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A DISTINCTIVE SYSTEM: ORIGINS AND  
IMPACT OF U.S. UNEMPLOYMENT  
COMPENSATION

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### **ABSTRACT**

Unemployment compensation in the United States was signed into law in August 1935 as part of the omnibus Social Security Act. Drafted in a period of uncertainty and economic distress, the portions that dealt with unemployment insurance were crafted to achieve a multiplicity of goals, among them passage of the act and a guarantee of its constitutionality. Along with the federal-state structure went experience-rating and characteristics added by the states, such as the limitation on duration of benefits. The U.S. unemployment compensation system is distinctive among countries by virtue of its federal-state structure, experience-rating, and limitation on benefits. We contend that these features were products of the times, reflecting expediency more than efficiency, and thus that UI would have been different had it been passed in another decade. But how different is the UI system in the United States because of these features, and how have they affected the U.S. labor market? We present evidence showing that more seasonality in manufacturing employment in 1909-29 is related to higher UI benefits from 1947 to 1969, if a state's manufacturing employment share is below the national mean. Lobbying activities of seasonal industries appear important in the evolution of the parameters. We also present suggestive evidence on the relationship between declining seasonality and experience-rating.

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“If Franklin D. Roosevelt had not been President and if the nation had not been plunged into the Great Depression of the 1930's, action might not have been taken at that time or might have taken a different form.” Arthur Altmeyer (1966, p. 6)<sup>1</sup>

The unemployment compensation system of the United States is distinctive. No where else does publicly-mandated unemployment insurance contain the feature of experience-rating, whereby firms are penalized for benefits paid out to their workers.<sup>2</sup> Unlike many European systems, unemployment compensation among the states has always limited duration of benefits.<sup>3</sup> And no national system in the industrialized world cedes to their states, provinces, or cantons as much autonomy to establish tax rates, set benefits, and determine eligibility as does that in the United States. Unemployment compensation in the United States is not one system; it is many. Yet, even though there are a multitude of systems — 53 to be precise — there is unity in several features that are also distinct with respect to other countries. Experience-rating, a federal-state structure, and the limitation on benefit duration are the most obvious. Others include less generous benefits, a tax base equal to a small fraction of payroll, restrictive eligibility, and currently low take-up rates.

The three distinctive features of the U.S. unemployment insurance (UI) system were intentional.

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<sup>1</sup> Altmeyer was the chair of the Technical Board of the Committee on Economic Security, established by executive order in 1934, and was one of three members of the first Social Security Board, becoming its chair in 1936.

<sup>2</sup> Both Great Britain and Austria had once allowed for some type of experience-rating at the trade or industry level. In Britain the original act contained a section that has been interpreted as a form of experience-rating. It was replaced in 1920 with a provision that entire industries could independently manage their own UI plans. But the operation of the provision was suspended in 1921 and eliminated entirely in 1927 (Feldman and Smith 1939, Lester and Kidd 1939). Experience-rating by industry was part of the original UI system passed in Austria in 1920, but it was later abandoned because labor felt it was too divisive an issue (Becker 1971, chap. 3).

Even though there is no experience-rating in European UI systems, many European countries have mandated severance pay for permanently-separated workers. The system amounts to some experience-rating, although employer taxes are not linked to unemployment benefits. They are, instead, a tax per worker laid-off that is usually a function of years of employee service with the firm.

<sup>3</sup> Federal-state extended benefits for periods of high unemployment, jointly financed by the federal government through the Federal Unemployment Tax and the states, were proposed in the 1960s and eventually passed in 1970. Benefits, even when extended, are still limited, usually to 13 weeks beyond the exhaustion of regular state benefits.

Even though UI was part of the omnibus Social Security Act (SSA) passed in August 1935, a time of urgency and amidst a flurry of legislation, its details were well thought out. Two of the features — the state system and the potential for experience-rating — were parts of the original federal law and were responses to past lessons fresh in the minds of the drafters. The limitation on duration of benefits, incorporated into all state laws, was also derived from historical lesson. The law was tailored to the times but not simply to the Depression experience. Previous decades of experience with unemployment, in the United States and elsewhere, and with the legislative and judicial processes, shaped the act.

More so than any other part of the Social Security Act, such as welfare and social security, the design of UI remains today that intended in the original document. Details have changed, to be sure. They had to, because the UI is a state system and the states had to pass legislation to receive credit for the taxes charged their employers. Tax rates, benefits, the tax base, eligibility, maximum duration of benefits, and coverage have all changed countless times since the late 1930s. But the substance of the act remains very much the same.

The act was intended to provide unemployment benefits to those having attachment to the labor force. Under the act, the unemployed are viewed as those temporarily out of work, not the permanently displaced. The law contains no provision for retraining.<sup>4</sup> UI was not a handout or welfare, for benefits were not to be means tested. They depend on previous earnings and work experience, and could be of limited duration. Employers were to be penalized for their contribution to (compensated) unemployment and states were given an incentive to devise tax rates to accomplish that goal. Finally, the act encouraged states to tailor their systems to best meet the needs of their workers and firms. Because the substance of the UI system has changed little with time, many claim

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<sup>4</sup> Passed in 1933, the Wagner-Peyser Act (Employment Exchange Bill) established a federal-state network of employment service offices to help workers in their job search, but it was not intended to provide retraining.

that it is antiquated, particularly with regard to its lack of retraining and the absence of benefit eligibility for many part-year and part-time employees who lose their jobs (see, e.g., ACUC 1996).

Because, as we contend, today's UI system has retained its original design, we can address part of the central question of the conference: How did the establishment of the UI system “define” or alter the economy in subsequent years? The answer involves observing how the UI system affected the economy through its particular design. We will emphasize the distinctive features of the system and not its existence because some UI system, we and most others believe, was destined to be established.<sup>5</sup> But how would the UI system have differed had it been passed during an era other than the Great Depression? In what manner are its distinctive features today, and their evolution at the state level, products of the period of its passage and what difference have they made to the economy?

As Arthur Altmeyer conjectures in the headnote, had there been no Great Depression social insurance might not have taken the form it did in 1935. Of the three distinctive features of the system, it is the federal-state structure that would probably be different had passage been delayed. And had there not been a federal-state structure, it is likely that the system would not have been experience-rated, but we are less secure in this prediction. The most interesting issue concerns how the system functioned because of its federal, and not national, character.

We explore various aspects of the system, two of which — the federal-state structure and experience-rating — are related to the possible difference that passage during the 1930s meant. We look at how states tailored their systems from the late 1940s to the 1960s in response to the needs, objectives, or simple rent-seeking activities of their citizens. We then ask whether firms in states with more experience-rating responded to financial penalties by reducing employment fluctuations and

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<sup>5</sup> Those who worked on the act believe that as well, “There is no question ... that sooner or later the same world-wide economic, social, and political forces responsible for the emergence of social security programs in 125 nations would have resulted in the development of a social security program in the United States” (Altmeyer 1966, p. 6).

whether seasonality in the United States evolved any differently from that in Canada, which does not have experience-rating, after both passed UI.

## **I. UNEMPLOYMENT INSURANCE TODAY AND ITS EVOLUTION**

### *A. Coverage, eligibility, and generosity*

We step back, for a moment, from the questions at hand to briefly describe the UI system today and its evolution nationally and at the state level during the past 60 years. When UI was passed in 1935, the intent of the framers was to insure workers, with attachment to the labor force, against unemployment of short duration and to provide them with sufficient income to tide them over, but not so much as to generate serious work disincentives. That has remained the intent. Note, however, that the original law is extremely parsimonious in the details and that virtually all the features that realized the intent — those regarding eligibility, duration, and generosity — arose out of state law. Coverage is one of the few details in the 1935 act.<sup>6</sup>

At the time of its passage, UI covered non-agricultural, non-public sector workers in firms with more than eight employees.<sup>7</sup> In the six decades since its passage, coverage of those demonstrating “attachment” to the labor force has continued but the act has become more inclusive in covering workers in virtually all firms and those in public-sector employment. As shown in Figure 1, covered employment was 60 percent in the early 1950s and it is now 90 percent.<sup>8</sup> Thus, U.S. unemployment insurance coverage today is nearly universal for wage and salary employees. Some of the time-series

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<sup>6</sup> The potential for experience-rating was also part of the original law. We take up this subject below.

<sup>7</sup> Also excluded were domestic service, employees of non-profits, casual labor, those over 65-years old, and some others (Title VIII, Sec. 811). Railroad workers were excluded in 1938 when they became covered by their own statute.

<sup>8</sup> In 1954 coverage was extended to firms with at least 4 employees. In 1970 the law was broadened to include employees of non-profits, and in both 1970 and 1976 coverage was extended to all state- and local-government employees and to some agricultural workers.

expansion reflects increases in the statutory number of employees per firm and in the distribution of employees across firms. The upper line in the graph (after 1971) shows the influence of other changes in the law. The various jumps in that line reflect the inclusion of non-profits and public-sector workers.

The original intent of UI — that it be for those attached to the labor force, of limited duration, and of moderate amount — was implemented by the various states and evolved over time. Attachment to the labor force is assured by eligibility requirements of two types: monetary and non-monetary. Monetary eligibility requirements typically demand that the claimant demonstrate earnings in the recent past that exceed some minimum and have had employment that was sufficiently continuous.<sup>9</sup> Claimants must also demonstrate availability for work and current search behavior. Unemployment must have arisen from economic reasons; quits and terminations for cause are typically invalid reasons. The maximum duration of benefits is typically 26 weeks, in all states today. Potential duration increased somewhat in the early years of the system and rose to the current 26-week level by the mid-1950s.<sup>10</sup>

The original act, although silent on most details, did set down a legal grievance procedure, and most grievances today concern the non-monetary aspects of eligibility, such as whether an employee quit or was fired. States have considerable discretion to change eligibility. Yet it is important to realize that the eligibility requirements established at the very outset of the program are, by and large, those in place today. The requirements may have suited the labor force of the 1920s and 1930s, but with a larger share of the work force employed part-time and discontinuously, a lower fraction of the covered

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<sup>9</sup> Monetary eligibility requirements typically have three parts and take the following form: (1) earnings during some base period (sum of the 4 or the 5 most recent quarters) have to exceed some minimum level; (2) during at least 1 of the quarters they have to exceed a higher level; and (3) claimant had to have earnings during at least 2 of the 4 quarters.

<sup>10</sup> Federal-state extended benefits, as part of the 1970 UI law, are triggered by a complicated formula concerning both the level and the rate of change of unemployment in a state. States can choose whether to use a trigger based on their insured unemployment rate or on their overall unemployment rate. More recently, as occurred in the 1991 to 1993 recession, Congress has, by discretion and on an ad hoc basis, passed emergency extended benefits for the entire nation, thus by-passing the laws for the separate states.

work force is now eligible for benefits once unemployed.

There are various measures of the system's generosity. All begin with the legal replacement rate schedule. Most state laws, today and in the past, contain replacement rates in the 50 to 60 percent range.<sup>11</sup> The ex post, actual rate can be computed only by using micro-level data, since it requires knowing the earnings of benefit recipients.<sup>12</sup> A more convenient measure for the past is the average weekly benefits of UI recipients as a fraction of the average weekly wage of all covered employees. As seen in Figure 2 (open-hole line), this measure has been rather stable, nationally, from the early years of the program to the present.<sup>13</sup>

Even though the ratio of benefits to average wages, for the entire United States, has been relatively stable, growing variation across the states has emerged during the past decades, as can be seen in Figure 3. The bottom (open-hole) line shows the standard deviation of the log of the "replacement rate" (benefit/wage) by state. After an initial decline to 1956, as the states tinkered with their new systems, this variance measure rose and then remained at that level until the late 1970s when it rose again (although it has declined recently). A second measure (also in Figure 3, upper line), the standard deviation of the log (maximum weekly benefit/average weekly wage), reveals considerably more upward drift. States have, over time, established maximum rates that differ more from each other, even though the ex post replacement rates exhibit less increasing variance.

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<sup>11</sup> Many are, instead, expressed as an equivalent fraction (e.g., 1/26) of high quarter wages.

<sup>12</sup> Actual pre-tax replacement rates today have been computed in the 52 to 71 percent range, by state, with between 70 and 90 percent of recipients, by state, receiving more than 50 percent. See ACUC (1996, p. 54) which calculates the rate for IL, MI, PA, TX, WA, and WI using the SIPP. Gruber (1994) estimates a mean after-tax replacement rate of 58 percent for unemployed household heads during 1969-87, using the PSID. He finds, in most states, average after-tax replacement rates of below 50 percent in 1987 when UI benefits became fully taxable under the federal income tax.

<sup>13</sup> UI benefits were not subject to federal income tax prior to 1979. The federal taxation of benefits was phased in from 1979 to 1987. Thus the stability of the pre-tax replacement rate, as shown in Figure 2, masks a decline in the after-tax replacement rate during the phase-in period.



