The Cost of Unemployment Insurance

By W. S. Woytinsky*

This is the first of two articles drawn from a technical study of the long-range cost estimates of unemployment insurance,[1] which was undertaken to clarify the implications of the cost factor for the philosophy and policy of unemployment insurance in this country. Though the long-range estimates presented in these articles are not exactly applicable to any particular State system, the concepts and methods and their tentative application to the United States as a whole should be of value to State employment security agencies and to students in the broad field of social security. As in all Bulletin articles, the opinions expressed are those of the author and do not necessarily represent official views of the Social Security Administration.

TO ENSURE a clear understanding of the current functions and role of unemployment insurance in its relation to other forms of social security, long-range estimates of the costs of the unemployment insurance program are important not only when such plans are drafted or amended but also when revisions are considered in the light of changing economic conditions. In the phase of legislative planning, cost estimates serve to determine what a community—a State or the whole Nation—may do in the field of employment security without prejudicing other branches of social security and imposing excessive financial burdens on business, workers, consumers, and taxpayers. After an unemployment insurance program has been established, its cost determines its impact on the economic system and especially on the business cycle. A program that can pour into circulation, during a depression, an additional purchasing power offsetting, say, 5 or 10 percent of the losses in national income has a different role from that of a program which can compensate 50 percent of such losses. Similarly the economic role of a program that costs 1 percent of pay rolls must differ from that of a program costing 3 to 5 percent. A clear understanding of the long-run costs of unemployment insurance is therefore vital for an appraisal of the program's economic role and its effective integration with other measures of social protection.

The estimates presented in the following pages are tentative. The purpose of this article is to enable persons interested in unemployment insurance to form their own judgment on the cost of various unemployment insurance plans under various assumptions, on the possibility of their improvement, and on the best way of combining them with other measures.

Basis of Unemployment Insurance Cost Estimates in the Social Security Act of 1935

The pioneer work in estimating costs of unemployment insurance was performed by the Committee on Economic Security, appointed by President Roosevelt in 1934 to study and make recommendations on legislation to promote economic security for the individual. In its report on the factual background of the unemployment insurance recommendations the Committee described two types of cost estimates:

"In building a scheme of unemployment compensation on an actuarial basis, estimates may take two forms: (1) The rate and duration of benefits may be set, and contributions sufficient to meet the costs of such standards may be levied, or (2) contributions may be set, and benefit rates and duration may be estimated within these financial and other limitations. The first type of estimate is that commonly used in insurance schemes of all kinds; the second is based on the principle that industry can assume only a certain additional cost without suffering undue hardship, resulting, perhaps, in contraction of employment, and that consequently employers' contributions should be limited." [2]

The Committee used the second type of estimate. It assumed that the unemployment insurance system would be financed by contributions amounting to 3, 4, or 5 percent of pay rolls [3] and that weekly benefits would amount to 50 percent of the earnings lost through unemployment up to a weekly maximum of $15. Then it tried to establish the maximum number of weeks for which benefits might be paid, assuming alternative provisions for the waiting period. In other words, in its actuarial computations the contribution rate and waiting period were handled as two *independent variables*, and the maximum duration of benefits in a self-sustaining, financially sound unemployment insurance system was estimated as a mathematical *function* of these variables. Following this procedure, the Committee arrived at the conclusions summarized in table 1.

In line with the same reasoning and assuming a waiting period of 1 week, one would find that the maximum duration of benefits would have approximated 8 to 9 weeks if the contribution rate had been set at 3 percent, 13 weeks at 4 percent, and 18 weeks at 5 percent. A program providing for a maximum duration of benefits of 26 weeks after a waiting period of 1 week would have required, according to this estimate, contributions at a rate of approximately 7 percent of pay rolls.

In the light of these findings, the cost of an effective and at the same

Table 1.—*Estimated maximum weeks of benefits, 1922–33*

Waiting period	Number of weeks by contribution rate of—		
	3 percent	4 percent	5 percent
2 weeks	10	15	21
3 weeks	11	17	24
4 weeks	12	18	26

Source: Committee on Economic Security, *Social Security in America*, p. 87.

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[1] W. S. Woytinsky, *Principles of Cost Estimates in Unemployment Insurance*, 1948.

[2] Committee on Economic Security, *Social Security in America*, 1937, p. 76.

[3] These figures included a 10-percent allowance for administrative expenses.

time self-sustaining unemployment insurance program appeared prohibitive indeed. The Committee tried, therefore, to develop an alternative estimate fitted to a lower standard of financial solvency.

The estimates given above were based on the assumption that the United States would pass through a period of business fluctuation as in 1923–33, with a similar boom and depression and mass unemployment of the same duration and severity as in the early 1930's. The reserves accumulated throughout the first 7 years of such a hypothetical period would finance the benefits to eligible employees throughout the depression.

"It is possible," the report pointed out, "to estimate the maximum duration of benefits on another basis, assuming that all funds contributed during normal years and years of minor depression are expended within those years. This will mean that the emergency of a major depression with its reduced contributions from lowered pay rolls and its increased obligations for the payment of benefits to the eligible unemployed will bankrupt the unemployment compensation fund. Government subsidy or borrowing to restore the solvency of the fund or other Government provisions for the unemployed will then be necessary." [4]

Using this assumption and referring to the period 1923–30, the Committee concluded that a contribution of 3 percent of pay rolls would be sufficient to pay benefits up to 17 weeks if the waiting period was set at 2 weeks, up to 19 weeks with a 3 weeks' waiting period, and up to 22 weeks if benefit payments started 4 weeks after the termination of employment. The maximum duration of benefits for a system with a waiting period of 1 week and a contribution rate of 3 percent would have amounted, according to this estimate, to 14 or 15 weeks.[5]

Experience has revealed that these estimates were extremely "conservative" from the point of view of the insurance carrier. In fact, the Committee assumed a very high level of unemployment and a very unfavorable pattern of distribution of unemployed workers by duration of unemployment intervals. The source of the bias was in the statistics at the Committee's disposal and to some extent in their interpretation.

The computation relied essentially on a hypothetical model of distribution of employment and unemployment in covered industries in each year from 1923 to 1933. To develop this model, total unemployment in the United States as estimated by experts was distributed between the "compensable" and "noncompensable" labor force. In accordance with the industrial composition of the two sections of the labor market, the largest volume of unemployment was assigned to the labor force that would be covered by the unemployment insurance system. It was estimated that, on the basis of occupation and size-of-firm requirements, only 43 percent of the employed gainful workers but as much as 72 percent of the unemployed throughout the country would be covered by unemployment insurance.[6] The representativeness of the period 1923–33 as a typical cycle is open to question. However, even if we assume that the periods 1923–30 and 1923–33 are representative, it is not likely that the percent of unemployed in the covered group would be so much higher than the percent of employed. This consideration would seem to explain why the cost estimates prepared by the Committee have been too high.

Despite these shortcomings, the estimates used by the Committee had two unquestionable merits: as has been said, they represented pioneer work in a field that had not been explored before in this country; and they stressed the necessity of a cautious approach to the new branch of social security in the early phase of operation.

Table 2.—*Financial experience of State unemployment insurance systems in the United States, 1938–46*

[Dollar amounts in millions]

Item	1938–46	1938	1939	1940	1941	1942	1943	1944	1945	1946
Average rate of employer contributions (percent)	-------	2.7	2.7	2.7	2.6	2.2	2.1	1.9	1.7	1.5
Taxable wages [1]	$412,873	$25,665	$28,411	$30,107	$38,677	$49,721	$59,034	$60,655	$58,512	$62,091
Collections [2]	$9,359	$819	$825	$854	$1,006	$1,139	$1,325	$1,317	$1,162	$912
Interest	$655	$21	$32	$42	$53	$68	$82	$102	$126	$129
Benefit payments	$3,712	[3] $394	[3] $429	$519	$344	$344	$79	$62	$446	$1,095
Reserve funds on December 31	-------	$1,110	$1,538	[4] $1,187	[5] $2,524	$3,387	$4,215	$6,072	$6,914	$6,860

[1] Before 1940, most States taxed an employer's total pay roll; beginning 1940, most States taxed only the first $3,000 in wages paid by an employer to an employee.

[2] Collections during year are based on taxable wages through September of preceding year; collections also include penalties, delinquencies, and employee contributions.

[3] Only 23 States paid benefits throughout 1938; 8 additional States paid benefits during part of 1938. 49 States paid benefits throughout 1939; the last 2 began payments in July 1939.

[4] Excludes $98 million transferred to the railroad unemployment insurance program.

[5] Excludes $8 million transferred to the railroad unemployment insurance program during the year.

Actual Cost of Unemployment Insurance, 1938–46

From the point of view of costs, the first decade of operation of unemployment insurance in this country appears as a period of experimenting with various eligibility provisions, various benefit formulas, and various contribution rates. In all States the statutory provisions have been revised and the contribution rates changed time and again. The prevailing tendency in the revision of benefit formulas has been to give more protection to insured workers. The waiting period has been shortened and the maximum duration of benefit payments increased. At the same time, contribution rates have been reduced in conformity with the principle of experience rating, and requirements for eligibility have been changed.

