changes in average unemployment duration, there should be no disputing that average duration is now significantly longer than it was in the early 1950s.

1.5. Developments in the States Affecting UI Benefit Duration

Benefit provisions in the regular state UI programs are determined by state laws with no significant federal input. State laws cover both potential benefit duration and the level of benefits, e.g., the statutory replacement rate and the minimum and maximum weekly benefit. Each year the states enact important modifications in their UI benefit provisions. This section reviews changes in statutes affecting UI benefit duration in the regular state UI programs.

The earlier discussion of the EB and TFB programs illustrated their importance to the long term unemployed during recessionary periods. However, statutes governing the

regular UI programs in the states influence the duration of benefits in all phases of the business cycle.

Benefit duration in regular UI programs is affected by state statutes governing entry into benefit status and by the maximum potential duration of benefits. Other aspects of UI program administration, e.g., the degree to which work search is actively monitored, and the unemployment situation in local labor markets are also important in determining actual UI benefit duration. However, the present discussion focuses just on state laws related to benefit duration.

Table 1.6 summarizes four distinct aspects of duration-related state benefit statutes over the period from 1954 to 2003. Each column shows the number of states (out of 51)⁹ that have the particular feature identified in the column heading. Several columns in Table 1.6 show large changes over these 50 years.

Information on the waiting period is summarized in columns [1]-[3]. The presence of uniform duration formulas is summarized in column [4] while columns [5]-[8] focus on maximum potential benefit duration. Finally, column [9] summarizes the prevalence of state-financed added benefits (AB) programs. These provide added weeks of benefits beyond the 26 which typifies all but two state UI programs. AB programs add weeks to potential entitlements for those who exhaust regular UI benefits. The financing of AB programs is fully a state responsibility, the same as for regular UI benefits. AB is activated when a state's unemployment rate exceeds a trigger specified in its UI law.

Changes in UI statutes take place for many reasons. Three are emphasized in the present discussion. 1) High unemployment can motivate benefit liberalizations intended to lessen the hardships experienced by the long term unemployed. 2) Because state UI is a federal-state partnership, state-level changes may be induced or mandated by actions of the federal partner. In particular, federal financial inducements may motivate state-level changes. 3) States may modify statutes when their trust funds are depleted. Here the motivation is to prevent or minimize borrowing by restricting access to benefits. All three motivations have been important in the years covered by Table 1.6. Inferences about

⁹ The 51 jurisdictions are the 50 states plus the District of Columbia. Puerto Rico and the Virgin Islands are not included in the analysis.

Table 1.6. Summary of State Laws Affecting UI Benefit Duration, 1954 to 2003

Year	Waiting Period, = 0 [1]	Waiting Period, >0, <1 [2]	Waiting Period, <1 [3]	Uniform Duration [4]	Max. Duration < 26 [5]	Max. Duration 26 [6]	Max. Duration > 26 [7]	Average Max. Duration [8]	States With AB Program [9]
1954	3	2	5	14	28	22	1	22.8	0
1955	3	3	6	14	26	24	1	23.0	0
1956	4	3	7	14	24	25	2	23.6	0
1957	4	3	7	14	20	29	2	24.0	0
1958	5	3	8	15	18	31	2	24.3	0
1959	5	4	9	13	10	34	7	26.1	0
1960	5	4	9	13	9	34	8	26.3	6
1961	5	4	9	12	6	37	8	26.6	6
1962	3	6	9	11	5	37	9	26.8	7
1963	3	6	9	11	3	39	9	27.0	7
1964	4	6	10	9	3	39	9	27.0	7
1965	3	8	11	8	2	40	9	27.0	7
1966	3	8	11	7	2	40	9	27.0	8
1967	3	8	11	7	2	39	10	27.0	8
1968	4	8	12	7	1	40	10	27.1	8
1969	4	8	12	7	1	40	10	27.1	8
1970	4	8	12	7	0	41	10	27.2	8
1971	5	9	14	7	0	41	10	27.2	9
1972	7	11	18	8	0	41	10	27.2	3
1973	8	11	19	8	0	41	10	27.2	3
1974	9	11	20	8	0	41	10	27.2	3
1975	9	11	20	9	0	41	10	27.2	3
1976	12	11	23	9	0	41	10	27.2	3
1977	12	11	23	9	0	41	10	27.2	3
1978	13	10	23	9	0	41	10	27.2	3
1979	13	10	23	9	0	41	10	27.2	3
1980	13	10	23	9	0	41	10	27.1	3
1981	12	11	23	8	0	42	9	27.1	3
1982	12	8	20	8	0	42	9	27.1	8
1983	12	7	19	8	0	44	7	26.6	3
1984	12	5	17	8	0	48	3	26.2	5
1985	11	5	16	8	0	48	3	26.2	4
1986	11	5	16	8	0	49	2	26.2	5
1987	11	5	16	8	0	49	2	26.2	3
1988	12	5	17	8	0	49	2	26.2	3
1989	12	5	17	8	0	49	2	26.2	4
1990	12	5	17	8	0	49	2	26.2	4
1991	11	5	16	8	0	49	2	26.2	5
1992	11	5	16	8	0	49	2	26.2	5
1993	11	5	16	8	0	49	2	26.2	5
1994	11	5	16	8	0	49	2	26.2	5
1995	11	4	15	8	0	49	2	26.2	5
1996	11	4	15	8	0	49	2	26.2	5
1997	11	4	15	8	0	49	2	26.2	5
1998	11	4	15	8	0	49	2	26.2	5
1999	11	4	15	8	0	49	2	26.2	5
2000	11	4	15	8	0	49	2	26.2	5
2001	12	5	17	8	0	49	2	26.2	3
2002	12	5	17	8	0	49	2	26.2	3
2003	14	4	18	8	0	49	2	26.2	3

Source: Significant Provisions of State Unemployment Insurance Laws, various issues. Data refer to January 1 of each year. Average maximum duration (in weeks) is the average of 51 state maxima.

these influences will be drawn by noting the timing of certain federal statutes and changes in the number of states with particular statutory provisions.

Most states require claimants to wait one week before starting to collect UI benefits. The number requiring a one week wait in 2003 is 33 but in the mid 1950s the number ranged between 44 and 46.¹⁰ Two aspects of waiting period provisions are summarized in columns [1] and [2]. The number of states with no waiting period has increased from the 3-5 range for the years between 1954 and 1971 to the 11-14 range for all years between 1976 and 2003. The administrative feasibility of operating with no waiting period has undoubtedly improved as automation of UI administration has advanced. However, the timing of the adoptions in the early to mid 1970s suggests that easing hardships due to recessions also played a role in these adoptions.

Column [2] identifies states where one of two situations obtain. In a few, the waiting period is a number of days greater than zero but less than a full week. In most, retroactive compensation of the waiting week occurs after benefits have been received for a specific number of weeks, typically from three to five weeks. This type of retroactive compensation is present in many state Workers' Compensation programs. There was a net increase of about six states with such UI provisions between 1964 and 1981, but a like number discontinued this feature between 1982 and 1984. Problems related to low UI trust fund balances undoubtedly motivated some states to revoke these provisions during the early 1980s. Many states that changed their retroactive feature, however, did so in response to changes in the EB program. After December 5, 1980, the federal partner would not provide compensation for the first week of EB benefits in situations where there was not a one week waiting period. The retroactive compensation of the waiting week effectively meant there was a zero waiting period for everyone who exhausted regular UI benefits. Thus, the first week of EB would have to be fully state financed. To retain 50 percent federal financing of the first week of EB, the retroactive provisions were eliminated in most states with such provisions. As a consequence, the number of states with a waiting period of less than one week has been noticeably lower since 1981.

Uniform benefit duration has been noticeably less prevalent in recent years compared to the earliest years covered by Table 1.6. In the years since 1965, the count of

¹⁰ These counts are derived by subtracting the entry in column [3] from 51.

states has been consistently in the 7-9 range whereas the counts were consistently in the 13-15 range before 1960. However in the pre-1965 years most states with uniform durations had a maximum duration below 26 weeks.¹¹ On balance, the change away from uniform durations had only a small effect on overall potential duration because of the offsetting effects of a higher potential duration for some coupled with a shorter potential duration for others.

From the perspective of recent decades, it is appropriate to describe potential benefit duration in regular UI as being 26 weeks in all states except Massachusetts and Washington (where it is 30 weeks). Since 1986, maximum potential duration has been 26 weeks in 49 of the 51 programs. This will change when a new 26 week potential duration becomes effective in Washington following legislation of 2003.

Columns [5]-[7] trace the developments in potential duration by showing counts of states with less than and more than 26 weeks as well as exactly 26 weeks. In 1954 more states (28) had a potential duration of less than 26 weeks than states at 26 weeks (22). Note the timing of developments in columns [5] and [7] during the late 1950s. Between 1956 and 1960 the former decreased from 24 to 9 while the latter increased from 2 to 8. The severe recession of 1958, with its high exhaustion rates, occurred in the middle of these years. The recession motivated changes that lengthened potential duration in many states. After 1960, the numbers with potential durations of less than 26 weeks continued to decrease, and by 1970 all had a maximum of at least 26 weeks.¹²

States where regular UI could pay more than 26 weeks of benefits numbered between 8 and 10 in all years between 1960 and 1982. Adoption of these provisions was spurred by the recession of 1958 and the associated increase in benefit exhaustions. Discontinuation of these long potential durations took place mainly in 1982 and 1983, and state-level financial considerations motivated the changes. State trust funds were severely depleted during these years. By reducing potential duration to 26 weeks, a full 13 weeks of EB would receive 50 percent federal funding. To maximize the 50 percent federal EB contribution, states restricted maximum duration in the regular programs to 26

¹¹ For example, of the 14 states with uniform durations in 1954, 10 had a potential duration of less than 26 weeks. However, of the seven with uniform durations in 1966, all seven had a 26-week potential duration.

¹² One discussion of perspectives on uniform versus variable duration and the appropriate length of potential benefit duration is found in Chapters 8 and 12 of Haber and Murray (1966).

weeks. Thus all 13 weeks between 27 and 39 for an individual claimant would be eligible for the 50 percent federal cost share. This financial consideration motivated the states to shorten potential duration to 26 weeks. When West Virginia did this in 1985, it left just Massachusetts and Washington with potential durations above 26 weeks in their regular UI programs. This situation persisted through 2003 when Washington reduced potential duration for regular UI from 30 to 26 weeks.

Column [8] summarizes these developments in potential benefit duration by displaying a simple (unweighted) average of potential durations across all 51 programs. This average increased from 22.8 weeks in 1954 to 27.0 weeks in 1963 as 17 states adopted maximums of 26 weeks and 8 states adopted maximums above 26 weeks. Averages on the 27.0-27.2 plateau persisted until 1982-1983 when most states eliminated their long (greater than 26 weeks) durations. The simple average has been 26.2 weeks since 1984.

The final development to be summarized is the state adoption of Additional Benefit (AB) programs. Again, the effects of the 1958 recession are apparent in the initial set of adoptions. There were no AB programs prior to 1960 when six adopted AB. The number of states with AB increased from 6 in 1960 to a maximum of 9 in 1971. Because AB was (is) fully state-financed, these programs were mostly eliminated in 1971 when EB became operative. The financial motivation for states was direct. For weeks of AB compensation, the state share was 100 percent compared to only 50 percent if the same weeks were compensated under the EB program.

The only other noteworthy development in AB was its re-adoption by 5 states in 1982. In 1981 and early 1982, there was considerable uncertainty about the adoption of a temporary federal benefits (TFB) program. Given the high rate of exhaustions and impending changes in EB, a few states instituted AB to provide benefits to their long term unemployed. Following the adoption of the TFB program (Federal Supplemental Compensation or FSC) of 1982, the AB programs were discontinued in the states. Again, states dropped their initiatives in response an alternative program (FSC) that had full federal financing.

Two themes are present in the state actions described in the preceding paragraphs.
1) There is a strong motivation to help the long term unemployed through benefit

extensions. 2) Financial incentives figure prominently in state laws affecting the long term unemployed. When federal programs exist to serve the same long term client base, the states will terminate existing programs and/or modify their programs to minimize state expenditures and maximize federal spending on behalf of the same clients.

1.6. Summary

This chapter has summarized important evolutionary developments in the U.S. economy during the past five decades. Its purpose was to provide an overview of the labor market within which two major U.S. Department of Labor programs, Unemployment Insurance (UI) and the Employment Service (ES), have been operating. Key aspects of the business cycle extending back to the late 1940s were reviewed. Annual benefit payments for the three tiers of UI were described with attention to expenditures during recessionary periods. Absolute levels of spending and spending relative to both GDP and UI covered wages were reviewed.

The chapter also summarized developments in unemployment duration and unemployment occurrences back to 1950. A strong upward trend in average unemployment duration was documented in data from the monthly labor force survey and data from the state UI programs. The trend towards increased duration accelerated in the early 1980s. This trend has been a key factor underlying the secular increase in exhaustion rates in UI. During the 1990s exhaustion rates averaged 35.5 percent compared to 25.2 percent in the 1950s. Finally, the chapter reviewed key UI statutes in the states that affect benefit duration in the regular state UI programs. Potential duration in 8-10 states exceeded 26 weeks between 1960 and 1982 (Table 1.6). Because they were mainly smaller states, the cutback to 26 weeks in most states during the early 1980s had only a small effect on potential duration nationwide (Table 1.3). Because UI statutes on potential duration have been very stable since the early 1980s, the increases in exhaustion rates of recent decades have arisen from developments in the labor market rather than changes in UI duration statutes.

Chapter 2. Expenditures on UI Benefits

The present project assembled extensive data on UI benefits and ES activities. Chapters 2 and 3 examine aspects of UI benefit availability and benefit payments while Chapters 4 and 5 focus on ES activities. In all four chapters, the analysis is constrained by the availability of data. A brief discussion of these constraints is given in the following paragraphs. Appendices A and B provide more details about data assembly.

2.1. Data Considerations

The purpose of UI and ES activities is to assist workers experiencing difficulties in the labor market. The client base is unemployed workers and workers requiring assistance to secure more productive and fulfilling employment.

A convenient signal of the need for UI and ES services is the volume of unemployment and the associated unemployment rate (those unemployed as a fraction (or percent) of the total employed plus unemployed). The most widely recognized measures of unemployment are derived from monthly household labor force survey (the Current Population Survey or CPS), an ongoing survey that has operated continuously since the mid-1940s. Since 1967, the CPS design has included geographic controls so that state and regional measures of unemployment are available from that date. This and subsequent chapters emphasize UI and ES developments in states and regions. The analysis covers the time period from 1967 to 2001-2002.

Data on UI benefits (benefit amounts, first payments, weeks compensated, average duration and exhaustions) extend back to the 1940s as shown in the previous chapter. State data for the regular UI program also extend back to the 1940s. Data for the Federal-State Extended Benefits (EB) program with state detail are available for all years between 1971 (when benefits were first paid) and the present. For the programs that paid Temporary Federal Benefits (TFB), however state-level details are available only from 1975. Appendix A describes procedures used to develop state estimates during 1975, 1976 and 1977. For earlier recessions, however, details on TFB payments are available nationally (as shown in Table 1.2 of Chapter 1) but not for individual states.

This chapter's analysis of UI spending will focus on each of the three tiers of benefits: regular UI, EB and TFB. It should be noted that while individual states have supported additional benefits (AB) programs in the past, there are no data that separately identify these benefits. Like regular UI benefits, they are fully state financed. Thus, in the reporting system for the individual state UI trust fund accounts, withdrawals from state trust funds to pay AB are not distinguished from withdrawals to pay regular UI benefits.

Given the differing availability of state unemployment data and the differing availability of the three tiers of benefits, the time periods for the separate analyses differ. Regular UI benefits by state are traced from 1967 to 2002. EB is traced from 1971 to 2002 while TFB is traced from 1975 to 2002 for years when there was a TFB program.

The intent of the present chapter is to provide a summary overview of UI spending with geographic detail. Reciprocity rates and associated spending in state UI programs vary widely (Vroman (2002)). Because of the large volume of information from the states, it was decided to conduct the analysis at the level of regions as well as states, but to emphasize regional detail in the tabular summaries.

There are two widely used regional aggregations of states. The U.S. Department of Labor (DOL) has traditionally administered its programs using ten regions. Recently this administrative structure was consolidated into six regions. The second set of regional aggregations is the set of nine divisions specified by U.S. Bureau of the Census, the so called Census Divisions. This is a nine-way grouping of states which aggregates to four regions (North East, Midwest, South and West) and to the nationwide total. The main choice for the present analysis was between the ten DOL regions and the nine Census Divisions. Because the project was supported by DOL, it seemed likely that more readers would prefer to have summaries based on the 10 DOL regions with associated tables showing DOL regional data. Appendix C presents some information on UI benefits for the nine Census Divisions. It also identifies the regional and divisional affiliations of the individual states. For the DOL regions, Table C.1 shows each state's regional affiliation using both the earlier 10 region classification scheme and the present six region classification scheme.

2.2. Regional Unemployment Patterns

Since unemployment drives so much of UI and ES activities, it seemed appropriate to review regional developments in unemployment prior to examining UI program activities. Table 2.1 summarizes relative unemployment rates for the 10 DOL regions spanning the 36 years from 1967 to 2002. (Table C.1 shows the states in each DOL region.) Each entry is the regional unemployment rate divided by the national unemployment rate for the year. Entries above and below 1.0 identify situations with above-average and below-average unemployment rates respectively. Summary statistics at the bottom of Table 2.1 are shown to provide an idea of how much the regional unemployment rates varied about the national unemployment rate during this period.

Because Table 2.1 has so much detail (360 region-year data points), the lowest and highest relative unemployment rates are highlighted for each year. Brackets identify the region with the lowest unemployment rate. Three regions had all the observations with the lowest unemployment rates, i.e., DOL regions 1, 7 and 8. Each had the lowest rate during at least nine separate years. Note that the lowest-ever relative rates occurred during 1986-1988 in Region 1 when rates were less than 60 percent of the national average. Observe that Region 7's rate exceeded 0.90 of the national rate just once (1987). For Region 8, only five years had unemployment rates at or above the national average.

The distribution of highest regional unemployment rates (cells with dark backgrounds) was much more widespread. Six separate regions experienced the highest relative unemployment rates with the most persistent patterns of high unemployment found in the far western states, i.e., Regions 9 and 10. Respectively, the two regions accounted for 10 and 11 years of highest unemployment, including all years since 1992.

Regional averages appear at the bottom of Table 2.1. The lowest 36-year averages obtained in the three regions with persistently low unemployment, Regions 1, 7 and 8. Their averages over the period were 0.89, 0.75 and 0.83 respectively. Regions 9 and 10 had the highest relative unemployment with respective 36-year averages of 1.17 and 1.20. Note that the other five regions had averages within five percentage points of 1.00.

Table 2.1 also shows that the regions differ in the extent to which their average unemployment rates have deviated from the national average. The standard deviation

Table 2.1. Relative Unemployment Rates for DOL Regions, 1967 to 2002.

Year	DOL Reg 1	DOL Reg 2	DOL Reg 3	DOL Reg 4	DOL Reg 5	DOL Reg 6	DOL Reg 7	DOL Reg 8	DOL Reg 9	DOL Reg 10
1967	0.70	0.97	0.95	1.05	0.90	1.07	0.61	0.94	1.46	1.26
1968	0.76	0.89	0.95	1.07	0.90	1.15	0.62	0.98	1.39	1.31
1969	0.79	0.93	0.92	1.00	0.90	1.14	0.66	1.04	1.41	1.41
1970	0.99	0.91	0.87	0.91	0.99	1.00	0.65	0.88	1.41	1.61
1971	1.16	1.06	0.84	0.81	0.99	0.91	0.70	0.79	1.42	1.49
1972	1.23	1.15	0.91	0.80	0.96	0.92	0.63	0.82	1.32	1.48
1973	1.25	1.11	0.93	0.80	0.92	0.91	0.64	0.94	1.37	1.48
1974	1.17	1.14	0.92	0.95	0.92	0.89	0.65	0.82	1.29	1.31
1975	1.19	1.15	0.90	1.04	1.02	0.77	0.65	0.76	1.15	1.12
1976	1.19	1.34	0.95	0.94	0.93	0.81	0.63	0.68	1.20	1.12
1977	1.10	1.31	0.99	0.98	0.91	0.83	0.68	0.78	1.17	1.14
1978	0.95	1.25	1.05	0.96	0.95	0.87	0.68	0.81	1.15	1.10
1979	0.94	1.22	1.08	0.97	1.02	0.83	0.69	0.75	1.05	1.17
1980	0.83	1.04	0.99	0.97	1.25	0.80	0.82	0.79	0.94	1.13
1981	0.83	0.99	1.03	1.01	1.22	0.79	0.83	0.75	0.95	1.23
1982	0.81	0.90	1.02	1.02	1.24	0.79	0.83	0.76	1.02	1.19
1983	0.71	0.87	1.03	1.03	1.21	0.93	0.84	0.76	0.99	1.13
1984	0.65	0.91	1.03	1.02	1.21	0.93	0.85	0.78	0.99	1.22
1985	0.61	0.87	0.98	0.98	1.19	1.10	0.88	0.85	0.99	1.17
1986	0.56	0.84	0.89	1.00	1.10	1.35	0.86	1.00	0.95	1.21
1987	0.54	0.74	0.86	0.99	1.13	1.42	0.92	1.11	0.93	1.19
1988	0.57	0.74	0.89	1.01	1.10	1.42	0.89	1.05	0.97	1.13
1989	0.73	0.91	0.84	1.03	1.06	1.29	0.87	1.01	0.95	1.13
1990	1.02	0.93	0.93	1.00	1.06	1.13	0.84	0.86	1.00	0.96
1991	1.18	1.04	0.99	0.98	1.01	1.01	0.76	0.74	1.07	0.94
1992	1.07	1.14	0.97	0.96	0.95	1.00	0.64	0.74	1.18	1.01
1993	0.98	1.12	0.96	0.92	0.92	1.02	0.73	0.70	1.28	1.07
1994	0.97	1.13	0.95	0.93	0.87	1.06	0.72	0.68	1.34	1.00
1995	0.96	1.14	0.98	0.94	0.85	1.06	0.74	0.73	1.32	1.04
1996	0.89	1.15	0.96	0.94	0.86	1.06	0.77	0.75	1.28	1.16
1997	0.89	1.21	1.01	0.96	0.84	1.09	0.75	0.70	1.22	1.08
1998	0.78	1.17	0.97	0.93	0.84	1.11	0.79	0.87	1.26	1.13
1999	0.78	1.18	0.94	0.95	0.89	1.09	0.72	0.82	1.21	1.22
2000	0.69	1.08	0.92	0.97	0.94	1.08	0.81	0.78	1.19	1.29
2001	0.77	0.98	0.89	1.03	0.99	1.03	0.86	0.82	1.11	1.31
2002	0.84	1.04	0.86	0.99	0.99	1.04	0.83	0.92	1.12	1.25
Average	0.89	1.04	0.95	0.97	1.00	1.02	0.75	0.83	1.17	1.20
Std. Dev.	0.20	0.15	0.06	0.06	0.12	0.17	0.09	0.11	0.17	0.15
Coeff. Var.	0.23	0.15	0.06	0.06	0.12	0.17	0.12	0.13	0.14	0.13

Source: Based on data in U.S. Department of Labor, Bureau of Labor Statistics, "Geographic Profile of Employment and Unemployment," various issues and state data developed in Vroman, Worden and Acs (1992). Regional unemployment rates measured a ratio to the national unemployment rate.

shows the average (absolute) deviation of the state's relative unemployment rate from 1.0. Region 1 (New England) has by far the largest standard deviation (0.20) while Regions 3 and 4 have the smallest (0.06). These represent the extremes of deviations from the national average unemployment rate. The other seven regions had standard deviations that ranged between 0.09 and 0.17.

The coefficient of variation (CV, bottom row of Table 2.1) is defined as the ratio of the standard deviation to the mean, i.e., the ratio of the immediately higher two rows. It is a gauge of relative variability. In these data, the CVs are dominated by the standard deviations. Thus the largest CV is in Region 1 (0.23) and the smallest ones are Regions 3 and 4 (0.06). The remaining seven fall into the range between 0.12 and 0.17. The fact that the standard deviation and the CV are both largest in Region 1 is hardly surprising since it is unique in having experienced both the lowest and the highest relative unemployment rates in different years.

In considering the regional patterns displayed in Table 2.1, three final comments may be appropriate. 1) There are some systematic differences in unemployment rates across these ten regions. Regions 1, 7 and 8 have had below-average unemployment rates in most years, i.e., 93 of 108 region-year observations. In contrast, Regions 9 and 10 had above-average unemployment in 61 of 72 region-year observations. These five regions have displayed unemployment rates that deviated systematically from the national average and all by more than 10 full percentage points, i.e., below 0.90 or above 1.10. Unemployment rates in the other regions have moved much more like the national average during these 36 years. 2) Certain past economic crises and booms experienced by individual regions are apparent in Table 2.1. Thus the rust belt unemployment problem of the early 1980s is apparent in the Region 5 data and the energy crisis of the mid to late 1980s is apparent in the Region 6 data. Finally, the so called Massachusetts miracle of the mid-to-late 1980s is also apparent in the data for Region 1 with relative unemployment rates below 0.75 of the national average for seven successive years. 3) Unemployment rates in the DOL regions do not march in lock step with the national unemployment rate. In considering the unemployment rates in the states, there would be even more variation and deviations from the national unemployment rate than suggested by the regional relative unemployment rates shown in Table 2.1.

2.3. Regular UI Benefits by DOL Region

The payment of regular UI benefits varies widely by state and region. Table 2.2 summarizes spending by DOL region using averages for the 36 years from 1967 to 2002. The data are arrayed by region with national data in the bottom line. Column [1] shows average unemployment rates (TURs) for these years while column [2] shows relative unemployment rates. The entries in column [2] are very similar to the averages displayed previously at the bottom of Table 2.1.¹³ Thus Regions 9 and 10 stand out as having high unemployment rates while Regions 1, 7 and 8 have low unemployment rates.

Columns [3] and [4] show averages of unemployment (from the CPS) and of weekly regular UI beneficiaries. Their ratio, column [5], illustrates the range of regional reciprocity rates, from a high of 0.43 in Region 1 to a low of 0.21 in Region 6. Reciprocity in the region with highest reciprocity is about twice as likely as in the region with lowest reciprocity. Over these 36 years, three regions have high reciprocity (Regions 1, 2, and 10) while three have low reciprocity (Regions 4, 6 and 8). Column [6] shows these contrasts in relative terms expressing each regional reciprocity rate as a ratio to the national rate. Similar regional contrasts are obtain using insured unemployment to measure reciprocity.

Columns [7]-[9] then focus on regular UI benefit payments. Regional averages appear in column [7] while averages per unemployed person appear in column [8]. The latter, which adjusts for the size of the regional labor force and unemployment, again shows a range that has the highest average (\$3,211 in Region 1) more than twice the lowest average (\$1,429 in Region 4). The latter ratios divided by the national average of \$2,165 provide a relative index of benefit costs per unemployed person (column [9]).

Relative reciprocity (column [6]) and relative costs (column [9]) across regions are closely related. Their simple correlation in Table 2.2 is 0.964. Most of the regional variation in regular UI costs per unemployed person reflects differing reciprocity rates.

¹³ The two sets of averages are computed differently. The Table 2.1 averages are based on 36 calculations of the regional unemployment divided by the national unemployment rate, i.e., 36 relative unemployment rates, whereas in Table 2.2 the relatives are computed from the 36 year averages of regional unemployment rates (column [1]) divided by the 36 year national average. While the two calculations are not necessarily identical, they are very similar. The largest contrast for a given region is only 0.02.

Table 2.2. Regular UI Benefit Payments for DOL Regions, 1967 to 2002.

DOL Region	Unemployment Rate, TUR % [1]	Relative TUR = [1]/6.05 [2]	Unemployment [3]	Weekly UI Beneficiaries [4]	UI Reciprocity Rate = [4]/[3] [5]	Relative UI Reciprocity = [5]/0.31 [6]	Regular UI Benefits [7]	Benefits per Unemployed = [7]/[3] [8]	Relative Benefits per Unem. = [8]/2165 [9]
Region 1	5.42	0.90	342	148	0.43	1.37	1100	3211	1.48
Region 2	6.30	1.04	749	307	0.41	1.31	2169	2896	1.34
Region 3	5.77	0.95	690	235	0.34	1.09	1691	2451	1.13
Region 4	5.87	0.97	1139	270	0.24	0.76	1628	1429	0.66
Region 5	6.18	1.02	1383	428	0.31	0.99	3195	2310	1.07
Region 6	6.05	1.00	760	157	0.21	0.66	1104	1452	0.67
Region 7	4.58	0.76	270	83	0.31	0.98	530	1964	0.91
Region 8	4.96	0.82	178	41	0.23	0.73	301	1692	0.78
Region 9	6.93	1.15	1040	364	0.35	1.12	2251	2165	1.00
Region 10	7.18	1.19	297	115	0.39	1.23	860	2894	1.34
U.S.	6.05	1.00	6848	2148	0.31	1.00	14829	2165	1.00

Source: Data from the Bureau of Labor Statistics and the Office of Workforce Security. Unemployment and weekly UI beneficiaries in thousands. UI benefits in millions. Data are averages for 1967 to 2002

The close linkage between the average reciprocity rate and the average cost rate also obtains across the individual states. When averages like those in columns [6] and [9] were computed for states during the same 36 years, the resulting correlation was found to be 0.946, nearly as high as for the regional data. The reciprocity rate in the regular UI program (beneficiaries as a fraction of the unemployed) is the primary determinant of the relative cost rate (benefit costs per unemployed person relative to the national average).

Access to regular UI benefits and benefit generosity are primarily matters determined by the individual states. Thus it should not be a surprise that reciprocity varies widely across states and regions. This variation is longstanding and the patterns have been quite stable since 1967.¹⁴ The decisions regarding eligibility have traditionally been state prerogatives with no substantive federal input. Interstate differences in political forces and concerns over labor costs undoubtedly both play a role in how states set the rules governing both monetary and nonmonetary eligibility requirements. Absent federal mandates and/or minimum performance standards governing benefits, it is not surprising that outcomes regarding regular UI benefits should be highly varied by state and region.