Generosity must be tempered by eligibility, and eligibility has fallen across the past 45 years.<sup>14</sup> We graph a measure of eligibility in Figure 2 (solid-hole line) — UI claims as a fraction of total national unemployment. The measure declines in two periods: during the early 1960s and the early 1980s. Another way of observing the same phenomenon is to express UI as a fraction of GDP and graph it against the unemployment rate, as has been done in Figure 4.<sup>15</sup> The two lines of Figure 4 are very close until the early 1980s when they drift farther apart. Both Figures 2 and 4 reveal the declining eligibility.

One of the puzzles addressed in the recent literature on UI is why the fraction receiving benefits has decreased. Some emphasize long-term changes in the structure of the labor force and the erosion of union strength (Baldwin and McHugh 1992; Corson and Nicholson 1988). Others claim the change is part of a general race-to-the-bottom in social insurance as well as a product of an interaction between UI and federally-funded programs (ACUC 1996).<sup>16</sup> States have eroded UI eligibility to shift costs to programs, such as food stamps, that are more fully-funded.<sup>17</sup> Thus it appears from various indicators that the fraction of covered employment that is able to (or chooses to) collect UI, when unemployed, has declined over time.

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<sup>14</sup> Hamermesh and Slesnick (1995) demonstrate that consumption has been stable in recent years for those receiving benefits. Thus the consumption-smoothing mechanism of UI has not been altered for this group, but those who receive benefits has changed.

<sup>15</sup> UI in Figure 4 is total benefits paid by the states (also to federal employees, railroad workers, ex-servicemen, and veterans) but not including federally-funded emergency supplemental benefits.

<sup>16</sup> Another possible factor is the decrease in net benefits with their inclusion in taxable income. Anderson and Meyer (1996) find that this reduction in net benefits reduced UI take-up rates and can explain some of the decline in UI receipt in the 1980s.

<sup>17</sup> The regional distribution of the labor force matters to the aggregate take-up rate. States in the Northeast have high take-up rates but others, such as Texas, have low take-up rates. Blank and Card (1991) conclude that one-third to one-half of the decline in take-up is due to changes in the regional distribution of the U.S. workers. Others argue that this factor is less important. Instead, they note that as states faced budgetary pressures, they got tougher administratively and encouraged employers to challenge claims. Further, as the fraction of workers with unstable work force histories grows, so will the wedge between the total unemployment rate and the portion that is eligible for UI. The decline of unions could also have contributed to the decrease in take-up rates if unions had supported workers whose claims were challenged and if they provided information on filing.

The size of UI in the national economy is a product of coverage, eligibility, generosity, and the unemployment rate. Thus it might not be an odd nor unfortunate situation for UI to be a shrinking share of GDP. But it is curious and interesting that Workers' Compensation (WC), the first social insurance program in the United States, is now considerably larger than UI. In 1960 UI was almost twice as large as WC, but in 1990, another non-recessionary year, WC was almost twice the size of UI. Even during the 1991 to 1993 recession, UI was a lower fraction of GDP than was WC. The WC explosion may, in part, be a product of the same forces that have increased all health-care expenditures. Both UI and WC are fully-funded at the state level and thus both could have been subject to a race-to-the-bottom. But if there has been such a race, it should have eroded expenditures on both.<sup>18</sup>

#### *B. Comparisons with Canada and other OECD countries*

Another means of judging the generosity, eligibility, and coverage of the U.S. system is by way of comparison. Our neighbor to the north passed a national UI law in 1940.<sup>19</sup> Through the early 1970s the general features of the two programs moved in tandem. But since then expenditures on the Canadian system have exploded in comparison with the United States. The reasons concern major legislative changes in Canada. Eligibility requirements were substantially reduced in 1972 — just eight weeks of work were required to qualify (increased to 10 to 14 in 1978), and benefits were expanded in numerous ways — maximum weeks and the replacement rate were increased (Green and Riddell 1993). In consequence, spending soared. Although further changes in the latter part of the 1970s reduced the generosity of the system, Canada had moved closer to the European UI model and farther away from

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<sup>18</sup> One reason there could be a race-to-the-bottom in UI but less so in WC concerns asymmetric information. Employers have far more information on why workers are terminated than they do on workers' health status, and thus they can more credibly threaten to contest UI, than WC, claims.

<sup>19</sup> Canada passed the Employment and Social Insurance Act in 1935 but it was deemed not within the realm of the federal government. A Royal Commission, set up in 1937, recommended a Canadian federal UI program and a constitutional amendment to allow for it. With the amendment, passage and the constitutionality of the Canadian Unemployment Insurance Act of 1940 was assured (Green and Riddell 1993). Interestingly, Canada has a national UI law and provincial minimum wages, whereas the United States has state UI laws and a national minimum wage.

that of the United States.<sup>20</sup> In 1976 the ratio of total unemployment insurance benefits in the United States to that in Canada was 5; it was 1.3 in 1990 (Green and Riddell 1993, table 4).

## II. ORIGINS OF THE DISTINCTIVE FEATURES

How did the U.S. unemployment compensation system obtain its distinctive features and in what sense were they the products of a distinctive decade? Were they designed to ensure passage of the act, take care of special problems of the day, or serve another function? Among the three features — experience-rating, federal-state structure, and limited benefits — that which most shaped the system has been its federal-state structure. A discussion of all three takes us deep into the history of the subject at both the national and state levels and gives us a chance to explain some of the basic features of UI at its outset and today.<sup>21</sup>

### *A. State action prior to 1935*

Prior to the Great Depression, unemployment insurance was discussed at both the state and national levels but there was little pressure to pass legislation. Massachusetts, in 1916, was the first state to introduce a UI bill, modeled after the 1911 British act which set up its social security and unemployment insurance systems. Massachusetts was followed by New York and Wisconsin in 1921. The Wisconsin bill, originally drafted in large measure by John R. Commons, differed from the others by penalizing firms with higher unemployment rates, a system now known as experience-rating and

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<sup>20</sup> A recent study shows that the United States has among the least generous UI systems in the OECD. Part of the lack of generosity comes from the lower replacement rate in the first half-year of unemployment and part comes from the absence of UI coverage after 6 months. The calculation also factors in assistance programs (e.g., food stamps) applying under particular family circumstances. In the overall generosity measure, covering five years, the United States is third from the bottom (out of 21 countries), and is third or fourth from the bottom for the first year. See OECD (1994), table 8.1, p. 175.

<sup>21</sup> We have borrowed heavily from, among others, Altmeyer (1966), Becker (1971), Blaustein (1993), Douglas (1939), Haber and Murray (1966), Industrial Relations Counselors (1934), Nelson (1969), Perkins (1946), Schlesinger (1958), Stewart (1930, 1938), and Witte (1962). Historians are fortunate that many who crafted and drafted the legislation wrote extensive memoirs, although they are not always in agreement.

then termed “merit-rating.” The Huber (or Groves) Bill, as it was eventually called, underwent various modifications before becoming law in 1932. The most important change concerned the establishment of employer-reserve accounts instead of a state-pooled fund, with employer liability limited to the amount of the fund.<sup>22</sup> The system of employer-reserve accounts, although allowed by the federal act and adopted by some, was eventually dropped by all states.

Seven states (CT, MA, MN, NY, PA, SC, WI) introduced bills for compulsory systems of unemployment insurance before 1929 and one was introduced in Congress in 1928 (Industrial Relations Counselors 1934, p. 72). With the onset of the economic downturn, activity accelerated regarding UI legislation. Commissions to study unemployment insurance were authorized in nine states and reported in six (CA, CT, MA, NY, OH, WI). The governor of one convened a conference of seven contiguous states to explore the possibility of coordinated action. That governor, Franklin D. Roosevelt, assigned the conference organizing task to Frances Perkins, later to be his Secretary of Labor. Perkins, in turn, involved Paul Douglas in its planning.

Douglas helped draft unemployment legislation for Ohio in 1932 that differed in two important ways from the Wisconsin model. The Ohio plan provided for pooled reserves at the state level, rather than employer accounts, and did not incorporate merit-rating (although it left open the possibility of experience-rating in the future). The two systems were similar in other respects. Benefits were limited to 16 weeks in Ohio and to 10 weeks in Wisconsin. Benefits equaled 50 percent of weekly wages in both states but with different minimum and maximum levels. The tax rate was 2 percent of covered wages to be paid by employers in Wisconsin but was 3 percent in Ohio, with 2 percent from employers

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<sup>22</sup> Commons worked on the 1921 Huber bill which contained a pooled state-fund. According to Becker (1971), when Philip La Follette (the son of the Senator) wanted to run for governor, he asked Paul Raushenbush and Harold Groves to help draft a UI bill. Groves, according to Becker, thought that employer funds, and thus full experience-rating, would appear less like socialism to the voters. Some firms had already created their own unemployment insurance funds and with full experience-rating there would be no cross-subsidization. The final Huber (Groves) bill is generally associated with Commons, although it, perhaps, should be associated more with the Commons school than with the man.

and 1 percent from employees.<sup>23</sup>

The Commons and Douglas “model” plans — those of Wisconsin and Ohio — reflected opposing views of the causes of unemployment and the economic effects of the remedy. Commons, and his associates at the University of Wisconsin, believed employers had wide leeway to reduce seasonal and other layoffs, and thus they championed merit-rating and employer-reserve funds.<sup>24</sup> UI would be to unemployment what Workers' Compensation was to industrial safety. Both laws would penalize employers who engaged in practices that, to Commons and others, injured labor.

Douglas, and his associates at the University of Chicago, saw in unemployment compensation a means of lifting the economy out of its doldrums through increased purchasing power. Contrary to Commons, Douglas was unconvinced that a large part of unemployment was at the discretion of the employer. Employers already had incentives to reduce unemployment and seasonal layoffs. A sound system based on pooled accounts, he believed, was essential to the automatic-stabilizing role he accorded unemployment compensation. Merit-rating could unduly penalize some firms that experienced negative shocks and could even exacerbate a downturn by driving them into bankruptcy.<sup>25</sup>

The debates between the two schools took place mainly on substantive grounds, but ideological factors entered as well.<sup>26</sup> Each group had the ear of an influential segment of the committees that framed the eventual document. Although these differences form an intellectual backdrop for the

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<sup>23</sup> See *Industrial Relations Counselors* (1934, table D) for state bills passed by either house after 1929.

<sup>24</sup> It is not clear what market failure Commons believed was at work, other than the fact the firms did not directly take into consideration the value their workers placed on consumption smoothing. Of course, if workers were identical, those in more highly seasonal industries would receive a wage premium.

<sup>25</sup> The Commons and Douglas models were not the only serious proposals. The American Association for Labor Legislation (AALL), a progressive-era organization, drafted a compromise bill that retained merit-rating but had some industry pooling of funds.

<sup>26</sup> See, for example, Rubirow (1934) for a taste of the vitriol in the debate between Douglas and Commons. Rubirow and Douglas were closely allied. Some of the differences are comprehensible to us, while others are simply not.

legislative history of UI, they also concern the essence of the bill — the national versus state structure, pooled versus firm reserves, and merit-rating versus none. Both Douglas and Commons played major roles in devising our current UI system, but the final bill would more clearly bear the Commons stamp.

In 1933, 25 states together introduced 83 bills (39 of which were amendments). An equal number of the separate bills embraced the Douglas and Commons forms (16 each); fewer (6) espoused a compromise version. Although none passed any state legislature, bills in seven states passed at least one house (CA, CT, MD, MA, MN, NY, OH). Wisconsin had passed a UI bill the year before which, of course, embraced the Commons system.<sup>27</sup> The majority of the other seven state bills that passed one house were modeled after the Wisconsin bill.

Of the eight state bills, all but two (MD, OH) called for individual employer reserves, the most extreme form of experience-rating.<sup>28</sup> All of these limited employer liability to their fund amount, thus placing the unemployed at risk of not receiving compensation. Five of the eight states limited benefits to 50 percent of the weekly wage with varying maximum benefit caps, one used a 75 percent replacement rate (CA), one 40 percent (MN), and one (CT) had a more complicated formula. Several offered benefits to those employed part-time. There was considerable variation in the duration of benefits. At the lower end were Wisconsin and Massachusetts with 10 weeks, and California with 13 weeks. In the middle were New York and Ohio with 16, and Maryland with 20. At the upper end were Minnesota at 40 weeks and Connecticut at 46.

As it became clear that an unemployment compensation act would be passed by Congress, states deliberated their own measures more seriously. Prior to passage of the Social Security Act, signed into law on August 14, 1935, five states passed their own legislation. Apart from Wisconsin, the list

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<sup>27</sup> See Blaustein (1993) and Industrial Relations Counselors (1934). We do not know details of the remaining four.