In terms of cost, the development of the system since its inauguration may be described as a trend toward better insurance at reduced cost. The two tendencies are not contradictory. The experience of employers in a period of rising employment entitled them to a reduction in contribution rates, and at the same time one State after another concluded

[4] Ibid., p. 88.

[5] All these computations refer to the United States as a whole.

[6] Ibid., p. 79.

that its unemployment insurance program could be liberalized without additional contributions. Apart from political and ideological factors, this development of State unemployment insurance programs was controlled by the upward trend in economic conditions.

The payment of unemployment benefits started in 30 States during 1938, at the low point of the recession. From the point of view of benefit costs, therefore, the system was put to a severe test in the first year of operation. In single States, current outlays exceeded collections and the problem of solvency was among the principal preoccupations of the new agencies. Very soon, however, as the recovery progressed and the defense program started, the load of benefits began to decline. This development was interrupted temporarily in 1940, in the initial phase of conversion of industries to military needs, but the set-back was mild and of short duration. The war boom had developed before the country entered the shooting war. In 1942, shortages in the labor force became the pivotal problem of the labor market.

Thereafter the unemployment insurance system operated under conditions of more-than-full employment. It had more than 3 years to prepare itself for the reconversion, and it entered the new emergency with considerable experience, greatly liberalized benefit formulas, and huge reserves accumulated during the war. The load of reconversion unemployment did not turn out to be overwhelming. And since it was shouldered partly by the provisions of the Servicemen's Readjustment Act of 1944, the State unemployment insurance programs had no difficulty in meeting their part of the costs. Most States could cover their outlays by current contributions, although the rates had been reduced during the war on the basis of experience rating. Other States paid out in benefits a little more than the current contributions and interest on their reserve funds, and they met the difference from those funds. This operation did not weaken the financial stability of the respective funds, however. It appears, rather, that at the end of the reconversion their financial status was stronger than before. In 1944 or 1945 the State agencies were facing a vague but imminent danger—a postwar unemployment of unpredictable severity that might threaten the solvency of their reserve funds. When the danger was past, some of the State agencies emerged from the trial with increased reserves and others with slightly reduced funds, but all were freed from the potential liability of a heavy volume of reconversion unemployment.

The financial experience of the unemployment insurance system during those years is summarized for the United States as a whole in table 2. In the 9-year period 1938–46, State unemployment insurance agencies collected in contributions approximately $9.4 billion, earned in interest an additional $655 million, and spent for benefits $3.7 billion, about 40 percent of the total amount collected or 0.9 percent of taxable wages.

This ratio of benefits to taxable wages, however, does not represent the typical average cost of unemployment insurance throughout a business cycle or a longer period. The surveyed period is no more typical than that from 1922 to 1933, on which the Committee on Economic Security based its actuarial estimates. Although the period 1938–46 included some years of relatively high benefit loads (during 1938 and during the conversion and reconversion periods), it also included the extremely low benefit experience of the war period. All in all, the average cost of unemploy-

Table 3.—*Hypothetical number of unemployed persons in specified compensable-duration intervals, per 100,000 workers, assuming various unemployment and separation rates*

Unemployment as percent of labor force	Separation rate per 4 weeks as percent of employed labor force							
	1	2	3	4	5	6	7	8
	Compensable-duration interval of 2 to 16 weeks							
1	645	567	502	449	410	380	355	335
2	1,232	1,291	1,219	1,136	1,063	1,000	945	899
3	1,630	1,930	1,939	1,872	1,792	1,710	1,635	1,566
4	1,902	2,454	2,593	2,586	2,527	2,448	2,365	2,286
5	2,091	2,879	3,168	3,248	3,235	3,180	3,106	3,026
10	2,495	4,048	5,028	5,651	6,041	6,280	6,416	6,483
15	2,560	4,453	5,863	6,919	7,711	8,306	8,751	9,079
20	2,516	4,546	6,187	7,524	8,613	9,501	10,227	10,820
25	2,420	4,480	6,234	7,735	9,019	10,120	11,065	11,876
30	2,298	4,329	6,114	7,698	9,095	10,336	11,433	12,411
35	2,161	4,117	5,889	7,490	8,944	10,261	11,458	12,554
40	2,016	3,872	5,584	7,168	8,628	9,975	11,223	12,374
45	1,860	3,604	5,236	6,759	8,191	9,527	10,786	11,963
50	1,700	3,312	4,840	6,288	7,661	8,960	10,191	11,358
	Compensable-duration interval of 2 to 22 weeks							
1	686	579	502	449	410	380	355	335
2	1,416	1,374	1,260	1,157	1,075	1,007	949	902
3	1,966	2,146	2,067	1,950	1,841	1,743	1,659	1,583
4	2,368	2,824	2,847	2,758	2,645	2,532	2,425	2,330
5	2,664	3,407	3,573	3,546	3,454	3,342	3,229	3,119
10	3,354	5,182	6,186	6,731	7,008	7,127	7,152	7,119
15	3,515	5,906	7,543	8,667	9,437	9,959	10,305	10,523
20	3,493	6,148	8,174	9,729	10,921	11,834	12,451	13,064
25	3,384	6,137	8,382	10,219	11,722	12,955	13,965	14,793
30	3,229	5,981	8,323	10,327	12,039	13,505	14,759	15,836
35	3,048	5,728	8,089	10,168	12,003	13,624	15,055	16,326
40	2,848	5,414	7,728	9,819	11,707	13,412	14,954	16,349
45	2,635	5,058	7,283	9,329	11,212	12,943	14,540	16,010
50	2,418	4,670	6,777	8,748	10,601	12,324	13,934	15,438
	Compensable-duration interval of 2 to 28 weeks							
1	701	579	502	449	410	380	355	335
2	1,515	1,404	1,269	1,161	1,077	1,008	950	902
3	2,186	2,247	2,115	1,973	1,853	1,749	1,661	1,584
4	2,706	3,031	2,960	2,821	2,681	2,554	2,439	2,339
5	3,105	3,732	3,778	3,674	3,534	3,394	3,263	3,142
10	4,108	6,067	6,996	7,413	7,562	7,571	7,506	7,401
15	4,394	7,143	8,871	9,955	10,624	11,024	11,246	11,347
20	4,414	7,576	9,851	11,493	12,676	13,524	14,011	14,544
25	4,306	7,656	10,270	12,315	13,914	15,167	16,144	16,905
30	4,129	7,523	10,320	12,536	14,534	16,109	17,410	18,486
35	3,910	7,253	10,117	12,573	14,681	16,493	18,049	19,390
40	3,662	6,890	9,736	12,248	14,469	16,432	18,167	19,701
45	3,397	6,460	9,222	11,721	13,976	16,015	17,859	19,528
50	3,113	5,973	8,610	11,033	13,263	15,312	17,197	18,935

ment insurance in this period was probably lower than it would have been through a typical business cycle, with an unemployment rate ranging from 5 percent at the peak of prosperity to 15 percent at the trough of the depression. Moreover, as was mentioned before, the State unemployment insurance programs underwent important changes in the 9 years under consideration. Therefore, if 0.9 percent of taxable wages were accepted as the average cost of unemployment insurance from 1938 to 1946, that rate would be of little use in cost projections for various unemployment insurance programs — for example, one providing for a maximum of 26 weeks of benefit payments after a waiting period of 1 week.