For persons who exhaust regular UI benefits, access to EB and/or TFB may be possible if the latter programs are activated when the exhaustions take place. However, receipt of regular UI acts as a screen that governs access to the latter programs even when one or both are active. The screening role of regular UI could influence the interstate distribution of benefits from EB and/or FSB. Subsequent sections examine this question.

2.4. Receipt of EB

As noted, the EB program started to pay benefits in 1971. Its subsequent history falls into two broad periods. During the 13 years between 1971 and 1983 it was widely used with total benefit payouts exceeding \$16 billion. For most of these years, the program operated with the initial, comparatively low trigger thresholds.

Legislation of late 1980 modified the trigger mechanism for EB with provisions that became effective during 1981 and 1982. However many states continued to pay EB through 1983 because the level of unemployment was so high that the EB triggers

¹⁴ See, for example, Chart II-4 in Vroman(2002) for a visual representation of this stability.

remained active. Note in Table 1.2 that EB payouts totaled \$1.3 billion, \$2.4 billion and \$1.7 billion for the three years 1981, 1982 and 1983.

After 1983, EB has ceased to be an important program for the unemployed. The highest annual payout in the nineteen years between 1984 and 2002 was \$264 million in 1991.¹⁵ The initial analysis of this section focuses on the years 1971 to 1983.

Table 2.3 displays 1971-1983 data for the DOL regions divided into two sub-periods. Panel A pertains to the four years when the national EB trigger was “On” for a significant portion of the year. The threshold selected was five or more months. Under this threshold there were four individual years when EB was “On,” 1975, 1976, 1977 and 1980.¹⁶ Data for the remaining nine years between 1971 and 1983 appear in Panel B of Table 2.3. During both sub-periods EB paid out about \$8.1 billion.

Panels A and B of Table 2.3 are arranged to allow comparisons between the regular UI program and EB during these two periods. The format of the table closely parallels that of Table 2.2. Columns [1] and [2] display average and relative unemployment rates for the indicated periods. Columns [3]-[6] display regional data related to regular UI reciprocity, respectively average unemployment, average beneficiaries, the reciprocity rate and the relative reciprocity rate. In column [6] of both panels there is roughly a two to one range of relative reciprocity rates, as noted previously in Table 2.2 for the 1967-2002 period. As before, relatively high reciprocity is observed in Regions 1, 2 and 10 and relatively low reciprocity in Regions 4, 6 and 8.

Columns [7]-[9] focus on regular UI benefit payments for the two time periods, showing respectively averages, averages per unemployed person and benefit costs per person measured relative to the national average. In both panels, a close association between relative reciprocity (column [6]) and relative costs per unemployed person (column [9]) is observed. The correlation between the two series is 0.942 in Panel A and 0.878 in Panel B. Again, the principal determinant of relative costs per unemployed person for the regular UI program during both periods is the relative reciprocity rate.

¹⁵ The total given in Table 1.2 and in the text excludes Puerto Rico and the Virgin Islands. Adding their EB payments raises the national total to \$294 million in 1991.

¹⁶ The national trigger was also “On” for about three months in 1972. Despite this activation, EB actually paid fewer benefits in 1972 than in 1971. When individual state data for 1972 were examined it was apparent that in many states the program never served many claimants. This probably reflects lags in establishing EB since it was just the program’s second year of operation.

Table 2.3. Regular UI and EB Benefit Payments for DOL Regions, 1971 to 1983

DOL Region	Unemployment Rate, TUR % [1]	Relative TUR = [1]/U.S. [2]	Unemployment [3]	Regular UI Beneficiaries [4]	UI Reciprocity Rate = [4]/[3] [5]	Relative UI Reciprocity = [5]/U.S. [6]	Regular UI Benefits [7]	Reg. Ben. per Unemployed = [7]/[3] [8]	Relative Reg. Ben. per Unem. = [8]/U.S. [9]	EB Benefits [10]	EB Ben. per Unemployed = [10]/[3] [11]	Relative EB Ben. per Unem. = [11]/U.S. [12]
Panel A. Four years when the national EB trigger was "On" for five or more months: 1975, 1976, 1977 and 1980												
Region 1	8.23	1.08	477	199	0.42	1.17	782	1641	1.12	156	327	1.20
Region 2	9.18	1.21	1021	420	0.41	1.15	1683	1649	1.13	407	399	1.47
Region 3	7.24	0.95	789	328	0.41	1.16	1413	1791	1.23	179	227	0.83
Region 4	7.45	0.98	1196	355	0.30	0.83	1218	1018	0.70	222	185	0.68
Region 5	7.79	1.03	1622	610	0.38	1.05	2888	1781	1.22	580	357	1.32
Region 6	6.06	0.80	617	138	0.22	0.63	488	790	0.54	79	129	0.47
Region 7	5.25	0.69	284	105	0.37	1.03	426	1497	1.02	68	240	0.88
Region 8	5.72	0.75	172	44	0.26	0.72	189	1099	0.75	23	134	0.49
Region 9	8.48	1.12	1020	366	0.36	1.00	1402	1375	0.94	256	251	0.92
Region 10	8.56	1.13	293	111	0.38	1.06	455	1555	1.06	66	227	0.83
U.S.	7.59	1.00	7491	2677	0.36	1.00	10944	1461	1.00	2036	272	1.00
Panel B. The other nine years between 1971 and 1983												
Region 1	6.51	0.96	378	158	0.42	1.31	666	1759	1.21	50	133	1.01
Region 2	7.09	1.05	795	339	0.43	1.34	1410	1774	1.22	144	181	1.37
Region 3	6.67	0.99	737	258	0.35	1.10	1278	1734	1.19	92	124	0.95
Region 4	6.38	0.94	1065	249	0.23	0.73	962	903	0.62	52	49	0.37
Region 5	7.29	1.08	1539	470	0.31	0.96	2550	1657	1.14	327	213	1.62
Region 6	5.84	0.86	624	133	0.21	0.67	650	1042	0.71	23	37	0.28
Region 7	5.00	0.74	272	86	0.31	0.99	385	1416	0.97	18	66	0.50
Region 8	5.34	0.79	165	40	0.24	0.77	214	1299	0.89	7	43	0.33
Region 9	7.71	1.14	950	331	0.35	1.10	1352	1423	0.97	119	125	0.95
Region 10	8.56	1.27	300	105	0.35	1.10	492	1643	1.13	66	220	1.67
U.S.	6.76	1.00	6825	2168	0.32	1.00	9960	1459	1.00	897	131	1.00

Source: Data from the Bureau of Labor Statistics and the Office of Workforce Security. Unemployment and regular UI beneficiaries in thousands. Regular UI and EB benefits in millions. Data are averages for indicated sets of four and nine years respectively.

The final three columns in Table 2.3 focus on regional EB costs during these two periods. Inspection of column [11] shows clearly that there is much wider variation in EB costs per unemployed person across the regions than in regular UI costs. The high to low ratio in Panel A is the ratio of \$399 (Region 2) to \$129 (Region 6) or 3.09 while in Panel B it is the ratio of \$220 (Region 10) to \$37 (Region 6) or 5.95. The analogous high-to-low ratios for regular UI (column [8]) are 1.75 in Panel A and 1.96 in Panel B.

Two aspects of the greater variation in EB costs by region are noteworthy. First, the three regions with lowest regular UI costs per unemployed (column [8]) also have the lowest EB costs (column [11]), i.e., Regions 4, 6 and 8.¹⁷ Second, the wider variability of EB costs in Panel B compared to Panel A would be anticipated since the national trigger activated the EB program in all states for a substantial share of each of the four years that underlie the Panel A data.

In both panels of Table 2.3, there is a statistically significant association between relative costs of regular UI and EB across the ten regions. The correlation between columns [9] and [12] in Panel A is 0.780 and in Panel B it is 0.781. Thus, a strong positive association held during both periods between regular UI costs and EB costs when both were measured per unemployed person.

The analyses of the Table 2.3 regional data as just described were also conducted using data for the individual states. The set-up was the same as in Table 2.3 with the data spanning 1971 to 1983 divided into the same four and nine year periods. At the state level, the correlation between the relative reciprocity rate and relative regular UI benefits was 0.945 for the four years when the national EB trigger was “On” for five or more months. For the other nine years of the 1971-1983 period the correlation was 0.884. For both periods, the relative reciprocity rate was the main determinant of relative benefit costs per unemployed person.

As with the regional data of Table 2.3, however, there was a significant but less tight association across the states between relative regular UI costs and EB costs. The correlation was 0.659 for the four-year period and 0.688 for the nine-year period. Even though these correlations were similar, the regression equation for the nine-year period

¹⁷ The pattern for the high cost regions is less dramatic, partly because of high costs in Regions 3 and 5 as well as Regions 1, 2 and 10.

was much less precise in its estimation of the individual state averages. Thus the standard error of estimate (the average distance between actual and predicted values) was \$293 for the four year national trigger period but \$749 for the other nine year period. In years where the national EB trigger was not active for five or more months, there was a strong positive association with regular UI costs, but at the same time a much less precise association when compared to the years when the national EB trigger was “On.”

The findings of analysis at the state level strongly paralleled the findings for the regional data from Table 2.3. This held for both periods within the thirteen year interval 1971 to 1983. The state-level analysis of EB expenditures reinforces the findings of the analysis of data from the ten DOL regions. There is a strong positive association between regular UI spending and EB spending, but the connection is, as would be expected, less tight than the connection between the reciprocity rate and the costs of benefits in the regular UI program.

As noted previously, EB spending since 1983 has been much lower than in the 1971-1983 period. While several factors help to explain this change, the most obvious is the change in the EB triggering mechanism. The net effect of the changes legislated in 1980 is to make it much more difficult to activate EB. A second factor is that unemployment rates between 1984 and 2002 were generally low with only two annual average TURs at 7.5 percent and four in the range between 7.2 percent and 6.9 percent.¹⁸ A third factor has been the lower reciprocity rates in regular UI programs since 1980.

To examine the changes in EB availability Table 2.4 displays summaries of annual state data spanning the full 32 years between 1971 and 2002. The data have been aggregated into three time periods: the four year and the nine year periods between 1971 and 1983 (differentiated by whether EB was “On” for five or more months), and the remaining nineteen years between 1984 and 2002.

Three other dimensions of information are included in Table 2.4. The 51 state UI programs (the fifty states plus the District of Columbia) have been divided into three groups according to the long run level of their regular UI reciprocity rate. The ratio of beneficiaries to unemployment was averaged for each state for the full 36 years between 1967 and 2002 and each state was classified as either high, medium or low. For the three

¹⁸ Recall column [1] of Table 1.2.

Table 2.4. Proportion of Years EB Payments by States Met the Indicated Thresholds Relative to Regular UI Benefits, 1971 to 2002

Relative Unemployment Rate	Relative UI Recip-ency Rate	Total EB - 2 Pct. of Regular UI			Total EB - 5 Pct. of Regular UI			Total EB - 10 Pct. of Regular UI		
		1971-1983 National Trigger "On" Five Months, 4 Years	1971-1983 No Nat. Trigger of Five Months, 9 Years	1984-2002 No National Trigger 19 Years	1971-1983 National Trigger "On" Five Months, 4 Years	1971-1983 No Nat. Trigger of Five Months, 9 Years	1984-2002 No National Trigger 19 Years	1971-1983 National Trigger "On" Five Months, 4 Years	1971-1983 No Nat. Trigger of Five Months, 9 Years	1984-2002 No National Trigger 19 Years
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
High	High	1.00	0.82	0.27	1.00	0.73	0.18	0.91	0.49	0.05
	Medium	1.00	0.82	0.07	1.00	0.76	0.05	0.91	0.49	0.01
	Low	1.00	0.65	0.03	1.00	0.57	0.03	1.00	0.39	0.01
Medium	High	1.00	0.71	0.03	1.00	0.67	0.00	0.65	0.49	0.00
	Medium	1.00	0.37	0.00	1.00	0.14	0.00	0.77	0.06	0.00
	Low	1.00	0.29	0.00	0.91	0.04	0.00	0.83	0.00	0.00
Low	High	1.00	0.27	0.00	1.00	0.14	0.00	0.65	0.10	0.00
	Medium	1.00	0.24	0.00	0.92	0.20	0.00	0.73	0.08	0.00
	Low	1.00	0.29	0.00	0.96	0.16	0.00	0.70	0.00	0.00
Total	High	1.00	0.60	0.10	0.99	0.51	0.06	0.74	0.36	0.02
	Medium	1.00	0.48	0.02	0.97	0.37	0.02	0.80	0.21	0.00
	Low	1.00	0.41	0.01	0.99	0.25	0.01	0.84	0.13	0.00
Total	Total	1.00	0.50	0.04	0.98	0.38	0.03	0.79	0.23	0.01
	State-Year Observations	204	459	969	204	459	969	204	459	969

Source: Data from the Office of Workforce Security, "Unemployment Insurance Financial Handbook" and annual Handbook updates. Each proportion shows the fraction of state-year observations that EB payments met the designated threshold.

periods of interest, the average unemployment rates (TURs) for each state were computed and states were again classified as either high, medium or low. Columns [1] and [2] in Table 2.4 display the crossclassification of the two three-way breakdowns. Finally, the annual level of EB benefits was measured as a fraction of regular UI benefits for the same year. Three thresholds for EB as a proportion of regular UI benefits are shown in Table 2.4; 2 percent, 5 percent and 10 percent.

Thus there are four dimensions of information in Table 2.4, each arranged as a three-way classification yielding 81 permutations. For each one, the table shows the number of state-year observations where the designated threshold is met, expressed as a proportion of all state-year observations that fall into the particular cell. The four bottom rows in the table provide summaries of the same proportions.

Starting with column [3], note that every state regardless of TUR or regular UI reciprocity rate met the 2 percent threshold during the four years when the national EB trigger was “On” for five or four months. The 5 percent threshold was also generally met (column [6]) during these years. About 80 percent of the (204) state-year observations also met the 10 percent threshold (column [9]). In this column, however, note that the likelihood of EB payouts meeting this threshold was higher in states where the relative unemployment rate was high, e.g., 0.91 or above compared to proportions in the 0.65-0.83 range for states with medium and low unemployment.

For the other nine years of the 1971-1983 period, there is a clear association between the likelihood of meeting a designated threshold and both the relative unemployment rate and the regular UI reciprocity rate. For the 5 percent threshold, states where both unemployment and reciprocity were in the top group had a proportion of 0.73 whereas those where both were in the bottom group had a proportion of 0.16.

The contrast between the two 1971-1983 subperiods and the 1984-2002 period is vivid. Just a single proportion in columns [5], [8], and [11] exceeds 0.25 and just two exceed 0.15. Both obtained in the states with high unemployment and with high reciprocity, e.g., the first row. Of the remaining 25 entries (top nine rows), two were 0.05, three were 0.03, two were 0.01 and the other 18 were zero.

Reciprocity rates near the bottom of Table 2.4 show a strong relationship between likelihood of EB meeting the specified threshold and the state’s reciprocity rate. For most

triplets in the top nine rows of columns [4]-[11] a strong relationship between the reciprocity rate and the likelihood of EB meeting the designated threshold is present. The single large exception is found in column [9] and that occurred in years when the national EB trigger was “On” for five or more months. To have the possibility of receiving EB benefits in years when the national trigger is not active, it is best to be from a state with a high regular UI reciprocity rate. That is the clear message from the data examined here.

2.5. Temporary Federal Benefits

Although Temporary Federal Benefits (TFB) programs have been enacted in every recession since the downturn of 1958, data at the level of states and regions are only available from 1975.¹⁹ During the 28 years between 1975 and 2002 there were nine separate years when TFB payments were made during most or all of the year. Thus the present analysis focuses on data from the years 1975, 1976, 1977, 1982, 1983, 1984, 1992, 1993, and 2002.

From column [5] of Table 1.2 it is clear that the level of TFB payments was much higher during the two most recent recessions than in the 1975-1977 and 1982-1984 periods. The annual average for the six earlier years was \$1.9 billion compared to \$12.0 billion for the three recent recessionary years. Because of this contrast in spending levels, the information on TFB expenditures was aggregated into two groupings; the six earlier years between 1975 and 1984 and the three later years between 1992 and 2002.²⁰

Table 2.5 presents summary data in two panels: the six earlier years of TFB in Panel A and the three recent years in Panel B. Note that the structure of information in the columns of Table 2.5 replicates the structure followed previously in Table 2.3 for the analysis of the EB program. The data are arranged by DOL region with attention to unemployment rates, regular UI reciprocity rates, regular UI benefit payments and TFB benefit payments. National summaries appear at the bottom of each panel.

¹⁹ Appendix A discusses the availability of TFB data including procedures to develop state estimates during the three years from 1975 to 1977. Details of individual TFB programs are given in Section 1 of Chapter 3.

²⁰ When the current recession ends, it is clear that TFB data from 2003 will also be important to study. The current program (Temporary Extended Unemployment Compensation or TEUC) will pay benefits throughout 2003. Note that data from 1991 and 1994 are not included in the present analysis. They were excluded because of the low level of total expenditures during both years compared to 1992 and 1993.

Table 2.5. Regular UI and TFB Benefit Payments for DOL Regions, Nine Years from 1975 to 2002.

DOL Region	Unemployment Rate, TUR % [1]	Relative TUR = [1]/U.S. [2]	Unemployment [3]	Regular UI Beneficiaries [4]	UI Reciprocity Rate = [4]/[3] [5]	Relative UI Reciprocity = [5]/U.S. [6]	Regular UI Benefits [7]	Reg. Ben. per Unemployed = [7]/[3] [8]	Relative Reg. Ben. per Unem. = [8]/U.S. [9]	Temp. Federal Benefits, TFB [10]	TFB per Unemployed = [10]/[3] [11]	Relative TFB Ben. per Unem. = [11]/U.S. [12]
Panel A. Six early years when a TFB program was active most of the year: 1975, 1976, 1977, 1982, 1983 and 1984												
Region 1	7.74	0.93	464	187	0.40	1.25	853	1838	1.19	280	604	2.75
Region 2	8.86	1.06	1005	392	0.39	1.21	1768	1760	1.14	449	447	2.03
Region 3	8.23	0.99	931	342	0.37	1.14	1799	1933	1.25	292	314	1.43
Region 4	8.38	1.01	1452	376	0.26	0.80	1493	1028	0.67	261	180	0.82
Region 5	9.17	1.10	1966	608	0.31	0.96	3455	1758	1.14	592	301	1.37
Region 6	7.01	0.84	801	188	0.24	0.73	1007	1258	0.82	113	141	0.64
Region 7	6.26	0.75	348	111	0.32	0.99	526	1511	0.98	84	243	1.10
Region 8	6.28	0.75	207	56	0.27	0.84	319	1538	1.00	34	164	0.74
Region 9	8.99	1.08	1181	416	0.35	1.09	1874	1587	1.03	268	227	1.03
Region 10	9.63	1.16	357	128	0.36	1.11	656	1840	1.19	117	329	1.50
U.S.	8.33	1.00	8711	2803	0.32	1.00	13423	1541	1.00	1917	220	1.00
Panel B. Three recent years when a TFB program was active most of the year: 1992, 1993 and 2002												
Region 1	6.57	0.97	471	190	0.40	1.28	2326	4938	1.51	1227	2604	1.96
Region 2	7.44	1.10	964	365	0.38	1.20	4275	4435	1.35	2385	2474	1.86
Region 3	6.31	0.94	863	290	0.34	1.06	3193	3699	1.13	1586	1837	1.38
Region 4	6.44	0.96	1545	379	0.25	0.78	3336	2160	0.66	1369	886	0.67
Region 5	6.44	0.96	1602	517	0.32	1.02	5746	3587	1.10	1560	974	0.73
Region 6	6.85	1.02	1031	231	0.22	0.71	2213	2146	0.66	811	787	0.59
Region 7	4.90	0.73	323	107	0.33	1.05	993	3077	0.94	285	884	0.66
Region 8	5.24	0.78	232	52	0.22	0.71	574	2471	0.75	182	785	0.59
Region 9	8.07	1.20	1565	546	0.35	1.10	5047	3226	0.98	1930	1234	0.93
Region 10	7.39	1.10	396	164	0.42	1.31	1751	4421	1.35	633	1600	1.20
U.S.	6.74	1.00	8991	2844	0.32	1.00	29454	3276	1.00	11969	1331	1.00

Source: Data from the Bureau of Labor Statistics and the Office of Workforce Security. Unemployment and regular UI beneficiaries in thousands. Regular UI and TFB benefits in millions. Data are averages for indicated sets of six and three years respectively.

Because TFB programs originate in periods of high unemployment, note that the national average unemployment rates in both Panels A and B (8.33 percent and 6.74 percent respectively) are higher than the 36 year average of 6.05 percent displayed earlier in Table 2.2. The differences in national unemployment between Panels A and B provide another indication of how the past two recessions have been less severe than those of the mid 1970s and the early 1980s.

The regular UI program reciprocity rates in columns [5] and [6] repeat geographic patterns noted earlier. Reciprocity is consistently above-average in Regions 1, 2 and 10 and consistently below-average in Regions 4, 6 and 8. Also consistent with earlier findings, there is a close association between relative reciprocity (column [6]) and relative regular UI costs per unemployed person (column [9]). Their correlation is 0.82 in Panel A and 0.94 in Panel B.

In both periods, regular UI costs and TFB costs by region are positively and significantly associated. Their correlation is 0.67 over the earlier six year period and 0.88 for the recent three year period.²¹ The regional pattern of TFB expenditures strongly follows the pattern for regular UI expenditures.

A similar analysis, like that of the regional data displayed in Table 2.5, was also undertaken with the underlying state-level data. Because the results generally conformed with earlier findings regarding EB expenditures, they can be summarized briefly. 1) For both time periods, there was a strong positive link in the regular UI program between the relative reciprocity rate and the relative cost of benefits per unemployed person. The correlations were 0.90 for the six year period and 0.91 for the more recent three year period. 2) The association between relative regular UI benefits and relative TFB benefits (analogous to columns [9] and [12] in Table 2.5) while clearly positive and statistically significant was not tight, particularly for the earlier six year period. For the two periods, the two correlations were 0.39 and 0.67 respectively. While knowledge about regular UI spending per unemployed person is useful for projecting relative TFB spending, there is considerable noise in the relationship. The loose association was especially noticeable for the earlier six year period of TFB, i.e., 1975, 1976, 1977, 1982, 1983 and 1984.

²¹ For the earlier six-year period, the correlation between regular UI and TFB benefit costs per unemployed person is significant at the 0.05 level but not at the 0.01 level. All other correlations identified in this chapter are significant at the 0.01 level.

As with the payment of EB benefits, it is of interest to document the importance of TFB benefits in years when these programs were active for most of the year. Table 2.6 summarizes state experiences with TFB payments showing the proportion of years when payments equaled or exceeded set proportions of regular UI benefits. As with the earlier analysis of EB payments, the table has four dimensions of information: 1) relative unemployment rates (three groups in column [1]), 2) relative regular UI reciprocity rates (three groups in column [2]), two time periods (columns [3]-[7] and [8]-[12]) and 4) five threshold levels for the importance of TFB payments (2, 5, 10, 20 and 30 percent of regular UI payments). Each cell in the table shows the proportion of state year observations in the cell that meet the indicated threshold.

Table 2.6 vividly illustrates the greater importance of TFB payments in the three years between 1992 and 2002 relative to the six earlier years between 1975 and 1984. There are 45 interior cells in both halves of the table, e.g. the top nine lines for all five columns in each period. There are also four summary cells for each column, making a total of 20 summary cells in each half of Table 2.6. For all 65 possible comparisons, the proportion for the 1992-2002 period equals or exceeds the proportion for the 1975-1984 period.²² During the last two recessions TFB payments have been much more important in the states than during the preceding two recessionary periods.

These findings in Table 2.6 provide an alternative way of describing the importance of TFB payments besides the proportional shares of total benefit payments as shown previously in column [9] of Table 1.2. Between 1977 and 1984, 37 of the 306 state-year observations (or 0.12) met the 30 percent threshold whereas 94 of 153 (or 0.61) met the same threshold during the 1992-2002 period.

While the data in Table 2.6 and in column [9] of Table 1.2 are alike in showing the importance of TFB benefits during the past two recessions, there is a distinction that should be noted. An aggregate proportion as in Table 1.2 is dominated by events in the largest states, whereas the proportions in Table 2.6 weight the individual states equally regardless of size. Thus the entries in Table 2.6 provide an indication of how pervasive the TFB thresholds were met throughout the set of 51 UI programs in these years. TFB

²² Since proportions cannot exceed 1.0, the comparison need to allocate ties. In fact, there is but a single interior cell for the 1975-1984 period that equals 1.0 (the second row in column [3]). Thus there was only one tie.

Table 2.6. Proportion of State-Year Observations When TFB Payments Relative to Regular UI Benefits Met the Indicated Thresholds

Relative Unemployment Rate [1]	Relative UI Reciprocity Rate [2]	Six years between 1975 and 1984					Three years between 1992 and 2002				
		2 Pct. Reg. UI Benefits [3]	5 Pct. Reg. UI Benefits [4]	10 Pct. Reg. UI Benefits [5]	20 Pct. Reg. UI Benefits [6]	30 Pct. Reg. UI Benefits [7]	2 Pct. Reg. UI Benefits [8]	5 Pct. Reg. UI Benefits [9]	10 Pct. Reg. UI Benefits [10]	20 Pct. Reg. UI Benefits [11]	30 Pct. Reg. UI Benefits [12]
High	High	0.97	0.71	0.50	0.41	0.24	1.00	1.00	1.00	1.00	0.94
	Medium	1.00	0.79	0.65	0.47	0.24	1.00	1.00	1.00	0.88	0.88
	Low	0.97	0.91	0.82	0.53	0.24	1.00	1.00	1.00	1.00	1.00
Medium	High	0.97	0.79	0.62	0.35	0.12	1.00	1.00	1.00	0.88	0.47
	Medium	0.97	0.94	0.68	0.29	0.06	1.00	1.00	1.00	0.94	0.53
	Low	0.88	0.76	0.56	0.18	0.06	1.00	1.00	1.00	1.00	0.82
Low	High	0.97	0.91	0.59	0.15	0.12	1.00	1.00	1.00	0.65	0.24
	Medium	0.91	0.79	0.53	0.21	0.03	1.00	1.00	0.94	0.35	0.18
	Low	0.68	0.53	0.26	0.00	0.00	1.00	1.00	1.00	0.65	0.47
Total	High	0.97	0.80	0.57	0.30	0.16	1.00	1.00	1.00	0.84	0.55
	Medium	0.96	0.84	0.62	0.32	0.11	1.00	1.00	0.98	0.73	0.53
	Low	0.84	0.74	0.55	0.33	0.10	1.00	1.00	1.00	0.88	0.76
Total	Total	0.92	0.79	0.58	0.29	0.12	1.00	1.00	0.99	0.82	0.61
	State-Year Observations	306	306	306	306	306	153	153	153	153	153

Source: Data from the Office of Workforce Security, "Unemployment Insurance Financial Handbook" and annual Handbook updates. Each proportion shows the fraction of state-year observations that TFB payments met the designated threshold.

spending has represented 20 percent or more of regular UI benefits in roughly 80 percent of the 153 state-year observations during the past two recessions and 30 percent or more of regular UI benefits in roughly 60 percent of the same 153 state-year observations. The high TFB expenditure shares have been widespread across the states as well as quantitatively large in these years.

Considering the findings of this section and the previous section on EB, it is clear that TFB payments have been much more important during the past two recessions than earlier while the quantitative importance of EB has diminished dramatically. In effect, the U.S. has been using a national trigger to activate long term UI benefits during the past two recessions and the associated benefit payments have been fully federally financed.

The final point to note in Table 2.6 is the association of the proportions of state-year observations that meet the indicated TFB payment thresholds with relative unemployment rates and with regular UI reciprocity rates. No consistent patterns are apparent for either sub-period. Thus, for example, the proportion of states that met the 30 percent threshold during 1975-1984 decreased with lower reciprocity rates but not during the 1992-2002 period. During the latter period, in fact, a larger proportion of states in the low reciprocity rate group met the 30 percent threshold (0.76) than in the high reciprocity rate group (0.55).²³ Further analysis of this change in pattern might be warranted. With the data assembled for this project, additional analysis would be possible.

The pattern of the proportions in Table 2.6 stands in contrast to the pattern previously observed for the EB program in Table 2.4. Throughout Table 2.4, lower proportions meeting the indicated EB threshold proportions were observed in low reciprocity rate states. For the long term unemployed who exhaust regular UI benefits, the receipt of long term unemployment support (EB plus TFB) has been more equal across states arrayed by reciprocity rates during the two recent recessions when EB has been small while TFB has been large (both long term payments measured relative to benefit payments from the regular UI program).

²³ Recall Column [12] in Table 2.6.

2.6. Summary

This chapter has undertaken a descriptive analysis of unemployment and UI benefit payments at the level of DOL regions and states. Noteworthy findings were obtained in five broad areas.

1) Systematic differences in regional unemployment rates were documented. Across the ten DOL regions unemployment rates were consistently below-average in Regions 1, 7 and 8 while consistently above-average unemployment rates were present in Regions 9 and 10. There was also considerable variation of regional unemployment rates around the national unemployment rate. This relative variability was most apparent in Region 1 and least prominent in Regions 3 and 4.

2) The recipiency rate in the regular UI program (weekly beneficiaries as a proportion of CPS unemployment) is the most important determinant of costs (benefits per unemployed person) in the regular UI program. Correlations consistently at or above 0.85 were reported in both regional data and in state-level data for multi-year periods. This close association was documented for the long 36 year period between 1967 and 2002 and for selected sub-periods between 1971 and 2002 when the analysis was focused on EB and TFB costs. While replacement rates and other factors are operative in the states, their quantitative importance is secondary to that of regular UI recipiency rates in determining regular UI costs.