<sup>28</sup> Of course compulsory employer reserves does not constitute “social insurance,” but, rather, is compulsory “self insurance” by firms.

includes, in chronological order of passage (all in 1935), NY (April), NH (May), CA (June), and MA (August) — a UT law was repealed and one in WA was declared unconstitutional (Stewart 1938, p. 28). New York's was the only one with a pooled fund.<sup>29</sup>

It should be transparent, by now, that there was considerable agreement and uniformity in the state laws proposed and passed prior to the Social Security Act. First, and foremost, states debated the legislation because it was believed, and with hindsight rightly so, that the legislation would be state based. Second, there was considerable agreement concerning the benefits of merit-rating and in many cases, the proposal was for the most extreme form — employer reserves. Third, there was considerable similarity in the details, such as limitation on benefits, no means testing, and the definition of eligibility.

The content of these bills and the reports of the various commissions were important backdrops for discussions at the national level which began in earnest in 1931. So too were the unemployment insurance systems of the seven countries that had earlier passed national compulsory UI laws and the ten with subsidies to voluntary UI plans (Blaustein 1993, p. 82).

The British UI system was passed along with other major social insurance in 1911 and Germany's has existed since 1927. British experience with soaring unemployment in the interwar period gave rise to a widely held view, in the United States and elsewhere, that unlimited benefits could have disastrous effects. Interwar unemployment in Britain heavily influenced the limitation on benefits adopted by every state.

#### *B. Federal action prior to passage of the Social Security Act*

In the debate over UI at the federal level, there were many issues to be decided. Most basic was whether the system would be state or national. Next was whether there would be experience-rating,

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<sup>29</sup> The CA law, as passed, provided for a pooled fund but allowed firms with approved plans to opt out (Stewart 1938, p. 53).

and also whether the reserve fund would be state, national, employer, or industry based. Although there were many other parts of the system that varied from one draft bill to another, they were less basic and debated less intensely.

An unemployment insurance bill was introduced into Congress in 1934. Known as the Wagner-Lewis Bill, much of it was modeled after the Wisconsin legislation. The proposed law provided for a state system with the states having the choice of a pooled or an employer-reserve system. Portions were drafted by Paul Raushenbush, who with his wife, Elizabeth Brandeis, had been students of Commons at the University of Wisconsin. Raushenbush's father-in-law was Justice Brandeis and the Justice's role in the legislation will soon be clear.

The most difficult problem was how the federal government could entice the states to pass UI legislation without endangering the bill's constitutionality, for only one had done so by 1934. The answer was found in a precedent involving the federal estate tax. Justice Brandeis, or so a widely-reported story maintains, devised the tax-offset plan (Blaustein 1993, p. 125; Schlesinger 1988 [1958], p. 302). He conveyed it to his son-in-law Paul Raushenbush, who in turn incorporated it in the Wagner-Lewis Bill. The tax-offset plan was ingenious and used a scheme the Court had already validated.

In 1926 the federal government, in response to Florida's elimination of its estate tax through state constitutional amendment, imposed a tax on all states but remitted credits if the state passed an estate tax. No state could then entice migration with the promise of no estate tax, without paying a penalty. The law, later upheld by the Court in *Florida v. Mellon* (1927) provided the model for the federal unemployment compensation tax credit.

Roosevelt had run in 1932 on a platform that included “unemployment and old-age insurance under State laws” and he did not wish to endanger the full legislation with the piecemeal approach represented by the proposed Wagner-Lewis legislation in the House and Senate. Unemployment was



the gripping issue of the day, but Roosevelt had a wider vision of the future needs of the country. Passing UI, Roosevelt suspected, would be a far easier task than passing social security, old-age assistance, and other types of safety-net legislation. Thus the answer was to bundle them in one bill.

In June 1934 Roosevelt strategically asked that the Wagner-Lewis Bill be deferred and created the Committee on Economic Security (CES), with Frances Perkins as chair, to look into all aspects of social insurance. The CES staff largely consisted of those with expertise and interests in the Wisconsin system, but their ultimate decision was based more on practicality than ideology.

The clearest statement of what Roosevelt wanted and how the CES made their ultimate decision comes from the recollections of Frances Perkins (Perkins 1946). The President, according to Perkins, had no favorite design for unemployment insurance. As governor “he had not made up his mind” (p. 107), and as President he seemed open to most plans.<sup>30</sup> Despite the fact that Roosevelt stated on November 15, 1934 that “this part of social insurance should be a cooperative federal-state undertaking,” Perkins takes the credit for writing these words that have been quoted so often since. According to her, Roosevelt had no independent view on the subject and the “question was by no means settled” in November (p. 289).<sup>31</sup>

As the deliberations intensified, Perkins, and others on the CES, began to favor a strictly national UI system. But the constitutional matter was troubling and for good reason.<sup>32</sup> The National

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<sup>30</sup> Roosevelt was open to all except one. He opposed Harry Hopkins's plan to institute a permanent work relief system, which the President opposed as constituting a permanent “dole” (Perkins 1946, p. 205).

<sup>31</sup> Altmeyer (1966) believed otherwise. “The President's desire to rely upon the states as much as possible was based upon his lifelong belief in our federal form, rather than a national form, of government” (p. 11). Perkins would have disagreed.

<sup>32</sup> In Perkins's words: “There was one outstanding, and in my mind, determining factor, at that time in favor of the federal-state system. Although we thought we were on the right track in using the taxing power of the Federal Government, we were never quite sure whether a federal system of unemployment insurance would be constitutional. The Federal Government could tax ... But could it distribute its funds on a basis of social benefit? The Attorney General's office ... repeatedly advised us that it was a doubtful constitutional point” (p. 291).

Industrial Recovery Act (NIRA) in May 1935 (*Schechter Poultry Corp. v. U.S.*), and the first Agricultural Adjustment Act (AAA) in January 1936 (*Butler v. U.S.*), would be overturned by the Supreme Court. The second Child Labor Case (*Bailey v. Drexel Furniture Co.*) was lost in 1922 over the use of taxing powers that were not designed to raise revenue, the same reasoning that would shortly bring down the AAA. Despite the concern, the CES, according to Perkins, decided in early December 1934 to recommend a national system.<sup>33</sup> Only after intense lobbying by the various cabinet agencies of CES members, did the CES decide, in late December 1935, to recommend the federal-state system still with us today. “The President knew of only part of this confusion,” recalled Perkins, “if we were agreed on a method, then he was for it.” “The Committee,” she believed, “must bear the responsibility for the pattern of unemployment insurance we have in this country today” (p. 292).

The CES was divided on experience-rating, particularly whether firms could, by state law, have their own reserves (as they did in Wisconsin). It ultimately decided to allow states to have such reserves and that became part of the Act. But the most important issue was the federal-state structure. In the end, the pragmatists won and a state system was assured containing considerable leeway for state experimentation with experience-rating, benefits, and eligibility.<sup>34</sup>

To understand the long-run effects of UI legislation we must construct a counterfactual world. What changes would have brought about a different system in terms of the state-federal structure and experience-rating? Although we cannot be certain, we suspect that passage just a year or two later, certainly a decade later, would have changed the bill considerably.

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<sup>33</sup> The Technical Board of the Committee independently decided on a national system, chiefly to ensure unimpeded geographic mobility of workers. Perkins does not mention how their deliberations affected her views.

<sup>34</sup> Directly following the CES report, a bill, which would become the SSA, was brought to congressional committee. It contained UI as a state system, with the tax-offset, and with compulsory experience-rating (for states to receive credit after reserves were sufficiently high). The House version of the bill removed the experience-rating feature on the grounds that it would differentiate among states and lead to the same problems that were feared before federal UI. That is, some states would have considerably lower taxes than others on particular industries or firms. The Senate version contained experience-rating as did the final bill.

The Court was a major hindrance, but would not remain so for much longer. In 1937 the Court left intact the National Labor Relations Act (*N.L.R.B. v. Jones and Laughlin*).<sup>35</sup> By 1941, even without packing the Court, Roosevelt had appointed seven justices and by 1945 the entire Court had changed. A new era of “permissiveness” regarding government regulation began.<sup>36</sup>

Assume for the moment that the CES had decided to back a national system, that the plan received overwhelming approval by the President, and that the Supreme Court was no threat to the legislation. Would Congress have passed it? Most histories of the period emphasize the constitutionality of the proposed legislation, but all mention, as well, the potential problems with Congress. When Perkins and others on the CES were lobbied by their colleagues after they decided in early December 1934 to back a national system, Congressional approval was the major issue.<sup>37</sup> But Congressional matters were always bound up with those of the Court. Several years later, when the Fair Labor Standards Act was introduced, there was never serious discussion of having the federal government compel more states to pass wage and hours laws. We will never know whether a national system could have passed Congress had the other stumbling blocks, mainly the Court, been removed,

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<sup>35</sup> The real break came with *West Coast Hotel Co. v. Parrish* (1937), which upheld a Progressive-era state minimum-wage law. Although it did not directly concern New Deal legislation, *West Coast Hotel* has been interpreted as assuring the constitutionality of the Fair Labor Standard Act, yet to be passed.

<sup>36</sup> According to Miller (1968) and many other constitutional historians, 1937 was a momentous turning point in Supreme Court history. The long period from *Munn* (1877) to *Jones and Laughlin* (1937) was one of laissez-faire conservatism and Court-dominated legislation. “Badly wounded in the [Court packing] struggle, the Court, without announcement and without fanfare, dropped its laissez-faire stop sign and erected in its place a placard of permissiveness” (p. 79). More important than the Court-packing battle, however, was the overwhelming vote for Roosevelt in 1936.

Though Roosevelt lost the Court-packing battle, an act of March 1937 eventually gave him what he wanted. It granted to Supreme Court Justices over seventy years of age, with ten years service, full pay upon retirement. Four conservative justices left by 1941 (Devanter 1937, Sutherland 1938, Butler 1939, McReynolds 1940), although four liberal ones (Cardozo 1938, Brandeis 1939, Stone 1941, Hughes 1941) did as well (see Eriksson 1941).

<sup>37</sup> “There was grave doubt ... that Congress would pass a law for a purely federal system” according to Perkins, who was recalling the results of some last-minute December interviews with members of Congress (Perkins 1946, p. 292).

but we sense that it could have.<sup>38</sup>

Thus it is our belief that the federal-state structure was a product of the times, particularly the threat of the Supreme Court. But without the state-federal structure, would experience-rating have been incorporated into a national law? We think not, but acknowledge that this is the more difficult counterfactual.

Those close to Roosevelt who preferred the national system were also individuals who did not favor experience-rating, certainly not in the extreme employer-reserve form. The coincidence of beliefs was no accident; it derived from economic reasoning. A state system, to many such as Douglas, would not be adequate during a major economic downturn and would hinder geographic mobility when employment shocks differed by state. Similarly, the penalties of experience-rating could exacerbate unemployment if shocks differed substantially by industry or firm. Certain potential benefits from both the state system and experience-rating were not doubted by those who came to oppose them. It was the net effect that mattered.

Among those who held these views, Frances Perkins was the closest to Roosevelt. She was his Secretary of Labor, had headed the New York State analogue when Roosevelt was governor, and was chosen by him to head the CES. Her views carried considerable weight, and if not for the Court, she would have argued strenuously for the adoption of a national UI system without experience-rating. She made forceful arguments to Roosevelt regarding experience-rating when the position of the court was still being assessed.

Perkins presented her case to Roosevelt in a most personally-persuasive manner. The comparison between merit-rating in WC and UI was often made by the Commons group, and Perkins

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<sup>38</sup> Another question is whether UI would have been different had the Wisconsin group supported a national system, rather than defending the components of the Wisconsin UI bill.

Congress did vote on one national bill. The Lundeen bill, a Farmer-Labor proposal, received some 50 votes as an amendment to the SSA. The bill would have made UI a national program but would also have considerably broadened its scope, duration, and benefits. See Douglas (1939, p. 82).

reminded Roosevelt of the dangers in WC incentives. “A [man] badly crippled ... [by an industrial accident] might be put back to work on extremely low wages. He would get no compensation, and therefore the accident cost for the employer would go down ... The most serious defect of merit rating,” Perkins emphasized to the President, “was the refusal to employ slightly handicapped people” (Perkins 1946, p. 290).

In summary, the UI portions of the SSA were well thought out and crafted, a triumph of pragmatism to many and of economic reason to others. Yet it can also be claimed that there is much in the final bill that was accidental, a product of the decade, of the people, of the Court, of the state bills that preceded it. That some of the features were eminently sensible for the time is clear from the historical record. In a 5 to 4 decision in 1937, the Supreme Court, used the *Florida v. Mellon* precedent, just as Brandeis had predicted, to uphold the sections of the 1935 Social Security Act dealing with unemployment compensation.<sup>39</sup> We know the Act survived the Court, but how accurate were the framers concerning the impacts of the distinctive features? Merit-rating, it was thought, would provide disincentives to unemployment, and the state system was touted as allowing UI to be tailored to the times and the place.