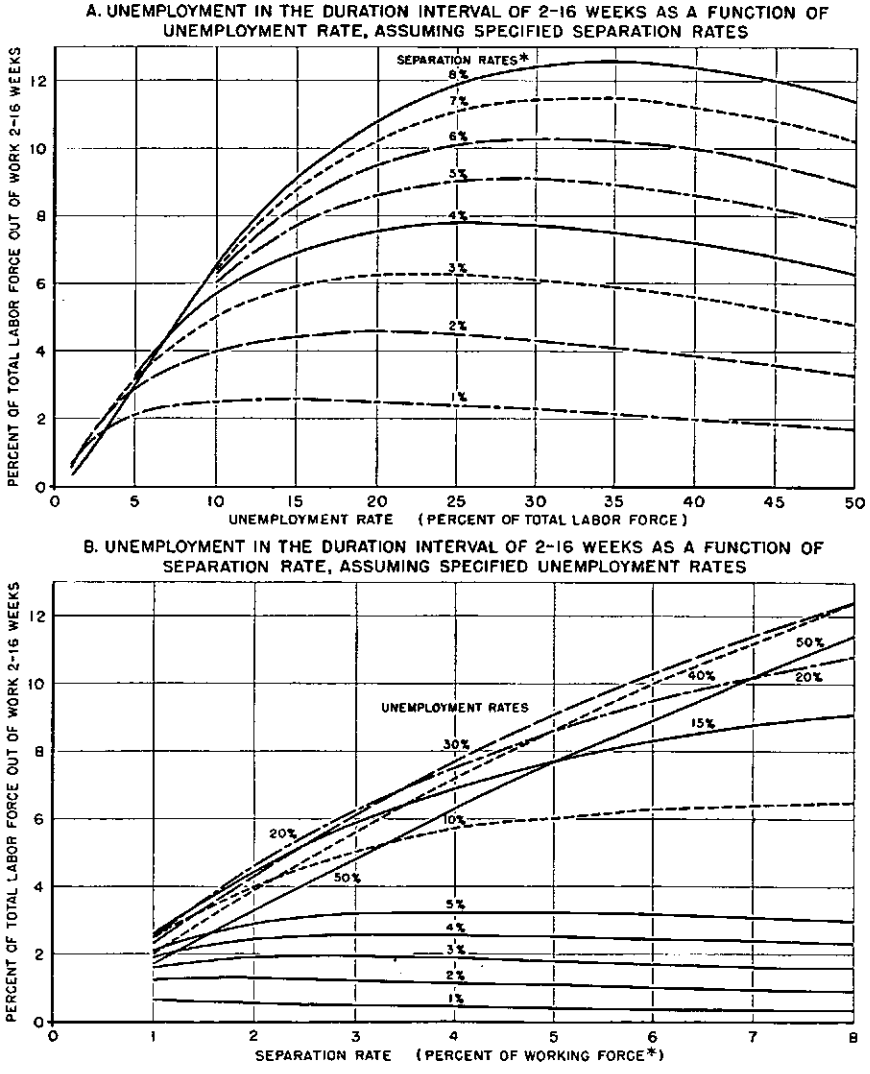
Thus the system's operating experience since its inauguration does not solve the problem of the long-range cost of the program, with definite specifications as to the duration of benefit payments, the benefit formulas, and the like. This experience seems to indicate only that the original cost estimates were too high and that an effective program would cost much less than 3 percent of pay rolls (or 2.7 percent exclusive of administrative costs). The next step, therefore, is to analyze what its precise cost may be under various conditions.

Principles of Long-Range Cost Estimates of Unemployment Insurance

For a long-range cost estimate, the operation of an unemployment insurance program should be examined under hypothetical, deliberately simplified conditions of employment, labor turn-over, withdrawal of workers from the labor market, entrance of new workers, and so on. This approach might be described as *mathematical* even though it makes no use of mathematical language or symbols. For the benefit of persons primarily interested in everyday activities of unemployment insurance, its results may be presented in illustrative tables as simple as a multiplication table. Such illustrative tables would show what would be the volume of compensable unemployment, benefit amount, or some other characteristic of the program as a result of a combination of definite factors, precisely as a multiplication table shows the product of any combination of two multipliers.

The estimates start from the assumptions that benefits are paid to individuals who have been laid off or who quit their jobs with good cause; that the benefits are paid on a weekly basis, in accordance with previous employment and earnings, and after a 1-week waiting period; and that they are restricted to a definite number of weeks per year. It is immediately recognized that the benefit load of a program of this type is controlled not by the aggregate volume of unemployment but by unemployment among definite groups of workers in definite compensable-duration intervals. This type of unemployment does not necessarily increase with the growth of the total volume of unemployment. For example, members of a family who start to look for work during a depression because the usual breadwinner is unemployed are not eligible for benefits. In the advanced phase of a depression, with a rising tide of unemployment, the number of individuals who have exhausted their benefit rights may increase more

Chart 1.—*Hypothetical percent of total labor force in the compensable duration-of-unemployment interval of 2 to 16 weeks, assuming specified separation and unemployment rates*



*Percent of employed labor force per 4 weeks.

rapidly than the number of newly laid-off workers who are eligible for benefits.

Still more important in estimating the cost of unemployment insurance is another factor. Under the impact of a long spell of heavy unemployment, labor turn-over may become so slow that a rigid segregation develops between employed workers and those out of work. In this event, hard-core unemployment will grow, while the number of persons in compensable-duration intervals drops to a negligible fraction of the total volume of unemployment. Theoretically, benefit loads of an unemployment insurance system may be at a low point in the midst of a severe depression. On the other hand, industrial shifts may cause considerable unemployment in compensable-duration intervals in a period of improving business conditions, as was the case during the conversion of industry in 1940–41 and during 1946–47, when there was practically full employment.

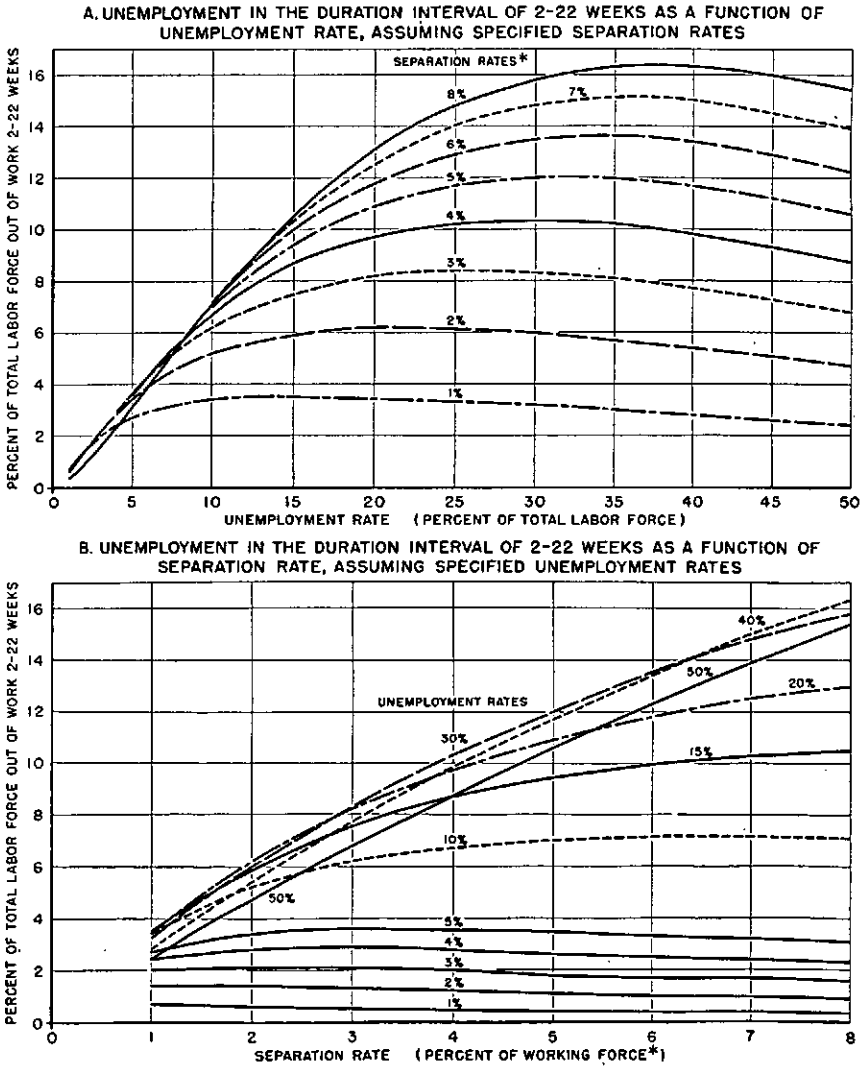
In general terms, the size of compensable unemployment is controlled not by the level of total unemployment but by the fresh unemployment —essentially by the number of effective separations,[1] on the one hand, and the chance of the separated worker's being hired, on the other. This chance depends, in turn, upon the ratio of the number of openings (accessions) to that of applicants, including the newly separated workers. The number of openings is in balance with that of separations if employment is steady, and differs from the number of separations if employment is growing or declining. In general terms, the chance of reemployment for separated workers is therefore determined by three factors: the rate of separation, the level of unemployment, and the variation in this level.

When, however, compensable unemployment under a definite unemployment insurance program is described as a function of the rate of effective separation and the level of unemployment, one should remember that such concepts as "separation rate," "unemployment rate," "chance of reemployment," and the like have a definite meaning only for a more or less homogeneous labor force. There is a considerable difference in the load of compensable unemployment when 10 percent of the workers, in all industries and all sections of the labor force, are unemployed, and when there is practically no unemployment in half of the labor market and a 20-percent unemployment rate is characteristic of the other half.

Therefore, after a labor-market model related to *average* unemployment and labor turn-over rates has been established, the effects of the heterogeneity of the labor market and disparity in unemployment and separation rates for different worker groups should be taken into account.

Variation of compensable unemployment in a uniform labor market is studied on a hypothetical, simplified model. As the first step in the computation it is assumed that the level of unemployment is *steady*, so that, in each 4-week period, the same number of workers are separated from jobs and find their way back to employment. No attention is paid in this phase of analysis to changes in the composition of the labor force, entrance into and withdrawal from cov-

Chart 2.—*Hypothetical percent of total labor force in the compensable duration-of-unemployment interval of 2 to 22 weeks, assuming specified separation and unemployment rates*



*Percent of employed labor force per 4 weeks.