3) Costs in the regular UI programs play a large role in determining costs in both the EB and the TFB programs. In states and regions where regular UI costs are above-average there is a clear tendency for EB and TFB costs to also be above-average. However these associations were generally lower than those between the recipiency rate and the cost rate in the regular UI program. The lower correlations were observed for the various sub-periods when EB and TFB costs were examined. These findings held both in regional data and in state data.

4) Like Chapter 1, the present chapter documented the decline of the EB program as a source of support for the unemployed in recessions. During the past two recessions, the primary UI support for the long term unemployed who exhaust regular UI has been provided by TFB programs.

5) This change in the importance of TFB relative to EB has been accompanied by a different pattern of support in the states when arrayed by unemployment rates and regular UI reciprocity rates. The increased reliance on TFB payments has been associated with more equal access to TFB regardless of the unemployment rate or the regular UI reciprocity rate in individual states. Thus in Table 2.4 the proportions of state-year observations meeting designated thresholds (EB payments as a proportion of regular UI payments) were clearly higher in states with high unemployment rates and in states with high regular UI reciprocity rates. The explanation for the changed pattern of support should be pursued in future research.

Chapter 3. Alternative Triggers for the Federal-State Extended Benefit Program

As noted in Chapter 1, unemployment Insurance (UI) can be viewed as a three-tiered program. The “regular” benefits that are financed and administered by each state constitute the program’s first tier. During 2003 all but two states provided up to 26 weeks of regular UI benefits to eligible claimants (Massachusetts and Washington provided up to 30 weeks). In ten states, every eligible claimant may receive up to 26 weeks of benefits, although Illinois and New York are the only large states that have such “uniform potential duration” of benefits. In the other 41 states, the maximum duration of benefits is linked to a worker’s earnings or work experience during the base period — roughly the year before the claimant files for benefits.

The second tier of the UI system is the permanent or “standby” extended benefit (standby EB) program that Congress established in 1970. In principle, the standby EB program activates automatically when unemployment rises, extending the potential duration of a worker’s benefits by 50 percent (up to 13 weeks).

The third tier of the UI system is made up of the “emergency” or temporary federal benefit (TFB) extensions that Congress has enacted in every recession since 1958. TFB extensions have varied greatly in their generosity, financing, and eligibility criteria, as described below.

Both standby EB and TFB are a response to the longer spells of unemployment and the increased rates of regular benefit exhaustion that accompany a recession. Because standby EB is automatic, it has three possible advantages over “emergency” or TFB programs. First, emergency extensions are subject to a “recognition lag” — it takes time for Congress to recognize the onset of a recession and to enact legislation, so there may be a significant lag between the onset of slack labor markets and the availability of extended benefits. Second, emergency extensions have been politically difficult to shut down; as a result, they may continue to pay extended benefits beyond the time when labor markets have recovered and when workers can reasonably be expected to find reemployment. This suggests that emergency extensions may be less efficient than automatic extensions. Third, emergency extensions have usually been made effective on the date of enactment, leaving UI administrators little or no time to implement the new

program. This again suggests that emergency extensions may be inefficient relative to a standby program that is ready to implement.

Although standby EB has some advantages in principle, an effective standby EB program requires appropriate triggers. These triggers must balance the potential disincentive effects of longer potential benefit durations against the presumably greater demand for insurance that arises during a recession.

For three reasons, the standby EB program has activated relatively rarely since 1981. First, Congress revised the triggers in 1981 so as to make it more difficult for EB to activate. This policy choice was based on the belief that the existing triggers resulted in an EB program with work disincentive effects that were unacceptably high. Second, insured unemployment rates, which are used to trigger EB, have fallen secularly over the last two decades. Hence, even if the triggers had not been revised in 1981, the standby EB program would have activated less frequently in the past 20 years than before. As a result, the standby EB program has fallen into relative disuse, as documented earlier in Chapters 1 and 2. One might argue that such an outcome is appropriate — if unemployment has fallen secularly, then the demand for unemployment insurance might also fall. However, Congress has continued to pass emergency benefit extensions in each recession, which suggests that, at least in the view of lawmakers, benefit extensions remain desirable. Third, in the last two recessions, governors have frequently ended EB in a state when emergency extended benefits became available. When given this option governors did this because EB is financed half from state trust funds and half from federal funds, whereas TFB or emergency programs have been financed entirely from federal funds. Ending EB when an emergency program commences shifts the financing of extended benefits from the states to the federal government. The last 20 years, then, have seen the displacement of the EB program by a succession of emergency extensions.

The main purpose of this chapter is to examine the extent to which alternative mechanisms for activating EB — **EB triggers** — would result in greater availability of extended benefits to UI exhaustees. The chapter begins with a brief history of extended benefits in the United States (Section 3.1). We then develop a model to simulate the impact of different EB triggers on the extent to which EB activates and pays benefits (Section 3.2). The results of the simulations are described in Section 3.3.

3.1. A Brief History of Extended Benefit Programs

Table 3.1 summarizes the main features of the extended benefit programs — including the Federal-State Extended Benefits program (EB) — that have been enacted starting in 1958. The first two temporary federal benefit (TFB) extensions, Temporary Unemployment Compensation (TUC) and Temporary Extended Unemployment Compensation (TEUC), were enacted in 1958 and 1961. They were similar in that each lasted slightly over a year and extended the potential duration of benefits to workers who exhausted their regular state benefits by 50 percent, up to a maximum of 13 additional weeks. They differed, however, in that TUC was a voluntary program financed by interest-free loans to 17 participating states. TEUC, on the other hand, was mandatory and was financed by increases in the federal unemployment tax.

In 1965 and 1966 Congress considered a proposal to create a permanent (or “standby”) extended benefits program. The proposal was modeled on the earlier temporary programs, in that it extended the potential duration of benefits by 50 percent, up to 13 weeks, for workers who exhausted their regular state benefits. However, the extended benefits were to “trigger” automatically in a recession — rather than requiring congressional discretion and action — and were to be financed half-and-half by the states and the federal government. (Regular UI benefits are financed out of state UI trust funds, whereas TEUC and most subsequent emergency extended benefits have been financed out of the federal UI trust fund or from federal general revenues.)

The proposal for a permanent standby extended benefit program failed in 1966, but Congress enacted essentially the same proposal in 1970 as the Extended Unemployment Compensation Act, known as the Extended Benefits program, or EB. The intent of the permanent “standby” EB program was and is to extend automatically the potential duration of benefits when the economy slumps into recession, rather than rely on Congress to react and pass specific legislation. EB extends benefits to claimants who exhaust their regular state benefits by an amount equal to one-half of their regular benefit duration, up to 13 weeks. The weekly benefit amount is the same as the weekly benefit amount under the regular state program. Unlike regular state benefits, which are financed

Table 3.1. Extended Unemployment Benefit Programs, 1958 to Present

Program and enabling legislation	Effective dates and extensions	Potential duration of extended benefits provided	Financing	Notes
Temporary Unemployment Compensation Act, P.L. 85-441	6/58 - 7/59	50% of regular state duration, up to 13 weeks	Interest-free loans to 17 participating states	State participation voluntary
Temporary Extended Unemployment Compensation Act (TEUC), P.L. 87-6	4/61 - 6/62	50% of regular state duration, up to 13 weeks	Temporary increases in Federal Unemployment Tax (.4% in 1962, .25% in 1963)	
Extended Unemployment Compensation Act of 1970 (EB), P.L. 91-373, with major amendments in P.L. 96-364, P.L. 96-499, P.L. 97-35, P.L. 102-318	8/70 to present	50% of regular state duration, up to 13 weeks	One-half from Federal Unemployment Tax revenues paid to Extended Unemployment Compensation Account (EUCA); one-half from state UI reserves	EB activated in a state by an insured unemployment rate (IUR) trigger, 8/70 to present; EB could be activated in all states by a national IUR trigger, 8/70-8/81. Effective 1981, EB denied to claimants refusing to seek or accept suitable work, and to claimants who had quit or been discharged. State triggers were made more restrictive, 8/81. Eligibility for EB more restrictive, effective 9/82. States permitted to adopt a total unemployment rate (TUR) trigger, 6/92
Emergency Unemployment Compensation Act, P.L. 92-224 and P.L. 92-329	1/72 - 9/72, extended to 3/73	50% of regular state duration, up to 13 weeks	Extended Unemployment Compensation Account (EUCA)	State-level triggers (different from EB triggers) used to activate program
Federal Supplemental Benefits (FSB), P.L. 93-572, P.L. 94-12, P.L. 94-45, P.L. 95-19	1/75 - 12/76, extended to 1/78	50% of regular state duration, up to 13 weeks (1/75-2/75 and 5/77-1/78); additional 50% of regular state duration, up to 13 weeks provided 3/75-4/77 (that is, up to 26 weeks of FSB total)	Repayable advances to EUCA from general revenues; general revenues after 3/77	EB program was activated in all states, so total potential benefit duration was 65 weeks for those exhausting EB between 3/75 and 4/77. State-level triggers applied starting 1/76. Uniform Federal eligibility and disqualification standards implemented 4/77 (P.L. 95-19)

Table 3.1. (continued) Extended Unemployment Benefit Programs, 1958 to Present

Program and enabling legislation	Effective dates and extension	Potential duration of extended benefits provided	Financing	Notes
Federal Supplemental Compensation (FSC), P.L. 97-458, P.L. 94-424 P.L. 98-21, P.L. 98-135	9/82 - 3/83 extended to 9/83 and 3/85	FSC-I (9/82-1/83): 50% of regular state duration, up to 6-10 weeks. FSC-II (1/83-3/83): 65% of regular state duration, up to 8-16 weeks. FSC-III (4/83-9/83): 55% of regular state duration, up to 8-14 weeks. FSC-IV (10/83-3/85): Same as FSC-III, except entitlement did not vary once established.	General revenues	Potential duration varied with state's EB status and separate FSC triggers. Except in FSC-IV, potential duration would vary when state's EB or FSC status changed. FSC-I and FSC-II exhaustees could collect FSC-III benefits, but not FSC-IV benefits. EB eligibility criteria applied to all phases of FSC. Available regular state benefits and EB (if activated) had to be exhausted to receive FSC
Emergency Unemployment Compensation Act of 1991 (EUC), P.L. 102-164, P.L. 102-182, P.L. 102-244, P.L. 102-318, P.L. 103-6 P.L. 103-152	11/91 - 6/92, extended to 7/92, 3/93, 10/93, and 2/94	EUC-I (11/91-2/92): lesser of 100% of regular benefits, or 13 or 20 weeks. EUC-II (2/92-7/92): lesser of 130% of regular benefits, or 26 or 33 weeks. EUC-III (7/92-3/93): lesser of 100% of regular benefits, or 20 or 26 weeks. EUC-IV (3/93-10/93): lesser of 60% of regular benefits, or 10 or 15 weeks. EUC-V (10/93-2/94): lesser of 50% of regular benefits, or 7 or 13 weeks	EUC-I, EUC-II, and EUC-V from Extended Unemployment Compensation Account (EUCA); EUC-III and EUC-IV from general revenues	Potential duration determined at time of filing for EUC, and depended on state's classification as high- or low-unemployment. EUC entitlement could be increased if state moved from low to high status, or if program became more generous; EUC entitlement could not be decreased. Claimants exhausting benefits between 3/91 and 11/91 could receive benefits under "reach-back" provisions (but no retroactive benefits paid). Under EUC-III and EUC-IV, claimants had the option of drawing EUC benefits at the start of a new benefit year (see text). EB eligibility criteria applied to all phases of EUC. Once EUC was exhausted, a claimant needed to regain regular UI eligibility to receive additional EUC.
Temporary Extended Unemployment Compensation Act of 2002 (TEUC), P.L. 107-147	3/02-12/02, extended to 8/03	50% of regular benefit duration, up to 13 weeks; additional 50% of regular benefits, up to 13 weeks, in high unemployment states.	Extended Unemployment Compensation Account (EUCA)	Additional ("second tier") extended benefits available in states based on the Insured Unemployment Rate (IUR) or Total Unemployment Rate (TUR).

entirely from state UI trust funds, EB is financed half-and-half from the federal and state UI trust funds.

Originally, EB was activated nationally whenever the 13-week average of the national insured unemployment rate (IUR) reached 4 percent. Also, it was activated in a given state whenever the state's 13-week average IUR reached 4 percent and was at least 20 percent higher than its average in the same period of the previous two years (see Table 3.2). [See section 3.2 below for further details on the IUR and discussion of the activation or "triggering" of EB.]

States were allowed to adopt EB as early as October 1970 and were required to do so no later than January 1972. Even before EB became available in all states, however, Congress enacted the third TFB extension under the Emergency Unemployment Compensation Act (sometimes called "Temporary Compensation" or "TC"), which provided up to 13 weeks of extended benefits to claimants who either exhausted EB or exhausted regular benefits in states where EB was not available. Temporary Compensation was activated by special triggers that differed from the EB triggers. It was financed from Federal Unemployment Tax Act (FUTA) revenues. The program, which originally was set to run from January 1972 until September 1972, was extended through March 1973.

During the severe recession of the mid 1970s, the national trigger activated EB in all states, permitting workers to receive up to 26 weeks of regular unemployment benefits followed by up to 13 weeks of EB. Nevertheless, the recession was so severe that Congress enacted the fourth TFB emergency extension in January 1975, Federal Supplemental Benefits (FSB), which provided up to 13 additional weeks of benefits to those who exhausted regular benefits and EB. In March 1975, the FSB program was amended to provide an additional 13 weeks (that is, up to 26 weeks in total). As a result, a claimant could receive up to 65 weeks of unemployment benefits for the period March 1975 through March 1977 — 26 weeks of regular state benefits, 13 weeks of EB, and 26 weeks of FSB.

In April 1977, FSB was extended again (through January 1978), but the potential duration of FSB benefits was reduced to 13 weeks from May 1977 through the end of the program. This extension also added special federal disqualifications for refusal of suitable

work and for failure to actively seek work, defined suitable work for the FSB program, and added special penalty and repayment provisions for fraudulent acts on the part of both claimants and employers. This was the first time such disqualifications had been imposed as part of a TFB extension.

In 1980 and 1981, Congress enacted three changes that made it more difficult for the EB program to activate (see Table 3.2). First, the trigger that had activated EB nationally was eliminated. Second, the IUR needed to activate EB on a state-specific basis was increased from 4 percent to 5 percent. Third, the definition of insured unemployment was revised so as to omit EB claimants from the calculation, reducing the IUR in times when EB was activated. In addition, more stringent eligibility and disqualifying conditions were imposed on EB claimants. These changes were part of a broader effort by the then-new Reagan administration and Congress to reduce expenditures on domestic programs.

Nevertheless, Congress continued to enact new TFB extensions in response to subsequent recessions. In 1982, Congress enacted Federal Supplemental Compensation (FSC) as part of the Tax Equity and Fiscal Responsibility Act of 1982. FSC differed from previous TFB programs in that the number of weeks payable in each state varied according to different criteria at different times. In fact, FSC went through four “phases,” each of which provided different potential benefit durations for each state depending on the state’s labor market conditions (see Table 3.1, under “potential duration of extended benefits provided”). Under phase II of FSC, a UI claimant in a high unemployment state could be eligible for up to 55 weeks of benefits: 26 from the regular state program, 13 from EB (assuming the state had triggered on), and 16 from FSC. Potential durations were somewhat shorter under phases III and IV of FSC, but the interstate differences in potential benefit durations were retained.

Congress made more effort to fine-tune benefits under FSC than under previous emergency extensions. First, the potential duration of benefits differed among states. This was new for an emergency extension. Second, the various phases of FSC led to frequent changes in potential benefit duration. Both of these features of FSC created administrative difficulties for the states. These features of FSC also suggest that Congress

saw itself as playing an active role in benefit extensions and that it did not see the automatic nature of the EB program as advantageous.

The recession of 1990 resulted in passage of another TFB extension of unemployment benefits — Emergency Unemployment Compensation (EUC), which was enacted in November 1991 after several months of delay by the first Bush administration, which vetoed earlier emergency extensions. EUC was the most complicated emergency benefit extension to date: it went through five phases, provided different potential durations across states at a given time, and had different potential durations within a state over time (see Table 3.1 and Storey and Falk (1993)). The potential duration of benefits within a state could change either by discretion of Congress (that is, as the program moved from one phase to another), or because a state changed its classification between high unemployment and low unemployment. By all accounts, EUC was very difficult for the states to administer. In Pennsylvania, for example, the potential duration of benefits changed nine times between November 1991, when EUC became effective, and February 1994, when phase V of EUC terminated. Five of these changes resulted from enactment of EUC or a movement from one phase to another, and four resulted because Pennsylvania was reclassified from a “low unemployment” state to a “high unemployment” state or vice versa. At one point, Congress let EUC lapse, but subsequently restored it, and during the gap, state administrators and UI claimants were left uncertain about the status of the program and their benefits.

The most recent emergency TFB extension of unemployment benefits, Temporary Extended Unemployment Compensation (TEUC), was enacted and became effective in March 2002, when it became evident that the labor market would not recover quickly following the terrorist attacks of September 11, 2001. In all states, TEUC extended exhaustees’ benefits by 50 percent of their regular benefit duration, up to a maximum of 13 weeks. Also, TEUC provided up to an additional 13 weeks of benefits in states where EB had triggered on or the Insured Unemployment Rate (IUR) was at least 4 percent and at least 20 percent higher than its average in the same period of the previous two years. A total of 12 states paid these additional benefits under TEUC at some point, although by December 2002, only three (Alaska, Oregon, and Washington) were continuing to so.

TEUC was financed entirely from the federal Extended Unemployment Compensation Account (EUCA).

The original TEUC program expired at the end of 2002, but Congress extended it in January and then in May of 2003 so that it presently expires at the end of December 2003. As a result, workers with remaining TEUC balances at the end of 2002 could continue to draw emergency extended benefits. Also, new exhaustees of regular benefits in 2003 could claim TEUC through the last week of December 2003 and could draw TEUC benefits through the end of March 2004. However, neither TEUC extension of 2003 provided additional benefits to workers who exhausted their TEUC benefits in 2002.

Currently, an important question for extended benefit policy is whether the EB program will be revived so as to be a significant source of extended benefits. Concerns about the EB program arose during the recession of the early 1990s, when EB activated in only 10 states and failed to activate in several states that experienced a severe recession (including California, New York, and Pennsylvania). During the recession of 2001-2002, EB activated in only five states — Alaska, Idaho, North Carolina, Oregon, and Washington. Accordingly, the next section examines how various alternative “triggers” for the EB program would perform.

3.2. Simulating the Impact of Alternative EB Triggers

As noted in this chapter’s introduction, the effectiveness of the EB program depends on the effectiveness of the mechanism that is used to activate it. This section and the next examine how various alternative “triggers” for the EB program would perform. We begin with a brief general discussion of the choices that must be made in selecting an EB trigger (subsection 3.2.1) and then summarize the triggers that we examine using simulation methods (subsection 3.2.2). In subsections 3.2.3 and 3.2.4, we describe the outcomes examined and the data used in the simulations. Finally, we examine the impact of 21 alternative triggers on 5 outcomes over 5 different time periods (Section 3.3).

3.2.1. Choice of a trigger

In general, selecting a trigger for EB entails four choices. First, what economic indicator is to be used as a gauge of the health of the labor market and of the need for extended benefits? Second, what level of the selected economic indicator is to activate the EB program? Third, should EB be activated whenever the selected indicator reaches a given level, or should it be necessary (in addition) for the indicator to show that labor market conditions have worsened by some specified amount? Finally, should EB be activated nationally, regionally, at the state level, or at the sub-state level? We discuss these issues in turn.

When the EB program was enacted in 1970, the only unemployment indicator that was available for each state was the IUR, making it the natural indicator of labor market health on which to base the EB trigger. The IUR is defined as average insured unemployment over the current week plus the preceding 12 weeks, divided by covered employment in the the first four of the last six completed quarters. (Covered employment, in turn, is the number of jobs covered by State UI laws, which comes from ES 202 administrative records.) This is an unusual economic indicator because its numerator is a count of UI claims (specifically, the average number of weeks of benefits claimed over the past 13 weeks), whereas its denominator is a count of the number of jobs for which UI payroll taxes were paid in the first four of the last six completed quarters. The advantage of the IUR is that it can be calculated from UI administrative data; hence, it is both closely tied to the current status of the UI program and readily available. The various IUR-based triggers that have been used over the history of the EB program and the various emergency extended benefits programs are summarized in Table 3.2.

In two instances, an “adjusted” IUR has been used to trigger emergency extended benefits (see Table 3.2). A problem with the conventional IUR is that its numerator includes only continuing UI claims. As a result, the IUR excludes UI exhaustees and can actually fall over the course of a long recession as workers exhaust their benefits and are unable to establish a subsequent valid claim for UI. This is the opposite of what a

Table 3.2. Triggers Used to Activate Extended Benefits and Temporary Federal Benefits

Trigger	Description	When in effect
4% IUR with 20% increase	State Insured Unemployment Rate (IUR) of at least 4%. Also, state IUR must be at least 20% higher than its average in same period of the previous two years. Under TEUC, used to trigger emergency extended benefits beyond the basic 13 weeks.	EB, 8/70 to 8/81; TEUC, 3/02 to 8/03
5% IUR with 20% increase	State IUR of at least 5%; must be at least 20% higher than the average in same period of the previous two years.	EB, 8/81 to present
4.5% national IUR	National IUR of at least 4.5% (no increase specified)	EB, 8/70 to 8/81
5% IUR	State IUR of at least 5% (no increase specified)	EB, 1976 to 8/81 (state option)
6% IUR	State IUR of at least 6% (no increase specified)	EB, 8/81 to present (state option)
6.5% TUR with 10% increase	State Total Unemployment Rate (TUR) of at least 6.5%; must also be at least 10% higher than the same period in either of previous two years.	EB, 6/92 to present (state option)
6.5% Adjusted IUR	State Adjusted IUR of at least 6.5% (no increase specified); used to trigger emergency extended benefits	EUC (1/72-3/73)
5% Adjusted IUR	State Adjusted IUR of at least 5% (no increase specified); used to trigger weeks of emergency extended benefits above the basic 13 weeks.	EUC (11/91-2/94)
9% TUR	State Total Unemployment Rate (TUR) of at least 9% (no increase specified); used to trigger weeks of emergency extended benefits above the basic 13 weeks.	EUC (11/91-2/94)

Note: The insured unemployment rate (IUR) is available weekly and is usually thought of as 13-week moving average because it is constructed as the average number of UI claims over the preceding 13 weeks divided by covered employment (the number of jobs covered by State UI laws). This averaging makes it less likely that a state will rapidly cycle on and off EB within a brief period. The IUR is not seasonally adjusted. The adjusted IUR adds regular UI exhaustions from the previous three months (or one-quarter of the previous year) to the numerator of the IUR. The total unemployment rate (TUR) is available monthly and is based on the Current Population Survey definition of the unemployment rate. The TUR-based trigger for the EB program uses a 3-month moving average of the seasonally adjusted TUR in determining whether to activate EB. The TUR-based trigger for the EUC program used a 6-month moving average of the TUR that was not seasonally adjusted as a method of determining high unemployment status.

reasonable measure of labor market health would do. The “adjusted” IUR handles this problem by adding to the numerator of the IUR the number of regular UI exhaustees from the previous three months.²⁴ (An alternative is to add the one-quarter of the exhaustees from the previous year.) As noted in Table 3.2, an adjusted IUR was used to trigger temporary federal benefits in a state during the Emergency Unemployment Compensation program of 1972-73, and to trigger a higher number of weeks of temporary federal benefits in a state during the EUC program of 1991-1994.

Another trigger that has been used since 1992 is the so-called Total Unemployment Rate (TUR). In 1992, the Bureau of Labor Statistics began publishing seasonally adjusted estimates of the unemployment rate for each state. This is simply the unemployment rate as conventionally defined in the Current Population Survey (CPS); that is, the percentage of the labor force that is without a job but is able, available, searching for a job. In the UI literature, the CPS unemployment rate has come to be called the Total Unemployment Rate (TUR), a reference to the fact that its numerator includes all unemployed workers, not just those who are receiving UI benefits. The TUR can be taken directly from the CPS for the largest 11 states because the CPS sample is large enough to yield directly reliable estimates of the unemployment rate for these states. For the smaller states, regressions are used to combine CPS data with UI administrative and other data to arrive at a monthly estimate of the state unemployment rate. The state-level TUR is a measure of each state’s labor market conditions that is less closely tied to the UI program than is the IUR. As such, it offers a potentially attractive alternative measure of labor market conditions. As noted in Table 3.2, when used as a trigger for the EB program, the TUR has been seasonally adjusted. However, under EUC (1991-1994), a TUR was used that was not seasonally adjusted.

At least two other indicators have been suggested as possible bases of triggers (Advisory Council on Unemployment Compensation (1994)) — a state’s UI exhaustion rate and the deviation from trend employment in a state. However, triggers based on these indicators have not been investigated to date, and we do not do so here.

²⁴ For the simulations reported below, we constructed an exhaustion factor for each quarter equal to the ratio of exhaustees in a given quarter to covered employment in the same quarter. We then added this to the IUR of each quarter with a one-quarter lag. This follows the procedure developed by Corson and Rangajaran (1993, p. 10).

The second choice — the level at which to set the selected trigger — depends largely on the level of desired expenditures on EB and the available funding for those expenditures. (If the theoretical grounds for extending benefits were firmer, then other considerations could come into play — see below.) Nevertheless, a problem that arises in selecting a level for triggering EB is that a state may have chronically high unemployment, and it is unclear that extending benefits all (or most of) the time in such a state would be sound policy. (Alaska and Puerto Rico, for example, have had chronically high unemployment in recent years.) EB is intended to alleviate cyclical unemployment, so it should in principle trigger only when there is evidence that labor market conditions in a state have deteriorated.

Ensuring that EB triggers only during a cyclical downturn raises the third choice — whether to require the trigger to imply some specified deterioration in labor market conditions. The state IUR trigger that has existed since 1970 has required that, for EB to activate, a state’s 13-week average IUR must be at least 20 percent higher in the current week than it was in the same week of the previous two years (averaged). Somewhat similarly, the TUR trigger that has been a state option since 1992 has required that a state’s TUR must be at least 10 percent higher in the current month than it was in the same month during one of previous two years. These “increase” requirements (sometimes referred to as thresholds) arguably distinguish between states in which unemployment is chronically high and states in which there has been a decline in labor market conditions that merits an extension of UI benefits on cyclical grounds.

The fourth choice pertains to the geographic level at which to trigger EB. The original EB program included both national and state triggers. The national trigger was dropped in 1981, mainly in response to concerns that it was excessively costly, and since then EB has been triggered only on a state-specific basis. However, some have argued that EB should be triggered even more locally than the state — that is, at the sub-state level — so as to target pockets of cyclical unemployment. The only detailed investigation of this issue (Czajka, Long, and Nicholson (1989)) concluded that triggering EB at the sub-state level would create substantial administrative costs. Also, there are lingering concerns about the validity of estimates of labor market health at the sub-state level

(Advisory Council on Unemployment Compensation (1994)). Absent clear advantages of triggering EB at the sub-state level, there has been little impetus to adopt such a system.

Ultimately, the choice of a trigger for EB depends on the amount of EB that is considered desirable, and on this there is much debate. The theoretical literature on optimal unemployment insurance has burgeoned in recent years (see Karni (1999) for a review of the literature through the late 1990s). Although the economic models developed in this literature provide a clear rationale for unemployment insurance, it is equally clear that the literature has yet to produce a consensus on how a socially optimal UI program would be structured. The optimal replacement rate and the potential duration of benefits implied by various economic models are sensitive to a variety of assumptions that have rarely been subjected to detailed examination or justification. Moreover, to our knowledge, no one has yet examined whether and how the potential duration of benefits should vary over the business cycle.

If strong theoretical and empirical findings on optimal UI did exist, it might be possible to argue for a particular EB trigger by a two-step process. First, one would derive an optimal duration of benefits and an optimal replacement rate, either or both of which might vary with economic conditions. Then one could choose an EB trigger that came close to producing the optimal duration over the cycle. The process would be to argue from an optimal potential duration of benefits to a trigger that would be consistent with that potential duration.

In the absence of strong findings on optimal UI, the choice of an EB trigger is likely to depend on political and impressionistic judgments of what is a “desirable” level of spending on EB. As will be seen below, the EB triggers that have been used in the past can be adjusted to yield virtually any level of UI program expenditures. As a result, the process becomes one of arguing from a desirable level of program expenditures to an EB trigger that is consistent with that level of spending. This raises the possibility that, in times of tightly constrained budgets, one could argue that spending on EB should be zero, and the EB trigger should be set so that the program never activates. In fact, in the early 1980s, EB triggers were made more stringent as a cost-cutting expedient, and the program has steadily declined since.

3.2.2. Triggers simulated

As noted, Table 3.2 summarizes the various “triggers” that have been used to activate EB. All are based on one of three labor market indicators — the IUR, the adjusted IUR, or the TUR. In the simulations below, we examine the performance of various triggers that, similarly, are based on the above three indicators.

Specifically, we examine eight IUR-based triggers, four of which do not require a deterioration of the IUR (that is, they require only an IUR level of 3%, 4%, 5%, and 6%), and four of which do require a deterioration of the IUR (1.5% with a 20% increase, 3% with a 20% increase, 4% with a 20% increase, and 5% with a 20% increase). We examine four adjusted-IUR-based triggers, two of which do not require a deterioration of the adjusted-IUR (adjusted IUR levels of 4% and 5%), and two of which do require a deterioration of the IUR (5% with a 20% increase and 5% with a 20% increase). Finally, we examine nine TUR-based triggers, three of which do not require a deterioration of the TUR (TUR levels of 6.5%, 7.5%, and 8.5%), and six of which do require a deterioration of the IUR (6.5% with either a 10% or a 20% increase, 7.5% with either a 10% or a 20% increase, and 8.5% with either a 10% or a 20% increase).

3.2.3. Outcomes examined

The impacts of the above triggers on five outcomes are of interest.

1. The percentage of time EB is activated in the 50 states and the District of Columbia. This outcome is constructed by calculating, for each state, the number of months EB is active during the time period in question, then dividing by the total number of months in question. A simple average of the resulting proportions is then calculated for the 50 states and the District of Columbia.