### *C. 1935 Social Security Act and unemployment compensation*

Better sense can be made of the impact of UI legislation if the details are spelled out. Our task is simplified because the original act left so much to the states. As passed in 1935 Titles III and IX of the Social Security Act, those that dealt with unemployment compensation, called for a federal tax of 3 percent (by 1938, but beginning at 1 percent in 1936, rising to 2 percent in 1937) on all wages of employers of 8 or more workers.<sup>40</sup> States that subsequently passed their own UI legislation, approved

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<sup>39</sup> See NCSW (1985) for the text of the Supreme Court opinions regarding the Social Security Act, in particular *Chas. C. Steward Machine Co. v. Davis* (1937) which upheld the tax provisions for UI.

<sup>40</sup> Employer size was later changed to a minimum of 4 and eventually to 1. State law, however, often mandated fewer employees than the federal minimum. In 1945, for example, 16 states required UI for firms with 1 or more

by the Social Security Board, would receive a tax credit of 2.7 percent (0.9 of 3 percent), the 0.3 percent difference going to the federal government for overseeing the fund.<sup>41</sup> States not passing a UI law would be ineligible to draw from the fund. The tax provided a strong incentive to pass UI legislation. Benefits could be paid out beginning in 1938, when it was believed the coffers would be full enough to cope with requests for compensation.

The federal act mandated few items. It was up to the states to determine benefits, duration, some aspects of eligibility, and, after some point, the degree of merit-rating and the tax structure. Each state had its own fund, managed by the U.S. Treasury. When state reserves reached 7.5 percent of total covered wages the state could lower tax rates on some firms. Most importantly, the reduction in the tax rate would be acceptable only if the state devised an approved experience-rated system to penalize firms for unemployment. A fully experience-rated system would be akin to self-insurance by each of the firms, and incomplete experience-rated systems — even vastly incomplete ones — could and did gain approval. Finally, the act implicitly disallowed the means-testing of potential recipients. Although the act is not explicit on means testing, it has been interpreted in this manner.<sup>42</sup>

By mid-1937 all states had passed an approved UI law. Each was guided by a set of “draft bills” containing variants of the central aspects of the legislation (U.S. Social Security Board 1937).

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employees whereas 22 retained the federally-mandated minimum of 8.

<sup>41</sup> The use of the tax credit and the state-based system were not the only aspects of the law governed by historical precedent. The administration of the funds was located in the U.S. Treasury Department and paid for with funds collected from employers by the federal government because of a perception that Workers' Compensation was improperly handled by several states. The funds, moreover, are restricted to the payment of benefits and cannot be used for training, for example.

<sup>42</sup> Among other aspects of the law are: (1) nine states had employee contributions at the outset (Blaustein 1993, p. 161), and (2) there was no federal taxable wage base stated in the act, although the base was \$3000 for social security. A federal taxable wage base for UI was added in 1940. But unlike the case of social security, the federal taxable wage base for UI has substantially eroded over time. Whereas the (FUTA tax base/total covered wages) was more than 90 percent in 1940, it is less than 40 percent today (ACUC 1996). As a consequence, most states have taxable wage bases that exceed the federal level.

Experience-rating, for example, could be calculated numerous ways and the draft bills outlined two possibilities for states adopting a pooled fund. One is now known as the reserve-ratio approach, the most popular then and today, adopted by 29 states in 1948 and used by 33 states in 1990. (We discuss experience-rating and the reserve-ratio concept below.) The other possibility was general, giving states wide latitude. The benefit-wage method was adopted by nine states in 1948, although its popularity has since declined. The benefit-ratio method has become the second most popular system, although just three states chose it in 1948. Another draft bill was created for states that adopted individual employer reserve funds, as Wisconsin had done in 1932. Maximum and minimum benefit levels, eligibility, whether the accounts were pooled or firm-specific reserves, and other features of the legislation differed from state to state in the initial legislation and evolved in ways that we have surveyed above.

### **III. THE DISTINCTIVE FEATURES: ORIGIN, EVOLUTION, AND IMPACT**

#### *A. Experience-rating: the most distinctive feature of UI*

##### 1. What is experience-rating and why was it adopted?

Of the three distinctive features of UI, two are easily understood in historical context. The state system was largely designed to ensure passage of the Act in Congress and to avoid its defeat by the Supreme Court. Some claimed that the state system would also allow much-needed innovation through state experimentation. But the same factors that demanded the federal government penalize states for not passing UI could lead them to race-to-the-bottom when allowed to innovate. The limitation of benefits, adopted by all states, was prompted by the interwar lesson with unemployment in Britain. But what about the most unique aspect of U.S. unemployment insurance — its experience- or merit-rating by firm?<sup>43</sup>

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<sup>43</sup> It is interesting to speculate whether experience-rating would have carried the day had Commons not supported it early in the history of UI and imbedded it in the first state UI law.

Experience-rating is defined as any tax system for unemployment insurance in which firms encountering a greater amount of compensated unemployment are taxed more heavily. In practice, however, there are a large number of experience-rating systems that have been adopted by the various states. One of the most common is based on a construct called the “reserve ratio.” The reserve ratio is given by the difference between taxes paid by the firm and benefits disbursed to its employees, all divided by the payroll of a firm. The ratio is defined over some time period, often that since the firm began experience-rating. All systems have a maximum and a minimum tax (which can be zero). When the reserve ratio of a firm changes, due say to an increase in its layoffs, it will often be subject to a different tax. A higher reserve ratio will bring about a lower tax rate and a lower reserve ratio a higher tax rate. But there can be “flats” in the schedule, so that a larger movement in the reserve ratio would be needed to change the tax rate.

A schedule with a high minimum and a low maximum will have less complete experience-rating than one with the reverse. “Flats,” in addition, cause bunching between reserve ratios and zero experience-rating in that range. A completely experience-rated system would have a minimum rate of zero and no maximum rate. It would penalize firms dollar-for-dollar with respect to benefits paid out to their workers. No systems have been completely experience-rated, with the possible exception of Wisconsin's employer-fund system as passed in 1932. All, therefore, are incompletely experience-rated to some degree.

The degree of experience-rating also depends on rules concerning what changes the tax rate. States governed by reserve ratios are the simplest to describe and are the most numerous today and in the past. But there are other systems with considerably more complicated rules.<sup>44</sup>

Experience-rating was championed for two reasons. One was equity. Firms that created more

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<sup>44</sup> See Anderson and Meyer (1993, 1994), Card and Levine (1994), and Topel (1983) for fuller discussions of measuring experience-rating across different state systems.



unemployment should pay for it. Sectors, such as construction, lumber, and food, that were inherently more seasonal, should be taxed more heavily. The more complete is experience-rating, the less would be the subsidy from low-unemployment to high-unemployment firms. The stabilizing effect of taxing layoffs furnished the other reason.<sup>45</sup> Experience-rating would tax unemployment and thus provide an incentive for firms to smooth production over the season and the cycle.

The belief that seasonality was responsible for substantial unemployment motivated both reasons for experience-rating. If unemployment resulted instead from economic downturns, firms might have less control over employment. And if unemployment were more stochastic than predictable, equity considerations would argue against experience-rating. Thus seasonality played a crucial role in the formulation of experience-rating in unemployment insurance.<sup>46</sup>

In the discussion of experience-rating, it was often claimed that because the United States was

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<sup>45</sup> "Stabilization" can be interpreted two ways. First is the disincentive to lay-off workers. Second is the fiscal effect of increasing consumer demand when there was unemployment. It was the latter, macro-economic, reason that was foremost in the minds of the drafters of the Social Security Act. According to Arthur Altmeyer, appointed chair of the Social Security Board in 1936, Roosevelt "stressed [the stabilization function of unemployment insurance] in his initial meeting with Miss Perkins [Secretary of Labor], Dr. Witte [executive director of the technical board of the Committee on Economic Security], and me in August 1934" (Altmeyer 1966, p. 25). Roosevelt also inserted a sentence in his message to Congress about the committee's report, remarking that "Federal legislation should not foreclose the States from establishing means for inducing industries to afford an even greater stabilization of employment" (p. 25). The message had been drafted by Altmeyer who took notice of the insertion. The addition appears to refer to experience-rating.

<sup>46</sup> Douglas (Douglas and Director 1933) and Commons (Lewisohn, et al. 1925) both contributed to volumes on unemployment that contain virtually identical discussions of the role of seasonality and the attempts by firms to smooth production, often through advertising campaigns to entice consumers to purchase goods more regularly over the year. Both groups of authors emphasized the role and ability of private enterprise to smooth employment over the season. Despite these similarities, their conclusions were often different. Commons and his coauthors argued for unemployment insurance with employer-based experience-rating to provide incentives for firms to further reduce seasonal unemployment. They recognized the role of cyclical downturns in causing unemployment, for they were writing in the wake of one of the worst economic downturn in American history. But, they noted, seasonal fluctuations were just as important, for virtually all industries "have busy and dull seasons which occur during practically the same month, year after year" (p. 83). They argued against employers who contended "that they do not need additional incentive unemployment insurance to cause them to stabilize employment" (p. 213). Douglas, mustering similar evidence and making similar points concluded, contrary to Commons, that firms already had sufficient incentives to smooth employment and that the main function of unemployment compensation was its relief and stabilizing impact which could be jeopardized by experience-rating. Although, in his 1931 volume, Douglas did propose a UI plan with premium rates varying by unemployment, he downplayed the role of experience-rating and opposed employer reserves.

a more agriculturally-based economy than most in Europe, its industry was more seasonal. Seasonality, according to many contemporaries, was at the root of the unemployment problem in the United States, apart from vastly aberrant periods such as the Great Depression.

In the 1930s, the debate over experience-rating and the related subject of pooled versus individual firm accounts was highly contentious. Commons and his influential associates viewed experience-rating as the crowning glory of the legislation, with the capacity to reduce future unemployment. Although Douglas recognized the importance of seasonality, he believed, as we have already noted, that firms already had ample economic incentives to reduce its costs (Douglas and Director 1931).<sup>47</sup>

But did states with more seasonality embrace merit-rating to encourage firms to reduce unemployment? Or, on the other hand, did states have incomplete experience-rating to subsidize certain seasonal industries?<sup>48</sup> The latter question is not a simple one because the ability of highly-seasonal firms to extract a subsidy from the less seasonal ones will depend on the lobbying strength of the more seasonal (and the lobbying weakness of the less). The first matter is to describe seasonality in the pre-UI period across the United States.

## 2. Seasonality before and after the adoption of UI

There are many ways to capture the concept of seasonality. One is a simple peak to trough measure, by month or by quarter. The measure captures what is generally meant by seasonality, but it may miss fluctuations over the year. Another, and the one we will mainly rely on, captures the choppiness in the data and is the standard deviation of monthly employment growth rates (see Barsky

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<sup>47</sup> Experience-rating remains a controversial issue. The recent ACUC report (1996) failed to reach a consensus whether to weaken or strengthen experience-rating. The argument for experience-rating remains that of Commons. The argument against is that experience-rating creates an adversarial system in which firms contest workers' UI claims and that it creates an incentive for firms to use contingent workers who would not qualify for UI benefits.

<sup>48</sup> See Adams (1986) for evidence to this effect for the 1970s.

and Miron 1989).<sup>49</sup>

We measure seasonality in manufacturing across states before and after UI. For the pre-UI period, we are able to use four years of manufacturing data (1909, 1914, 1919, and 1929), and for the post-UI period we use annual B.L.S. establishment survey data for the 1949 to 1969 period.<sup>50</sup> The major difference between the pre- and post-UI data is that the pre-UI data contain only production workers, whereas the post-UI data contain all employees in manufacturing. To account for the difference in coverage we multiply the 1949 to 1969 state seasonality estimates by a factor of 1.31, the estimated ratio in those years of the seasonality of production to all manufacturing workers at the national level. The adjustment factor implicitly assumes that each state's seasonality was affected to the same degree as was the nation's.<sup>51</sup> If correct, we are comparing seasonality in the pre- and post-UI periods for production workers in manufacturing.

The data for this measure of seasonality are given in the maps of Figures 5 and 6, the ranges of which are the same to facilitate comparison. The greatest seasonality pre-1929 was found in the Pacific, Mountain, and Plains states; the least in New England (except Maine), the Middle Atlantic, and parts of the South. States with more diversified manufacturing show less seasonality, possibly why much of Europe may have had less seasonal employment than did the American states. States with

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<sup>49</sup> More precisely, this measure of seasonality is the standard deviation of coefficient estimates on month dummies in a regression for each state, where the monthly change in log employment is regressed on a full set of month dummies. There are 11 monthly changes; that from December to January is not observable in the 1909 to 1929 period because our data are for the census years 1909, 1914, 1919, and 1929.

<sup>50</sup> The 1909 to 1929 data are from the U.S. census of manufactures (construction data were not collected until 1929) and give employment of wage-earners (meaning production workers) by month (U.S. Bureau of the Census 1933a). The data for 1949 to 1969 are from the U.S. Department of Labor, Bureau of Labor Statistics LABSTAT database maintained on the Internet at <http://STATS.BLS.GOV> and include both production and non-production workers.