[1] A separation that leads to the filing of an initial claim is called an "effective" separation; it includes some voluntary quits but excludes cases in which individuals shift from one job to another.

ered employment, differences in firing and hiring probabilities for various groups of workers, and so forth. All the complexity of the turn-over of employment and unemployment is reduced to three variables: rate of unemployment, rate of effective separation, and maximum duration of compensable unemployment as provided by the benefit formula. On this model the impact of each of these variables upon the volume of compensable unemployment is studied.

Next, the effect of *variations* in the level of employment upon the volume of compensable unemployment is examined. The model of labor turn-over remains the same as before, but the assumption of steady employment is replaced by that of a declining or rising unemployment.

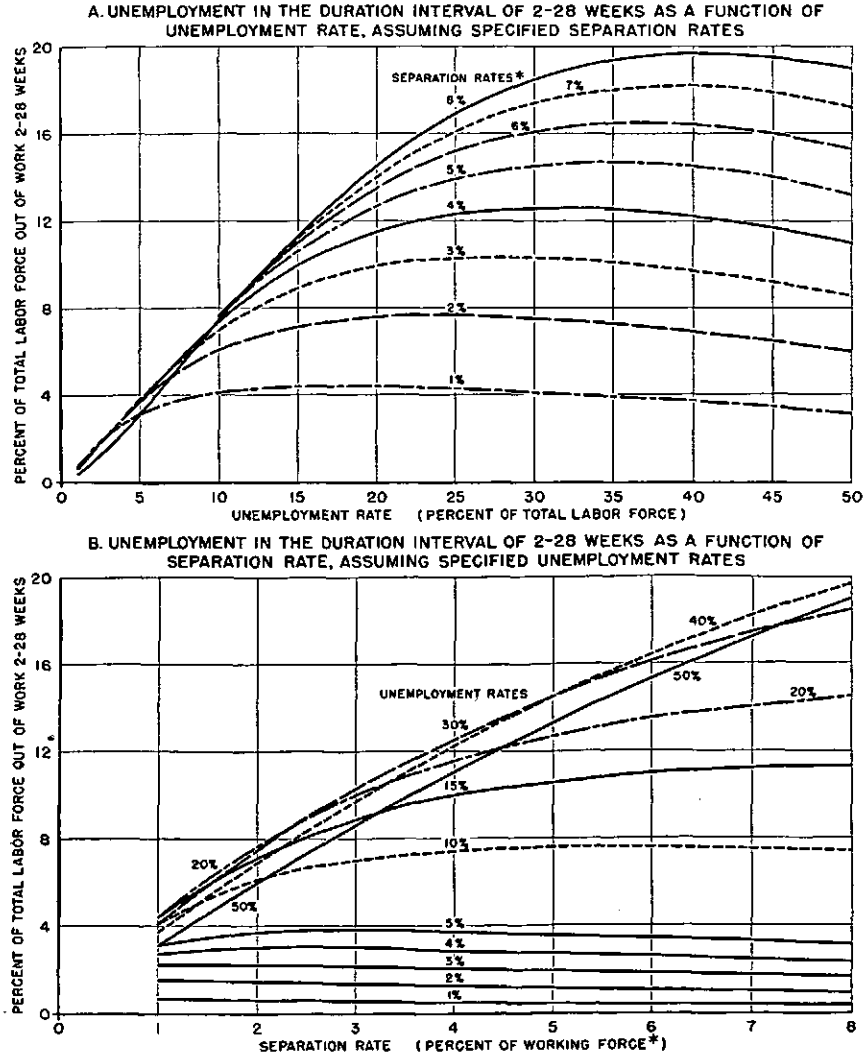
As the third step in the analysis, additional factors are introduced, and the covered labor force is examined as a *varying* universe, with workers entering and leaving the labor market and shifting between covered and noncovered industries.

The Simplest Model: Uniform Labor Market, Steady Labor Force, Steady Employment

The simplest way to estimate the volume of compensable unemployment under definite labor-market conditions is to start from the number of effective separations in the preceding period of time. If the number of workers laid off, say, in the last 6 or 7 months and the speed of unemployment turn-over during this period are known, it is easy to estimate the number of unemployed workers in specified duration intervals. The estimate is based on the assumption that during each 4-week period a definite proportion of unemployed individuals will be reemployed, that an equal proportion of the remaining unemployed persons will find their way back in the next 4-week period, and so on. Since the accession and separation rates are assumed to be equal, they can be used interchangeably. The probability of a worker's being hired during a 4-week period and the probability of his remaining out of work throughout the period are determined by the unemployment rate and separation (or accession) rate for a 4-week period. From such probabilities, the proportion of laid-off workers staying out of work for 4 weeks or more, 8 weeks or more, 12 weeks or more, etc., and for 2 weeks or more, 6 weeks or more, 10 weeks or more, etc., can be determined.[8] Then the probable number of persons unemployed in the compensable-duration interval[9] is computed.

The results of these computations are summarized in table 3. The compensable-duration intervals of 2 to 16 weeks, 2 to 22 weeks, and 2 to 28 weeks assume a waiting period of 1 week and a compensable-duration period of 14, 20, and 26 weeks, respectively. With a 1-week waiting period, a worker would not receive a benefit payment unless he remained unemployed during the waiting period and during the first compensable week—or for 2 weeks. With a 14-week statutory duration period, a worker unemployed through the fifteenth week, that is, up to but not including the sixteenth week, would be in compensable status. No allowance is made here for partial

Chart 3.—*Hypothetical percent of total labor force in the compensable duration-of-unemployment interval of 2 to 28 weeks, assuming specified separation and unemployment rates*



*Percent of employed labor force per 4 weeks.

[8] W. S. Woytinsky, op. cit., appendix A, pp. 151–153.

[9] Unemployment for longer than the waiting period but less than the statutory maximum duration plus the waiting period.

or part-total unemployment; it is assumed that only full weeks of unemployment are compensated.

Table 3 may be read either vertically, from the top to the bottom of each column, or horizontally. In the first case the hypothetical number of persons unemployed in a certain duration interval is considered as a function of the varying unemployment level, assuming a steady separation rate. In the second case it is handled as a function of the varying separation rate, assuming a given level of unemployment. The two approaches are followed in charts 1, 2, and 3. Their upper panels correspond to the vertical reading of table 3, the lower panels to the horizontal reading. As table 3 and charts 1–3 show, the volume of unemployment in definite duration intervals does *not* necessarily increase with unemployment and separation rates.

If the separation rate is very low—for example, 1 percent of the working force per 4 weeks—and the unemployment rate is high—say, more than 20 percent of the labor force—the chance that a separated worker will find a job during the waiting period is negligible. Nearly all separated workers pass, in this case, through the stage of compensable unemployment, and most of them are likely to exhaust their benefit rights before they find a new job. If the separation rate remains steady, the volume of compensable unemployment declines with the rise of the unemployment rate beyond a definite limit. In fact, figures in the first column, in all three panels of table 3, increase as the rate of unemployment goes up from 1 percent to 15 or 20 percent, and decline thereafter. If the separation rate is higher—for example, 2 or 3 percent per 4 weeks—the turning point comes somewhat later, but all curves in the upper panels of charts 1, 2, and 3 are bell-shaped.

On the other hand, the horizontal reading of the table shows that the increasing turn-over rate affects the volume of unemployment in the compensable-duration intervals in different ways, depending on the level of total unemployment. If unemployment is negligible—for example, 1 or 2 percent—the volume of unemployment in compensable-duration intervals declines as the separation rate increases. This movement is shown in panel B of the charts by the descending slope of the curves corresponding to unemployment rates of 1 and 2 percent. If unemployment is very severe—for example, 40 to 50 percent—the volume of compensable unemployment increases almost in direct proportion to the separation rate.

In general, compensable unemployment increases with the separation rate when unemployment is severe, but declines with an increase in the separation rate at very low levels of unemployment. On the other hand, compensable unemployment increases along with the unemployment rate for all separation rates shown in table 3 until it reaches a maximum, beyond which it declines as the unemployment level increases. The maximum amount of compensable unemployment is reached at higher levels of unemployment, however, as the separation rate increases.