2. The number of states in which EB triggers on at least once during the time period in question. This outcome should be self-explanatory.

3. The percentage of unemployed workers who reside in states where EB is activated. For each month, we divide the number of unemployed workers residing in states where EB is active by the total number of unemployed workers in all states. An

average of the resulting monthly proportions, calculated for various time periods of interest, gives the desired outcome.

4. The percentage of regular UI exhaustees who reside in states where EB is activated. This outcome is obtained by calculating, for each month, the number of final payments made to regular state UI claimants who reside in states where EB is active. We then divide by the total number of final payments made to regular state UI claimants in all states. An average of the resulting monthly proportions is calculated for various time periods of interest.

5. The benefits paid to UI claimants as a result of EB. These estimates are more tenuous than the other outcomes reported because they involve making a series of assumptions. Specifically, in a state where EB is activated, EB benefits paid (*ebben*) are the product of three factors: (1) the number of regular UI claimants who exhaust their benefits, claim, and receive EB (*ebrec*), (2) the average EB weekly benefit amount (*ebwba*), and (3) the average duration in weeks of an EB spell (*ebdur*):

$$ebben = ebrec \cdot ebwba \cdot ebdur$$

To simulate *ebben*, assumptions are required about each of the arguments on the right-hand-side of this equation. The assumptions we make are intended to yield an upper-bound estimate of EB benefits paid. To estimate the number of EB recipients, we assume that all regular claimants who receive a final payment during a period when EB is activated move onto EB. In addition, we assume that regular claimants who receive a final payment during the two months before EB becomes active claim and receive EB. This latter assumption is based on the observation that, in states where EB has activated, the number of new EB recipients in the first month of the program has equaled roughly the sum of final payments during the current month plus the preceding two months.

The average weekly benefit amount of EB recipients (*ebwba*) cannot be observed during periods when the EB program was not active, so it must be estimated. We do so as follows. First, we calculate, for each state, the ratio of observed *ebwba* to regular WBA for each month in which EB was active over the period 1978 to 2002 period. We then average these ratios (within state) to obtain a mean ratio of *ebwba* to regular WBA for each state. This constant is used to simulate the *ebwba* that would obtain in each month

for that state — the observed regular WBA for month t is multiplied by the state-specific mean ratio to obtain a simulated *ebwba* for month t .

This simulated *ebwba* can be used consistently to calculate *ebben* for every month whether or not *ebwba* is actually observed in that month. We do this in one set of simulations reported below. Alternatively, it is possible to substitute the observed *ebwba* for the simulated *ebwba* in months where *ebwba* is observed. This yields a second set of simulations, also reported below (in parentheses in Tables 3.3 and 3.8).

Finally, to simulate *ebdur*, we assume that every EB recipient receives the maximum 13 weeks of EB. This is clearly an overestimate of the average duration of EB spells — it is not even the case that all EB recipients are eligible for 13 weeks of benefits. However, we make this assumption in order to obtain an upper-bound estimate of the cost of the various triggers examined.

3.2.4. Data and approach used in the simulations

The goal of the simulation is to estimate the impacts of various EB triggers on the outcomes described above. Accordingly, the variables used in the simulation are of two kinds — those used to construct triggers and those used to measure outcomes. What follows is a brief description of the variables used and their sources.

Monthly data on the number of employed workers and the number of unemployed workers in each state from January 1978 through June 2002 were obtained from the Bureau of Labor Statistics. These data have been used both to construct the total unemployment rate (TUR, one of the triggers examined, which equals unemployment divided by the sum of employment and unemployment) and to gauge the impact of various triggers on the percentage of unemployment in states where EB had triggered on.

For the regular UI program, weekly data on the insured unemployment rate (IUR) and quarterly data on covered employment in each state from January 1987 through October 2002 were obtained from U.S. Department of Labor, Employment and Training Administration (ETA) 539 reports (U.S. Department of Labor (2000)). The IUR is the basis of one of the triggers examined, and we converted the weekly IUR data to monthly observations for comparability with other data used in the simulations. We used the covered employment data in computing the adjusted IUR (that is, the IUR adjusted for UI

exhaustions) by dividing quarterly exhaustions by quarterly covered employment. This “exhaustion factor” was then added to the IUR to obtain the adjusted IUR.

Annual data on the average regular state weekly benefit amount (WBA) and the average EB weekly benefit amount (*ebwba*, for years in which EB was in effect in a state) in each state from 1978 through 2002 were obtained from ETA 5159 reports (U.S. Department of Labor (2000)). These data have been used in constructing estimates of the extended benefits paid (that is, EB program expenditures) under various triggers, as described in Section 3.2.2.²⁵

For the regular UI program, monthly data on the number of final payments from February 1974 through September 2002 were obtained from ETA 5159 reports (U.S. Department of Labor (2000)). We use final payments (a measure of regular benefit exhaustion) to estimate the percentage of exhaustees in states where EB is activated, to construct the adjusted IUR (by calculating an exhaustion factor equal to exhaustees during the last three months divided by covered employment, as described above), and to construct estimates of extended benefits paid under various triggers (exhaustees are used to estimate of the number of EB recipients — *ebrec* — see Section 2.3 above).

The approach used in the simulations is conceptually straightforward. For each state and each month, we compute a zero-one indicator of whether EB would be activated in that state and month, based on a selected trigger. These indicators then allow us to tabulate the number of states in which EB is active, the percentage of time EB is activated over a given period of time, the percentage of unemployed workers in states where EB is active, and so on, for each of the outcome of interest. The next section describes the results of this exercise.

3.3. Results of the Simulations

Table 3.3 summarizes the simulated impacts of alternative EB triggers on the five outcomes described above for the entire period for which data on each trigger are available. (Note that the period considered for the TUR-based triggers is 1978-2002,

²⁵ We are grateful to Thomas Stengle of OWS for access to machine readable files of the data in the ETA 539 and ETA 5159 reports.

Table 3.3. Simulated Impacts of Alternative TUR-based EB Triggers (1978-2000) and Alternative IUR- and Adjusted-IUR-based EB Triggers (1987-2002)

	Number of states triggering on at least once	Percentage of time EB is activated	Percentage of unemployed in states where EB is activated	Percentage of exhaustees in states where EB is activated	Estimated benefits paid (in millions of \$)
TUR-based triggers (1978-2002)	[1]	[2]	[3]	[4]	[5]
6.5% without increase	49	35.66	44.46	44.89	52,010 (45,799)
6.5% with 10% increase	40	15.47	17.65	18.27	26,127 (22,700)
6.5% with 20% increase	33	11.17	13.36	14.09	27,710 (18,085)
7.5% without increase	23	21.73	27.77	28.17	36,311 (31,473)
7.5% with 10% increase	17	11.10	14.17	14.86	22,112 (18,891)
7.5% with 20% increase	11	8.25	10.92	11.54	17,660 (15,167)
8.5% without increase	8	12.59	16.13	16.29	22,966 (19,541)
8.5% with 10% increase	3	7.39	9.78	10.36	16,557 (13,776)
8.5% with 20% increase	2	5.69	7.83	8.35	13,552 (11,342)
IUR-based triggers (1987-2002)					
1.5% with 20% increase	51	14.06	15.29	16.85	16,306 (16,099)
3% without increase	41	19.57	24.09	28.88	30,725 (30,325)
3% with 20% increase	35	5.30	7.06	8.47	10,884 (10,677)
4% without increase	25	6.46	6.83	8.70	12,256 (11,911)
4% with 20% increase	20	1.94	2.92	3.70	5,985 (5,807)
5% without increase	15	1.99	0.73	1.17	2,226 (2,082)
5% with 20% increase	12	0.50	0.38	0.47	1,231 (1,158)
6% without increase	4	0.90	0.15	0.38	552 (524)
Adjusted IUR-based triggers (1987-2002)					
4% without increase	35	15.35	19.65	23.98	25,848 (25,346)
4% with 20% increase	31	4.96	7.28	8.67	10,764 (10,564)
5% without increase	21	6.47	7.21	9.17	12,185 (11,818)
5% with 20% increase	19	2.16	3.27	3.92	6,026 (5,885)

whereas for the IUR- and adjusted IUR-based triggers the period is 1987-2002.) The simulations suggest three main points. First, and most obviously, more stringent triggers result in EB activating in fewer states, activating less often, covering fewer unemployed workers and UI exhaustees, and paying fewer benefits. In particular, requiring 10% or 20% increases in the TUR, IUR, or adjusted IUR dramatically reduces the availability of EB. For example, removing the 20% increase requirement from a 3% IUR trigger would more than triple the time EB was available during the 1987-2000 period. However, similar outcomes can be obtained by raising the TUR or IUR level while reducing the increase in the TUR or IUR required to trigger EB. For example, the outcomes resulting from TUR triggers of 6.5% with a 20% increase, 7.5% with a 10% increase, and 8.5% with no increase are broadly similar.

Second, all of the triggers examined tend to “target” unemployed workers and exhaustees. This can be seen by comparing column [2] with columns [3] and [4]. In every case, the percentage of unemployed and exhaustees in states where EB is activated exceeds the percentage of time EB is activated.

Third, the outcomes shown in columns [2], [3], and [4] (percentage of time EB is activated, percentage of employment in states where EB is activated, and percentage of exhaustees in states where EB is activated) are highly correlated. However, these outcomes appear to be more highly correlated under the TUR-based triggers than under the IUR- and adjusted IUR-based triggers. In particular, the gap between the percentage of unemployed and the percentage of exhaustees in states where EB is activated (columns [3] and [4]) is somewhat greater under IUR-based triggers than under TUR-based triggers. That is, the IUR-based triggers tend to result in somewhat broader coverage of exhaustees relative to unemployed workers than the TUR-based triggers. This suggests that, if the goal of EB is to extend the benefits available to workers who have exhausted their regular state benefits, the IUR-based triggers are more target-efficient.

Tables 3.4 through 3.8 each display one of the outcomes of the various triggers for specific time periods. Table 3.4 focuses on the number of states that trigger on under the various triggers, Table 3.5 focuses on the percentage of time EB is activated, and so on. Five time periods are analyzed in each table, although only three (1990-94, 1995-99, and 2000-02) are common to all three types of triggers (TUR-based, IUR-based, and

Table 3.4. Number of States Triggering On at Least Once under Alternative EB Triggers, Selected Time Periods

TUR-based trigger	1980-84	1985-89	1990-94	1995-99	2000-02
6.5% without increase	49	35	39	13	7
6.5% with 10% increase	49	13	37	3	7
6.5% with 20% increase	46	7	34	1	5
7.5% without increase	44	26	26	6	1
7.5% with 10% increase	44	10	24	3	1
7.5% with 20% increase	41	5	21	1	1
8.5% without increase	40	20	12	3	0
8.5% with 10% increase	40	9	12	3	0
8.5% with 20% increase	37	5	12	1	0
IUR-based trigger		1987-89	1990-94	1995-99	2000-02
1.5% with 20% increase		8	47	5	48
3% without increase		30	37	21	27
3% with 20% increase		1	33	1	25
4% without increase		14	21	10	13
4% with 20% increase		0	18	0	11
5% without increase		6	12	2	4
5% with 20% increase		0	9	0	3
6% without increase		2	3	1	1
Adjusted IUR-based trigger		1987-89	1990-94	1995-99	2000-02
4% without increase		19	32	18	19
4% with 20% increase		2	31	2	19
5% without increase		9	19	10	11
5% with 20% increase		1	18	1	10

Table 3.5. Percentage of Time EB Activated under Alternative EB Triggers, Selected Time Periods

TUR-based triggers	1980-84	1985-89	1990-94	1995-99	2000-02
6.5% without increase	70.22	40.92	41.47	8.86	2.88
6.5% with 10% increase	31.72	5.03	20.95	0.82	2.16
6.5% with 20% increase	24.06	2.12	15.16	0.29	1.31
7.5% without increase	52.72	26.60	18.73	4.09	0.33
7.5% with 10% increase	27.84	3.82	10.95	0.75	0.33
7.5% with 20% increase	21.74	1.63	7.71	0.29	0.33
8.5% without increase	36.55	15.52	6.83	1.08	0.00
8.5% with 10% increase	22.90	2.91	4.77	0.33	0.00
8.5% with 20% increase	18.14	1.28	3.60	0.07	0.00
IUR-based triggers		1987-89	1990-94	1995-99	2000-02
1.5% with 20% increase		1.88	23.86	0.49	31.37
3% without increase		16.05	29.77	14.12	13.79
3% with 20% increase		0.08	11.08	0.03	8.43
4% without increase		4.96	11.21	3.89	3.73
4% with 20% increase		0.00	4.58	0.00	2.09
5% without increase		1.83	3.07	1.31	1.37
5% with 20% increase		0.00	1.14	0.00	0.46
6% without increase		0.86	1.34	0.71	0.46
Adjusted IUR-based triggers		1987-89	1990-94	1995-99	2000-02
4% without increase		10.37	25.47	10.26	10.70
4% with 20% increase		0.33	10.49	0.23	7.06
5% without increase		3.98	11.49	4.00	4.07
5% with 20% increase		0.16	4.90	0.20	2.22

Table 3.6. Percentage of Unemployed in States on EB under Alternative EB Triggers, Selected Time Periods

TUR-based trigger	1980-84	1985-89	1990-94	1995-99	2000-02
6.5% without increase	84.16	53.91	59.51	12.58	1.57
6.5% with 10% increase	38.65	5.97	32.83	0.28	1.44
6.5% with 20% increase	30.12	3.44	25.12	0.14	1.32
7.5% without increase	69.15	32.12	32.79	6.32	0.29
7.5% with 10% increase	36.56	4.85	21.78	0.24	0.29
7.5% with 20% increase	28.72	3.11	16.54	0.14	0.29
8.5% without increase	50.62	18.37	15.18	0.22	0.00
8.5% with 10% increase	31.30	3.97	10.52	0.08	0.00
8.5% with 20% increase	27.71	2.66	8.43	0.03	0.00
IUR-based trigger		1987-89	1990-94	1995-99	2000-02
1.5% with 20% increase		0.93	30.28	0.31	40.83
3% without increase		13.69	41.06	20.70	15.90
3% with 20% increase		0.01	17.27	0.01	13.19
4% without increase		2.77	15.73	3.60	3.06
4% with 20% increase		0.00	8.48	0.00	2.79
5% without increase		0.49	1.59	0.24	0.63
5% with 20% increase		0.00	0.68	0.00	0.48
6% without increase		0.14	0.25	0.12	0.07
Adjusted IUR-based trigger		1987-89	1990-94	1995-9	2000-02
4% without increase		7.11	37.28	15.23	15.05
4% with 20% increase		0.09	17.56	0.09	13.76
5% without increase		1.89	17.31	3.42	3.70
5% with 20% increase		0.02	9.33	0.03	3.41

Table 3.7. Percentage of Exhaustees in States on EB under Alternative EB Triggers, Selected Time Periods

TUR-based trigger	1980-84	1985-89	1990-94	1995-99	2000-02
6.5% without increase	86.34	52.27	63.32	14.25	2.43
6.5% with 10% increase	41.79	6.54	37.30	0.20	2.20
6.5% with 20% increase	33.11	3.83	29.65	0.07	2.00
7.5% without increase	70.90	30.11	36.76	7.50	0.48
7.5% with 10% increase	39.67	5.71	25.20	0.19	0.48
7.5% with 20% increase	31.64	3.57	19.83	0.07	0.48
8.5% without increase	52.07	17.36	17.78	0.26	0.00
8.5% with 10% increase	34.25	4.90	12.72	0.07	0.00
8.5% with 20% increase	27.61	3.17	10.38	0.01	0.00
IUR-based trigger		1987-89	1990-94	1995-99	2000-02
1.5% with 20% increase		1.41	34.63	0.28	49.97
3% without increase		15.73	50.04	26.38	22.72
3% with 20% increase		0.02	21.94	0.01	19.80
4% without increase		3.67	20.55	5.01	6.24
4% with 20% increase		0.00	11.36	0.00	5.67
5% without increase		0.97	2.49	0.59	1.00
5% with 20% increase		0.00	1.03	0.00	0.66
6% without increase		0.40	0.60	0.33	0.20
Adjusted IUR-based trigger		1987-89	1990-94	1995-99	2000-02
4% without increase		8.66	46.13	19.62	20.98
4% with 20% increase		0.16	22.09	0.06	19.38
5% without increase		2.82	22.38	4.96	5.02
5% with 20% increase		0.03	12.28	0.01	4.38

Table 3.8. Estimated Benefits Paid under Alternative EB Triggers, Selected Time Periods
(in millions of \$)

TUR-based trigger	1980-84	1985-89	1990-94	1995-99	2000-02
6.5% without increase	20,788	9,175	15,833	2,629	653
	(16,082)	(7,711)	(15,630)	(2,672)	(643)
6.5% with 10% increase	10,543	1,000	9,396	42	598
	(8,138)	(930)	(9,247)	(42)	(596)
6.5% with 20% increase	8,416	547	7,531	10	561
	(6,606)	(549)	(7,388)	(10)	(561)
7.5% without increase	17,970	5,533	9,633	1,263	188
	(13,976)	(4,845)	(9,454)	(1,263)	(188)
7.5% with 10% increase	10,188	916	6,715	42	188
	(7,854)	(909)	(6,547)	(42)	(188)
7.5% with 20% increase	8,201	516	5,379	10	188
	(6,440)	(519)	(5,242)	(10)	(188)
8.5% without increase	14,105	3,085	4,784	77	0
	(11,038)	(2,870)	(4,578)	78	(0)
8.5% with 10% increase	9,393	833	3,656	27	0
	(7,189)	(825)	(3,451)	(28)	(0)
8.5% with 20% increase	7,551	505	3,107	5	0
	(5,880)	(507)	(2,909)	(5)	(0)
IUR-based trigger		1987-89	1990-94	1995-99	2000-02
1.5% with 20% increase		125	8,498	63	7,619
		(125)	(8,292)	63	(7,619)
3% without increase		1,851	15,723	7,980	5,170
		(1,931)	(15,438)	(7,828)	(5,128)
3% with 20% increase		6	6,579	3	4,297
		(6)	(6,372)	(3)	(4,297)
4% without increase		470	7,952	1,940	1,894
		(467)	(7,707)	(1,884)	(1,852)
4% with 20% increase		0	4,264	0	1,721
		(0)	(4,086)	(0)	(1,721)
5% without increase		137	1,488	231	371
		(132)	(1,385)	(228)	(337)
5% with 20% increase		0	554	0	254
		(0)	(481)	(0)	(254)
6% without increase		64	276	128	84
		(63)	(272)	(131)	(59)
Adjusted IUR-based trigger		1987-89	1990-94	1995-99	2000-02
4% without increase		1,287	14,249	5,827	4,485
		(1,236)	(13,959)	(5,709)	(4,443)
4% with 20% increase		41	6,699	49	3,976
		(41)	(6,498)	(49)	(3,976)
5% without increase		420	8,586	1,632	1,546
		(398)	(8,356)	(1,561)	(1,503)
5% with 20% increase		4	4,646	0.5	1,376
		(4)	(4,505)	(0.5)	(1,376)

adjusted IUR-based). The time periods are chosen to show how the triggers perform during slack labor markets (1980-84, 1990-94, and 2000-02) and periods of economic expansion (1985-89 and 1995-99).

Four main points are evident in Tables 3.4 through 3.8. First, under most of the triggers, EB was less likely to activate in more recent recessions than in earlier recessions. In the case of the TUR-based triggers, this reflects the secular improvement in labor markets (that is, the decline in the CPS unemployment rate) that has occurred since the early 1980s. In the case of the IUR- and adjusted IUR-based triggers, this reflects both the secular improvement in labor markets and reductions in insured unemployment that have occurred due to falling UI participation (see Charts II-1 and II-2 in Vroman (2002)).

Second, a corollary of the first point is that, even if Congress had not raised the IUR trigger from 4% to 5% (both with a 20% increase requirement) in 1981, EB would have activated relatively rarely in the recession of the early 1990s and during the current recession. This can be seen by examining the rows for the “4% with 20% increase” IUR trigger in Tables 3.4 through 3.8. During the early 1990s, EB would have triggered in 18 states (Table 3.4) and covered about 11% of exhaustees (Table 3.7) under the old 4% trigger; whereas under the actual 5% trigger, EB triggered in 9 states and covered about 1% of exhaustees. During the current recession, EB would have triggered in 11 states and covered about 6% of exhaustees under the old 4% trigger; whereas under the existing 5% trigger, EB triggered in only 3 states and covered less than 1% of exhaustees.

Third, if states had adopted the optional TUR trigger for EB (6.5% with 10% increase) EB would have activated in more states during the current recession than under the standard IUR trigger (5% with 20% increase) — 7 states versus 3 (Table 3.4). However, the percentage of exhaustees covered as a result would not have been much larger (2.2% versus 0.7%, Table 3.7). This suggests that the failure of most states to adopt the optional TUR trigger has little to do with the declining effectiveness of EB.

Similarly, adoption of the optional 6% IUR trigger by the states would have had little or no impact on the number of states in which EB activated during the current recession or on the percentage of exhaustees covered by EB. (To examine this issue further, it would be necessary to simulate two or more triggers combined.)

3.4. Conclusions

The simulation analysis of EB triggers had three principal findings. 1) Most obviously, raising EB trigger thresholds reduces the scale of EB programs, i.e., the fraction of time EB is active and aggregate EB expenditures. 2) Nearly all of the 21 triggers examined here effectively targeted EB on the unemployed and UI exhaustees, i.e., the percentage shares of unemployed and exhaustees in states where EB was activated were usually higher than the percentage of time EB was active. 3) Of the three broad classes of EB triggers examined by the simulations (the TUR, the IUR and the adjusted IUR), the IUR and the adjusted IUR tended to be more target efficient than the TUR. To serve a larger population efficiently in periods when EB is active, use of IUR and adjusted IUR triggers seems to be preferable.

The simulations have yielded insight into the decline of EB since the early 1980s, a phenomenon also discussed in Chapters 1 and 2. While raising EB triggers has caused a decline in the program, EB would have declined even with unchanged triggers. Two other factors - a general reduction in unemployment since the early 1980s and a decrease in the reciprocity rate in the regular UI program - have also operated to reduce the scope of EB during the past two decades. Widespread adoption of optional TUR-based triggers would have increased the scope of EB only modestly.

More simulation analysis of the type undertaken here would be useful. In particular, extending the analysis of the IUR and adjusted IUR triggers to earlier years (back to 1978) would permit a more extensive comparison of EB performance under these triggers with performance under TUR-based triggers.

Chapter 4. Aggregate Employment Service Activities

This project devoted major time and resources in assembling state-level series for various activities of the Federal-State Employment Service (ES). The data assembly efforts pursued hard copy publications as well as electronic sources. While considerable success was obtained, the data to be described and examined in this chapter and in Chapter 5 still are seriously incomplete.

Two types of data on ES activities were assembled. 1) Data on the primary areas of ES service provision were assembled. These data included applications for ES services, receipt of some service, counseling and testing as well as placements and other services related to securing employment. 2) Information on the demographic characteristics of persons served by the ES was assembled. Important dimensions included gender, age, veteran status and ethnicity. For both types of data, the objective was to assemble annual time series for individual states for as many years as possible. Appendix B provides details of these data assembly activities. It is possible there will be additional work on data assembly at a future date.

For the present project, data assembly occupied a large share of total project activities. This chapter summarizes data on key ES activities. For the present report, no analysis of the demographic characteristics of ES clients was undertaken. The strategy of these two chapters is to provide some description of national and regional data in the present chapter and conduct some analysis but to reserve for Chapter 5 the main statistical analysis of state-level outcomes.

4.1. ES National Aggregates

Table 4.1 summaries important aspects of ES activities for the 35 years between 1967 and 2001. Readers are cautioned to note that 34 of the 35 “years” spanned by these data refer to twelve month intervals, but the reference periods for the years changed twice between 1967 and 2001. The changes in the reference periods involved a change in the dating of fiscal years in 1977 and, starting in the fall of 1983, a changeover to program years for reporting ES activities. Details of the reference period for each year are

Table 4.1. Aggregate Measures of ES Activities, 1967 to 2001

Year	Labor Force [1]	Unem- ployment [2]	Un. Rate, TUR % [3]	ES App- lications [4]	Some Service [5]	Coun- seled [6]	Tested [7]	Placed [8]	Obtained Emp. [9]	Entered Emp. [10]
1967	76,540	2,926	3.8	10,563	NA	2,372	2,249	6,093	NA	NA
1968	78,035	2,899	3.7	10,493	NA	2,576	2,084	5,699	NA	NA
1969	79,822	2,826	3.5	9,778	NA	1,132	NA	5,460	NA	NA
1970	81,991	3,462	4.2	9,811	NA	1,067	NA	4,567	NA	NA
1971	83,903	4,554	5.4	9,628	NA	1,052	NA	3,556	NA	NA
1972	85,904	4,950	5.8	14,225	NA	1,081	NA	1,999	NA	NA
1973	88,305	4,625	5.2	17,384	NA	1,137	NA	2,811	NA	NA
1974	90,766	4,760	5.2	13,118	7,518	974	849	3,275	NA	NA
1975	92,952	6,543	7.0	14,824	7,643	876	711	3,094	NA	NA
1976	94,996	7,668	8.1	14,815	8,137	867	676	3,312	NA	NA
1977	98,319	7,095	7.2	15,550	9,404	946	735	4,052	NA	NA
1978	101,184	6,375	6.3	15,245	10,056	1,037	761	4,543	NA	NA
1979	104,396	6,028	5.8	15,315	10,158	1,066	825	4,469	NA	NA
1980	106,481	7,220	6.8	16,632	10,268	1,108	828	4,017	NA	NA
1981	108,275	8,039	7.4	21,082	NA	NA	NA	3,677	NA	NA
1982	109,987	10,031	9.1	19,225	NA	691	534	2,967	29	2,996
1983	111,382	11,241	10.1	19,787	NA	644	547	3,176	281	3,458
1984	112,649	8,998	8.0	22,599	NA	636	589	3,167	378	3,545
1985	114,767	8,367	7.3	19,825	9,590	612	647	3,482	417	3,878
1986	116,733	8,290	7.1	19,679	8,261	625	NA	3,404	426	3,829
1987	118,945	7,938	6.7	18,989	6,982	593	NA	3,217	439	3,655
1988	120,788	6,975	5.8	18,207	6,546	549	NA	3,198	553	3,751
1989	122,869	6,531	5.3	17,845	6,704	564	NA	3,197	565	3,763
1990	125,011	6,686	5.3	18,176	7,205	591	NA	3,097	602	3,699
1991	126,122	7,917	6.3	18,960	10,339	654	NA	2,683	509	3,192
1992	127,232	9,219	7.2	20,213	10,904	675	NA	2,562	516	3,078
1993	128,660	9,345	7.3	21,110	11,790	661	517	2,669	592	3,237
1994	130,156	8,539	6.6	19,958	11,739	620	449	2,711	644	3,283
1995	131,694	7,518	5.7	18,557	11,891	665	458	2,656	762	3,330
1996	133,233	7,409	5.6	18,057	11,737	647	391	2,325	943	3,161
1997	135,293	6,994	5.2	18,118	11,922	614	345	2,177	1,158	3,221
1998	137,145	6,435	4.7	17,600	11,596	612	309	2,068	1,358	3,270
1999	138,505	6,056	4.4	17,000	10,783	556	281	1,859	1,552	3,236
2000	140,127	5,701	4.1	16,496	10,875	540	260	1,748	2,028	3,577
2001	141,342	5,955	4.2	16,415	11,034	481	246	1,370	2,665	3,867

Source: Based mainly on data from ETA 9002 reports and data from early issues of the Employment and Training Report of the President. Data in thousands. Reference years for all data refer to the final month of the individual fiscal year and program year accounting periods. NA - Data not available.

provided in Tables B.1 and B.2 of Appendix B. To ensure consistency, all series including the labor force and unemployment series in Table 4.1 have the identical reference periods for each individual year. The same is true for the electronic files assembled by the project.

Applications for ES services span a broad range of activities related to job matching, counseling, testing and other assessments. In many instances, ES applicants are fulfilling a requirement to register with the ES as a condition of eligibility for UI benefits. Thus many applicants are simply complying with a legal requirement rather than seeking specific services from the ES that would enhance skills and/or employability.