<sup>51</sup> Another difference is that the pre-1930 manufacturing data include railroad repair shops. We can subtract this sector only for 1929. Railroad repair was less seasonal than the rest of manufacturing and will bias the results against a reduction in seasonality especially in the small western states.

cold, harsh climates, not surprisingly, had more seasonality, as did those with greater dependence on the food (SIC 20) and timber (SIC 24) industries.

In comparison with pre-1929 seasonality, that for the 1949 to 1969 period is considerably lower.<sup>52</sup> The (unweighted) mean of our seasonality measure decreases from 0.0254 in 1909-29 to 0.0182 in 1949-69 (after applying our correction factor), about a one-third decline.<sup>53</sup> Not only did the mean of seasonality decline in the post-World War II era, its distribution changed. With few exceptions, seasonality in the post-World War II period increases uniformly when moving from East to West whereas the geographic pattern in the pre-1929 period is considerably more mixed.

Some states shifted position between the periods. As seen in Figure 7, CT, FL, MN, NC, SD, and WY (the darkest states) actually became more seasonal. But considerably more states became less seasonal. Leading the list are AR, CA, CO, DE, ID, IA, LA, MD, MS, UT, VA, and WA (the cross hatched states in Figure 7), all having among the greatest seasonality in the 1909-29 period. Fully 30 states had decreases in seasonality over the years we cover. Some of the declines, as in the South, stemmed from the growth of more diversified manufacturing. States with the most seasonality in the 1909 to 1929 period, generally had the smallest fraction of their employment in manufacturing (and construction). But there were exceptions, such as the states of the Pacific region for which seasonality was extremely high and seasonal industries were a non-trivial fraction of total employment. Also MD, DE, ME, and some parts of the Midwest had considerable seasonality of employment and a high fraction of manufacturing and construction workers in total employment.

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<sup>52</sup> For a discussion of seasonality around the turn of the century, see Engerman and Goldin (1993).

<sup>53</sup> We compute similar changes for another measure, the log(maximum quarterly/minimum quarterly) employment. The (unweighted) mean for "quarterly" seasonality from 1909 to 1929 is 8.65 log points but 5.49 for 1949 to 1969. These figures are unadjusted for differences in employment coverage.

National monthly data on production-worker employment in manufacturing are available from the B.L.S. starting in 1919. The standard deviation of monthly log employment growth rates, for the entire nation, declined from 0.0105 for 1919-29 to 0.0091 for 1949-69.

Seasonality, therefore, was substantial prior to the passage of UI and declined subsequently. We now address whether pre-UI seasonality affected the evolution of state laws and also whether experience-rating by state had an effect on seasonality.

*B. Distinctive features: evolution and impact*

1. Evolution of benefits

The federal-state structure of UI allows it to evolve differently across the various states. Such differences could emerge for reasons of efficiency or, instead, could reflect diverse lobbying interests and power. We investigate whether states with more seasonality in the pre-Depression period were those that evolved relatively high benefits. Firms and workers in the more seasonal industries should have been the most interested in generous benefits (and low experience-rating). But their ability to achieve high benefits will be greater when they are not too large a share of the labor force, because the more seasonal industries will want to use the UI system to transfer resources from less seasonal industries. As long as experience-rating is not perfect, more seasonal industries are almost always subsidized by the less seasonal ones.<sup>54</sup>

We regress various measures of the average level of state benefits from 1947 to 1969 on (1) seasonality in manufacturing employment for 1909-29 (also construction in 1929), (2) the proportion of the state labor force in manufacturing and construction in 1930, and (3) an interaction of the seasonality and labor force proportion measures.<sup>55</sup> The key independent variables were determined 30 to 50 years prior to the dependent variables.

Six regressions are offered to demonstrate the range of results with different functional forms

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<sup>54</sup> Many employees in highly-seasonal industries are not subject to effective marginal experience-rating in any state because their firms are already at the maximum tax rate.

<sup>55</sup> We use the ratio of the average benefit to the average weekly wage in the state. The true after-tax replacement rate would be higher because UI benefits were not taxed during this time period. See ACUC (1996) for a discussion of alternative measures of replacement ratios.

and specifications. Columns (1) and (5) use the log of the average replacement rate, whereas col. (2) uses log (maximum benefits/average weekly wage). An advantage of examining the determinants of maximum weekly benefits is that they are directly set by state legislatures. Columns (3), (4), and (6) loosen the constraint on the log (average weekly wage) coefficient and include it as a separate variable. Finally, in col. (6), we add the log of per capita income and the percentage unionized in the state.

The results, given in Table 1, are striking and suggestive. Benefits are higher the greater is seasonality in manufacturing employment in 1929, as long as the percentage in manufacturing and construction is below 30 percent (using col. 1), just above the (unweighted) state mean in 1930 (25.5 percent).<sup>56</sup> And benefits are higher the greater is the percentage in manufacturing and construction, as long as the seasonality measure is above 0.0213 (using col. 1), approximately the (unweighted) mean in 1909-29 (0.0253). States with more seasonal industries in the pre-UI period had higher benefits, as a fraction of wages, in the post-UI period but only if their manufacturing and construction sectors were not overly large in relation to total state employment. Seasonality in the construction industry, moreover, has an added effect and operates similar to the way overall seasonality in manufacturing does. When seasonality is high, benefits are higher, as long as the proportion of the state's labor force in the combined manufacturing and construction sector is not too high. State per capita income enters positively, but unionization is weakly negative.

Our findings suggest a political economy story of successful lobbying efforts by highly-seasonal industries. Generosity has its limits, however. Lobbying is more effective when the costs can be spread over a sufficiently wide group of industries and workers.

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<sup>56</sup> If, for example, seasonality increases by one standard deviation (a change of 0.0183) and if the proportion in manufacturing is 0.151 (one standard deviation below the mean), then the impact will be to increase in the replacement rate by 9 percent (using the col. 1 results). Note that the construction seasonality results (col. 5) also show that increasing seasonality in construction increases benefits but only if the share of the labor force in manufacturing and construction is below around the mean in 1930.

## 2. Impact of experience-rating

The most distinctive feature of UI — experience-rating — is embedded in various aspects of state UI laws. States were given an incentive by Title IX of the Act to adopt some form of experience-rating, although many had already incorporated merit-rating in their UI laws. When reserves reached 7.5 percent of total payroll, a state could reduce the tax rates of some firms below the 2.7 percent rate set by law only if it adopted an approved form of experience-rating.<sup>57</sup>

The tax schedules incorporating experience-rating and the type of reserve system used evolved over time. The schedules are complex often containing many flat portions, and it is difficult to construct useful summary measures of them. In assessing whether a firm will pay more if it lays off a worker, one must know the tax schedule facing the firm and where the firm is on it.<sup>58</sup> These statistics are difficult to obtain today, and we have nothing resembling them for the past. We use, instead, an admittedly crude state-level measure of experience-rating to assess its long-run impact on seasonality.

The measure is the “slope” of the schedule, which can be defined only for the 31 states adopting the reserve-ratio basis. It is given by  $(\text{maximum} - \text{minimum tax rate}) / (\text{reserve ratio at minimum} - \text{reserve ratio at maximum tax rate})$ . It is a measure of the degree to which firms are taxed for an additional layoff when they are between the minimum and maximum tax rates. We use the measure to crudely assess whether the adoption of experience-rating by the states had some effect on the change in seasonality which we have just illustrated.

The effect of UI on layoffs has been a subject of wide-ranging interest for it addresses a central question in the economic effects of public policy. Does UI encourage more layoffs because firms do not bear their full costs? Most researchers find, mainly for the post-1970s period, that incomplete

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<sup>57</sup> This rapidly happened as unemployment plummeted in the early 1940s.

<sup>58</sup> Anderson and Meyer (1993, 1994) show that experience-rating systems are extremely complicated and that there is considerable heterogeneity in the marginal tax cost of layoffs facing firms even within a single state system and a single industry.

experience-rating increases layoffs, heightens seasonality, and shifts employment to more-seasonal sectors. It is ironic, though, from the standpoint of our paper, that so much emphasis has been placed on incomplete experience-rating when the most unique, and possibly the most interesting, aspect of the U.S. unemployment insurance system is its presence in any form.

Anderson and Meyer (1994), Card and Levine (1994), Feldstein (1976, 1978), and Topel (1983, 1985) all argue that imperfect experience-rating leads to excessive cyclical and seasonal layoffs.<sup>59</sup> In a study of the retail trade industry, Anderson (1993) finds that higher UI taxes reduce seasonal variation in employment, mainly during the Christmas boom and raise the average level of employment in the retail trade industry.<sup>60</sup> Deere (1991) contends that the current imperfectly experience-rated UI system subsidizes unstable sectors and industries and thereby serves to expand their employment.<sup>61</sup>

Not only does UI involve cross-subsidization, but Anderson and Meyer (1993) also provide convincing evidence that the system has persistently subsidized the same firms and industries.<sup>62</sup> Thus they argue that UI is less a system of insurance than of subsidies to unstable sectors and their workers. The subsidization, moreover, could originate in the political strength of unstable firms, industries, and their unionized work forces, as persuasively argued by Adams (1986).

Rather than ask what impact incomplete experience-rating has had, we inquire, instead, as to its impact on changes in seasonality. We employ two main tests, both admittedly imprecise due to data

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<sup>59</sup> Anderson and Meyer (1994) show that conclusions from analyses using industry-state data may be misleading but reach similar conclusions using firm-level data. Feldstein (1978), Topel (1983), and Card and Levine (1994), using Current Population Survey data matched to information on state UI laws and the individual's industry of employment, find that greater UI subsidies and lower experience-rating are associated with more temporary-layoff unemployment. Temporary layoffs seem more sensitive to experience-rating than are permanent layoffs.

<sup>60</sup> Similarly, Halpin (1979) concludes that stronger experience-rating reduced seasonal fluctuations in the employment of two highly-seasonal industries during the 1960s and early 1970s (but not in a third).

<sup>61</sup> But Iorio (1987) argues that, in a world of incomplete capital markets, imperfect experience-rating provides insurance to riskier industries and allows their workers to smooth consumption (see Gruber 1994, for evidence on consumption smoothing).

<sup>62</sup> Meyer and Rosenbaum (1996) find the same result for workers.



deficiencies for the long period we are exploring.

One test is to see if the marked change in seasonality we demonstrated above is related to the extent and completeness of experience-rating across the various states. Our primary dependent variable is the difference, between 1909-29 and 1949-69, in one of our measures of seasonality (the standard deviation of monthly employment growth rates). The measure of experience-rating is the slope of the tax function in reserve-ratio states averaged over twelve years in the 1951 to 1969 period. The slope is the change in the UI tax rate with a change in the reserve ratio and can be thought of as the degree to which an increase in unemployment increases a firm's taxes, within the minimum and maximum rates.<sup>63</sup> We also use an experience-rating measure devised by Deere (1991), the "subsidy" to firms in a state, measured as the present discounted value of the difference between UI benefits received and the increase in UI taxes owed as the result of an additional layoff.

Because of the necessity of using only reserve-ratio states, we have just 31 (sometimes 30) observations and outliers can dominate the analysis. Figure 8 shows the scatterplots for manufacturing and construction. In the manufacturing sample California is a notable outlier, as is Nevada in the construction sample. Thus we present both OLS and median regression estimates in Table 2.

As is shown in Table 2, the median regressions provide modest evidence of a negative impact of experience-rating on long-run trends in seasonality.<sup>64</sup> The high-low seasonality measure is more significant than is the measure employing the standard deviation of employment growth rates and the coefficients using construction data are more significant than are those for manufacturing. In all cases, however, the coefficients are economically significant. An increase in experience-rating of one standard deviation (0.165), decreases manufacturing seasonality by -0.00505 or about one-half a standard

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<sup>63</sup> We ignore "flats" in the schedule, and are aware of all the problems we previously mentioned that are raised in Anderson and Meyer (1994). Our slope measure is a simplification of the approach to measuring experience-rating utilized by Brechling (1981).

<sup>64</sup> Alternatively, OLS without the outlier provides similar results to the median regression.

deviation. Our evidence, therefore, is consistent with the micro-level data we cited above, but given the non-linearity and complexity of the tax rate schedules, it must be interpreted with caution.

A second test concerns using the natural experiment of two different UI systems just a border apart. Canada and the United States introduced UI systems at nearly the same time. That in the United States began paying out benefits in 1938; Canada's system did in 1942. The systems were initially of similar generosity regarding benefits, duration, and coverage, and remained so until the early 1970s. The major difference is that the U.S. system is experience-rated whereas Canada's is not. To the extent that experience-rating was effective, the United States should have undergone more stabilization of seasonal employment fluctuations than did Canada from the pre-UI to the post-UI periods.

To examine the hypothesis, we make some, admittedly crude, comparisons of changes in seasonal employment fluctuations in construction and manufacturing for Canada (as an aggregate) and for U.S. states on or close to the Canadian border. We use border states to control for other trends in seasonality that ought to be common to states and provinces with similar climate and, possibly, industrial structure.