Assuming steady unemployment, steady turn-over of labor, and perfect homogeneity of the covered labor force, the theoretical maximum limit of unemployment in definite duration intervals may be estimated by means of interpolation. The limit is marked by the highest point of the curves in the upper panels of the three charts. Thus it is found that, if there are 8 separations per 100 employed workers per 4 weeks, the number of persons unemployed for 2 or more weeks and up to but not in-

Table 4.—*Hypothetical ratio (percent) of unemployment in specified compensable-duration intervals to total unemployment, assuming various unemployment and separation rates*

Unemployment as percent of labor force	Separation rate per 4 weeks as percent of employed labor force							
	1	2	3	4	5	6	7	8
	Compensable-duration interval of 2 to 16 weeks							
1	64.5	56.7	50.2	44.9	41.0	38.0	35.5	33.5
2	61.6	64.6	61.0	56.8	53.2	50.0	47.3	45.0
3	54.3	64.3	64.6	62.4	59.7	57.0	54.5	52.2
4	47.6	61.4	64.8	64.7	63.2	61.2	59.1	57.2
5	41.8	57.6	63.4	65.0	64.7	63.6	62.1	60.5
10	25.0	40.5	50.3	56.5	60.4	62.8	64.2	64.8
15	17.1	29.7	39.1	46.1	51.4	55.4	58.3	60.5
20	12.6	22.7	30.9	37.6	43.1	47.5	51.1	54.1
25	9.7	17.9	24.9	30.9	36.1	40.5	44.3	47.5
30	7.7	14.4	20.4	25.7	30.3	34.5	38.1	41.4
35	6.2	11.8	16.8	21.4	25.6	29.3	32.7	35.9
40	5.0	9.7	14.0	17.9	21.6	24.9	28.1	30.9
45	4.1	8.0	11.6	15.0	18.2	21.2	24.0	26.6
50	3.4	6.6	9.7	12.6	15.3	17.9	20.4	22.7
	Compensable-duration interval of 2 to 22 weeks							
1	68.6	57.9	50.2	44.9	41.0	38.0	35.5	33.5
2	70.8	68.7	63.0	57.9	53.8	50.4	47.5	45.1
3	65.5	71.5	68.9	65.0	61.4	58.1	55.3	52.8
4	59.2	70.6	71.2	69.0	66.1	63.3	60.6	58.3
5	53.3	68.1	71.5	70.9	69.1	66.8	64.6	62.4
10	33.5	51.8	61.9	67.3	70.1	71.3	71.5	71.2
15	23.4	39.4	50.3	57.8	62.9	66.4	68.7	70.2
20	17.5	30.7	40.9	48.6	54.6	59.2	62.3	65.3
25	13.5	24.5	33.5	40.9	46.9	51.8	55.9	59.2
30	10.7	19.9	27.7	34.4	40.1	45.0	49.2	52.8
35	8.7	16.4	23.1	29.1	34.3	38.9	43.0	46.6
40	7.1	13.5	19.3	24.5	29.3	33.5	37.4	40.9
45	5.9	11.2	16.2	20.7	24.9	28.8	32.3	35.6
50	4.8	9.3	13.6	17.5	21.2	24.6	27.9	30.9
	Compensable-duration interval of 2 to 28 weeks							
1	70.1	57.9	50.2	44.9	41.0	38.0	35.5	33.5
2	75.8	70.2	63.5	58.1	53.9	50.4	47.5	45.1
3	72.9	74.9	70.5	65.8	61.8	58.3	55.4	52.8
4	67.7	75.8	74.0	70.5	67.0	63.9	61.0	58.5
5	62.1	74.6	75.6	73.5	70.7	67.9	65.3	62.8
10	41.1	60.7	70.0	74.1	75.6	75.7	75.1	74.0
15	29.3	47.6	59.1	66.4	70.8	73.5	75.0	75.6
20	22.1	37.9	49.3	57.5	63.4	67.6	70.1	72.7
25	17.2	30.6	41.1	49.3	55.7	60.7	64.6	67.6
30	13.8	25.1	34.4	41.8	48.4	53.7	58.0	61.6
35	11.2	20.7	28.9	35.9	41.9	47.1	51.6	55.4
40	9.2	17.2	24.3	30.6	36.2	41.1	45.4	49.3
45	7.5	14.4	20.5	26.0	31.1	35.6	39.7	43.4
50	6.2	11.9	17.2	22.1	26.5	30.6	34.4	37.9

cluding 16 weeks may reach somewhat more than 12.5 percent of the labor force when the unemployment rate is 35 percent; the number of persons unemployed for 2 to 22 weeks may be as high as 16.4 percent when the unemployment rate is 38 percent; and the number of persons out of jobs for 2 to 28 weeks may rise to 19.7 percent when 41 percent of all workers are unemployed. It should be kept in mind that in these estimates the term "separation" applies only to such terminations from employment as may result in compensable unemployment, that is, to involuntary separations and quits for good cause. A rate of 8 percent per 4 weeks for such separations suggests an extremely rapid turn-over of labor, such as may develop temporarily in some sector of the labor market, but such a rate is utterly improbable for the total covered labor force and for a comparatively long period, especially a period of heavy unemployment. For moderate separation rates—for example, 3 percent per 4 weeks—the maximum limits of compensable unemployment are found to be 6.25 percent, 8.38 percent, and 10.35 percent of the total labor force for the duration intervals of 2 to 16 weeks, 2 to 22 weeks, and 2 to 28 weeks.

In a cost analysis it may be desirable to visualize what proportion of the total volume of unemployment is likely to fall within specific compensable-duration intervals, assuming various rates of unemployment and labor turn-over. For the hypothetical case of a steady unemployment rate, an even flow of separations, and a perfectly homogeneous labor force, the question is answered by table 4, derived from table 3.

In interpreting table 4, it should be kept in mind that the proportion of waiting-period unemployment is correlated positively with the rate of separation and negatively with the level of unemployment, while the proportion of long-duration unemployment to the total volume of unemployment is correlated negatively with the speed of labor turn-over and positively with the total volume of unemployment. Therefore, under the assumed conditions, the proportions of waiting-period unemployment and of long-duration unemployment tend to vary in opposite directions. As a rule the proportion of claimants in the waiting period is small in comparison with that of unemployed persons who have exhausted their benefit rights. Therefore, the proportion of unemployment in compensable-duration intervals tends to decline when turn-over rates are going down or unemployment rates are going up. There are, however, conspicuous deviations from this general rule.

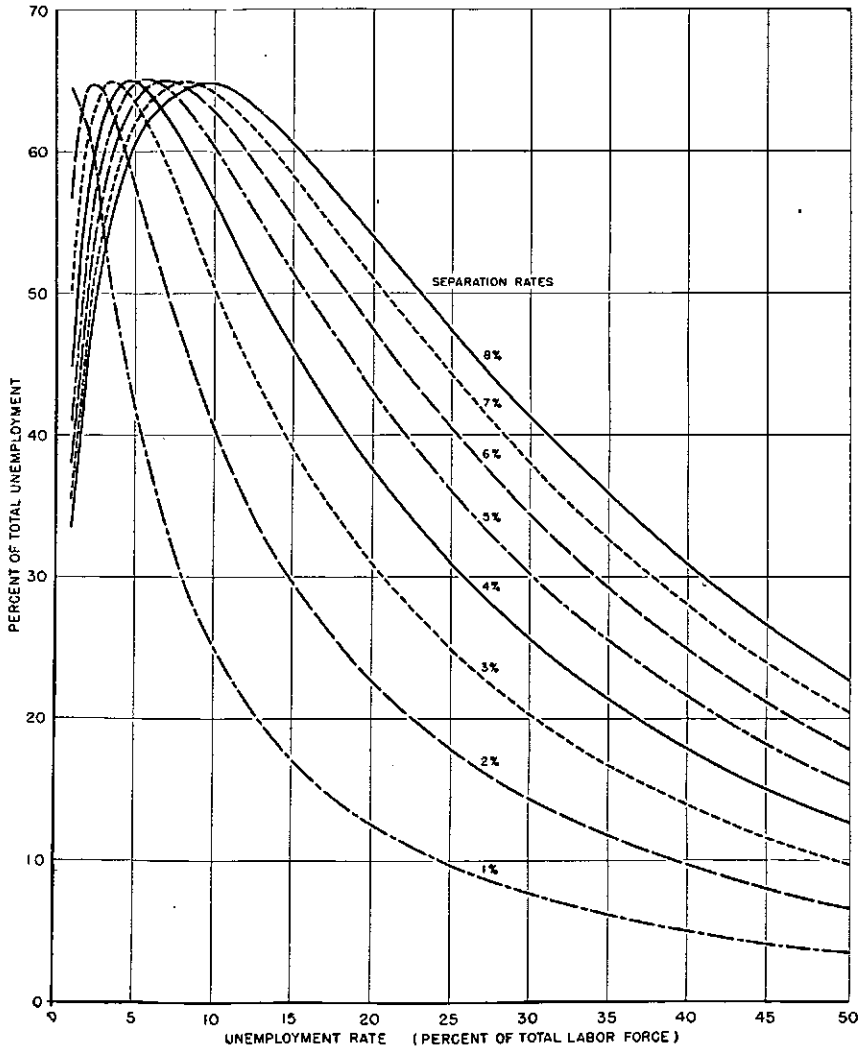
Under conditions of moderately heavy unemployment—say, 5 to 10 percent—and moderate labor turn-over—say, 2 to 4 percent per 4 weeks—the proportion of compensable unemployment to total unemployment varies in a comparatively narrow range:

Duration	*Percent*
2 to 16 weeks	40 to 65
2 to 22 weeks	50 to 70
2 to 28 weeks	60 to 75

Under conditions of heavy unemployment—say, 20 to 25 percent—and a similar speed (2 to 4 percent) of labor turn-over, the ranges will be, for the three duration intervals, 20 to 40 percent, 25 to 50 percent, and 30 to 60 percent, respectively.