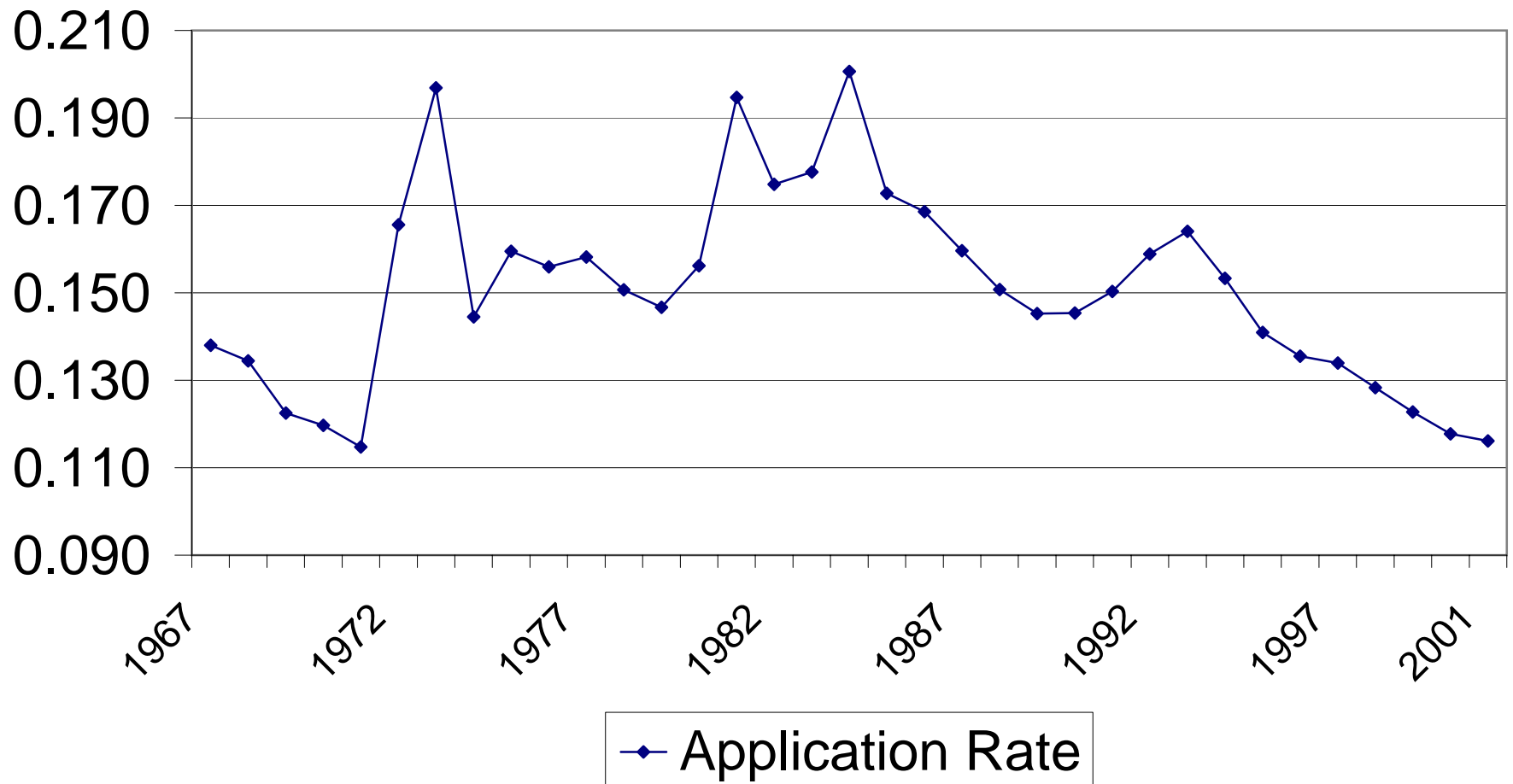
Between 1967 and 2001 the volume of applications at the ES nationwide varied between 9.6 million (1971) and 22.6 million (1984). While applications show an upward trend over these 35 years, they grew more slowly than the labor force. The slow growth of applications is especially apparent after 1972-1973 with total applications averaging 15.06 million during 1975-1977 compared to 16.64 million during 1999-2001, the final three years in Table 4.1.

Chart 4.1 gives a visual summary of applications showing the annual application rate, i.e., applications as a proportion of the labor force (the ratio column [4] to column [1] in Table 4.1, also appearing in the final column in Table 4.2 below). Following a spike in 1973, there is a tendency for the application rate to decline during periods of economic expansion, particularly between 1985 and 1990 and again between 1994 and 2001. Regression analyses with aggregate data and with pooled state-year data show a strong positive relationship between the ES application rate and the unemployment rate.²⁶ Years of high unemployment are years when the ES application rate is also high.

Column [5] of Table 4.1 summarizes provision of “some service” by ES programs. Across the 24 years of available data, persons who received some service varied between a low of 6.55 million and a high of 11.92 million. Unlike the pattern of ES applications, however, there is no clear cyclical pattern in the provision of “some service.” For the years where data are present in Table 4.1 there were three sustained economic expansions. Note that “some service” increased during the late 1970s,

²⁶ This is discussed in more detail below and in Chapter 5.

Chart 4.1. ES Application Rates, 1967 to 2001



decreased during the late 1980s and was quite stable during the late 1990s. The absence of a clear cyclical pattern for “some service” stands in marked contrast with the application rate time series shown in Chart 4.1.

Columns [6] and [7] in Table 4.1 show time series for numbers counseled and tested, with clear downtrends in both services. The number counseled in 2000-2001 was about one fifth of the number in 1967-1968 while an even steeper decline is apparent in the number tested. Both series decline sharply between 1968 and 1969 and again between 1980 and 1982. The number tested decreased more or less continuously after 1993. While the number counseled also decreased after 1993, the falloff is less sharp. Since 1997, the combined number counseled and tested has been less than one million per year, and the total in 2001 was only 0.73 million. These traditional ES activities now touch about one in every 200 members of the labor force compared to 12 in every 200 in 1967.

Placing people in jobs is central to the operations of the ES. Columns [8]-[10] of Table 4.1 display time series of these activities. Compared to the late 1960s when the ES placed some 5.5-6.0 million persons annually, the recent totals have been much more modest, in the neighborhood of 3.3-3.9 million.

Note the change in the data from 1982. Starting in that year, the ETA 9002 reporting system distinguishes two routes for securing employment. It continues to record placements as in earlier years.²⁷ However there is a strong upward trend in Obtained Employment (column [9]). In most situations these could be termed self-placements. Individual persons registered with the ES utilize job contacts (including electronic listings) and other ES services in securing a new job.²⁸ Typically, a placement involves a job order made by an employer with the ES whereas obtained employment does not involve a job order.

²⁷ The instructions for the ETA 9002 reports defines a placement as hiring an applicant after referral to a job by the ES or by other co-located staff working with the ES agency with verification from a reliable source.

²⁸ The instructions for the ETA 9002 reports identify six situations, all of which involve services wholly or partially funded by the ES. These are 1) participation in job search activities, 2) accepting a job resulting from use of a Job Service Sponsored automated labor exchange, 3) after receiving employment counseling or testing or development of an employability plan, 4) after receiving bonding assistance, 5) after termination from a skills training program to which an ES applicant was referred by the ES agency and 6) before expiration of a tax credit voucher. The job is to be secured within 90 days after receiving one or more of these services and verification of the job is to be made by a reliable source, e.g., the employer.

Entered employment is the sum of placements and obtained employment (after removing double counting of persons who were both placed and entered employment in the same year). Entered employment ranged between 3.16 million and 3.88 million in the years from 1983 to 2001. While less than the annual volume of placements in the late 1960s, this inflow into new jobs represents between 10 and 15 percent of the new jobs secured during these years. Entered employment is sufficiently large to have an effect on aggregate unemployment and other macro indicators from the labor market.

Chart 4.2 summarizes national developments in placement rates and entered employment rates. It documents the rapid decrease in placements between 1967 and 1972 and again between 1978 and 1982. Since 1982 the entered employment rate has shown only a small downtrend as increases in obtained employment have largely offset decreases in placements.

While the mix between placements and obtained employment has been evolving since the early 1980s, the rate of change was especially rapid between 1994 and 2001. During these eight years, the obtained employment share of the total increased from 0.20 to 0.69. In 2001, the volume of obtained employment was more than twice the volume of placements for the first time.

4.2. ES Activities in the Regions

The importance of ES activities varies by states and regions. This variation is explored here with data from the ten DOL regions. Table 4.2 focuses on application rates for ES services during the 1967-2001 period. The table displays annual application rates for each region along with the national application rate. The bottom rows show summary measures of applications for the 35 years, displaying averages (means), standard deviations and coefficients of variation. Also highlighted are the highest and lowest regional application rates for each individual year.

Table 4.2 shows there are large and systematic differences in application rates by region. While the national average was 0.15 for this period, note that the averages for five regions were 0.18 or higher while three averages were 0.12 or lower. Across all regions, Region 8 stands out as having consistently high applications for ES services. For 24 of

Chart 4.2. Placement Rates and Entered Employment Rates, 1967 to 2001

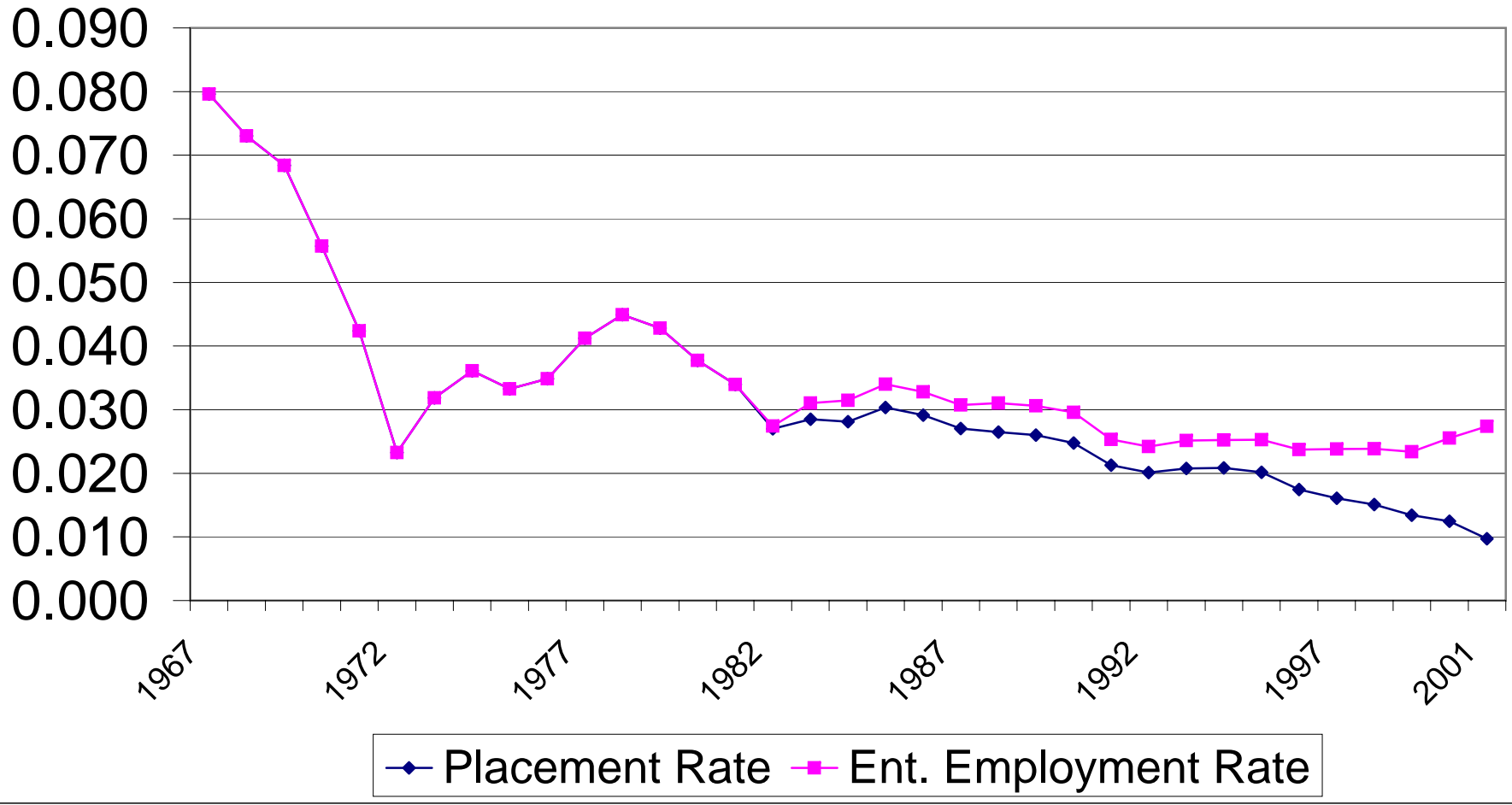


Table 4.2. Application Rates for ES Services, National and DOL Regional Data, 1967 to 2001

Year	Reg. 1	Reg. 2	Reg. 3	Reg. 4	Reg. 5	Reg. 6	Reg. 7	Reg. 8	Reg. 9	Reg. 10	U.S.
1967	0.1357	0.1175	0.1209	0.1343	0.1177	0.1720	0.1135	0.1659	0.1969	0.1627	0.1380
1968	0.1313	0.1139	0.1216	0.1297	0.1211	0.1679	0.1149	0.1695	0.1732	0.1531	0.1345
1969	0.1125	0.1042	0.1171	0.1205	0.1073	0.1524	0.1055	0.1561	0.1546	0.1487	0.1225
1970	0.1238	0.1064	0.1129	0.1202	0.1093	0.1518	0.1061	0.1624	0.1224	0.1395	0.1197
1971	0.1304	0.1013	0.1084	0.1165	0.1116	0.1440	0.1015	0.1652	0.0947	0.1358	0.1148
1972	0.1988	0.1177	0.1595	0.1526	0.1636	0.2108	0.1516	0.2357	0.1603	0.2282	0.1656
1973	0.2125	0.1602	0.1724	0.1931	0.1881	0.2325	0.1817	0.2707	0.2181	0.2430	0.1969
1974	0.1485	0.1157	0.1192	0.1457	0.1252	0.1826	0.1494	0.2178	0.1577	0.2143	0.1445
1975	0.1648	0.0937	0.1302	0.1769	0.1470	0.2080	0.1671	0.2312	0.1652	0.2325	0.1595
1976	0.1556	0.0870	0.1367	0.1643	0.1429	0.2118	0.1699	0.2327	0.1609	0.2224	0.1560
1977	0.1389	0.1038	0.1384	0.1650	0.1516	0.2020	0.1701	0.2331	0.1596	0.2192	0.1582
1978	0.1242	0.0970	0.1304	0.1659	0.1536	0.1887	0.1667	0.2150	0.1338	0.2061	0.1507
1979	0.1153	0.0861	0.1288	0.1684	0.1480	0.1897	0.1750	0.2042	0.1226	0.1990	0.1467
1980	0.1245	0.0897	0.1309	0.1789	0.1585	0.1959	0.1920	0.2096	0.1433	0.1953	0.1562
1981	0.1741	0.1362	0.1358	0.2246	0.2042	0.2295	0.2357	0.2487	0.1779	0.2324	0.1947
1982	0.1558	0.1236	0.1230	0.1989	0.1847	0.2108	0.2225	0.2274	0.1567	0.1793	0.1748
1983	0.1445	0.1321	0.1458	0.1954	0.1857	0.2189	0.2267	0.2081	0.1515	0.1968	0.1777
1984	0.1452	0.1757	0.1602	0.2036	0.2221	0.2431	0.2604	0.2349	0.1629	0.2345	0.2006
1985	0.1267	0.1328	0.1481	0.1902	0.1880	0.2089	0.2342	0.2120	0.1200	0.2259	0.1727
1986	0.1177	0.1349	0.1474	0.1905	0.1742	0.2167	0.2283	0.2307	0.1055	0.2143	0.1686
1987	0.0973	0.1094	0.1401	0.1852	0.1754	0.2186	0.2073	0.2307	0.0891	0.2021	0.1596
1988	0.0884	0.0910	0.1219	0.1718	0.1683	0.2105	0.1952	0.2297	0.0963	0.1980	0.1507
1989	0.0969	0.0867	0.1153	0.1782	0.1402	0.2162	0.1877	0.2245	0.0944	0.1903	0.1452
1990	0.1165	0.0888	0.1180	0.1837	0.1373	0.2067	0.1927	0.2294	0.0892	0.1848	0.1454
1991	0.1361	0.0942	0.1278	0.1956	0.1393	0.2000	0.1929	0.2249	0.0895	0.1987	0.1503
1992	0.1411	0.1178	0.1359	0.2092	0.1450	0.2060	0.1919	0.2272	0.0942	0.1982	0.1589
1993	0.1300	0.1327	0.1428	0.2143	0.1465	0.2024	0.1903	0.2237	0.1113	0.2067	0.1641
1994	0.1165	0.1024	0.1336	0.2047	0.1464	0.1937	0.1881	0.2086	0.0906	0.2029	0.1533
1995	0.1048	0.0918	0.1260	0.1958	0.1203	0.1801	0.1894	0.1980	0.0795	0.1940	0.1409
1996	0.0958	0.1049	0.1065	0.1860	0.1174	0.1695	0.1779	0.1940	0.0785	0.1940	0.1355
1997	0.0851	0.1047	0.1211	0.1874	0.1094	0.1621	0.1670	0.1862	0.0803	0.1955	0.1339
1998	0.0727	0.0979	0.1179	0.1828	0.1022	0.1516	0.1621	0.1732	0.0700	0.2326	0.1283
1999	0.0705	0.0886	0.1053	0.1772	0.1032	0.1461	0.1528	0.1664	0.0639	0.2253	0.1227
2000	0.0635	0.0845	0.0920	0.1586	0.1044	0.1474	0.1475	0.1653	0.0676	0.2227	0.1177
2001	0.0641	0.0483	0.0745	0.1777	0.1021	0.1502	0.1557	0.1543	0.0663	0.2307	0.1161
Average	0.12	0.11	0.13	0.18	0.14	0.19	0.18	0.21	0.12	0.20	0.15
Std. Dev.	0.03	0.02	0.02	0.03	0.03	0.03	0.04	0.03	0.04	0.03	0.02
Coef. Var.	0.28	0.22	0.15	0.15	0.22	0.15	0.22	0.14	0.34	0.14	0.15

Source: Based mainly on data from ETA 9002 reports and data from early issues of the Employment and Training Report of the President. Application rates measure applications as a proportion of the labor force. Reference years for all data refer to the final month of the individual fiscal year and program year accounting periods.

the 35 years its application rate was highest. At the opposite extreme, Region 2 had the lowest average application rate and the lowest rate in 16 of 35 individual years.

Note that application rates display wide year-to-year variation in Table 4.2. For five regions the coefficient of variation (CV) exceeds 0.20. This wide annual variability undoubtedly has several determinants, but one appears to be regional unemployment. Years of high unemployment have above-average application rates. Regression analysis (to be reported later) confirms that high unemployment is linked to high application rates.

Wide variation is also observed in the entered employment rates for individual regions. Table 4.3 displays annual time series for the ten DOL regions as well as the national average for the 1967-2001 period. Nationwide, the average entered employment rate was 0.035 over these 35 years. Note in Table 4.3 that each of the regional averages deviated by at least 0.06 from this national average. Typically each region's entered employment rate was either substantially above or substantially below the national average. Low entered employment rates were consistently present in Regions 1, 2, 3, 5 and 9 while above-average rates were characteristic of the other five regions.

Table 4.3 also identifies the regions with the highest and lowest entered employment rates in each individual year. Regions 2 and 8 dominate the extremes. Region 2's entered employment rate is the lowest in 19 of the 35 years. Region 8 consistently dominates the highest entered employment rates, having the highest rate in 30 of the 35 years. Its 35 year average of 0.063 is 80 percent above the national average. No other region comes close to Region 8 in its high entered employment rate.

Placing people in jobs and providing other support for job finding depends upon several factors with the strength of labor demand being paramount. One indicator of variable success in finding jobs is the coefficient of variation of the entered employment rate. In Table 4.3 these measures exceed 0.20 in all DOL regions, and they exceed 0.30 in six regions. Entered employment rates are highly varied from one year to the next.

4.3. Analysis of ES Activities

Chapter 5 and this chapter report the results of quantitative analyses of ES activities. The remainder of this chapter is concerned with developments in ES application rates and entered employment rates in national data and across the ten DOL

Table 4.3. Entered Employment Rates, National and DOL Regional Data, 1967 to 2001

Year	Reg. 1	Reg. 2	Reg. 3	Reg. 4	Reg. 5	Reg. 6	Reg. 7	Reg. 8	Reg. 9	Reg. 10	U.S.
1967	0.063	0.091	0.064	0.079	0.056	0.132	0.069	0.114	0.089	0.093	0.080
1968	0.057	0.085	0.059	0.071	0.051	0.124	0.066	0.109	0.077	0.084	0.073
1969	0.051	0.076	0.057	0.069	0.051	0.113	0.063	0.106	0.068	0.084	0.068
1970	0.043	0.065	0.047	0.058	0.040	0.087	0.052	0.095	0.056	0.055	0.056
1971	0.031	0.048	0.036	0.046	0.026	0.075	0.042	0.077	0.041	0.046	0.042
1972	0.020	0.017	0.021	0.029	0.014	0.038	0.026	0.046	0.023	0.027	0.023
1973	0.023	0.020	0.030	0.039	0.022	0.047	0.038	0.056	0.035	0.039	0.032
1974	0.028	0.023	0.031	0.039	0.025	0.052	0.048	0.064	0.042	0.059	0.036
1975	0.028	0.021	0.028	0.035	0.022	0.047	0.042	0.062	0.039	0.066	0.033
1976	0.028	0.021	0.028	0.041	0.022	0.052	0.047	0.065	0.037	0.064	0.035
1977	0.034	0.026	0.034	0.046	0.032	0.055	0.056	0.072	0.042	0.067	0.041
1978	0.038	0.029	0.037	0.051	0.037	0.056	0.059	0.081	0.043	0.070	0.045
1979	0.035	0.027	0.034	0.049	0.036	0.054	0.062	0.079	0.038	0.065	0.043
1980	0.033	0.027	0.028	0.046	0.029	0.050	0.053	0.068	0.032	0.055	0.038
1981	0.028	0.025	0.024	0.042	0.024	0.048	0.048	0.062	0.028	0.048	0.034
1982	0.022	0.020	0.018	0.034	0.019	0.040	0.040	0.051	0.023	0.039	0.027
1983	0.027	0.020	0.021	0.040	0.025	0.040	0.043	0.052	0.025	0.047	0.031
1984	0.026	0.021	0.019	0.041	0.025	0.043	0.042	0.057	0.025	0.046	0.031
1985	0.029	0.021	0.025	0.043	0.032	0.043	0.050	0.057	0.021	0.052	0.034
1986	0.026	0.023	0.025	0.040	0.031	0.040	0.046	0.057	0.021	0.052	0.033
1987	0.022	0.020	0.024	0.039	0.027	0.037	0.042	0.054	0.021	0.053	0.031
1988	0.019	0.018	0.024	0.038	0.026	0.047	0.043	0.058	0.021	0.051	0.031
1989	0.019	0.016	0.022	0.039	0.025	0.048	0.042	0.060	0.020	0.050	0.031
1990	0.018	0.013	0.021	0.040	0.023	0.048	0.042	0.062	0.018	0.046	0.030
1991	0.016	0.011	0.018	0.034	0.020	0.039	0.038	0.057	0.015	0.040	0.025
1992	0.014	0.010	0.016	0.034	0.020	0.037	0.036	0.053	0.014	0.036	0.024
1993	0.015	0.011	0.018	0.038	0.019	0.035	0.039	0.050	0.015	0.036	0.025
1994	0.015	0.009	0.018	0.038	0.019	0.037	0.039	0.051	0.014	0.035	0.025
1995	0.014	0.010	0.018	0.038	0.020	0.037	0.039	0.054	0.013	0.033	0.025
1996	0.011	0.013	0.015	0.036	0.017	0.032	0.040	0.052	0.012	0.037	0.024
1997	0.009	0.014	0.017	0.036	0.018	0.032	0.038	0.051	0.011	0.040	0.024
1998	0.009	0.013	0.018	0.037	0.020	0.032	0.035	0.047	0.009	0.041	0.024
1999	0.009	0.011	0.019	0.039	0.022	0.029	0.030	0.045	0.004	0.041	0.023
2000	0.009	0.010	0.022	0.039	0.024	0.040	0.032	0.053	0.004	0.040	0.026
2001	0.008	0.008	0.017	0.036	0.022	0.040	0.025	0.039	0.033	0.041	0.027
Average	0.0251	0.0256	0.0272	0.0428	0.0268	0.0516	0.0444	0.0633	0.0294	0.0509	0.0352
Std. Dev.	0.013	0.021	0.012	0.011	0.010	0.025	0.011	0.018	0.019	0.015	0.014
Coef. Var.	0.53	0.83	0.46	0.25	0.37	0.48	0.24	0.29	0.66	0.30	0.40

Source: Based mainly on data from ETA 9002 reports and data from early issues of the Employment and Training Report of the President. Entered employment rates measured as a proportion of the labor force. Reference years for all data refer to the final month of the individual fiscal year and program year accounting periods.

regions. Chapter 5 reports results of pooled analyses of state-level data. Since the data files are new, these analyses should be considered preliminary.

Table 4.4 displays regressions for the 1967-2001 period that explain developments in application rates for the DOL regions. A common specification is used with the regional unemployment rate and a linear trend as the explanatory variables. The coefficient on the unemployment rate (TUR) shows the marginal response of application rates (applicants as a proportion of the labor force) to changes in unemployment while the coefficient for the trend is intended to show the direction of change for longer run developments in applications.

Concentrating first on the unemployment coefficients, note they are consistently positive and all but one are statistically significant.²⁹ Six of the regional coefficients and the national coefficient have t ratios that exceed 5.0. There is a strong and consistent connection between regional unemployment and ES applications. The range of the point estimates is generally from 0.58 to 2.25 with the slope in the national data being 1.085. Applications for ES services respond strongly to changes in the unemployment rate.

While most of the trend coefficients in Table 4.4 are negative, note the positive and significant trends for Regions 4, 7 and 10. After controlling for unemployment, there were increases in application rates in these regions between 1967 and 2001.

The presence of positive trends in three regions helps explain why the trend in national data, while negative, is not significant. The divergent trends in individual regions were to a large extent offsetting, yielding only a small downtrend in aggregate data. ES applications were highly responsive to changes in unemployment between 1967 and 2001, but wide regional diversity in the basic trend of application rates was observed.

Table 4.5 shows regressions explaining the entered employment rates in the regions and nationwide for the same 35 years. All eleven unemployment rate coefficients are negative and ten have t ratios of 2.4 or larger. Higher unemployment rates reduce entered employment rates in all regions. The range of point estimates is generally between -0.14 and -0.54 with a coefficient of -0.35 in the national equation appearing at the bottom of the table.

²⁹ The coefficient for Region 2 has a t ratio of 1.5 whereas a t ratio of 2.0 is required for statistical significance at the 0.05 level.

Table 4.4. Regression Analysis of ES Application Rates by Region, 1967 to 2001.

DOL Region	Constant	Unemp. Rate, TUR	Trend 1967 = 1	Adj. R2	Standard Error	Durbin Watson	Average Applic. Rate
Region 1	0.1046 [9.0]	1.020 [6.1]	-0.00195 [6.4]	0.729	0.0180	1.25	0.125
Region 2	0.0998 [6.2]	0.336 [1.5]	-0.00072 [1.9]	0.102	0.0225	0.96	0.108
Region 3	0.1030 [10.3]	0.635 [4.2]	-0.00068 [2.7]	0.394	0.0148	1.23	0.128
Region 4	0.0921 [8.5]	0.943 [5.8]	0.00157 [6.0]	0.673	0.0155	1.58	0.176
Region 5	0.0824 [7.7]	1.170 [8.4]	-0.00056 [1.8]	0.682	0.0181	1.74	0.145
Region 6	0.1189 [8.5]	1.496 [6.4]	-0.00099 [3.0]	0.545	0.0189	1.33	0.191
Region 7	0.0592 [5.7]	2.251 [10.8]	0.00081 [2.8]	0.804	0.0172	1.68	0.176
Region 8	0.1200 [6.2]	1.807 [5.2]	-0.00010 [0.3]	0.433	0.0228	1.10	0.208
Region 9	0.1397 [6.4]	0.589 [2.1]	-0.00320 [8.3]	0.697	0.0229	1.28	0.123
Region 10	0.1370 [6.4]	0.579 [2.3]	0.00129 [3.1]	0.229	0.0242	1.10	0.202
U.S.	0.0928 [8.3]	1.085 [6.5]	-0.00042 [1.7]	0.555	0.0150	1.73	0.151

Source: Regressions explaining application rates shown in Table 4.2 using unemployment rates for the the DOL regions and a linear trend starting in 1967. Beneath each coefficient is the absolute value of its t ratio.

Table 4.5. Regression Analysis of Entered Employment Rates by Region, 1967 to 2001.

DOL Region	Constant	Unemp. Rate, TUR	Trend 1967 = 1	Adj. R2	Standard Error	Durbin Watson	Average Ent. Emp. Rate
Region 1	0.0573 [15.0]	-0.200 [3.7]	-0.00119 [11.9]	0.808	0.0059	0.38	0.0251
Region 2	0.0869 [11.0]	-0.538 [4.9]	-0.00154 [8.3]	0.729	0.0111	0.39	0.0255
Region 3	0.0608 [14.5]	-0.290 [4.5]	-0.00093 [9.0]	0.751	0.0062	0.52	0.0272
Region 4	0.0675 [12.1]	-0.226 [2.7]	-0.00064 [4.7]	0.455	0.0080	0.41	0.0428
Region 5	0.0461 [10.5]	-0.137 [2.4]	-0.00060 [4.8]	0.438	0.0074	0.41	0.0269
Region 6	0.1105 [9.1]	-0.512 [2.5]	-0.00155 [5.4]	0.574	0.0164	0.30	0.0516
Region 7	0.0584 [12.1]	-0.040 [0.4]	-0.00068 [5.0]	0.419	0.0081	0.60	0.0443
Region 8	0.1150 [12.4]	-0.541 [3.3]	-0.00139 [7.6]	0.646	0.0109	0.51	0.0633
Region 9	0.0863 [9.4]	-0.387 [3.3]	-0.00167 [10.2]	0.757	0.0097	0.67	0.0294
Region 10	0.0957 [10.5]	-0.340 [3.2]	-0.00114 [6.4]	0.549	0.0104	0.53	0.0508
U.S.	0.0744 [12.4]	-0.352 [3.9]	-0.00100 [7.4]	0.675	0.0080	0.39	0.0351

Source: Regressions explaining entered employment rates shown in Table 4.3 using unemployment rates for the the DOL regions and a linear trend starting in 1967. Beneath each coefficient is the absolute value of its t ratio.

The trend coefficients in Table 4.5 are also uniformly negative and significant. Over this period, the entered employment rate was trending down in all regions. The range of the trend coefficients was quite wide, from -0.00167 to -0.00064. In the national equation, this coefficient was -0.00100, suggesting a decrease in the entered employment rate of 0.01 per decade.

Note in Table 4.5 that all the Durbin Watson statistics are very low, ranging from 0.38 to 0.67, suggesting the presence of positive serial correlation in the residuals.³⁰ To test for sensitivity of findings to this potential problem, the regressions were fitted with data measured as first differences, e.g., as annual changes rather than annual levels. Under the first difference specification, the trend drops out and the change in the entered employment rate is regressed on the change in the unemployment rate.

The unemployment coefficients continued to be negative and significant in the first difference equations. All eleven were negative and nine of eleven had t ratios of 2.0 or larger.³¹ Thus the depressing effect of high unemployment on entered employment rates was consistently present in data measured both in levels and in first differences.