We aggregate monthly employment for 13 U.S. states (from West to East: WA, ID, MT, ND, MN, WI, MI, OH, PA, NY, VT, NH, and ME) to create a comparison group and use two measures of employment. One compares construction in 1929 (the only pre-UI year for the U.S. data) with that in the 1947-63 post-UI period. The other looks at manufacturing in 1929 (the only pre-UI year for which we have both U.S. state-level and Canadian monthly employment data in manufacturing) versus that in 1947-63.

The results of these comparisons are shown in Table 3. A larger reduction in seasonality in construction is found for the U.S. border states than for Canada (col. 3), consistent with there being

an impact of experience-rating. The difference in manufacturing is less pronounced.<sup>65</sup> Thus the bulk of our cross-state and cross-country analysis suggests that experience-rating served to reduce employment fluctuations in highly seasonal industries.

#### IV. CONCLUDING REMARKS

The UI system in the United States was established in a period of extreme and pervasive unemployment to be a program for ordinary times. The system could not have coped for long with the extent and duration of unemployment in the decade in which it was created. Its functions have changed little since its creation and an important question is whether UI is a program for the more ordinary times of today.

In the sixty years since its creation, UI has served a multitude of functions. Its limited benefits have, or so many believe, shielded the United States from the high unemployment experienced in Europe in response to negative employment shocks. Although some emphasize the incomplete nature of experience-rating in the U.S. system, it is far closer to a perfect merit system than is any other and many have demonstrated the benefits of experience-rating for lowering unemployment and seasonality.

The main criticism of the current UI system is that it has not changed with the times. The federal-state system set up in 1935 to find a way around the Supreme Court was ingenious. But it may later have produced a race-to-the-bottom. In comparison with other OECD countries, the U.S. unemployment insurance system has low generosity, and its eligibility rates have declined markedly since the 1960s. The original Act stated that UI monies could be used only to fund benefits and program administration. But there are many who today believe that UI needs to add reemployment and

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<sup>65</sup> When we correct for differences in employment coverage in the pre- and post-UI U.S. data we get a smaller reduction in seasonality (in comparison with Canada), and a larger reduction if we do not use the correction factor. We are uncertain whether the correction factor is appropriate given possible changes in employment coverage in the Canadian data.

retraining to its functions.

We have described the origins of the distinctive features of the unemployment compensation system adopted in August 1935 as part of the omnibus Social Security Act. Of greatest importance are its federal-state structure, experience-rating, and the limitation of benefits imposed by all states. We addressed how the parameters of the UI system evolved at the state level and the impact experience-rating has had on the seasonality of employment. Evidence was presented showing that more seasonality in manufacturing employment in 1909-29 is related to higher UI benefits from 1947 to 1969, if a state's manufacturing employment share is below the national mean. Lobbying activities of seasonal industries appear important in the evolution of the parameters. We also presented suggestive evidence showing that there is a relationship between declining seasonality and experience-rating.

Had there been no Great Depression, it is likely that unemployment insurance would have been passed at some future date. The bill, we believe, would have been closer to the one that Paul Douglas, Frances Perkins and others in the Roosevelt administration favored — strictly national in scope. Without the federal-state structure, it likely that it would not have incorporated experience-rating, although we are less certain of that. Compromises had to be made by those who championed a national UI system in the exacting and uncertain 1930s. The federal-state structure, and the manner in which the states were induced to adopt their own UI legislation, assured passage of the act and guaranteed its constitutionality. As is the case with other pieces of New Deal legislation, the legacy of the 1930s lives on.

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FIGURE 1: PERCENTAGE OF THE CIVILIAN LABOR FORCE COVERED BY UI, 1939 TO 1994

*Notes and Sources:*

U.S. Department of Labor (1996) for average monthly covered employment. After 1971 average monthly covered employment for the "reimbursable" sectors is included. "Reimbursable" includes the public sector and non-profits which do not pay taxes but receive coverage. CEA (1996) table B-31, for civilian employment. Civilian employment before 1947 includes those greater than or equal to 14-years old; after 1946 it is 16-years old.

$CovEmp1 = (\text{taxable covered employment}) / (\text{civilian employment})$

$CovEmp2 = [\text{all (taxable + reimbursable) covered employment}] / \text{civilian employment}$

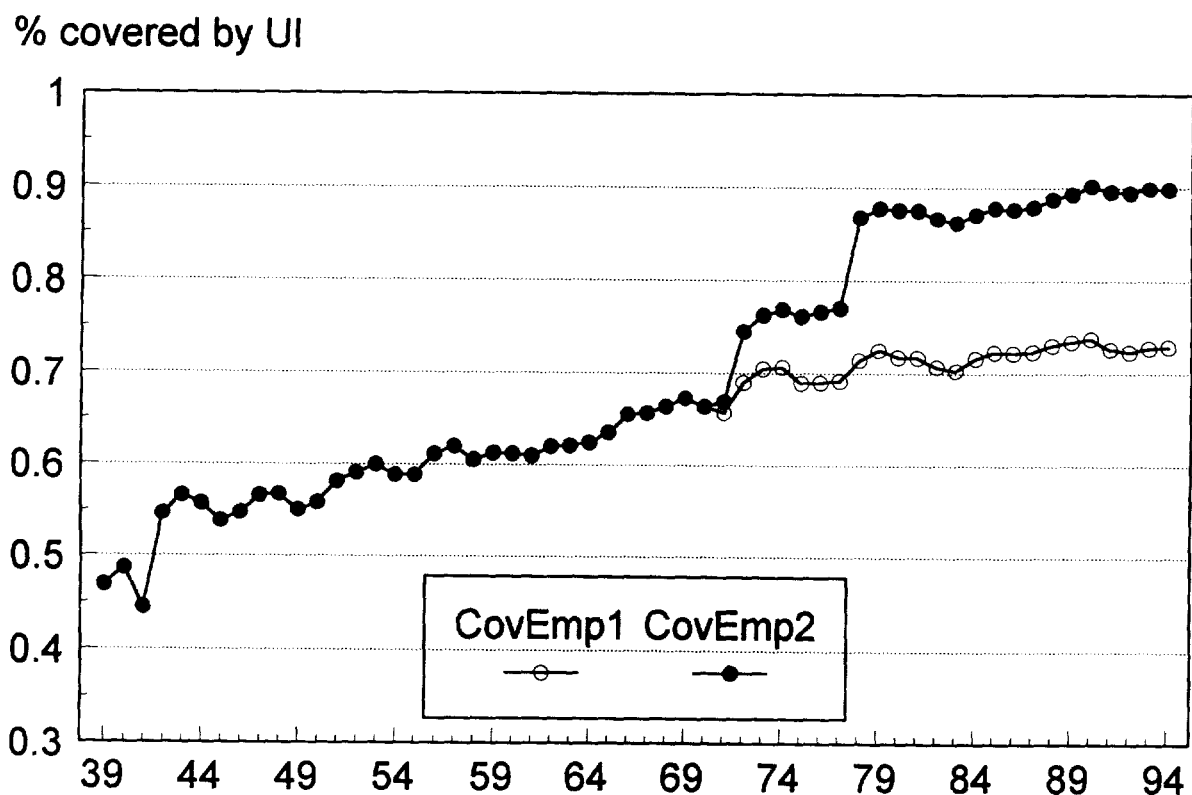


FIGURE 2: EVOLUTION OF (UI CLAIMS/TOTAL UNEMPLOYED) AND (BENEFITS/WAGES), 1940 TO 1994

*Notes and Sources:*

U.S. Department of Labor (1996) for the number of UI claims, average weekly benefits, and the average weekly wage. CEA (1996) table B-31 for civilian unemployment. Average weekly benefits and average weekly wages are entire U.S. averages.

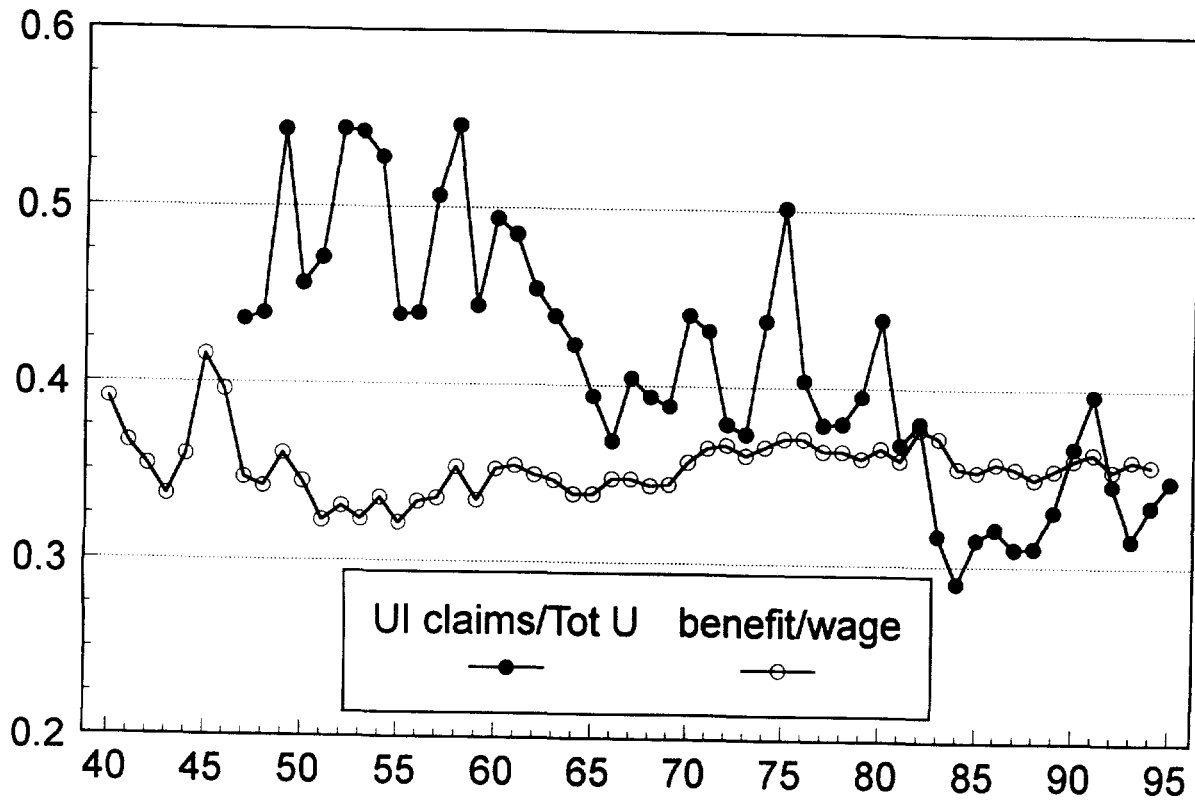


FIGURE 3: CROSS-STATE STANDARD DEVIATIONS OF (BENEFITS/WAGES) AND (MAXIMUM BENEFITS/WAGES), 1940 TO 1994

*Notes and Sources:*

U.S. Department of Labor, ETA (1996) for state-level data on average weekly UI benefit and average weekly wage.

U.S. Department of Labor, ETA (1996) and U.S. Department of Labor, ETA Laws (various years) for maximum weekly benefits in the case of no dependents.

*sd rrate* = standard deviation of the log(average weekly benefit/average weekly wage)

*sd rrmax* = standard deviation of the log(maximum weekly benefit, no dependents/average weekly wage)

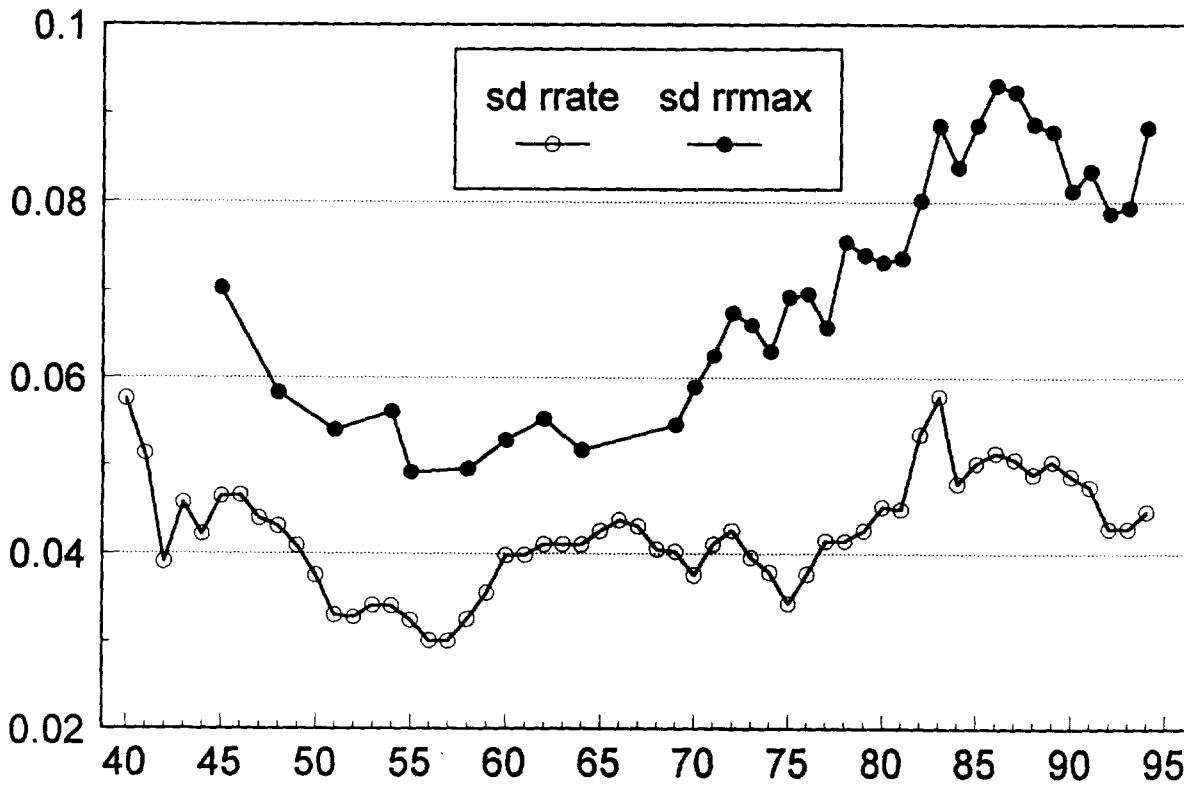


FIGURE 4: UNEMPLOYMENT BENEFITS AS A FRACTION OF GDP AND THE UNEMPLOYMENT RATE, 1948 TO 1994

*Notes and Sources:*

*GDP:* 1959-1994 CEA (1996), table B-1; 1946-1958 NIPA, table 1.1 1946-58.