Chart 4 shows the hypothetical ratios of the number of persons out of work for 2 to 16 weeks to total unemployment, assuming separation rates of 1 to 8 percent per 4 weeks and

Chart 4.—*Hypothetical number of unemployed persons in the compensable-duration interval of 2 to 16 weeks as a percent of total unemployment, assuming specified separation* and unemployment rates*



*Percent of employed labor force per 4 weeks.

unemployment rates ranging from 1 to 50 percent; the chart is a plot of the data in the upper section of table 4. It will be noticed that for all separation rates the maximum ratio of compensable to total unemployment is the same—approximately 65 percent. This maximum corresponds to an unemployment rate of 1 percent when the separation rate is somewhat less than 1 percent, and to unemployment of 10 percent when the separation rate is 8 percent.

The proportion of compensable unemployment to total unemployment is the best single measure of the extent to which loss in earnings caused by unemployment is being compensated by unemployment insurance. Under a definite benefit formula this ratio is determined by the combination of two variables: level of unemployment and rate of labor turn-over. In a more general sense, the uniform maximum duration of benefit payments provided by the program—14 weeks, 20 weeks, and 26 weeks in the three panels of tables 3 and 4—may be regarded as the third variable.

Under the same economic conditions, compensable unemployment—whether measured in relation to the total labor force, to employment, or to total unemployment — increases with the duration interval, as a general rule. A clearer picture of the effect of the different provisions for maximum duration on operation of the program may be obtained from a comparison of the respective items in the three panels of table 3.

When the unemployment rate is high—say, over 25 percent—and labor turn-over comparatively low — not more than 3 percent per 4 weeks—so that a separated worker has only a negligible chance of finding a new job, the volume of unemployment in a compensable-duration interval is almost proportional to the number of weeks in this interval, that is, to the statutory maximum duration of benefit payments. This is, however, a marginal case, characteristic of a deep depression. Under conditions of moderately severe unemployment—say, 10 percent—and a separation rate of 2 to 4 percent, the interval of 2 to 22 weeks includes approximately 20 to 30 percent more unemployed workers than the interval of 2 to 16 weeks, and the interval of 2 to 28 weeks includes approximately 30 to 50 percent more unemployed workers than the interval of 2 to 16 weeks.

If unemployment is light—below 5 percent—and the labor turn-over rate is comparatively high—5 percent or more per 4 weeks—the volume of compensable unemployment does not increase appreciably with the increase in the maximum duration of benefit payments.

Table 5.—*Hypothetical annual number of unemployed persons in specified compensable-duration intervals, per 100,000 workers, assuming two different separation rates with respect to the employed labor force and various unemployment rates at beginning and end of year*

Unemployment at beginning of year as percent of labor force	Unemployment at end of year as percent of labor force						
	2	5	10	15	20	25	30
	Separation rate: 4 percent of employed labor force per 4 weeks						
	Duration interval of 2 to 16 weeks						
2	1,150	2,280	3,870	5,240	6,340	7,260	8,040
5	2,190	3,200	4,660	5,880	6,830	7,600	8,230
10	3,450	4,340	5,570	6,510	7,260	7,860	8,380
15	4,330	5,100	6,030	6,790	7,420	7,950	8,290
20	4,890	5,510	6,280	6,920	7,440	7,860	8,150
25	5,290	5,760	6,420	6,950	7,420	7,730	7,980
30	5,540	5,890	6,480	6,940	7,330	7,570	7,790
	Duration interval of 2 to 22 weeks						
2	1,170	2,360	4,320	6,090	7,630	8,980	10,110
5	2,340	3,510	5,350	6,970	8,370	9,550	10,570
10	3,980	4,980	6,560	7,930	9,090	10,080	10,900
15	5,160	6,030	7,350	8,480	9,460	10,270	10,970
20	5,940	6,720	7,860	8,820	9,600	10,280	10,910
25	6,400	7,170	8,150	8,990	9,640	10,200	10,730
30	6,940	7,460	8,280	9,000	9,600	10,040	10,510
	Duration interval of 2 to 28 weeks						
2	1,180	2,440	4,500	6,560	8,500	10,220	11,750
5	2,420	3,660	5,680	7,530	9,410	11,000	12,390
10	4,280	5,460	7,250	8,960	10,500	11,810	12,950
15	5,680	6,730	8,320	9,750	11,070	12,210	13,180
20	6,680	7,650	8,990	10,230	11,380	12,330	13,160
25	7,420	8,270	9,540	10,540	11,520	12,330	13,000
30	8,020	8,780	9,840	10,740	11,530	12,220	12,800
	Separation rate: 5 percent of employed labor force per 4 weeks						
	Duration interval of 2 to 16 weeks						
2	1,070	2,230	3,900	5,480	6,660	7,590	8,620
5	2,180	3,210	4,820	6,210	7,290	8,210	8,940
10	3,640	4,580	5,940	7,080	7,950	8,710	9,330
15	4,700	5,560	6,600	7,600	8,280	8,930	9,400
20	5,410	6,130	7,030	7,790	8,430	8,980	9,300
25	5,950	6,490	7,260	8,020	8,510	8,780	9,150
30	6,270	6,700	7,420	8,020	8,430	8,700	8,970
	Duration interval of 2 to 22 weeks						
2	1,080	2,300	4,180	6,140	7,890	9,320	10,670
5	2,270	3,440	5,380	7,160	8,680	10,050	11,260
10	4,070	5,160	6,890	8,450	9,700	10,850	11,840
15	5,480	6,440	7,950	9,230	10,320	11,300	12,140
20	6,480	7,220	8,570	9,720	10,690	11,500	12,150
25	7,210	7,920	9,050	10,050	10,850	11,480	12,020
30	7,750	8,360	9,345	10,200	10,690	11,350	11,900
	Duration interval of 2 to 28 weeks						
2	1,080	2,300	4,370	6,510	8,540	10,411	12,120
5	2,300	3,530	5,630	7,680	9,580	11,330	12,910
10	4,300	5,530	7,450	9,310	10,950	12,450	13,780
15	5,970	7,080	8,810	10,400	11,830	13,150	14,290
20	7,150	8,220	9,750	11,150	12,410	13,530	14,450
25	8,150	9,080	10,450	11,660	12,970	13,650	14,380
30	8,910	9,700	10,910	12,000	12,950	13,610	14,300

First Correction: Changing Rate of Unemployment

Let us assume now that, as a result of a steady surplus of separations over accessions or vice versa, the level of unemployment changes gradually during a year. No allowance is made in this assumption for sudden changes in business conditions, seasonal factors, upturns in the trend in the course of a year, and the like. The new pattern differs from the one examined before only in that the postulate of *equality* of separation and accession rates is replaced by the postulate of a *steady difference* between the two rates.

Using the same method as before and assuming a steady rate of separation per 100 employed workers, the number of unemployed persons in compensable-duration intervals would vary as shown in table 5.[10]

From the figures in this table we can study the level of compensable unemployment at an assumed average level of unemployment with different unemployment rates at the beginning and end of the year.

If read diagonally, from the lower left-hand corner to the upper right-hand corner (excluding the column and row corresponding to 2 percent), each panel in table 5 shows several patterns of variations in the level of unemployment, which all correspond to the same average annual unemployment rate. For example, the same oblique line contains hypothetical figures for unemployment rates during the year, changing from 30 percent to 5 percent, from 25 to 10 percent, from 20 to 15 percent, and from 5 to 30 percent, while the *average* annual unemployment rate is 17.5 percent in all cases. The oblique lines above the diagonal include cases of *average* annual unemployment of 15, 12.5, 10 percent, and so forth, while the oblique lines below the diagonal are related to cases of average annual unemployment of 20, 22.5, 25 percent, and more. It is found that figures related to the same *average* annual unemployment rates increase in each panel from the lower left hand to the upper right hand, as in the examples in table 6.

Table 6.—*Hypothetical unemployment in selected duration intervals per 100,000 workers in labor force*

Unemployment as percent of labor force—		Duration of—					
At beginning of year	At end of year	2 to 16 weeks and separation rate of—		2 to 22 weeks and separation rate of—		2 to 28 weeks and separation rate of—	
		4 percent	5 percent	4 percent	5 percent	4 percent	5 percent
25	5	5,760	6,490	7,170	7,920	8,270	9,080
10	10	6,280	7,030	7,860	8,570	8,990	9,750
15	*15*	*6,790*	*7,600*	*8,480*	*9,280*	*9,750*	*10,400*
10	20	7,260	7,950	9,090	9,700	10,500	10,950
5	25	7,600	8,210	9,550	10,050	11,000	11,330

The items at the top of each column in table 6 are lower and those at the bottom are higher than the italicized figures, which correspond to a steady unemployment rate throughout the year. In the event of dwindling work opportunities, the volume of unemployment in definite duration brackets may be 25 to 35 percent larger than in the period of improving business conditions, although the annual average unemployment is the same in both cases.