An alternative specification was also tested where the linear trend was replaced with each region's civilian labor force. In explaining both the application rate and the entered employment rate, the results were very similar to those shown in Tables 4.4 and 4.5. Higher unemployment raised the application rate but reduced the entered employment rate. The fits of the regressions in terms of adjusted R²s, standard errors and the size, sign and significance of the slope coefficients were very similar to those appearing in these two tables.

Considering the results presented in Tables 4.4 and 4.5, significant effects of unemployment were found both for ES application rates and entered employment rates in the regional data. Higher unemployment rates increase application rates but reduce entered employment rates. Chapter 5 reports additional findings using state-level data.

ES activities typically serve low wage clients. Since regions have quite different wage levels, the disparities in application rates and entered employment rates shown in

³⁰ In the presence of positive serial correlation t ratios are inflated, making explanatory variables appear to be more significant than warranted.

³¹ The unemployment change coefficients had t ratios below 2.0 only in Regions 6 and 9.

Tables 4.2 and 4.3 could be related to differences in job search patterns and labor market institutions in the regions.

One obvious institutional factor could be a differing prevalence of private sector job matching services across states and regions. Certainly there are wide differences in average wages across regions. In 2001, for instance, the average weekly wage for UI taxable covered employers ranged from a high of \$919 in Region 2 to a low of \$584 in Region 7, or from 1.32 times the national average to 0.84 of the national average of \$698.

Since average wages are unequal across regions, the differing ES application rates and entered employment rates documented in Tables 4.2 and 4.3 could partly relate to differing wage levels. This was explored on a preliminary basis using regional data. A regression was fitted to note the association between the application rate averages shown at the bottom of Table 4.2 and the average weekly wage in the regions during 2001. A highly significant negative association was found. Across the ten DOL regions the correlation between the application rate and the average weekly wage was -0.79. Some of the differences in ES application rates may reflect a greater presence of private job matching intermediaries in high wage regions compared to low wage regions.

To pursue this idea further, an analysis across states was undertaken. The average ES application rate for the ten years 1992 to 2001 was regressed on the average weekly wage in the states in 2001. A highly significant slope coefficient was obtained (t ratio of 4.3) and the regression “explained” 26 percent of the interstate variation in the average application rate for the ten year period.

While the preceding results using regional and state data are not offered as in any way definitive, they are suggestive of one additional factor that may explain the differing importance of ES application rates across the states and regions. Applications for ES services may always be systematically below-average in states and regions where wages are above-average because private job placement providers may play a larger role in matching workers with jobs. Using the data assembled in the present project, this avenue of analysis could be pursued more thoroughly in a subsequent project.

4.4. Summary

This chapter presented key time series relating to ES activities spanning the years 1967 to 2001. Over these 35 years, the volume of all ES activities examined here (applications, provision of some services, counseling and testing as well as placements and entered employment) grew more slowly than the overall U.S. labor force. The one area of especially rapid growth was in obtained employment. But even in the area of securing jobs for ES applicants, the sum of the placements and obtained employment was no higher during 2000-2001 than two decades earlier.

Wide and persistent differentials across the 10 DOL regions were documented for both ES application rates and entered employment rates. Region 8 (mainly plains states) ranked consistently high while Region 2 (New York and New Jersey) ranked consistently low. The regional analysis clearly demonstrated that the importance of the ES in the labor market varies widely and systematically across broad geographic areas.

Regression analysis established that ES application rates and entered employment rates are closely linked to the demand for labor as proxied by the unemployment rate. Higher unemployment rates raise ES application rates while at the same time lowering entered employment rates. During recessions the ES experiences a growth in its client base but its ability to successfully secure jobs for clients decreases. These same labor market flows are the subject of the next chapter as well.

Finally, at both the regional level and across individual states a strong negative association between average wages and ES application rates was documented. This finding may suggest that job matching institutions differ between high wage and low wage geographic areas. More research on this question seems warranted.

Chapter 5. Trends and Cycles in Employment Service Delivery

Established in 1933, the Employment Service (ES) was the first federal agency to focus on improving the performance of the labor market. Throughout its history, the ES has served as a free public labor exchange, registering job seekers, taking job orders from employers, and matching workers with job vacancies. Since the establishment of Unemployment Insurance (UI) in 1935, the ES has also administered the UI work test, which attempts to ensure that UI recipients are able to work, available for work, and seeking work.

Matching workers to jobs through placement and other reemployment services and administering the UI work test have been consistent functions of the ES over the years. However, as discussed in Chapter 4, the services provided by the ES vary over the business cycle and have changed over time. For example, starting in the early 1960s, a series of changes in federal legislation (summarized in Section 5.1 below) pushed the ES to emphasize a changing set of activities and services.

The main goal of this chapter is to offer some preliminary answers to the following questions: How do ES activities respond to changing economic conditions? To what extent have changes in federal legislation resulted in different mixes of ES activities? To our knowledge, these questions have not been addressed in previous research, primarily because the data needed to address them have not been available.

The state-year panel data on ES services (described in detail in Appendix B) are used in this chapter to extend the analysis that was started in Chapter 4. After briefly summarizing the evolution of the ES in Section 5.1, this chapter describes two models of ES activities (Section 5.2) and then presents estimates from those models using the newly developed data (Section 5.3). The main goal, again, is to begin to understand how ES activities respond to changes over the business cycle and to longer-run changes. The answers given in this chapter are preliminary. The data used have been available only for a short time, and the estimates raise several questions about model specification and estimation. It may well be that additional data (and/or more complicated estimating techniques) will be needed in order to yield convincing answers about how ES activities

respond to various outside influences. Accordingly, this chapter also attempts to point toward the issues that will need to be resolved in order to obtain improved answers.

5.1. The Changing Role of the ES

The evolution of the ES's role is summarized in Table 5.1, which lists major federal employment and training legislation and notes the implications of each piece of legislation for the ES and reemployment policy.

Until the 1960s, reemployment policy in the United States emphasized job placement and assumed that unemployed workers were job-ready and merely needed to be matched to an employer. During the 1960s, however, the Manpower Development and Training Act and the Economic Opportunity Act shifted emphasis away from job placement and toward "second-chance" training for workers who either were poorly served by the conventional system of public education or who were dislocated as a result of structural economic change. The role of the ES in this shift was at first substantial, but that role dwindled with the adoption of the Comprehensive Employment and Training Act (CETA) in 1973. Under CETA, training services were administered locally with the result, in the view of many, that reemployment services became fragmented. The diminished role of the ES continued through the 1980s and into the 1990s following adoption of the Job Training Partnership Act (JTPA) in 1982. This diminished role is reflected in the downward trends in ES activities that were seen in Chapter 4 and that will be seen again below.

During the 1980s there was much dissatisfaction with the ES, and questions were raised about its role and importance. Also during the 1980s, however, convincing research became available showing that existing government training programs fell short of their hoped-for results (LaLonde 1995). Moreover, a series of demonstrations using randomized trials suggested the effectiveness of relatively inexpensive reemployment services — job search workshops, interview and resume preparation classes, and other assistance — in helping unemployed workers (Meyer 1995). As a result, the former optimism about second-chance training was replaced by an emphasis on placing workers

Table 5.1. Employment and Training Legislation and the Changing Role of the Employment Service

Legislation	Implications for ES and reemployment policy
Wagner-Peyser Act (1933)	Creation of U.S. Employment Service; emphasis on public labor exchange / placement services.
Social Security Act, Title III (1935)	Creation of the Unemployment Insurance (UI) system; ES to administer the UI work test.
Area Redevelopment Act (1961)	ES established training programs in depressed areas; increased collection of labor market information.
Manpower Development and Training Act (1962)	Further involvement of ES in training programs; reduced emphasis on traditional placement services.
Economic Opportunity Act (1964)	ES provides outreach, screening, referral for disadvantaged worker programs.
Comprehensive Employment and Training Act (1973)	Local provision of reemployment services as well as by ES; fragmentation of reemployment services.
Job Training Partnership Act (1982)	Continued local control of delivery of reemployment services.
Worker Profiling and Reemployment Services (1993)	ES administers reemployment services under UI profiling; return of emphasis on public labor exchange / placement services.
Workforce Investment Act (1998)	ES becomes locus of One-Stop Centers.

Sources: Haber and Murray (1966); Bendick (1989); Balducci, Johnson, and Gritz (1995); Fagnoni (2000).

in jobs. In short, the sentiment in favor of "training first" was replaced by a growing belief in emphasizing rapid reemployment.

The new emphasis on rapid reemployment was embodied in amendments to the Social Security Act that established the Worker Profiling and Reemployment Services initiative in 1993. Under profiling, UI claimants who are likely to exhaust their UI benefits are required to attend job search assistance workshops conducted by the ES or risk losing their UI benefits (Corson and Decker 2000).

Emphasis on rapid reemployment is also present in the Workforce Investment Act of 1998, which requires that states provide most federally funded employment and training services through a system of One-Stop Centers. This change has had important implications for the ES, which is now the location from which nearly all reemployment services (or information about and referral to such services) are provided. (The Adult and Dislocated Worker programs are also to provide these services, but their role will be less important.) The intent of One-Stop Centers is to offer an appealing, logically organized office that directs any job seeker to information, assistance, or programs needed to gain employment. Also, One-Stop Centers encourage coordination of services by collecting the operations of various reemployment programs under a single manager.

It may be too early to detect the impact of the changes brought about by WIA on ES activities — the available data run only through July 2001. However, additional data used with variants of the model developed below should be able to detect what, if any, impact WIA has had on ES activities.

5.2. A Model of Employment Service Delivery

The traditional role of the ES — that of a free public employment agency — has involved provision of five main services: job referral, counseling and assessment (including aptitude and interest testing), job development, other job search assistance services, and referral to training. Because none of these services can be provided unless workers apply, examining the determinants of applications to the ES is also important.

The database developed for this project includes data for each state in most years between 1967 and 2001 on applications and the five main ES activities except job

development. (As discussed in Appendix B, the number of years of data varies among the different activities.) In this chapter, we focus on the number of applications and three of the above ES activities — number of individuals counseled, number of individuals referred to a job, and number of workers placed in a job. We have chosen these outcomes for preliminary analysis because of their importance and because they are the outcomes for which data are most complete (although even for these, there are gaps — see below and Appendix B).

The discussion to this point has suggested two main questions about changes in the activities of the ES:

- (1) How do recessions influence the activities and services provided by the ES?
- (2) How have ES activities responded over time to other influences, especially changes in federal reemployment policy? Is it possible to detect clear trends (as opposed to cyclical labor force influences) in ES activities?

Addressing these questions requires an empirical model that includes variables capturing (1) business cycle changes and (2) secular or long-run changes. In addition, we would like to control for as many other influences on ES activities as possible. For example, growth of the labor force is likely to increase ES activities because a larger labor force implies a larger number of new job seekers, reentrants, and laid-off workers, all of whom are engaged in job-seeking activities. This suggests that the model should include a measure of the size of the labor force. Also, the extent of union membership could influence ES activity: If a benefit of union membership is assistance in job finding, then a declining union sector would imply greater demand for other forms of assistance in job finding, including the ES. Accordingly, including a measure of the extent of union membership may also be appropriate.

Other influences on ES activity are less easy to measure. For example, states differ from each other in ways that are difficult to quantify but that may be extremely important to the volume and rate of ES activities: industry and occupational mix, ethnic composition of the labor force, and state-level policies, to name just three. If these interstate differences are relatively constant over time, it is possible to capture them either by first-differencing the data or by including a set of state-specific dummy variables in

the model. Either of these methods controls for individual state-specific effects (see below or Chapter 10 in Wooldridge (2002)).

Finally, we want to capture influences on ES activities that occur over time and that affect all states similarly. These include federal policy changes and long-term changes such as changes in technology. We model such influences in two ways. The preferred approach is to include a set of year-specific dummy variables in the model. This allows changes over time to differ from year to year; no structure, linear or otherwise, is imposed on the relationship between time and the variables. The alternative is to include a time trend in the model. The advantage of this approach is that it allows us to make statements about long-run or average trends affecting ES services. The drawback is that we assume a linear (or log-linear) trend.

These considerations can be summarized in the following model, which allows estimation of the extent to which the factors mentioned above influence the extent of ES activity y in state s and year t :

$$(1) \quad \log y_{st} = \beta_0 + \beta_1 \log lf_{st} + \beta_2 \log unem_{st} + \beta_3 \log union_{st} + a_s + d_t + u_{st}$$

In (1), subscript s denotes the state, and subscript t denotes the year. Accordingly, $\log y_{st}$ denotes the log of the level of ES activity y in state s , year t . This implies that equation (1) is written to represent four models, one in which the log of applicants is the dependent variable, a second in which the log of the number of workers counseled is the dependent variable, a third for referrals, and a fourth for placements.

Three of the independent variables in (1) vary both across states and over time: $\log lf$ (the log of the size of the labor force), $\log unem$ (the log of the number of unemployed workers), and $\log union$ (the log of union membership³²). The state fixed-effects mentioned above are represented by a_s . These are factors that vary across the states in the sample but not over time. Year-specific factors that affect all states equally are represented by d_t . These could be cyclical factors, trends, or random shocks that are specific to just one year. In most of the estimates discussed in section 5.3 below, we

³² Unionization estimates are from Hirsch, Macpherson and Vroman (2001).

control for these factors by including a set of dummy variables, one for each year. Finally, u_{st} is an idiosyncratic or time-varying error term.

Equation (1) can be estimated in either of two ways. The simplest approach is to start with equation (1) and take first-differences of observations t and $t-1$ for all t . This yields:

$$(2) \quad \Delta \log y_{st} = \beta_0 + \beta_1 \Delta \log lf_{st} + \beta_2 \Delta \log unem_{st} + \beta_3 \Delta \log union_{st} + \Delta d_t + \Delta u_{st}$$

where Δ represents the first-difference operator, and Δy_t represents a set of year dummy variables. The state fixed effects, a_s , have been eliminated from (2) by the first differencing. Note that the coefficients in equation (1) and (2) have identical interpretations. The only change is that we lose a year of observations in the process of taking first differences.

An alternative to first-differencing, which is more common now that most statistical software makes it easy to implement, is to include in the estimating equation a dummy variable for each state s . This yields a “fixed-effects” model because it controls explicitly for each state-level fixed effect. (Statistical software does this by “time-demeaning” the data on each variable in the model. Because there are only 51 state effects that need to be controlled for, we simply include a set of state-specific dummy variables. Time demeaning and including a set of state dummies yield identical results.) As written, the model specified by equation (1) is a fixed-effects model because it includes the state fixed-effects.

With a correctly specified model, the first-difference and fixed-effects estimators should give results that differ only by sampling error. Results that differ significantly suggest some type of specification error (for example, omitted variables or endogenous regressors — see, for example, section 10.6 in Wooldridge (2002)). As will be seen, the first-difference and fixed-effects estimates discussed below do differ from each other significantly, and we discuss possible sources of and solutions to the specification error that appears to exist.

Chapter 4 presented and estimated regression models where the dependent variable was the *rate* at which some ES activity occurred, and the independent variables

were *rates* such as the unemployment rate. By analogy to the equations (1) and (2), we write these *rate of activity* models as:

$$(3) \quad y_{st} = \beta_0 + \beta_1 lfpr_{st} + \beta_2 unemrt_{st} + \beta_3 unionrt_{st} + a_s + d_t + u_{st}$$

As in equations (1) and (2), subscript s denotes the state, and subscript t denotes the year, so that y_{st} represents the rate at which one of the four ES activities occurred in state s , year t . Also, $lfpr$ denotes the labor force participation rate, $unemrt$ denotes the unemployment rate, and $unionrt$ denotes the proportion of the labor force that belongs to a union.

Equation (3) can be estimated as a fixed-effects model or by taking first differences. In first-differences, this model can be written:

$$(4) \quad \Delta y_{st} = \beta_0 + \beta_1 \Delta lfpr_{st} + \beta_2 \Delta unemrt_{st} + \beta_3 \Delta unionrt_{st} + d_t + u_{st}$$

Equations (3) and (4), although different in their interpretation from the equations (1) and (2), can serve as a complement to those models and provide further checks on the appropriateness of the specification.

Besides allowing one to address the two main questions listed at the beginning of this section, the empirical models developed here allow one to address the following:

- (3) How do changes in the size of the labor force or labor force participation affect ES activity?
- (4) To what extent does unionization influence ES activity?
- (5) Other things equal, how much do states differ from each other in their ES activities?

5.3. Results of the Estimation

The results of estimating the basic first-difference models (represented by equation 2) are displayed in Table 5.2. The first column gives estimates how the labor force, unemployment, unionization, and unspecified annual effects influence the number

Table 5.2. First-difference Loglinear Models of ES Activities

	[1]	[2]	[3]	[4]
Dependent variables:	<u>log(Applicants)</u>	<u>log(Counseled)</u>	<u>log(Referrals)</u>	<u>log(Placed)</u>
<u>Independent variables</u>				
log(Labor force)	0.423 (2.33)*	0.076 (0.16)	-0.689 (0.93)	0.431 (1.28)
log(Unemployed)	0.168 (5.04)**	0.154 (2.33)*	0.042 (0.39)	-0.149 (3.18)**
log(Unionized)	-0.005 (0.10)	-0.135 (1.18)	-0.129 (0.66)	-0.082 (1.05)
1967	na	na	na	na
1968	0.048 (2.91)**	0.070 (1.41)	na	na
1969	-0.019 (1.22)	-0.791 (16.49)**	na	na
1970	0.037 (1.88)	-0.080 (1.63)	na	na
1971	-0.006 (0.28)	-0.063 (1.18)	na	na
1972	0.435 (18.15)**	0.020 (0.35)	na	na
1973	0.237 (9.71)**	0.114 (2.07)*	na	na
1974	-0.215 (11.03)**	-0.130 (2.59)*	na	na
1975	0.122 (5.11)**	-0.120 (1.97)	na	0.058 (2.04)*
1976	0.017 (0.86)	-0.023 (0.35)	na	0.127 (6.63)**
1977	0.077 (3.99)**	0.120 (2.04)*	na	0.225 (9.91)**
1978	0.018 (1.18)	0.121 (2.60)*	na	0.130 (7.61)**
1979	0.053 (4.14)**	0.023 (0.47)	na	0.024 (1.19)
1980	0.075 (4.70)**	0.003 (0.06)	na	-0.030 (1.35)
1981	0.239 (11.29)**	na	na	na
1982	-0.092 (4.28)**	na	na	na
1983	0.011 (0.49)	na	na	na
1984	-0.101 (7.33)**	na	na	na
1985	0.255 (13.57)**	na	na	na
1986	0.029 (1.67)	-0.030 (0.68)	na	0.025 (1.26)

Table 5.2. (continued) First-difference Loglinear Models of ES Activities

	[1]	[2]	[3]	[4]
Dependent variables:	<u>log(Applicants)</u>	<u>log(Counseled)</u>	<u>log(Referrals)</u>	<u>log(Placed)</u>
1987	-0.014 (0.65)	-0.043 (0.66)	-0.079 (3.73)**	-0.043 (1.85)
1988	0.020 (0.96)	-0.061 (1.09)	0.006 (0.34)	0.010 (0.46)
1989	0.051 (3.38)**	-0.012 (0.21)	0.037 (2.04)*	0.018 (0.95)
1990	0.075 (5.21)**	-0.036 (0.68)	0.023 (1.04)	0.002 (0.09)
1991	0.059 (3.16)**	0.016 (0.21)	-0.060 (1.70)	-0.081 (3.49)**
1992	0.070 (4.91)**	-0.080 (1.14)	-0.090 (1.53)	-0.007 (0.24)
1993	0.059 (3.42)**	0.294 (4.58)**	0.110 (1.27)	0.086 (4.56)**
1994	-0.003 (0.15)	-0.143 (2.59)*	0.005 (0.24)	0.045 (2.39)*
1996	0.004 (0.25)	-0.105 (1.68)	-0.081 (3.95)**	-0.117 (4.53)**
1997	0.040 (2.19)*	-0.136 (1.69)	-0.031 (0.92)	-0.042 (1.15)
1998	0.015 (0.83)	-0.081 (1.20)	-0.054 (1.68)	-0.016 (0.44)
1999	-0.001 (0.07)	-0.117 (1.54)	-0.152 (2.82)**	-0.135 (1.94)
2000	-0.003 (0.13)	-0.044 (0.60)	-0.060 (3.15)**	-0.004 (0.16)
2001	-0.009 (0.32)	-0.167 (1.65)	-0.215 (3.24)**	-0.234 (4.09)**
Constant	-0.045 (3.53)**	0.003 (0.06)	0.023 (1.13)	-0.049 (3.23)**
N	1662	1464	765	1122
R-squared	0.54	0.24	0.07	0.23

Notes: Models are estimated using available data on the 50 states and DC from 1967 through 2001. (The unit of observation is the state-year.) Coefficient estimates should be interpreted as elasticities. N varies among the four models because observations are missing in different years for different activities, as described in the text. In addition to the independent variables shown, all models include a dummy variable for each state (not reported).

Robust t-statistics in parentheses

*significant at 5% level; **significant at 1% level

of job applicants processed by the ES. The second column gives estimates of how the same variables influence the number of workers counseled by the ES. And so on.

Consider first the impact of changes in the size of the labor force on ES activities. Because the model is in logarithms, the coefficient estimates are interpreted as elasticities. Accordingly, they suggest that a doubling of the labor force results in a 53 percent increase in the number of ES applicants [$\exp(0.423) = 1.53$], but essentially no change in the number of workers counseled, referred to jobs, or placed in jobs. (Even though the estimated coefficients on referrals and counseling are large, the t-ratios of those coefficients are all well below 1.65, which is the cutoff for significance at the 10-percent level. If we take the point estimates at face value, they suggest that increases in the labor force have been associated with declines in referrals and increases in placements.) We will have more to say about these estimates below, when we discuss the fixed-effects models (Table 5.3.).

Consider next the impact of changes in unemployment on ES activities. The estimates suggest that the number of applicants and number of workers counseled both vary countercyclically, rising when unemployment rises and falling when unemployment falls. The elasticities of applications and counseling with respect to the number of unemployed workers are about 0.16 to 0.17. So when the labor market goes slack, more workers go to the ES for services, and the ES increases its counseling services. In contrast, ES referrals to jobs do not vary over the cycle, and the number of job placements varies procyclically, falling when unemployment rises. This suggests that, even though the number of ES applicants rises during recessions, the ES does not mechanically increase the number of job referrals it makes when the stock of applicants grows. Doing so would presumably be an exercise in futility because the number of job vacancies falls during recession. Clearly, the dwindling number of job vacancies during recession accounts for the drop in placements during recessions.

The extent of union membership appears to be unrelated to any ES activities. Our hypothesis was that unions provide services to members that substitute for services of the ES, but the findings from the first difference model do not support this.

Table 5.2 also includes estimates of year-specific effects on ES activities, with 1995 as the reference year. The estimates suggest both a general downtrend in ES

applications (the estimated coefficients tend to be higher in the 1970s than later) and an increase in applications in years of labor market slack (for example, the early 1980s). However, neither pattern is striking. The downward trend of counseling and referrals is clearer in Table 5.2, as is the cyclical variation in placements. Although we do not display the results, we have also estimated models that include a time trend rather than year-specific dummies. The results suggest clear downtrends in all ES activities. It might be useful to include both a time trend and year-specific dummies in the models, but we have not yet done so. In any case, we take the fact that the unemployment variable is able to pick up evidence of variation in applications, counseling, and placements, even after controlling for year-specific effects, as strong evidence that cyclical impacts do exist.

Table 5.3 displays the results of estimating the models of ES activities by fixed effects. These results are consistent with the first-difference results in one important way — they suggest again that ES applications and counseling services both rise in recessions (that is, when unemployment rises). However, they are inconsistent with the first-difference results in three ways. First, they do not reconfirm that placements fall in recessions, which strikes us as implausible. Second, they suggest that the impact of labor force growth on ES activities is either unrealistically large or opposite that found in the first-difference specification. For example, the results suggest that elasticity of applicants with respect to number of workers in the labor force exceeds 1 [$\exp(0.958) = 2.61$, so the elasticity is $2.61 - 1 = 1.61$], and that referrals and placements increase dramatically in response to increases in the labor force (rather than remaining roughly constant). Third, they suggest that increased union membership significantly reduces ES applications, referrals, and placements (all consistent with our hypothesis) and increases counseling (inconsistent with our hypothesis).

These differences between the first-difference and fixed-effects estimates suggest that the underlying model we are estimating is misspecified — in particular, that it omits a variable that should be included. An obvious possibility is the federal allocation to the ES, which is state-specific and time-varying. Data on this allocation, which has trended downward over the years we are considering, would allow us to control for the resources available to the ES for assisting and delivering services to workers. However, if we had to choose between the first-difference models (Table 5.2) and the fixed-effects models

Table 5.3. Fixed-effects Loglinear Models of ES Activities

	[1]	[2]	[3]	[4]
Dependent variables:	<u>log(Applicants)</u>	<u>log(Counseled)</u>	<u>log(Referrals)</u>	<u>log(Placed)</u>
Independent variables				
log(Labor force)	0.958 (15.09)**	0.033 (0.14)	2.481 (8.56)**	1.779 (10.99)**
log(Unemployed)	0.194 (7.08)**	0.396 (3.89)**	-0.035 (0.51)	0.012 (0.22)
log(Unionized)	-0.390 (8.19)**	0.765 (4.21)**	-1.186 (7.37)**	-1.096 (10.10)**
Constant	1.739 (4.01)**	-9.526 (6.04)**	-2.085 (1.00)	1.442 (1.37)
N	1737	1566	816	1224
R-squared	0.96	0.69	0.90	0.90

Notes: Models are estimated using available data on the 50 states and DC from 1967 through 2001. (The unit of observation is the state-year.) Coefficient estimates should be interpreted as elasticities. N varies among the four models because observations are missing in different years for different activities, as described in the text. All models include a dummy variable for each year (not reported) and a dummy variable for each state (reported in Table 5.4).

Absolute value of t-statistics in parentheses
 *significant at 5% level; **significant at 1% level

(Table 5.3), we would choose the first-difference models because they tend to be less sensitive to specification error of the kind that concerns us (Wooldridge (2002), section 10.6).

An advantage to the fixed-effects approach, however, is that it allows one to retrieve the state-specific fixed effects, which are estimated as the coefficients on the state dummy variables. These are displayed in Table 5.4 and come from the same models whose basic results are shown in Table 5.3. In each case, Florida is chosen as the reference state because preliminary analysis suggested that, among the large states, its ES activities were closest to the median. The results suggest that applications tend to be lower than median in Regions I and III, and tend to be above median in Regions V, VI, VIII, and X. Counseling tends to be low in Region V and tends to be high in Regions VI and VIII. Referrals and placements both tend to be high in Regions III, V, VII, VIII, and X. These findings conflict in some cases with the findings reported in Chapter 4. There are three possible reasons for the differences. First, the estimates reported in Table 5.4 control for other variables, such as labor force size and unemployment. Second, if the models in Table 5.4 do suffer from omitted variables as we suggested above, then these estimates would be inconsistent. Third, from the mid-1980s, the placement variable utilized here differs from that in Chapter 4 in the omission of “obtained employment” which became increasingly important during the 1990s.

An alternative to the logarithmic specifications discussed to this point is the activity rate specification represented by equations (3) and (4). Estimates of the first-difference version of this model (equation 4) are displayed in Table 5.5. These results are similar to those in Table 5.2 in two main respects. First, they suggest again that ES applications rise in recessions (in this case, when the unemployment *rate* rises), that referrals do not vary over the cycle, and that placements fall in recessions. (Contrary to the findings in Table 5.2, however, the results suggest that counseling does not vary over the business cycle.) Second, Table 5.5 tends to confirm that ES activities are insensitive to changes in the extent of union membership.