*UI:* Unemployment insurance benefits, 1963-94 CEA (1996), table B-41; 1946-1962 CEA (1977), table B-31.

*Un Rate:* Unemployment rate 1948-1994 from CEA (1996), table B-39.

UI does not include supplemental benefits paid by federal funds, but does include extended benefits.

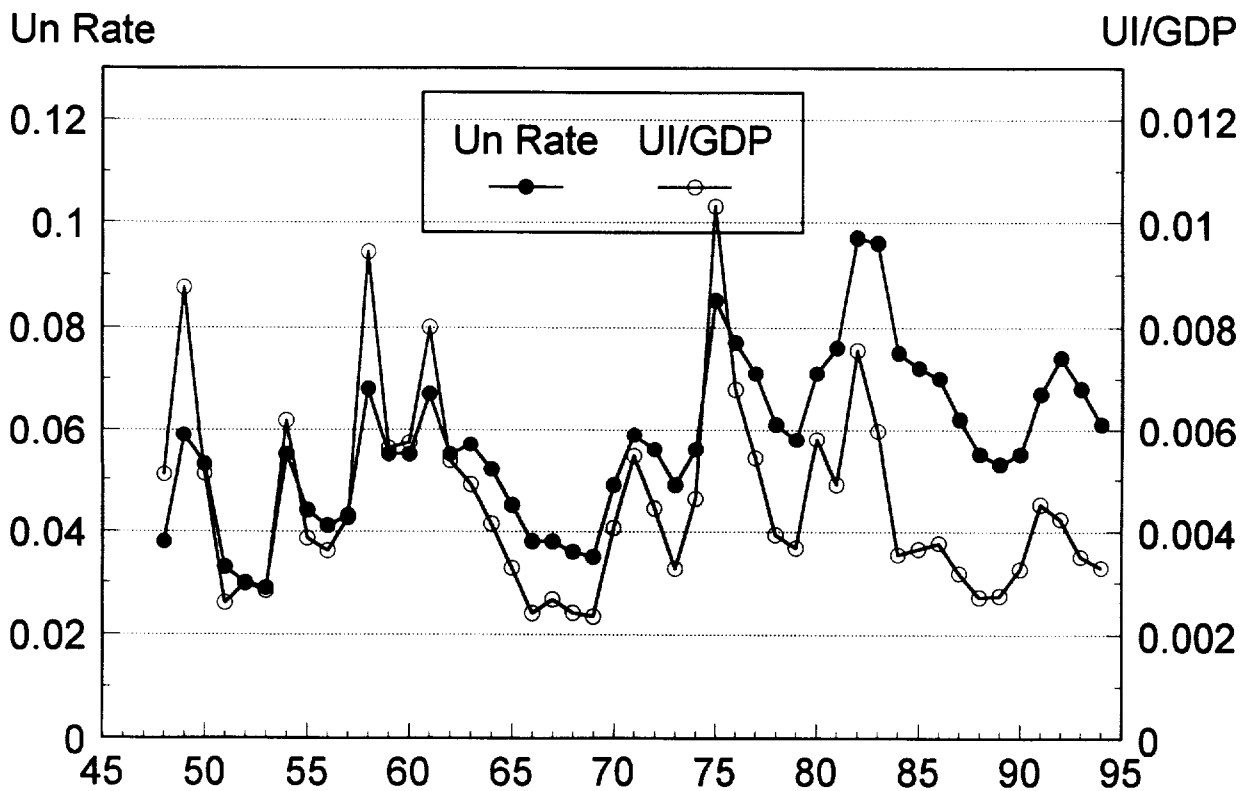


FIGURE 5: SEASONALITY, 1909-1929

Notes: The seasonality measure is the standard deviation of the monthly employment growth rate by state for the years 1904, 1909, 1919, and 1929. The numbers in the legend have been multiplied by 1000. The ranges were chosen to divide the 48 states into four equal groups. Source: U.S. Bureau of the Census (1933a).

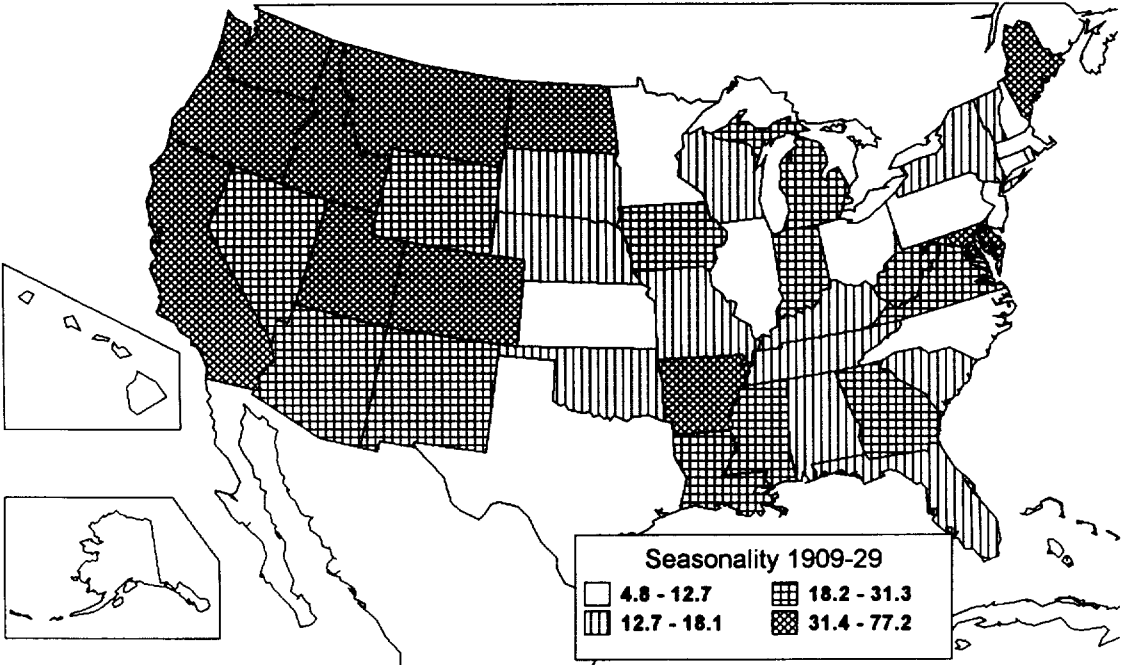


FIGURE 6: SEASONALITY, 1949-69

*Notes:* The seasonality measure is the standard deviation of the monthly employment growth rate by state for all years between 1949 and 1969. The numbers in the legend have been multiplied by 1000. The ranges were chosen to divide the 48 states into four equal groups in 1909-29 (see Figure 5).

*Source:* U.S. Department of Labor, <http://STATS.BLS.GOV.BLS.LABSTAT>.

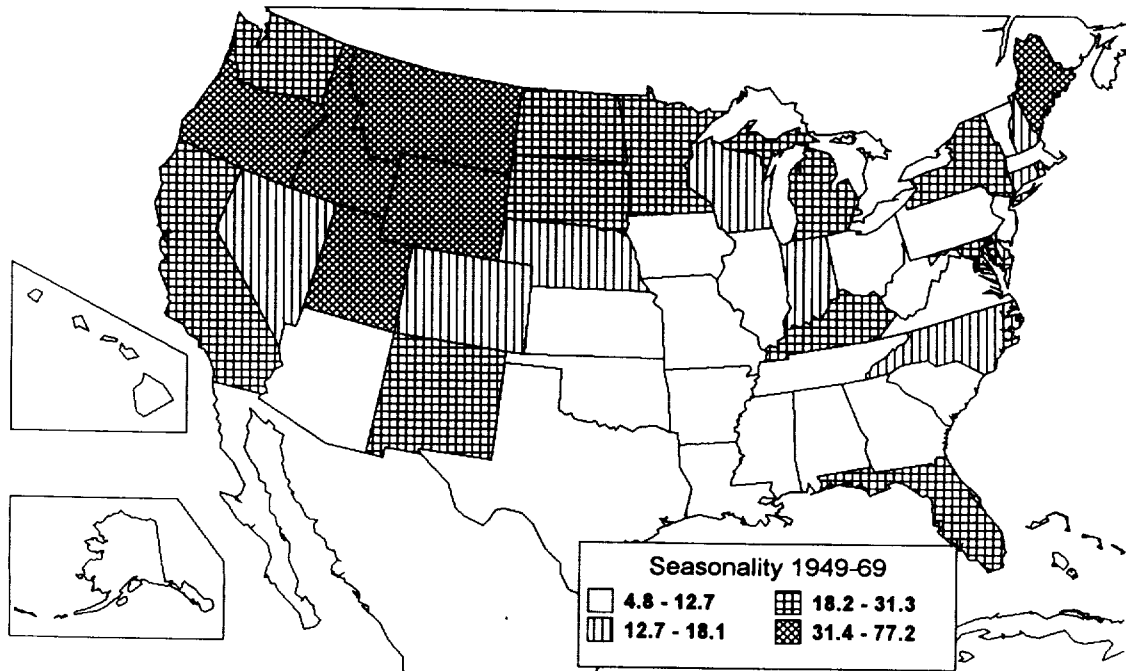


FIGURE 7: CHANGE IN SEASONALITY, 1909-29 TO 1949-69

Notes: The change in seasonality is (1909-29) minus (1949-69), thus negative values are increases in seasonality and positive values are decreases. The numbers in the legend have been multiplied by 1000.

Sources: See Figures 5 and 6.

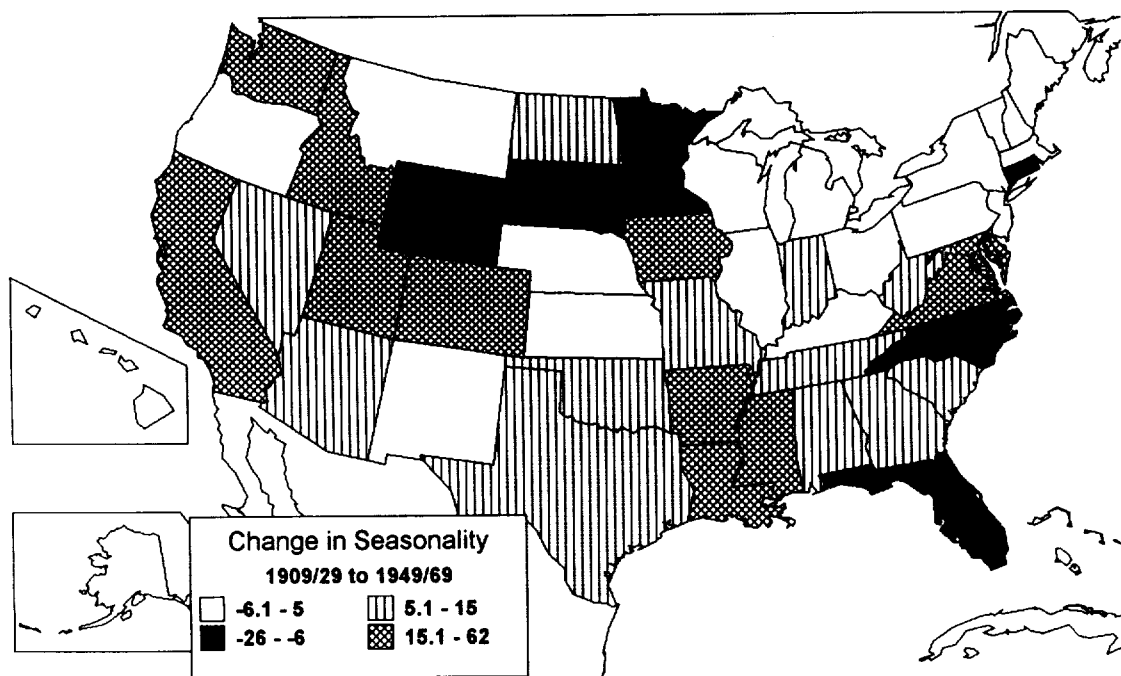


FIGURE 8: SCATTERPLOTS OF THE CHANGE IN MANUFACTURING (CONSTRUCTION) SEASONALITY, 1909-29 (1929) TO 1949-69, AND THE EXPERIENCE RATING SLOPE BY STATE

Notes and Sources: The measure of seasonality is the standard deviation of employment growth rates. "Slope" is defined in the text and is for 1951-69. See Table 2 for seasonality and slope sources.