The question arises as to what the average annual volume of compensable unemployment may be for a period that covers appreciable fluctuations in the level of unemployment in both directions.

A careful examination of table 5 suggests that the volume of unemployment in definite duration intervals throughout such a period—say, a full business cycle—is unlikely to be larger than under the assumption of a steady average unemployment rate throughout the same period.

Second Correction: Varying Labor Force

One of the main sources of variations in the labor force is the natural turn-over of the population as young people reach working age and older workers die or retire.

New entrants in the labor force in the recent past and near future may be roughly estimated at 2 million a year, 1.2 million men and 800,000 women. Approximately 1.5 million workers, on the other hand, leave the labor force each year, mainly because of superannuation, permanent disability, or death. This number also includes women who shift from paid jobs to housework in their own homes after marriage. The balance—approximately 500,000—represents the annual increment to the labor force from the growth of the population.

In addition, millions of individuals shift into and out of the labor force each year. Approximately 2 to 3 million members of farm families work on the farm during the harvest season but are not counted as workers during the rest of the year; about 2 million high-school and college students work for pay in their summer vacations; hundreds of thousands of married women work intermittently during the year or reenter the labor market, mostly because economic pressure increase or because family responsibilities lessen; many persons withdraw temporarily from the labor market because of sickness; other members in a family seek work from time to time when the earnings of the chief breadwinner are interrupted by unemployment or temporary disability. Because of all these shifts, the number of individuals who are in the labor force during a calendar year is considerably larger than the number at the seasonal peak. Assuming, for example, that the civilian labor force averages 57 million (59 million in the summer and 55 mil-

[10] Computing the figures in this table would normally require a tremendous amount of time and work. To facilitate the calculations involved, a method of interpolation was applied to table 3. The resulting figures in table 5 therefore represent approximations, and in fact, where comparison is possible, they differ slightly from corresponding figures in table 3. When the separation rate is 5 percent per 4 weeks and the level of unemployment is 15 percent of the labor force throughout the year, for example, compensable unemployment for a compensable-duration interval of 2 to 16 weeks is shown to be 7,711 in table 3, and 7,600 in table 5, for each 100,000 workers in the labor force. In every case, however, the difference is too small to affect the validity of the conclusions indicated in subsequent sections.

Table 7.—*Number of workers with wage credits and average employment in covered industries*

Year	Estimated number of workers with wage credits (in thousands)	Average employment (in thousands)	Column 2 as percent of column 3
(1)	(2)	(3)	(4)
1938	27,500	19,929	138
1939	30,100	21,378	141
1940	31,900	23,096	138
1941	37,600	26,814	140
1942	43,000	29,349	147
1943	44,000	30,828	143
1944	43,000	30,045	143
1945	43,000	28,410	151
1946	45,800	30,212	152

lion in the winter), the number of individuals engaged in some kind of economic activity or seeking work may reach 70 million in the course of a year.

More specifically, if in the next few years the nonagricultural labor force should average 46 million (approximately 34 million men and 12 million women), the number of individuals engaged in nonagricultural work at some time in the course of a year may reach 60 million. Thus the total number of individuals with wage, salary, or other earnings in nonagricultural pursuits during a year would be more than 30 percent greater than the number of full-year nonagricultural jobs—a higher percentage figure than that applicable to the entire labor force.

The proportion of entrances and withdrawals in relation to the number of full-year employee jobs in nonagricultural establishments is still higher. Of the 4 million employers and self-employed persons in nonagricultural pursuits, some shift during a year between work for others and independent work and some receive part of their current earnings in the form of profits and part from salaries or wages. Thus, if the average number of nonagricultural salary and wage earners during a year approximates 42 million, the number of individuals who receive salaries or wages during a year may be 1 million short of the 60 million mentioned above. Of these 59 million individuals, probably some 56 million would have appreciable wage and salary earnings in nonagricultural industries, while 3 million would have only casual earnings. All in all, the number of individuals who are either employed or seeking work for pay in nonagricultural industries during a year is likely to exceed by 35 to 40 percent the number of full-year salary and wage jobs.

Because of the limited coverage of existing State unemployment insurance programs, the number of persons with wage credits in covered industries is further increased in comparison with the number of full-year covered jobs by shifts between covered and noncovered establishments. Moreover, the ratio of the number of individuals with wage credits to the number of full-year covered jobs varies widely from year to year. The ratios of workers with wage credits to average employment (which approximates the number of full-year covered jobs) for the United States as a whole for the years 1938–46 are summarized in table 7.

Corrections are necessary to single out the separations that lead to potentially compensable unemployment. To be eligible for benefits the separated worker must meet statutory requirements that vary greatly from State to State. The percentage of workers with wage credits who are *not* eligible for benefits varies, in each State, with business conditions, but under all conditions their representation in job terminations is greater than their representation in the total number of individuals with wage credits. In fact, most of the individuals who have had some wage credits in covered industries during a 12-month period but are *not* eligible for benefits at the end of that period have experienced at least one separation; many have had several. On the other hand, the group of workers eligible for benefits includes persons with uninterrupted employment in covered establishments. It is conceivable that the group of workers not eligible for benefits, representing about 20 percent of all individuals with wage credits, would account for less than 5 percent of the work performed in covered industries and for 75 or 80 percent of the job terminations.

To sum up, the system covered by the State unemployment insurance programs includes millions of persons who enter the system when they take a covered job and disappear from it when that job is terminated. Therefore, only relatively few of the accessions and separations in covered establishments mark either the end or the beginning of a spell of unemployment that may be compensable.

All these factors tend to cut down the size of the compensable unemployment load in comparison with the hypothetical proportion of unemployment in a compensable-duration interval. Their impact on cost estimates may be illustrated by the following example.

Suppose that 80,000 persons, on the average, are employed during a year by covered employers, that 20,000 persons are seeking work in covered industries, and that covered establishments report 5 separations and as many accessions per 100 employed workers per 4 weeks. How many individuals are likely to be drawing benefits under an unemployment insurance program providing for 26 weeks of benefits after a 1-week waiting period?

In this example the labor force is 100,000, the unemployment rate is 20 percent, and the separation and accession rates are 5 percent. The hypothetical amount of unemployment in the duration interval of 2 to 28 weeks is 12,676 per 100,000 workers, according to table 3. This computation requires important corrections, however. The total of 20,000 job seekers includes new entrants, occasional workers, persons with no wage credits in covered employment, and those with insufficient credits. Unemployed workers with sufficient wage credits will hardly exceed 10,000. If persons who are likely to file claims for benefits although they have insufficient wage credits are added to this

figure, the total number of covered unemployed workers[11] may rise to 12,000. The size of the covered labor force is, therefore, 92,000 (80,000+12,000) instead of 100,000, and the ratio of covered unemployment to the covered labor force is 13 percent (12,000÷92,000) instead of 20 percent. The separation and accession rates, determined by the persons filing initial claims rather than by the actual turn-over, are not likely to exceed 2 percent. The hypothetical volume of compensable unemployment, determined by applying the covered unemployment and turn-over rates to table 3, amounts to 6,710 per 100,000 persons in the labor force or 6,173 for a labor force of 92,000—less than half the 12,676 based on the unadjusted unemployment and turn-over rates. In this example, variations in the labor force cut in half the "theoretical" volume of compensable unemployment. The rate of reduction depends on the assumed relationship between compensable and total labor turn-over. This relationship, in turn, varies with business conditions, but in all phases of a business cycle compensable separations and compensable unemployment are significantly less than total separations (even less than total involuntary separations) and total unemployment.

This correction has a drastic effect on the long-range cost estimates of unemployment insurance.[12]

Third Correction: Heterogeneous Labor Market

Since the distribution of unemployment by compensable-duration intervals is essentially determined by the rate of unemployment and the pattern of labor turn-over, the heterogeneity of the labor market may be reduced to the factor of disparity in the rates of unemployment and separations for different groups of workers. From the point of view of the present analysis, it makes no difference whether these groups are segregated by area, by industry and occupation, or by the workers' characteristics, such as sex, race, age, family status, skill, education, and length of service with the same firm. The essential fact is that unemployment and labor turn-over are higher than average for certain sectors of the covered labor force and lower than average for other sectors.

Such disparities may be exemplified by three typical patterns. Assuming a working population of 100,000 with 10,000 persons unemployed—each of the latter attached to a definite sector of the labor market—the average unemployment rate of 10 percent may result from the following distributions of unemployment in two sectors of the labor force.

(a) A part of the labor force—10, 20, 30, 40, or 50 percent—may be employed steadily (with a theoretical unemployment rate of zero), while the rate of unemployment among the rest of the workers is 11.11, 12.50, 14.28, 16.67, or 20.00 percent, respectively.