However, Table 5.5’s findings about the relationship between the labor force participation rate (LFPR) and ES activities are generally inconsistent with Table 5.2. Table 5.5 suggests that increases in the LFPR *decrease* all four measures of ES activity

Table 5.4. Proportional Deviations of States' ES Activities from Reference State (Florida); Estimates from Fixed-effects Loglinear Models

	[1]	[2]	[3]	[4]
Dependent variables:	<u>log(Applicants)</u>	<u>log(Counselled)</u>	<u>log(Referrals)</u>	<u>log(Placed)</u>
<u>Regions/States</u>				
Region I				
CT	0.030 (0.40)	-0.244 (0.90)	0.554 (1.52)	-0.430 (2.34)*
ME	-0.168 (1.55)	-0.468 (1.19)	1.508 (2.61)**	0.007 (0.03)
MA	-0.316 (5.22)**	-0.139 (0.62)	0.006 (0.02)	-0.169 (1.22)
NH	-0.582 (5.09)**	0.907 (2.19)*	-0.026 (0.05)	-1.057 (3.73)**
RI	-0.310 (2.70)**	0.684 (1.65)	0.584 (0.92)	-0.516 (1.72)
VT	-0.168 (1.21)	1.141 (2.28)*	1.353 (1.84)	-0.339 (0.96)
Region II				
NJ	0.016 (0.24)	-0.372 (1.48)	0.044 (0.18)	-0.047 (0.32)
NY	0.242 (3.05)**	-0.438 (1.46)	0.416 (1.71)	0.717 (4.18)**
Region III				
DE	-0.658 (5.01)**	0.222 (0.47)	0.502 (0.72)	-0.935 (2.77)**
DC	0.153 (1.20)	2.062 (4.50)**	1.667 (2.23)*	0.612 (1.78)
MD	-0.322 (5.03)**	0.896 (3.80)**	0.234 (0.87)	-0.223 (1.49)
PA	0.202 (3.02)**	-1.385 (5.50)**	0.573 (3.06)**	0.743 (5.32)**
VA	-0.171 (3.11)**	-0.837 (4.12)**	-0.433 (2.17)*	-0.564 (4.71)**
WV	0.187 (1.92)	0.376 (1.06)	1.802 (3.40)**	0.598 (2.34)*
Region IV				
AL	0.338 (5.07)**	-0.706 (2.88)**	1.344 (4.30)**	0.785 (4.83)**
FL	ref	ref	ref	ref
GA	-0.057 (1.07)	1.217 (6.13)**	0.208 (1.11)	-0.079 (0.68)

Table 5.4. (Cont.) Proportional Deviations of States' ES Activities from Reference State

	[1]	[2]	[3]	[4]
Dependent variables:	<u>log(Applicants)</u>	<u>log(Counselled)</u>	<u>log(Referrals)</u>	<u>log(Placed)</u>
KY	0.205 (2.95)**	0.900 (3.52)**	1.287 (3.82)**	0.688 (4.02)**
MS	0.228 (2.79)**	1.368 (4.59)**	0.928 (2.24)*	0.357 (1.76)
NC	-0.015 (0.26)	0.896 (4.11)**	0.137 (0.69)	-0.169 (1.34)
SC	-0.221 (2.78)**	0.332 (1.13)	0.185 (0.54)	-0.571 (3.09)**
TN	0.018 (0.30)	-1.207 (5.44)**	0.615 (2.40)*	0.203 (1.45)
Region V				
IL	0.225 (3.35)**	-1.614 (6.48)**	0.469 (2.44)*	0.643 (4.61)**
IN	0.283 (4.16)**	-1.148 (4.59)**	0.799 (3.04)**	0.394 (2.58)**
MI	0.486 (6.86)**	-0.784 (2.92)**	-0.004 (0.02)	0.363 (2.33)*
MN	0.094 (1.32)	-0.865 (3.30)**	1.064 (3.49)**	0.617 (3.69)**
OH	0.320 (4.76)**	-1.838 (7.34)**	0.507 (2.59)**	0.463 (3.30)**
WI	0.207 (2.99)**	-0.622 (2.44)*	1.112 (3.91)**	0.390 (2.43)*
Region VI				
AR	0.186 (2.23)*	-0.252 (0.82)	1.013 (2.38)*	0.330 (1.58)
LA	-0.055 (0.85)	-0.332 (1.39)	0.312 (1.02)	-0.145 (0.93)
OK	0.145 (1.99)*	0.606 (2.26)*	0.706 (1.96)	0.153 (0.85)
NM	0.020 (0.19)	0.897 (2.37)*	0.592 (1.13)	-0.062 (0.24)
TX	0.281 (5.54)**	0.521 (2.76)**	-0.219 (1.59)	0.122 (1.18)
Region VII				
IA	0.170 (2.23)*	-0.053 (0.19)	1.446 (3.81)**	0.825 (4.37)**
KS	-0.155 (1.94)	0.649 (2.23)*	0.684 (1.71)	-0.059 (0.30)
MO	0.460 (7.43)**	-0.077 (0.33)	1.201 (4.59)**	0.604 (4.16)**
NE	-0.251 (2.60)**	0.925 (2.63)**	0.986 (1.97)*	0.128 (0.53)

Table 5.4 (Continued) Proportional Deviations of States' ES Activities from Reference State;

	[1]	[2]	[3]	[4]
Dependent variables:	<u>log(Applicants)</u>	<u>log(Counselled)</u>	<u>log(Referrals)</u>	<u>log(Placed)</u>
Region VIII				
CO	-0.062 (0.88)	0.319 (1.23)	0.525 (1.66)	-0.064 (0.39)
MT	0.269 (2.19)*	1.268 (2.85)**	2.211 (3.32)**	0.843 (2.65)**
ND	0.075 (0.56)	1.361 (2.83)**	2.132 (2.96)**	0.602 (1.76)
SD	-0.021 (0.16)	1.664 (3.50)**	1.715 (2.47)*	0.449 (1.35)
UT	0.227 (2.28)*	1.641 (4.57)**	1.552 (3.20)**	0.620 (2.53)*
WY	-0.009 (0.06)	1.508 (2.83)**	2.185 (2.78)**	0.545 (1.45)
Region IX				
AZ	-0.042 (0.55)	-0.035 (0.13)	0.148 (0.48)	-0.369 (2.15)*
CA	0.164 (2.09)*	-2.078 (7.01)**	-0.551 (2.08)*	0.311 (1.83)
HI	0.005 (0.04)	-0.245 (0.57)	1.797 (2.86)**	0.141 (0.46)
NV	0.015 (0.13)	0.177 (0.43)	1.558 (2.83)**	0.263 (0.93)
Region X				
AK	0.326 (2.22)*	0.630 (1.19)	2.625 (3.43)**	1.173 (3.13)**
ID	0.157 (1.37)	0.528 (1.27)	1.740 (2.92)**	0.484 (1.67)
OR	0.377 (4.71)**	0.385 (1.25)	1.833 (4.77)**	0.946 (4.75)**
WA	0.314 (4.27)**	-0.447 (1.63)	1.367 (4.61)**	0.955 (5.50)**
Constant	1.419 (3.45)**	-7.688 (5.17)**	-2.591 (1.23)	0.980 (0.95)
Observations	1737	1566	816	1224
R-squared	0.96	0.69	0.90	0.90

Notes: Estimates from fixed-effects models reported in Table 5.3. Coefficient estimates represent the average proportional deviation of ES activity in each state from the average level of ES activity in Florida, controlling for the size of the labor force, the number of unemployed workers, the number of unionized workers, and year.

Absolute value of t-statistics in parentheses
 *significant at 5% level; **significant at 1% level

Table 5.5. First-difference Models of ES Activity Rates

	[1]	[2]	[3]	[4]
Dependent variables:	<u>Applicant Rate</u>	<u>Counseling Rate</u>	<u>Referral Rate</u>	<u>Placement Rate</u>
<u>Independent variables</u>				
Labor force participation rate	-0.198 (3.05)**	-0.030 (2.18)*	-0.156 (3.58)**	-0.047 (3.64)**
Total unemployment rate	0.003 (2.89)**	0.000 (1.79)	-0.000 (0.80)	-0.001 (4.70)**
Union coverage rate	0.001 (1.43)	-0.000 (0.93)	-0.000 (0.60)	0.000 (0.53)
Constant	-0.009 (4.08)**	0.000 (0.88)	-0.000 (0.51)	-0.001 (2.84)**
N	1662	1479	765	1122
R-squared	0.56	0.41	0.17	0.31

Notes: Models are estimated using available data on the 50 states and DC from 1967 through 2001. (The unit of observation is the state-year.) N varies among the four models because observations are missing in different years for different activities, as described in the text. In addition to the independent variables shown, all models include a dummy variable for each year (not reported).

Robust t-statistics in parentheses

*significant at 5% level; **significant at 1% level

that we are examining. This apparent inconsistency may occur because the relationships being estimated here (that is, between the LFPR and activity *rates*) are different from those being estimated in Table 5.2 (where the relationships are between the size of the labor force and the number of applicants and services delivered). Table 5.5's results may suggest indirectly that the influx of women into the labor force — which is mainly responsible for the increase in the LFPR — has been partially responsible for reduced ES activity. Alternatively (or in addition), the results could suggest that the sectors of the labor market that are growing (and where new labor force entrants are employed) may be less well served by the ES than are traditional sectors of the labor market. These are topics on which research would be useful.

Estimates of the fixed-effects version of the activity rate model (equation 3) are displayed in Table 5.6. These results are generally in accord with the results in Table 5.2. First, they suggest again that ES applications and counseling rise in recessions, and that placements fall in recession, although by a very small amount. (Unlike the findings in Table 5.2, however, they suggest that referrals fall in recessions.) Second, they suggest that increases in the LFPR increase the applicant rate, but have little impact on other ES activities. Although in accord with Table 5.2's results (which we have been relying on as the most convincing of those we have obtained so far), the fixed-effects results on the LFPR and ES activity in Table 5.6 differ significantly from the first-difference results on the LFPR and ES activity in Table 5.5. This suggests again that some relevant variable has been omitted. Third, Table 5.5 tends to confirm that ES activities are insensitive to changes in the extent of union membership, although they do suggest that increases in union coverage tend to reduce referrals (consistent with our hypotheses about union membership and ES activity).

5.4. Conclusions

The estimates presented in this chapter must be viewed as preliminary because the evidence suggests that some important variable (or variables) determining ES activities has been omitted from the models. A likely culprit is the omission of the annual federal ES allocation that funds each state's program, although other (and additional)

Table 5.6. Fixed-effects Models of ES Activity Rates

	[1]	[2]	[3]	[4]
Dependent variables:	<u>Applicant Rate</u>	<u>Counseling Rate</u>	<u>Referral Rate</u>	<u>Placement Rate</u>
<u>Independent variables</u>				
Labor force participation rate	0.269 (4.55)**	-0.011 (0.70)	0.024 (0.57)	-0.016 (0.93)
Total unemployment rate	0.005 (6.60)**	0.001 (2.43)*	-0.001 (1.99)*	-0.000 (2.18)*
Union coverage rate	0.000 (0.19)	0.000 (1.67)	-0.002 (3.20)**	-0.000 (0.41)
Constant	-0.036 (0.85)	0.012 (1.02)	0.099 (3.05)**	0.043 (3.44)**
N	1737	1581	816	1224
R-squared	0.41	0.39	0.23	0.73

Notes: Models are estimated using available data on the 50 states and DC from 1967 through 2001. (The unit of observation is the state-year.) All models include a dummy variable for each year (not reported) and a dummy variable for each state (not reported).

Absolute value of t-statistics in parentheses
 *significant at 5% level; **significant at 1% level

possibilities exist as well. The main indication that the model may be misspecified is that the first-difference and fixed-effects approaches give substantially different answers to the same questions posed, particularly about the relationship between labor force growth (or labor force participation) and ES activities.

Despite the evidence of specification error, the evidence regarding the way in which ES activities vary over the business cycle is generally consistent. The first-difference and fixed-effects estimates of both the logarithmic and activity rate models suggest that applications and applicant rates rise when the labor market goes slack; job placements and placement rates fall in a slack labor market; and counseling and referrals (surprisingly, perhaps) appear not to vary much over the cycle. Although these findings could change when and if it is possible to estimate models that are more completely specified, the fact that they are consistent in the first-difference and fixed-effects models suggests that they are quite robust.

Clearly, there is room for further work with these data. The first line of attack should be to add variables to the dataset and check whether omitted variables are indeed the source of the specification error that we believe now plagues the models. A second line of attack, if it is impossible to add appropriate data, would be to look for econometric modeling solutions to the specification problem. For example, even in the absence of additional variables, it may be possible that use of appropriate lags of the existing variables could result in consistent estimates of the relationships that are of interest.

Chapter 6. Conclusions and Further Research

This project undertook two kinds of activities. 1) It assembled time series data on UI benefit payments and ES activities. 2) It examined UI and ES data using descriptive tabulations, simulation analysis and regression analysis. The analysis of all five preceding chapters emphasized the effects of the business cycle on the UI and ES programs.

The strategy of the data assembly activities was to develop annual files with information for the individual states. This underlying data structure would thus support analysis at three levels: national aggregates, regions and states. Different parts of Chapters 1-5 reported summary information and analytic findings for all three levels of geographic detail.

Because the project wanted to trace effects of the business cycle on the UI and ES programs, it also examined unemployment rates in the states and regions. As noted in Chapter 2, unemployment data by state are available from the CPS for years starting in 1967. Unemployment levels and unemployment rates figured prominently in the analysis of UI and ES program activities.

The data assembled for the project are incomplete. While the UI data for the regular UI program and the EB program are complete, the data on temporary federal benefits (TFB) for individual states extend only from 1975. Earlier TFB data are available only for national aggregates. This means that one cannot examine TFB participants and benefits in individual states and regions for the pre-1975 programs with the acronyms TUC, TEUC and TC.

The ES data were collected for years starting in 1967. These data have numerous breaks as described in Appendix B and as shown in Table 4.1. Data assembly focused on ES activities and services as well as the demographic characteristics of ES applicants. The data on services extend back to 1967 while demographic data on ES applicants mainly extend from 1980. For many series, data were missing for the five year period from 1980 to 1984. As documented in Appendix B, however, several ES data series were also missing for many other individual years.

Chapters 1-5 report results of various analyses of the UI and ES programs. Chapters 1-3 focused on the UI program while Chapters 4 and 5 examine ES activities.

The analysis of these chapters was not exhaustive, but rather exploratory. For both programs, strong and consistent linkages with unemployment were demonstrated.

Chapters 1 and 2 both traced the change in relative importance of EB and TFB after 1980. In the recessions following the double dip recession of 1980-1983, the role of EB declined and that of TFB increased. Support for the long term unemployed who exhaust regular UI benefits during recessions now comes almost exclusively from TFB programs. While this change is certainly linked to the revision of EB triggers of the early 1980s, the simulation analysis of Chapter 3 demonstrated that the declining role for EB was partly attributable to both lower unemployment and lower reciprocity of regular UI benefits in the years since the mid-1980s.

The analysis of ES activities of Chapters 4 and 5 found strong and positive effects of unemployment on ES applications. This finding was present in national and regional data (Chapter 4) and in state data (Chapter 5) using regression analysis based on four different methods of data measurement. Placement rates and entered employment rates were negatively associated with unemployment rates. Recessions both increase the number of ES applicants and reduce the volume of ES placements. While these findings are hardly surprising to those familiar with the ES program, they should reassure readers that the ES data assembled by the project yield sensible results.

The findings regarding entered employment rates have relevance for the ES performance measures which became effective in July 2001.³³ The entered employment rate is a key performance measure applied to job seekers. Since entered employment rates show strong sensitivity to the unemployment rate, it would seem that this sensitivity could be incorporated into this performance measure, permitting a lower entered employment rate in years of above-average unemployment.

The project did sufficient analysis of regional data to highlight strong and persistent differences in regional outcomes for both the UI and the ES programs. Chapter 2 documented the consistently high regular UI reciprocity rates in Regions 1, 2 and 10 and low reciprocity rates in Regions 4, 6 and 8. Chapter 4 showed that ES application rates were particularly high in Region 8 and consistently above-average in Regions 4, 6, 7 and 10. Consistently low application rates were found in Regions 1, 2, 3, and 9. Wide

³³ The performance measures are listed in the federal register of May 31, 2001, pp. 29647-29653.

regional contrasts in entered employment rates were also documented. The diversity demonstrated in this report for the DOL regions (and Census divisions) could be examined in greater depth with additional analysis of state-level data.

Several important evolutionary developments were documented by this project. Three seem particularly noteworthy. 1) Recessions have been less frequent and less severe in the past 20 years compared to recessions in earlier decades. The contrast in recessionary patterns is clear in Table 1.1 of Chapter 1. 2) Unemployment duration has been lengthening and the rate of change accelerated after 1980. Among other things, this suggests the regular UI programs in future years will experience a continuing pattern of high, and, perhaps, increasing exhaustion rates. 3) The route whereby ES applicants secure new jobs has been changing with the rate of change being most rapid since 1994. ES placements are becoming much less important while the volume of obtained employment related to ES support activities has been growing. The use of job orders from employers as the route to reemployment seems destined to continue declining while ES support of self service and other reemployment support services seems destined to continue growing.

Readers will observe that the present report is by no means exhaustive. As noted above, data collection was a primary purpose of the project. Additional analysis of the data assembled in the project, at both the state and the regional levels, is to be anticipated.

Among potential topics for further research, four can be highlighted as priority research areas. 1) Further research into the changing patterns of unemployment occurrences and unemployment duration should be pursued. Among the factors that may be driving the trend towards increased unemployment duration, three can be readily identified for additional research: the ageing of the U.S. labor force, changes in worker skill requirements and an increased underlying rate of worker dislocations. Each may be contributing to the lengthening of unemployment duration documented in Chapter 1. Data on the pace of unemployment occurrences examined in Chapter 1 yielded different estimates as to the annual rate of unemployment occurrences. A comparative analysis of monthly data and work experience data from the CPS is needed.

2) More analysis of EB triggers is warranted. The simulations of Chapter 3 utilized IUR-based triggers only from 1987. It would be appropriate to extend the

analysis of IUR-based triggers back to 1980 so that the comparisons of outcomes with IUR-based and TUR-based triggers would be more complete. Using data from identical historical periods would strengthen the findings regarding the relative targeting efficiency of IUR versus TUR triggers. As noted in Chapter 3, the effects of other trigger mechanisms could also be examined, e.g., using information on exhaustion rates.

3) The present project did not explore the linkages between the resources devoted to ES administration in individual states and the labor market outcomes linked to ES activities. This analysis would require information not only on the Wagner-Peyser ES allocations to the states but also the amount of state supplementation of federal ES administrative monies.

4) Finally, while the report documented changes in entered employment rates and changes in the mix of placement rates versus obtained employment rates, no attempt was made to tie these changes to the evolution of ES administrative structures and/or the contrasts in the one-stop operations across the states. Examining this linkage will be of continuing interest as ES programs strive to provide effective reemployment support for workers who experience new onsets of unemployment.

The data assembled in the present project will facilitate new research on all four of these topics.

References

- Advisory Council on Unemployment Compensation, Report and Recommendations, Chapter 6, "Extended Benefits Reform." (Washington, D.C.: U.S. Government Printing Office, 1994). pp. 57-82.
- Akerlof, George, and B. Main, "Unemployment Spells and Unemployment Experience," American Economic Review, Vol.70 (December 1980), pp. 885-893.
- Balducchi, David, Terry R. Johnson and R. Mark Gritz, "The Role of the Employment Service," In Unemployment Insurance in the United States: Analysis of Policy Issues, edited by C. J. O'Leary and S. A. Wandner, (Kalamazoo, MI: W. E. Upjohn Institute for Employment Research, 1997), pp. 457-503.
- Bendick, Marc, "Matching Workers and Job Opportunities: What Role for the Federal-State Employment Service, in Rethinking Employment Policy, edited by D.L. Bawden and F Skidmore, (Washington, DC: Urban Institute, 1989).
- Blanchard, Olivier, and John Simon, "The Long and Large Decline in U.S. Output Volatility," Brookings Papers on Economic Activity, (2001, No. 1.), pp. 135-174.
- Corson, Walter, and Paul T. Decker, "Using the Unemployment Insurance System to Target Services to Dislocated Workers," In Long-Term Unemployment and Reemployment Policies, edited by L. J. Bassi and S. A. Woodbury, (Stamford, CT: JAI Press/Elsevier, 2000).
- Corson, Walter, and Anu Rangajaran, "Extended UI Benefit Triggers," Unemployment Insurance Occasional Paper 94-2, (Washington, DC: U.S. Department of Labor, Employment and Training Administration, 1994).
- Czajka, John L., Sharon L. Long, and Walter Nicholson, "An Evaluation of the Feasibility of a Substate Area Extended Benefit Program," Unemployment Insurance Occasional Paper 89-5, (Washington, DC: U.S. Department of Labor, Employment and Training Administration, 1989)
- Fagnoni, C. M., "Workforce Investment Act: Implementation Status and the Integration of TANF Services," Washington, DC: U.S. General Accounting Office, GAO/T-HEHS-00-145, (June 29, 2000).
- Haber, William, and Merrill Murray, Unemployment Insurance in the American Economy, (Homewood IL: Richard D. Irwin, 1966).
- Hirsch, Barry, Devid Macpherson and Wayne Vroman, " State-Level Estimates of Union Density, 1964 to Present," Monthly Labor Review, Vol. 124, (July 2001), pp. 51-55.

- Karni, Edi, "Optimal Unemployment Insurance: A Survey," Southern Economic Journal Vol. 66 (October 1999), pp. 442-465.
- LaLonde, Robert, "The Promise of Public Sector-Sponsored Training Programs," Journal of Economic Perspectives, Vol. 9 (Spring 1995), pp. 149-168.
- McConnell, Margaret, and Gabriel Perez-Quieros, "Output Fluctuations in the United States: What Has Changed Since the Early 1980s?" American Economic Review, (December 2000), Vol. 90, No. 5, pp. 1464-1476.
- Meyer, Bruce, "Lessons from the U.S. Unemployment Insurance Experiments," Journal of Economic Literature, Vol. 33 (March 1995), pp. 91-131.
- Storey, James, and Gene Falk, "Unemployment Compensation: The Emergency Unemployment Compensation (EUC) Program," CRS Report to Congress 93-367 EPW, Washington, DC: The Library of Congress, Congressional Research Service, (March 25, 1993).
- U.S. Department of Labor, Employment and Training Administration, "ETA 9002 Data Preparation Handbook," ET Handbook No. 406, (March 1993).
- U.S. Department of Labor, Employment and Training Administration, "Unemployment Insurance Financial Data," ET Handbook 394, (Washington, D.C.: U.S. Department of Labor, 1995).
- U.S. Department of Labor, Employment and Training Administration, Office of Workforce Security. Unemployment Insurance Reports Handbook 401, third edition, (May 2000). Available at <<http://ows.doleta.gov/dmstree/>>.
- U.S. Senate, Committee on Finance, "Staff Data and Materials on The Emergency Unemployment Compensation Act of 1974," (Washington, D.C.: U.S. Government Printing Office, 1977).
- Vroman, Wayne, "Low Benefit Reciprocity in State Unemployment Insurance Programs," Office of Workforce Security Occasional Paper 2002-2, (Washington, DC: U.S. Department of Labor, Employment and Training Administration, 2002).
- Vroman, Wayne, Kelleen Worden, and Greg Acs, "Regional Labor Market Performance and U.S. Department of Labor Programs," Final report to the U.S. Department of Labor for Contract No. 99-9-0421-75-051-01, (December 1992).
- Woodbury, Stephen A. and Murray A. Rubin, "The Duration of Benefits," In Unemployment Insurance in the United States: Analysis of Policy Issues, edited by C. J. O'Leary and S. A. Wandner, (Kalamazoo, MI: W. E. Upjohn Institute for Employment Research, 1997), pp. 211-283.

Woodbury, Stephen A, “New Directions in Reemployment Policy,” Employment Research, Vol. 4 (October 2000), pp.1-4.

Wooldridge, Jeffrey M., Econometric Analysis of Cross Section and Panel Data, (Cambridge, MA: The MIT Press, 2002).

Appendix A. UI Benefits by State and Year

The perspective of the project was to study annual calendar year data on UI benefit payments by state and year. Using states as the basic building blocks allows one to aggregate to regions (both DOL regions and Census regions) and to the nation as a whole. For two of the three tiers of UI, historic data were readily available for as long as desired, e.g., back to World War II for the regular UI program and back to 1971 for the Federal-State Extended Benefits (EB) program. Financial data (total benefits, state share and federal share) and claims data (first payments, weeks compensated, exhaustions weekly benefits and average duration) were all available. Additionally, there are regular UI data for potential duration and actual duration among benefit exhaustees. The regular UI data were also fully available for reimbursable employment which commenced in 1971 and expanded substantially in 1978.

As noted in Chapter 1, some form of temporary federal benefits (TFB) program has been enacted in every recession since 1958. For the TFB programs starting with Federal Supplemental Compensation (FSC) of 1982-1985, data again are fully available. As with EB, these data cover total benefits paid, first payments, weeks compensated, exhaustions and the average weekly benefit. Interested researchers and others can simply access electronic data bases maintained by OWS and obtain the desired data for the FSC program of 1982-1985, the Extended Unemployment Compensation (EUC) program of 1991-1994 and the recent Temporary Extended Unemployment Compensation (TEUC) program which started in March 2002. These data have been utilized along with the Regular UI and EB data displayed in Table 1.2 of Chapter 1.

Assembling data by state and year for the earlier TFB programs presents important challenges. For all the earlier TFB programs national data on total benefit payments are readily from the National Income and Product Accounts (NIPA). The NIPA data, for example, were used in Table 1.2 for the TFB programs of 1958-1959 (TUC), 1961-1962 (TEUC) and 1972-1973 (TC). All three programs were comparatively short and they usually represented less than 10 percent of total UI benefits for years when they

were active.³⁴ For these three TFB programs, no information was found for claims, exhaustions and the level of weekly benefits. Because no state detail was found for these earlier TFB programs, they entered the analysis of the current report only at the level of national aggregates.

The program of 1975-1978, Federal Supplemental Benefits (FSB), was considerably larger with cumulative benefit payments exceeding \$6.0 billion and representing from 11 to 19 percent of total benefits in the years 1975, 1976 and 1977. The FSB program also lasted for a longer period than its three TFB predecessors with the last benefit payments occurring in the spring of 1978.

The project developed annual state-level estimates for the TFB program during the three years 1975, 1976 and 1977. The estimates were developed using three sources of information. 1) OWS was able to supply annual national totals for total benefit payments, first payments, weeks claimed, weeks compensated, final payments and weekly benefits for each of the three years. The totals referred to the 50 states plus the District of Columbia and Puerto Rico. 2) For 1975, state-level data appeared in congressional testimony about the FSB program.³⁵ The data pertained to three FSB variables: total benefits, first payments and final payments (exhaustions). 3) Because potential FSB entitlements were linked to state unemployment rates (IURs), there were data on claims activity during the period when FSB was active. These data were available in so called trigger reports from the states with the data reported on a weekly basis. For one week in each quarter data were gathered from these trigger reports with weeks selected that had seasonal factors close to unity, i.e., the ratio of raw data on weeks claimed to seasonally adjusted data for the regular UI was close to unity.

In deriving the estimates of weekly FSB benefits during 1975, we noted the ratio of the EB weekly benefit in each state to the national average for EB and multiplied this ratio by the national WBA for FSB. Total FSB payments divided by this estimate of FSB weekly benefits was used to derive estimates of FSB weeks compensated. These estimates could be compared to data on weeks claimed to check on their “reasonableness.” Thus for 1975 there were three state-level variables taken directly from

³⁴ The important exception is TEUC benefit payments in 1961 which represented 15 percent of total benefits for that year. See column [9] in Table 1.2.

³⁵ See page 14 of U.S. Senate, Committee on Finance (1977).

the congressional document (total benefits, first payments and exhaustions) and two derived variables (the weekly benefit amount or WBA and weeks compensated). By construction, the product of weeks compensated and the WBA equaled total FSB benefits for each state in 1975.

Since much less data were available for 1976 and 1977, the data construction task was more difficult. After some experimentation it was again decided to estimate the WBA using the ratio of the state's WBA for EB to the national WBA for EB. This state ratio was then multiplied by the national WBA for the FSB program to yield estimates of the WBA for FSB in each state. To estimate FSB weeks compensated by state, we relied heavily on the ratio of weeks compensated to weeks claimed in each state during 1975. The initial estimates for 1976 and 1977 were then adjusted to agree with the national aggregate for weeks compensated. Since there were no state level estimates of annual FSB benefit payments for these two years, the statewide totals were initially estimated as the product of weeks compensated times the WBA. In a second iteration, the state estimates of weeks compensated were adjusted to agree with the national totals supplied by OWS. Because the benchmarks provided by actual data on total state FSB benefit payments were not available for 1976 and 1977, the state estimates for these years are less reliable than for 1975.

Note also that no attempt was made to estimate FSB first payments and final payments during 1976 and 1977. Finally, we note that FSB benefit payments during 1978 were very modest (\$15 million). No attempt was made to derive state-level estimates.

Appendix B. Employment Service Activities by State and Year

Assembling data on Employment Service (ES) activities presented a number of challenges and this appendix provides details of project activities. As will be apparent shortly, there remain significant gaps in the files that have been assembled. However, for the researcher interested in tracing the evolution of ES activities for the past 35 years, a set of usable data files now exists.

The aim of the project was to assemble annual data by state. The first issue to be noted is that the reference periods for individual years differ. The left hand columns in Table B.1 show details of the time periods and the annual designations of the years. The table spans the period from fiscal year (FY) 1967 (July 1966 to June 1967) to program year (PY) 2000 (July 2000 to June 2001). Note that the start dates and end dates for the FY data changed from July-to-June in FY1976 to October-to-September in FY1977. Three months of ES activities (July-September 1976) are not captured by these data. Note also that the first year of program year data (PY1983) spans just nine months from October 1983 to June 1984. An analysis of activities for this period should “annualize” these data to make them comparable with data from other years.

Finally, observe that FY data have year designations for the final month of each fiscal year while PY data use the first month of the year in PY dating. Thus there are two 1983s in the left hand column of Table B.1. For purposes of consistency, each annual period referred to in the data was assigned its year designation on the basis of the final month in the accounting period. Thus PY2000 data are dated 2001 because the final month is June 2001. By following this convention, there is no duplication of 1983 in the transition from FY to PY data.

The reporting systems that summarize ES activities have undergone important changes over the 1967-2001 period. Also, in moving towards the present, electronic files become more available. Thus there are horizontal lines in Table B.1 that break the 35 years into six subgroups of years. For the two earliest periods (FY1967 to FY1973 and FY1974 to FY1980), the data were derived exclusively from hard copy reports, e.g., various issues of the “Employment and Training Report of the President.” For the periods between FY1981 and PY1991, data were obtained from both hard copy sources and

Table B.1. Summary of ES Activities and Services in Data File, State-by-Year Information, 1967 to 2001

Fiscal Yr. Program Year	Dura tion Month	Last Month	Refer- ence Year	Appli- cations	Some Service	Assess. Services Total	Inter- viewed	Coun- seled	Tested	Referred to Train- ing	Placed in Train- ing	Regist. Job Open.	Job Referrals	Placed Total	Placed Non-Ag	Placed Perm. Jobs	Obtained Employ- ment	Entered Employ- ment
FY1967	12	6	1967	X				X	X			X			X			
FY1968	12	6	1968	X				X	X			X			X	X		
FY1969	12	6	1969	X				X				X			X	X		
FY1970	12	6	1970	X				X				X			X			
FY1971	12	6	1971	X				X				X			X			
FY1972	12	6	1972	X				X							X			
FY1973	12	6	1973	X				X							X			
FY1974	12	6	1974	X	X			X	X					X	X			
FY1975	12	6	1975	X	X			X	X					X	X			
FY1976	12	6	1976	X	X			X	X					X	X			
FY1977	12	9	1977	X	X			X	X					X	X			
FY1978	12	9	1978	X	X			X	X					X	X			
FY1979	12	9	1979	X	X			X	X					X	X			
FY1980	12	9	1980	X	X			X	X					X	X			
FY1981	12	9	1981	X-25-R									X-R	X-R				
FY1982	12	9	1982	X-41-R				X-R	X-R			X-R	X-R	X-R			X-R	X-R
FY1983	12	9	1983	X-41-R				X-R	X-R			X-R	X-R	X-R			X-R	X-R
PY1983	9	6	1984	X-41-R				X-R	X-R			X-R	X-R	X-R			X-R	X-R
PY1984	12	6	1985	X	X			X	X-R			X-R	X-R	X			X	X
PY1985	12	6	1986	X	X			X		X	X	X	X	X		X	X	X
PY1986	12	6	1987	X	X			X		X	X	X	X	X		X	X	X
PY1987	12	6	1988	X	X			X		X	X	X	X	X		X	X	X
PY1988	12	6	1989	X	X			X		X	X	X	X	X		X	X	X
PY1989	12	6	1990	X	X			X		X	X	X	X	X		X	X	X
PY1990	12	6	1991	X	X			X		X	X		X	X			X	X
PY1991	12	6	1992	X	X			X		X	X		X	X				
PY1992	12	6	1993	X	X	X	X	X	X	X	X	X	X	X		X	X	X
PY1993	12	6	1994	X	X	X	X	X	X	X	X	X	X	X		X	X	X
PY1994	12	6	1995	X	X	X	X	X	X	X	X	X	X	X		X	X	X
PY1995	12	6	1996	X	X	X	X	X	X	X	X	X	X	X		X	X	X
PY1996	12	6	1997	X	X	X	X	X	X	X	X	X	X	X		X	X	X
PY1997	12	6	1998	X	X	X	X	X	X	X	X	X	X	X		X	X	X
PY1998	12	6	1999	X	X	X	X	X	X	X	X	X	X	X		X	X	X
PY1999	12	6	2000	X	X	X	X	X	X	X	X	X	X	X		X	X	X
PY2000	12	6	2001	X	X	X	X	X	X	X	X		X	X		X	X	X

Source: Data assembled from various OWS sources. Spreadsheets have been assembled with annual state and/or regional detail as indicated.

electronic sources. Electronic sources were used exclusively for the final years spanning PY1992 to PY2000.