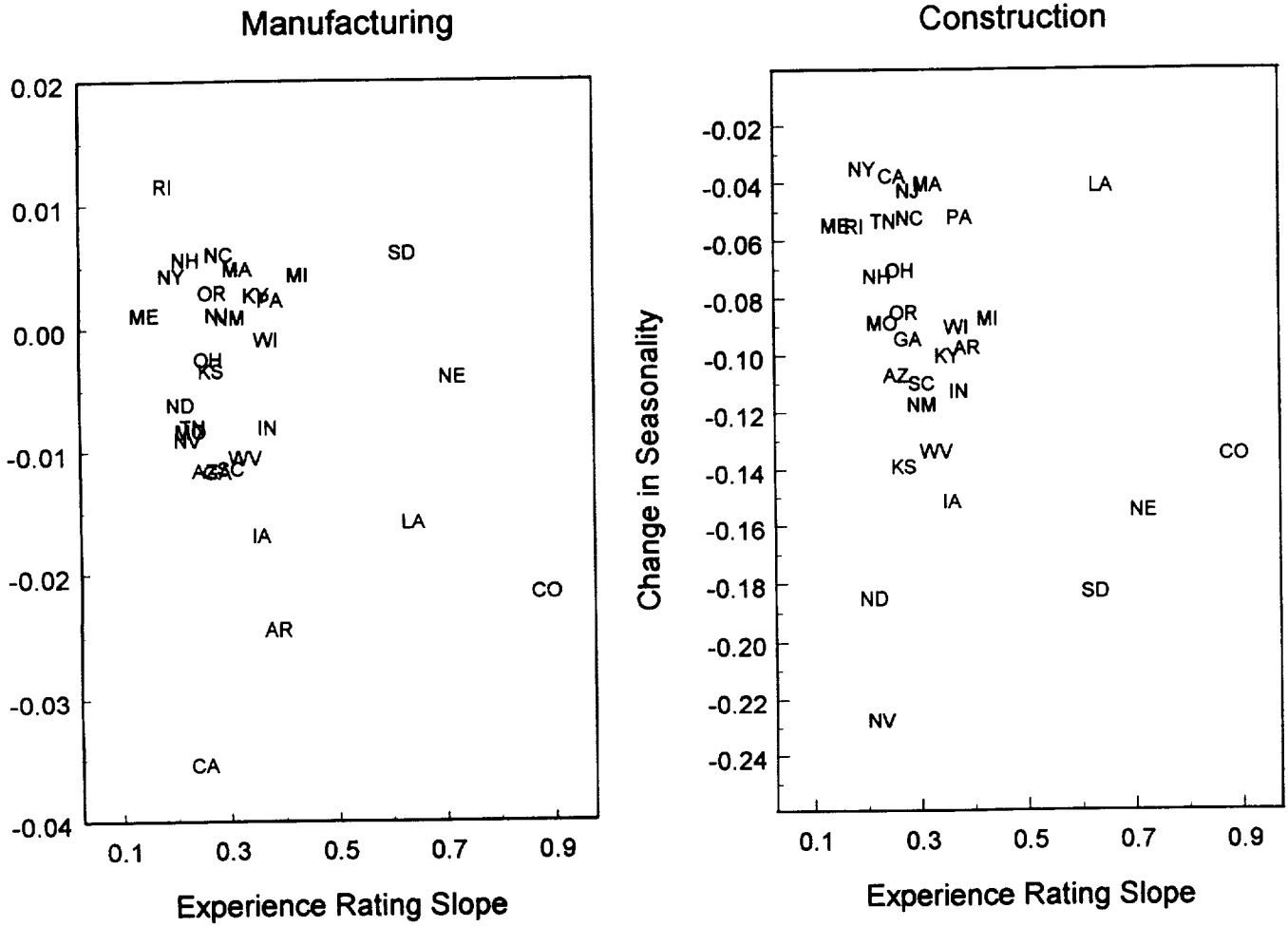




Table 1  
Explaining Unemployment Benefits by State, 1947 to 1969

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Log (average weekly benefits / wage)</i>	<i>Log (maximum benefits / wage)</i>	<i>Log (average weekly benefits)</i>	<i>Log (maximum benefits)</i>	<i>Log (average weekly benefits / wage)</i>	<i>Log (average weekly benefits)</i>
Seasonality in manufacturing, 1909-29	10.1 (2.18)	7.45 (2.98)	10.0 (2.20)	6.18 (2.37)	8.12 (2.13)	7.94 (2.03)
Proportion in (manufacturing + construction), 1930	0.725 (0.186)	0.499 (0.255)	0.751 (0.193)	0.729 (0.206)	1.22 (0.342)	0.710 (0.373)
Seasonality mfg. × prop. (mfg. + const.), interaction	-34.0 (7.64)	-25.5 (10.4)	-33.3 (7.77)	-18.1 (8.34)	-26.9 (7.43)	-27.0 (7.13)
Mean log (average weekly wage), 1947-69			0.933 (0.108)	0.378 (0.116)		0.724 (0.164)
Seasonality in construction, 1929					1.11 (0.433)	0.701 (0.429)
Seasonality construction × prop. (mfg. + const.), interaction					-3.77 (2.33)	-1.76 (2.26)
Log (per capita income), 1929						0.153 (0.0632)
% unionized, 1939						-0.226 (0.132)
Constant	-1.33 (0.0579)	-1.07 (0.0791)	-0.243 (0.0598)	-0.232 (0.0642)	-1.48 (0.0784)	-1.19 (0.360)
R <sup>2</sup>	0.330	0.125	0.741	0.485	0.453	0.834
Root MSE	0.0776	0.106	0.0781	0.0838	0.0717	0.0656
Number of observations	48	48	48	48	48	48

*Notes and Sources:*

Regressions are estimated using ordinary least squares. The continental forty-eight states are included. The seasonality measure is the standard deviation of monthly employment growth rates and is described in the text.

*Dependent variables:*

cols. (1) & (5) *Log (average benefits/wage)*: State mean of log (average state weekly benefits/average state weekly wage) for 1947 through 1969, U.S. Department of Labor, ETA (1996).

col. (2) *Log (maximum benefits/wage)*: State mean of log (maximum state weekly benefits/average state weekly wage) for the twelve years from 1947 to 1969 for which we have data, U.S. Department of Labor, BES (various years). Maximum weekly benefits are for a worker with no dependents.

cols. (3) & (6) *Log (average weekly benefits)*: Coefficients on state dummy variables in a regression of log (average weekly benefits) on a full set of year and state dummies using state-by-year data covering 1947 to 1969.

col. (4) *Log (maximum benefits)*: Coefficients on state dummy variables in a regression of log (maximum benefits) on a full set of year and state dummies for state-by-year data covering the twelve years from 1947 to 1969 for which we have data.

*Independent variables:*

*Seasonality in manufacturing, 1909-29*: Monthly data for manufacturing during 1909-29 from U.S. Bureau of the Census (1933a).

*Proportion in (mfg. + const.), 1930*: Proportion of the state's labor force in manufacturing and construction, U.S. Bureau of the Census (1932).

*Seasonality in construction, 1929*: U.S. Bureau of the Census (1933b).

*Mean log (average weekly wage), 1947-69*: coefficient on state dummies in a regression of log (average weekly wage) on a full set of year and state dummies for state-by-year data covering 1947 to 1969. Average weekly wage data from Department of Labor, ETA (1996).

*Log (per capita income), 1929*: U.S. Department of Commerce, BEA (1984), table 2.

*% unionized, 1939*: Troy and Sheflin (1985), table 7.2.

Table 2  
Explaining Changes in Seasonality, 1909-29 to 1949-69

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Manufacturing</i>			<i>Construction</i>		
Seasonality measure: Estimation technique:	S.d. measure OLS	S.d. measure Median regression	High-low Median regression	S.d. measure OLS	S.d. measure OLS	S.d. measure Median regression
Experience-rating measure, slope, 1951-69	-0.0147 (0.0114)	-0.0305 (0.0173)	-0.0875 (0.0167)		-0.0786 (0.0529)	-0.148 (0.0621)
UI subsidy, 1962-69 (1967 \$) × 10 <sup>-4</sup>				0.0993 (0.0582)		
Constant	0.000197 (0.000429)	0.00251 (0.00359)	0.00399 (0.00694)	-0.0107 (0.00422)	-0.0693 (0.0200)	-0.0389 (0.0232)
R <sup>2</sup> or pseudo R <sup>2</sup>	0.0547	0.0274	0.126	0.0972	0.0706	0.0956
Root MSE	0.0103			0.00867	0.0479	
Number of observations	31	31	31	29	31	31
Mean of dependent variable	-0.00481	-0.00481	-0.00506	-0.00402	-0.0960	-0.0960

*Notes and Sources:*

*Dependent variables:*

Cols. (1), (2), and (4) use the s.d. measure which is the change in the standard deviation in mean monthly employment growth rates for manufacturing from 1909-29 to 1949-69.

Col. (3) uses the high-low measure, which is the difference between the log of employment in the highest and lowest quarters.

Col. (5) and (6) use the s.d. measure for construction from 1929 to 1949-69.

*Independent variables:*

*Experience-rating measure, slope.* U.S. Department of Labor, BES (various years).

$$\text{slope} = (\text{maxres} - \text{minres}) / (\text{maxtax} - \text{mintax}),$$

where *maxtax* = maximum UI tax rate (including firms with negative balances); *mintax* = minimum UI tax rate; *maxres* = maximum reserve ratio on “sloped” part of tax schedule which equals the lowest reserve ratio associated with *mintax*; *minres* = lowest reserve ratio on the “sloped” part of the tax schedule which equals highest reserve ratio associated with *maxtax*.

*UI subsidy, 1962-69:* private communication from Donald Deere, see Deere (1991).

Col. (4) deletes California, which is an outlier. The coefficient of the UI subsidy variable is 0.0537 with a s.e. of 0.0694 if California is included.

**Table 3**  
**Seasonality in U.S. and Canadian Industry, Pre-UI to Post-UI**

	<i>Standard Deviation of Monthly Employment Growth Rates</i>		
	(1)	(2)	(3)
	<i>Pre-UI: 1929</i>	<i>Post-UI: 1947-63</i>	<i>Post - Pre, col. (2) - col. (1)</i>
		<i>Construction</i>	
Canada	0.170	0.085	-0.085
United States	0.211	0.063	-0.148
		<i>Manufacturing</i>	
Canada	0.0268	0.0123	-0.0145
United States	0.0237	0.0079 [0.0103]	-0.0158 [-0.0134]

*Notes and Sources:*

U.S. refers to the 13 states that are on or close to the Canadian border (from West to East: WA, ID, MT, ND, MN, WI, MI, OH, PA, NY, VT, NH, and ME).

*U.S. pre-UI manufacturing employment by month:* U.S. Bureau of the Census (1933a)

*U.S. pre-UI construction employment by month:* U.S. Bureau of the Census (1933b)

*U.S. post-UI manufacturing, construction employment by month:* Department of Labor, Bureau of Labor Statistics LABSTAT database maintained on the Internet at <http://STATS.BLS.GOV>.

*Canadian pre-UI manufacturing, construction employment by month:* Dominion Bureau of Statistics (1956).

*Canadian post-UI manufacturing, construction employment by month:* Dominion Bureau of Statistics (various years, 1955 to 1964)

*Standard Deviation of Monthly Employment Growth Rates:* see text.

Figures in brackets adjust for differences the coverage of the U.S. data between in the pre- and post-UI periods. The pre-UI period covers production workers only, whereas the post-UI period covers all employees. The adjustment, derived from national data for the post-UI period on both groups, produces a ratio of seasonality for production workers to all employees equal to 1.31. Thus the figures in brackets adjust the post-UI data to approximate the coverage in the pre-UI period.