Two kinds of data were assembled. Major ES activities are the focus of Table B.1 while Table B.2, to be introduced shortly, focuses on the demographic breakdown of individuals seeking ES services. The convention followed in both tables is to indicate the full availability of state data with an X. Where state data exist they can be aggregated to regions (both Census regions and DOL regions) and to national totals. Blanks indicate that state data are not available.

For the five year period from FY1981 to PY1984 there were especially large gaps in data availability. Generally, there were data from an electronic file on the personal characteristics of applicants for 41 states (counting the District of Columbia as a state) and Puerto Rico. The ten missing states were those in DOL Region 5 (Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin) and Region 9 (Arizona, California, Hawaii and Nevada). However, there was a second electronic file that had regional data. Hence the entries for these five years have symbols that follow the X's. The numeric entries indicate the number of states for which state data were obtained, and the capital R's signify the availability of data for the ten DOL regions. Within these five years, the data are most deficient for FY1981 and most complete for PY1984.

For the same five year period, there was an additional source for several data fields. An earlier project assembled electronic files that spanned the FY1981-PY1984 period. In assembling these data and checking them for accuracy, a series of hard copy printouts were made. These printouts were reviewed. They showed two kinds of hard copy data related to ES activities: several fields spanning the years 1967 to 1989 for four states (California, Maine, Michigan and Texas) and several fields for all states in three separate years (FY1978, FY1982 and PY1986). Thus data for California and Michigan (DOL Regions 9 and 5 respectively) could be obtained for the five years of interest. Other data could be obtained for all states for FY1982.

The geographic scope of the ES data was quite consistent throughout the entire 35 years. Data for Puerto Rico extend back to FY1967 with just one missing year (FY1980). Data for Guam and the Virgin Islands were first available in PY1985 and PY1986 but have gaps in many subsequent years. National totals present in summary spreadsheets

were generated for aggregations of 51, 52, 53 and 54 programs with the order of inclusion being the District of Columbia in 51 “state” totals and the successive addition for the other three being Puerto Rico (52), the Virgin Islands (53) and finally Guam (54). Since Puerto Rico has a relatively large labor force and ES program, the regional total for DOL Region II is shown both excluding and including Puerto Rico. With the availability of CPS labor force survey data for Puerto Rico starting in FY1979, the main ES summary variables, i.e., the application rate and the entered employment rate, can be shown for this “state” program as well as the other 51 “states.” The tables in Chapter 4 summarize ES activities for the 51 “states.”

Table B1 has entries for fifteen activities/outcomes: eight relating to services and seven linked to job matching/placement activities. Only three of the fifteen series can be described as complete: job service applications, persons counseled and placements. Some of the incomplete series were available for the earliest years. Thus the series for persons tested and for registered job openings permit comparisons between the very earliest and very latest years within the 1967-2001 period. For other series, the earliest available years are 1974, 1981, 1986 or 1993, permitting only shorter comparisons.

The final observation about Table B.1 concerns program years 1990 and 1991. Data for both years were obtained exclusively from hard copy publications.³⁶ Certain employment-related fields were not available for these two years because the hard copy documents did not include these variables. As noted in Chapter 4, obtained employment rates increased rapidly in the 1990s changing the mix of placements versus obtained employment within the combined total of entered employment. At the state level, this evolution cannot be fully described for 1992 because of the data on obtained employment were not available. Since there was just one year of missing data, however, estimates were derived for 1992 based on the ratio of entered employment to placements from adjacent years. The average ratio for 1991 and 1993 in each state was multiplied by the level of placements in 1992 to derive the estimates of entered employment.

Table B.2 summarizes available detail on the demographic and economic characteristics of persons who apply for services from the ES. Compared to Table B.1,

³⁶ The sources were the “Employment and Training Report of the Secretary of Labor” and annual Employment Service “Performance Data” for these two years.

Table B.2. Characteristics of Applicants for ES Services, 1967 to 2001

Fiscal Yr. Program Year	Dura- tion Month	Last Month	Refer- ence Year	Total	Women	Under 22	Minority	Black	Hispanic	Econ. Disad- vantaged	Welfare	Veterans Total	Vietnam Veterans	Handi- capped	UI Claimant
FY1967	12	6	1967	X											
FY1968	12	6	1968	X											
FY1969	12	6	1969	X						X					
FY1970	12	6	1970	X						X					
FY1971	12	6	1971	X						X					
FY1972	12	6	1972	X						X					
FY1973	12	6	1973	X						X					
FY1974	12	6	1974	X											
FY1975	12	6	1975	X											
FY1976	12	6	1976	X											
FY1977	12	9	1977	X											
FY1978	12	9	1978	X											
FY1979	12	9	1979	X											
FY1980	12	9	1980	X											
FY1981	12	9	1981	X-25-R	X-25-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41		X-41-R	X-41-R	X-41-R	X-41-R
FY1982	12	9	1982	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41	X-R	X-41-R	X-41-R	X-41-R	X-41-R
FY1983	12	9	1983	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R		X-R	X-41-R	X-41-R	X-41-R	X-41-R
PY1983	9	6	1984	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R
PY1984	12	6	1985	X	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R	X-41-R
PY1985	12	6	1986	X	X					X		X			
PY1986	12	6	1987	X	X					X		X			
PY1987	12	6	1988	X	X					X		X			
PY1988	12	6	1989	X	X					X		X			
PY1989	12	6	1990	X	X					X		X			
PY1990	12	6	1991	X	X					X		X			
PY1991	12	6	1992	X	X					X	X	X			
PY1992	12	6	1993	X	X	X				X	X	X			
PY1993	12	6	1994	X	X	X				X	X	X			
PY1994	12	6	1995	X	X	X				X	X	X			
PY1995	12	6	1996	X	X	X				X	X	X			
PY1996	12	6	1997	X	X	X				X	X	X			
PY1997	12	6	1998	X	X	X				X	X	X			
PY1998	12	6	1999	X	X	X				X	X	X			
PY1999	12	6	2000	X	X	X				X	X	X			
PY2000	12	6	2001	X	X	X				X	X	X			

Source: Data assembled from various OWS sources.

the picture presented here is much simpler. The series for all applicants, shown previously in Table B.1, is repeated in Table B.2 for reference purposes. It can be traced back to FY1967 with state detail. Again, there are missing data for the FY1981-PY1983 period, but at least detail for the DOL regions are available for these years.

The only other demographic detail for the period through FY1980 is for the economically disadvantaged. A review of the “Employment and Training Report of the President” for these years shows demographic detail by state for those placed by the ES but not for applicants. The state demographic detail for placements extends from FY1974 to FY1980. There is demographic detail for both applicants and placements for the FY1981-PY1984 period but state data are incomplete as shown in Table B.2.

Starting in PY1985 state data on ES applicants are available by gender and veteran status. Table B.2 also shows that detail by age and welfare status are available from the early 1990s.

The presentation of information in Tables B.1 and B.2 makes a sharp distinction between ES activities (Table B.1) and demographic characteristics (Table B.2). In fact, the ES data reporting system dating from the early 1980s has been much more extensive than suggested by these two tables. Unfortunately the electronic records from this reporting system have not been retained.

From data assembled in the present project and a project from the early 1990s,³⁷ summaries of electronic data reporting on ES activities can be described for three distinct periods. All were based on state-generated reports submitted to the national ES office. All were part of the ETA 9002 reporting system.

The first electronic reports spanned the five year period from FY1981 to PY1984. Demographic detail was divided into the following eleven categories; 1) total, 2) gender, 3) age (under 22, 45-54, and 55+ with 22-44 derivable as a residual) 4) race (nonminority, minority, black non-hispanic, Hispanic, American Indian/Alaskan and Asian/ Pacific Islander), 5) handicapped, 6) dislocated worker, 7) migrant and seasonal farm workers, 8) veterans (total, Vietnam, disabled, special disabled, other eligible), 9) employment status (employed, unemployed-non-claimant, and claimant), 10) education

³⁷ See Vroman, Worden and Acs(1992).

(in-school student, less than high school diploma, high school diploma and post-secondary degree) and 11) economically disadvantaged (total and welfare).

Crossed with the demographic fields were fields for services to individuals: 1) total, 2) received assessment services (total, interviewed, counseled and tested), 3) referred to other service-areas (total, skills training [JTPA, other], educational and supportive) 4) job search activities, 5) referred to employment, 6) entered employment (total, placed and obtained employment) and 7) received some reportable service; and service transactions: 1) reactivations, 2) assessment services (interviewed, counseled and tested), 3) job referrals, 4) job placements and 5) obtained jobs. The full cross-classification of the preceding fields has about 700 cells (29 columns for characteristics and 24 rows for detailed services). This cross-classification was to be filled out by each state. State and regional (for the 10 DOL regions) detail was to be submitted. This whole array of information can be termed Part A of the early ETA 9002 reporting system (as it is in the current reporting system).

Part B focused on job orders (openings) received and filled, each cross-classified by DOT (dictionary of occupational titles) and SIC (standard industrial classification). The report had 11 detailed industries and 13 detailed occupations for two kinds of transactions: job openings received and job openings filled. Part C was a cross-classification of client counts and average wages (six fields) by 13 detailed occupations. Part C had three groups of transactions: job orders received, job openings received and job openings filled. The total number of cells was 168 for Part B and 252 for Part C. Note that there were no demographics for Parts B and C of the ETA 9002 data.

The full ETA 9002 report (Parts A, B and C) for the ten DOL regions for the FY1981-PY1984 years has been present at the Urban Institute since the early 1990s when the data were used in an earlier project. Unfortunately the state level detail from this data base has not been found.

The second electronic file for these five years is a small extract with 13 fields that pertain to the characteristics of ES applicants by state. The individual fields are 1) total, 2) women, 3) economically disadvantaged, 4) minority, 5) black-non-Hispanic, 6) Hispanic, 7) handicapped, 8) veteran, 9) Vietnam veteran, 10) disabled veteran, 11) youth

(under 22 years), 12) an unknown field³⁸ and 13) UI claimants. This file refers just to applicants and not to any other ES services. Also, as discussed previously and shown in Table B.1, data for 10 states are consistently absent from this tape and even more state data are missing for total applicants and women applicants in FY1981.

For PY1984 some additional state detail was found in the “Employment and Training Report of the Secretary of Labor 1985.” Sections of this report compare certain services to veterans with overall ES service provision so that some fields appear for all 52 jurisdictions (the 50 states plus the District of Columbia and Puerto Rico). Note in Table B.1 that four fields are shown as complete for PY1984: applications, counseled, some service and placed.

A third electronic file covers the five years PY1985 to PY1989. This has twenty fields for all states plus the District of Columbia, Puerto Rico, Guam and the Virgin Islands. The twenty fields are: 1) total applicants, 2) male applicants, 3) female applicants, 4) economically disadvantaged, 5) unknown (posdisq), 6) reportable service, 7) counseled, 8) referred to training, 9) placed in training, 10) referred to a job, 11) referred to a federal contractor job, 12) placement transactions, 13) obtained employment, 14) placed, 15) placed in a permanent job (150+ days), 16) federal contractor job obtained employment (fcjlljob), 17) placed in a federal contractor job (fedcon), 18) job openings received, 19) federal contractor job openings received (fcjlop) and 20) expenditures. It can be seen from this listing that the file has five fields of personal characteristics, fourteen fields of services and placement activities and a single field related to spending.

We have also seen a master list of fields from a much larger electronic file. The full file had 89 fields arranged into eight main groupings with up to twenty entries per group. The eight main groupings and their respective numbers of data fields are as follows: 1) totals - 20, 2) total veterans - 15, 3) Vietnam veterans - 15, 4) disabled veterans - 13, 5) special disabled veterans - 15, 6) UI claimants - 4, 7) migrant and seasonal farm workers - 4, and 8) interstate activities - 3. Note that the largest number of fields pertains to the first group, the totals. In fact, these 20 fields are the ones previously identified in the electronic file for the PY1985-PY1989 period. For the other seven main

³⁸ This field is identified as posdisq on a printout of the PY1985-PY1989 tape to be discussed below.

groupings, numbered 2 through 8 in the preceding list, note that there are fewer than 20 fields. For each grouping, the fields listed represent a subset of the twenty identified in the previous paragraph.

Thus it can be seen that this third electronic file represents a subset of a larger file with 89 fields. Our electronic file is the first section of this larger file. To date, we have not found a tape with the full set of 89 fields identified on the master list of fields. What is missing from our smaller file is mainly information on services to veterans. Across major groups 2 through 8, the fields summarizing services to veterans account for 58 of the 69 fields with information. Outside the veterans fields, the other missing fields with large numbers of ES clients are the four fields devoted to UI claimants (applicants, placement transactions, obtained employment and placed).

The fourth electronic file used in the data assembly was obtained from the current reporting system. We have annual summaries for the period PY1992 to PY2000. This electronic file represents just a subset of information submitted by the states in ETA 9002 reports.

The states report ETA 9002 data on a quarterly basis. The report is divided into three sections.³⁹ Part A summarizes ES activities and demographic detail of persons served. The format of Part A is a matrix with 50 activities (client services and placement activities) in the rows and 38 demographic breakdowns of clients in the columns. Since full documentation for the present reporting system is widely available, only a few comments will be offered here. As with the previous electronic file, the activity fields in the current file also have some demographic details (veterans, gender, age, economically disadvantaged and welfare clients). The fields provide counts of persons and counts of transactions. The electronic file utilized in the present project has the full set of 50 “activity” fields but only the column A entries (total applicants). As indicated in Tables B.1 and B.2, the state-year fields are complete for these nine years, i.e., PY1992 to PY2000.

Part B of the ETA 9002 report summarizes job openings received and job openings filled by industry and occupation. The layout for both activities is 13 industries

³⁹ Detailed reporting instructions, definitions and explanations are given in U.S. Department of Labor, Employment and Training Administration (1993).

cross-classified by 14 detailed occupations. Part C focuses on job orders received, job openings received and job openings filled. For openings received and filled there are six fields (total, non-ag. temporary, non-ag. permanent, average wages, ag. temporary and ag. permanent) These are all cross-classified with 14 occupations. This project has not tried to obtain the Part B and Part C data. Thus our electronic file for PY1992-PY2000 is a small subset of the full range of ETA 9002 data, i.e., column A from Part A or fifty fields per state per year.

Finally, note that the basic structure of the ETA 9002 reporting system has been quite stable over the period from FY1981 to the present. While the number of detailed data fields has increased, the basic structure of the reports with Parts A, B and C has not changed much. Unfortunately, because the electronic files were incomplete or missing, considerable project resources had to be devoted to data assembly activities.

The final files prepared that summarize ES activities now exist as a set of Excel spreadsheets. One set has data for individual years grouped into five files. Respectively the five span the following periods: FY1967 to FY1973, FY1974 to FY1980, FY1981 to PY1984, PY1985 to PY1991 and PY1992 to PY2000. The individual years in each of these spreadsheets is a separate leaf. Each leaf has state data at the top for up to 54 jurisdictions and regional summary data at the bottom for the 10 DOL regions. Where state detail is present, the regional data for Region II are summarized both excluding and including Puerto Rico. Finally there is a pooled state-year file that spans the full period from FY1967 to PY2000. This file has the fields displayed in Table B.1 along with labor force and unemployment data for the same reference periods as the ES data.

Appendix C. States, Regions and Census Division Summary Data

The report undertakes analysis at both the level of states and regions. Tables in Chapters 2 and 4 display summary data for the ten DOL regions. This appendix provides information on the aggregation of states to regions and briefly examines summary data for the nine Census Divisions.

Table C.1 shows a listing of states arranged by DOL regions and alphabetically within each region. Columns [1] and [2] display the states and their FIPs codes (alphabetic codes). The current and former DOL regions of each state is shown in columns [3] and [4]. Columns [5] and [6] show respectively the numeric codes and the Census Divisions for each state. With the numeric keys in columns [2], [3], [4] and [5] it is possible to arrange the states alphabetically or by DOL region or by Census Division.

Column [7] shows average unemployment rates for the states averaged for the 36 years between 1967 and 2002. These have been grouped into high (1), medium(2) and low(3) for the analysis of Chapter 2. Column [8] shows unemployment rate group for each state. Column [9] shows the average reciprocity rate in the regular UI program for each state over the 1967-2002 period. Finally, column [10] shows the reciprocity rate group to which each state was assigned for the analysis of Chapter 2. Note the groupings refer to the full 36 years 1967 to 2002. For the analysis of EB and TFB of Chapter 2, groupings were assigned based on shorter time periods for the unemployment rates.

Table C.2 displays time series of relative unemployment rates for the Census Divisions. Note that the lowest unemployment rates (in brackets) are found in only three Divisions, and for 33 of the 36 years in just two divisions (New England and West North Central). The highest unemployment rates (with shaded backgrounds), in contrast, are found in six different divisions during these years. The Pacific division has had the persistently highest unemployment. This is apparent from the large number of years with the highest divisional unemployment rate (19 or more than half the 36 years) and the highest average relative unemployment rate (1.20). As with the data for the DOL regions, the highest unemployment rates have been more widely experienced by the divisions than the lowest unemployment rates. Finally, note in Table C.2 that New England has had the

Table C.1. Average Unemployment Rates and UI Reciprocity Rates for States by DOL Region and Census Division

State	FIPS Code Number	Current DOL Region	Former DOL Region	Census Division Number	Census Division	Avg. Un. Rate 1967-2002	Avg. Un. Rate Group	Regular UI Reciprocity 1967-2002	Regular UI Reciprocity Group
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
CONNECTICUT	9	1	1	1	New England	5.33	3	0.465	1
MAINE	23	1	1	1	New England	5.89	2	0.379	1
MASSACHUSETTS	25	1	1	1	New England	5.53	2	0.471	1
NEW HAMPSHIRE	33	1	1	1	New England	4.14	3	0.253	3
RHODE ISLAND	44	1	1	1	New England	6.06	2	0.521	1
VERMONT	50	1	1	1	New England	4.99	3	0.429	1
NEW JERSEY	34	1	2	2	Middle Atlantic	6.04	2	0.470	1
NEW YORK	36	1	2	2	Middle Atlantic	6.42	1	0.403	1
DELAWARE	10	2	3	5	South Atlantic	5.53	2	0.368	1
DIST OF COL	11	2	3	5	South Atlantic	7.16	1	0.376	1
MARYLAND	24	2	3	5	South Atlantic	5.04	3	0.279	2
PENNSYLVANIA	42	2	3	2	Middle Atlantic	6.24	1	0.434	1
VIRGINIA	51	2	3	5	South Atlantic	4.50	3	0.172	3
WEST VIRGINIA	54	2	3	5	South Atlantic	8.73	1	0.267	2
ALABAMA	1	3	4	6	E South Central	6.89	1	0.255	3
FLORIDA	12	3	4	5	South Atlantic	5.91	2	0.170	3
GEORGIA	13	3	4	5	South Atlantic	5.34	2	0.226	3
KENTUCKY	21	3	4	6	E South Central	6.30	1	0.279	2
MISSISSIPPI	28	3	4	6	E South Central	6.99	1	0.210	3
NORTH CAROLINA	37	3	4	5	South Atlantic	5.05	3	0.269	2
SOUTH CAROLINA	45	3	4	5	South Atlantic	5.93	2	0.247	3
TENNESSEE	47	3	4	6	E South Central	5.91	2	0.300	2
ILLINOIS	17	5	5	3	E North Central	6.19	2	0.336	2
INDIANA	18	5	5	3	E North Central	5.76	2	0.232	3
MICHIGAN	26	5	5	3	E North Central	7.63	1	0.332	2
MINNESOTA	27	5	5	4	W North Central	4.58	3	0.344	2
OHIO	39	5	5	3	E North Central	6.32	1	0.260	2
WISCONSIN	55	5	5	3	E North Central	5.16	3	0.397	1
ARKANSAS	5	4	6	7	W South Central	6.68	1	0.283	2
LOUISIANA	22	4	6	7	W South Central	7.67	1	0.235	3
NEW MEXICO	35	4	6	8	Mountain	6.85	1	0.209	3
OKLAHOMA	40	4	6	7	W South Central	5.11	3	0.214	3
TEXAS	48	4	6	7	W South Central	5.64	2	0.175	3
IOWA	19	5	7	4	W North Central	4.23	3	0.328	2
KANSAS	20	5	7	4	W North Central	4.16	3	0.312	2
MISSOURI	29	5	7	4	W North Central	5.36	2	0.318	2
NEBRASKA	31	5	7	4	W North Central	3.44	3	0.278	2
COLORADO	8	4	8	8	Mountain	4.98	3	0.184	3
MONTANA	30	4	8	8	Mountain	6.20	2	0.286	2
NORTH DAKOTA	38	4	8	4	W North Central	4.26	3	0.310	2
SOUTH DAKOTA	46	4	8	4	W North Central	3.55	3	0.174	3
UTAH	49	4	8	8	Mountain	5.26	3	0.255	3
WYOMING	56	4	8	8	Mountain	5.01	3	0.240	3
ARIZONA	4	6	9	8	Mountain	5.93	2	0.209	3
CALIFORNIA	6	6	9	9	Pacific	7.12	1	0.366	1
HAWAII	15	6	9	9	Pacific	5.47	2	0.366	1
NEVADA	32	6	9	8	Mountain	6.26	1	0.377	1
ALASKA	2	6	10	9	Pacific	8.88	1	0.565	1
IDAHO	16	6	10	8	Mountain	6.23	2	0.307	2
OREGON	41	6	10	9	Pacific	7.00	1	0.369	1
WASHINGTON	53	6	10	9	Pacific	7.34	1	0.385	1

Source: Based on data from the Office of Workforce Security (OWS) and the Bureau of Labor Statistics (BLS).
 Current DOL Region 1 also includes Puerto Rico and the Virgin Islands. Current DOL Region 6 also includes Guam.

Table C.2. Relative Unemployment Rates by Census Division, 1967 to 2002

	New England	Middle Atlantic	E. North Central	W. North Central	South Atlantic	E. South Central	W. South Central	Mountain	Pacific
1967	0.70	0.96	0.92	0.63	1.02	1.03	1.06	1.11	1.44
1968	0.76	0.91	0.92	0.65	1.02	1.09	1.14	1.12	1.39
1969	0.79	0.92	0.93	0.67	0.96	1.02	1.13	1.14	1.44
1970	0.99	0.91	1.00	0.69	0.85	0.98	0.99	1.02	1.50
1971	1.16	1.02	1.02	0.71	0.78	0.85	0.90	0.91	1.49
1972	1.23	1.10	0.97	0.66	0.81	0.82	0.91	0.93	1.40
1973	1.25	1.07	0.92	0.71	0.83	0.81	0.89	1.04	1.44
1974	1.17	1.07	0.93	0.68	0.96	0.89	0.88	0.99	1.31
1975	1.19	1.09	1.05	0.65	1.01	0.92	0.76	0.91	1.16
1976	1.19	1.25	0.95	0.65	0.96	0.81	0.78	0.94	1.19
1977	1.10	1.25	0.93	0.68	0.97	0.90	0.81	0.95	1.17
1978	0.95	1.22	0.98	0.67	0.95	1.00	0.86	0.89	1.17
1979	0.94	1.21	1.05	0.69	0.95	1.05	0.81	0.86	1.10
1980	0.83	1.06	1.30	0.81	0.89	1.11	0.79	0.90	0.99
1981	0.83	1.02	1.28	0.79	0.92	1.21	0.78	0.83	1.03
1982	0.81	0.97	1.29	0.80	0.90	1.24	0.78	0.90	1.06
1983	0.71	0.98	1.25	0.82	0.88	1.28	0.93	0.90	1.03
1984	0.65	1.01	1.25	0.83	0.86	1.30	0.93	0.83	1.07
1985	0.61	0.95	1.23	0.86	0.85	1.25	1.09	0.95	1.03
1986	0.56	0.88	1.14	0.83	0.82	1.35	1.35	1.06	1.00
1987	0.54	0.80	1.16	0.89	0.83	1.29	1.42	1.16	0.97
1988	0.57	0.80	1.14	0.85	0.87	1.29	1.42	1.13	0.99
1989	0.73	0.89	1.09	0.85	0.91	1.20	1.29	1.04	0.99
1990	1.02	0.94	1.08	0.84	0.94	1.11	1.13	0.95	1.00
1991	1.18	1.03	1.04	0.75	0.94	1.08	1.00	0.84	1.07
1992	1.07	1.10	0.98	0.65	0.96	0.95	1.00	0.87	1.17
1993	0.98	1.09	0.95	0.72	0.91	0.93	1.01	0.86	1.27
1994	0.97	1.09	0.90	0.69	0.93	0.91	1.07	0.87	1.31
1995	0.96	1.11	0.87	0.70	0.91	1.01	1.05	0.87	1.31
1996	0.89	1.10	0.87	0.75	0.92	1.00	1.03	0.95	1.30
1997	0.89	1.16	0.86	0.71	0.92	1.08	1.08	0.87	1.23
1998	0.78	1.13	0.88	0.72	0.90	0.99	1.10	0.97	1.27
1999	0.78	1.14	0.91	0.70	0.89	1.06	1.08	0.99	1.23
2000	0.69	1.06	0.96	0.80	0.89	1.10	1.07	0.95	1.25
2001	0.77	0.98	1.02	0.82	0.95	1.06	1.03	0.95	1.18
2002	0.84	1.02	1.02	0.80	0.92	0.98	1.04	1.00	1.17
Average	0.89	1.04	1.03	0.74	0.91	1.05	1.01	0.96	1.20
Std. Dev.	0.20	0.11	0.13	0.07	0.06	0.15	0.17	0.09	0.16
Coeff. Var.	0.23	0.11	0.13	0.10	0.06	0.14	0.17	0.10	0.13

Source: Based on data in U.S. Department of Labor, Bureau of Labor Statistics, "Geographic Profile of Employment and Unemployment," various issues. Divisional unemployment rates measured as a ratio to the national unemployment rate.

largest variability in its relative unemployment rate. This is indicated by the coefficient of variation of 0.23 at the bottom of the table which is larger than for all other divisions.

Table C.3 displays summary data on unemployment, reciprocity rates in the regular UI program and costs of regular program benefits per unemployed person. All data are averages for the 36 years 1967 to 2002. Note that six of nine divisions had relative unemployment rates (column [2]) within 0.05 of the national average for these years. Reciprocity rates were considerably above-average in three divisions (New England, Middle Atlantic and Pacific) but below average for four divisions (the three from the South and the Mountain division). These seven divisions deviated from the national average of 0.31 by 0.05 or more. Across the nine divisions, relative reciprocity and relative costs in the regular UI program (columns [6] and [9]) were closely associated. The correlation across regions was 0.95.

Thus when the data for the regular UI program were examined for the nine Census Divisions, the patterns closely resemble those for the DOL regions as reported in the text of Chapter 2.

Table C.3. Regular UI Benefit Payments for Census Divisions, 1967 to 2002.

Census Division	Unemployment Rate, TUR % [1]	Relative TUR = [1]/6.05 [2]	Unemployment [3]	Weekly UI Beneficiaries [4]	UI Reciprocity Rate = [4]/[3] [5]	Relative UI Reciprocity = [5]/0.31 [6]	Regular UI Benefits [7]	Benefits per Unemployed = [7]/[3] [8]	Relative Benefits per Unem. = [8]/2165 [9]
New England	5.42	0.90	342	148	0.43	1.37	1100	3211	1.48
Middle Atlantic	6.28	1.04	1093	456	0.42	1.33	3260	2982	1.38
E North Central	6.35	1.05	1282	393	0.31	0.98	2918	2275	1.05
W North Central	4.52	0.75	395	124	0.31	1.00	848	2145	0.99
South Atlantic	5.50	0.91	1051	242	0.23	0.73	1609	1531	0.71
E South Central	6.43	1.06	435	114	0.26	0.84	620	1426	0.66
W South Central	6.01	0.99	717	149	0.21	0.66	1052	1467	0.68
Mountain	5.72	0.95	344	83	0.24	0.77	579	1681	0.78
Pacific	7.11	1.18	1188	439	0.37	1.18	2845	2395	1.11
U.S.	6.05	1.00	6848	2148	0.31	1.00	14829	2165	1.00

Source: Data from the Bureau of Labor Statistics and the Office of Workforce Security. Unemployment and weekly UI beneficiaries in thousands. UI benefits in millions. Data are averages for 1967 to 2002.