[11] From the point of view of an unemployment insurance program with limited coverage, a distinction should be made not only between covered and noncovered *employment* but also between covered and noncovered *unemployment*. *Covered unemployment* will represent persons with sufficient attachment to covered industries to file claims for benefits when unemployed, including those who have exhausted their benefit rights or have been disqualified for some reason. *Noncovered unemployment* will be composed of unemployed workers who do not file claims for unemployment benefits, including occasional and temporary workers separated from covered establishments, new entrants to the labor market, and persons reentering the labor market after a long absence.

[12] The correction for these factors is discussed in the second article.

Table 8.—*Hypothetical number of unemployed persons in specified compensable-duration intervals, per 100,000 workers, assuming various unemployment and separation rates, and taking into account disparities in these rates for various groups of workers*

Unemployment as percent of labor force	Separation rate per 4 weeks as percent of employed labor force							
	1	2	3	4	5	6	7	8
	Duration interval of 2 to 16 weeks							
1	645	567	502	449	410	380	355	335
2	1,232	1,291	1,219	1,136	1,063	1,000	945	899
3	1,614	1,911	1,920	1,853	1,774	1,693	1,619	1,550
4	1,854	2,393	2,528	2,521	2,464	2,387	2,306	2,229
5	1,986	2,735	3,010	3,086	3,073	3,021	2,951	2,875
10	2,121	3,441	4,274	4,805	5,135	5,338	5,454	5,511
15	2,048	3,562	4,690	5,535	6,169	6,645	7,001	7,263
20	1,950	3,523	4,795	5,831	6,675	7,363	7,926	8,386
25	1,815	3,360	4,676	5,801	6,764	7,590	8,299	8,907
30	1,735	3,268	4,616	5,812	6,867	7,804	8,632	9,370
35	1,675	3,191	4,564	5,805	6,932	7,952	8,880	9,729
40	1,633	3,136	4,540	5,806	6,989	8,080	9,091	10,023
45	1,581	3,063	4,451	5,745	6,962	8,098	9,168	10,169
50	1,530	2,981	4,356	5,659	6,895	8,064	9,172	10,222
	Duration interval of 2 to 22 weeks							
1	686	579	502	449	410	380	355	335
2	1,416	1,374	1,260	1,157	1,075	1,007	949	902
3	1,946	2,125	2,046	1,931	1,823	1,726	1,642	1,567
4	2,309	2,753	2,776	2,689	2,579	2,469	2,364	2,272
5	2,531	3,237	3,394	3,369	3,281	3,175	3,068	2,963
10	2,851	4,405	5,258	5,721	5,957	6,058	6,079	6,051
15	2,812	4,725	6,034	6,934	7,550	7,967	8,244	8,418
20	2,707	4,765	6,335	7,540	8,464	9,171	9,650	10,125
25	2,538	4,603	6,287	7,664	8,792	9,716	10,474	11,095
30	2,438	4,516	6,284	7,797	9,089	10,196	11,143	11,956
35	2,362	4,439	6,269	7,880	9,302	10,559	11,668	12,653
40	2,307	4,385	6,260	7,953	9,483	10,864	12,113	13,243
45	2,240	4,299	6,191	7,930	9,530	11,002	12,359	13,609
50	2,176	4,203	6,099	7,873	9,541	11,092	12,541	13,894
	Duration interval of 2 to 28 weeks							
1	701	579	502	449	410	380	355	335
2	1,515	1,404	1,269	1,161	1,077	1,008	950	902
3	2,164	2,225	2,094	1,953	1,834	1,732	1,644	1,568
4	2,638	2,955	2,886	2,750	2,614	2,490	2,378	2,281
5	2,950	3,545	3,589	3,490	3,357	3,224	3,100	2,985
10	3,492	5,157	5,947	6,301	6,428	6,435	6,380	6,291
15	3,515	5,714	7,097	7,964	8,499	8,819	8,997	9,078
20	3,421	5,871	7,635	8,907	9,824	10,481	10,859	11,272
25	3,230	5,742	7,703	9,236	10,436	11,375	12,108	12,679
30	3,117	5,680	7,792	9,465	10,973	12,162	13,145	13,957
35	3,030	5,621	7,841	9,744	11,378	12,782	13,988	15,027
40	2,966	5,581	7,886	9,921	11,720	13,310	14,715	15,958
45	2,887	5,491	7,839	9,963	11,880	13,613	15,180	16,599
50	2,802	5,376	7,749	9,930	11,937	13,781	15,477	17,042

(b) The average unemployment rate may amount to 9 percent for half the labor force and to 11 percent for the other half, or the rates may be 8 and 12 percent, 7 and 13 percent, 5 and 15 percent, or even a fraction of 1 percent in one sector and close to 20 percent in the other.

(c) The average unemployment rate may be less than 10 percent in one sector of the labor force and more than 10 percent in other areas, industries, occupations, or worker groups. It may, for example, amount to 5 percent for 80 percent of the workers and 30 percent for the rest of the labor force, or 2 percent for 20 percent of the workers and 12 percent for the rest of them, and so on.

Similar disparities in separation rates are conceivable, but the degree of disparity will not be the same. While the upper limit of the unemployment rate is 100 percent, there is practically no limit to the speed of labor turn-over. If the "floating" group in the working force of an establishment changes completely each week (not an impossible occurrence), its separation rate will amount to 400 percent per 4 weeks.

Disparities in chances for reemployment may be of different types. The most common and for practical purposes the most important variation comes from the duration of the unemployment. For each group of separated workers, the probability of finding a new position tends to decline as the period of unemployment lengthens. Each group of laid-off workers is likely to include individuals with various degrees of skill and ability; some have connections that can help them in their search for work, others have none; some are attached to overcrowded or depressed industries, others are engaged in more promising pursuits. From the very beginning their chances of reemployment are unequal, and those who have the best chance are likely to find a new position sooner than the rest of the group. The chances of those who remain unemployed for, say, 2 weeks after separation are therefore less than the average at the time of separation, and the proportion of persons hired during the following 2 weeks will probably again be somewhat smaller. The same process of negative selection will continue until the last of the group either is reemployed or withdraws from the labor force as unemployable. The proportion of unemployable and marginal workers among the unemployed steadily increases with the duration of unemployment, and turn-over is likely to be rather slow among beneficiaries who have almost reached the compensable-duration limit.

As long as the over-all rate of unemployment is low—say, 5 percent—and labor turn-over is considerable, it does not make much difference whether the risks are distributed evenly over all the labor force or limited to definite industries. But the situation changes as unemployment rises. The same is true of the distribution of labor turn-over. If, however, unemployment is extremely heavy—more than 25 percent of the total labor force—it is unlikely to be concentrated in a small fraction of the labor market. The effect of the heterogeneity of the labor force on the volume of unemployment in compensable-duration intervals therefore is likely to increase when the over-all unemployment rate rises from 2 percent to roughly 25 percent and to decline if unemployment continues to increase above that limit.

All in all, the effects of heterogeneity may be introduced into cost estimates as a deflation factor applied to the hypothetical volume of unemployment in specified duration intervals, as

Table 9.—*Hypothetical ratio (percent) of unemployment in specified compensable-duration intervals to total unemployment, assuming various unemployment and separation rates, and taking into account the disparities in these rates for various groups of workers*

Unemployment as percent of labor force	Separation rate per 4 weeks as percent of employed labor force							
	1	2	3	4	5	6	7	8
	Duration interval of 2 to 16 weeks							
1	64.5	56.7	50.2	44.9	41.0	38.0	35.5	33.5
2	61.6	64.6	61.0	56.8	53.2	50.0	47.3	45.0
3	53.8	63.7	64.0	61.8	59.1	56.4	54.0	51.7
4	46.4	59.9	63.2	63.1	61.6	59.7	57.6	55.8
5	39.7	54.7	60.2	61.8	61.5	60.4	59.0	57.5
10	21.3	34.4	42.8	48.0	51.3	53.4	54.6	55.1
15	13.7	23.8	31.3	36.9	41.1	44.3	46.6	48.4
20	9.8	17.6	23.9	29.1	33.4	36.8	39.6	41.9
25	7.3	13.4	18.7	23.2	27.1	30.4	33.2	35.6
30	5.8	10.9	15.4	19.4	22.9	26.0	28.8	31.3
35	4.8	9.1	13.0	16.6	19.8	22.7	25.3	27.8
40	4.1	7.9	11.3	14.5	17.5	20.2	22.8	25.0
45	3.5	6.8	9.9	12.8	15.5	18.0	20.4	22.6
50	3.1	5.9	8.7	11.3	13.8	16.1	18.4	20.4
	Duration interval of 2 to 22 weeks							
1	68.6	57.9	50.2	44.9	41.0	38.0	35.5	33.5
2	70.8	68.7	63.0	57.9	53.8	50.4	47.5	45.1
3	64.8	70.8	68.2	64.4	60.8	57.5	54.7	52.3
4	57.7	68.8	69.4	67.3	64.4	61.7	59.1	56.8
5	50.6	64.7	67.9	67.4	65.6	63.5	61.4	59.3
10	28.5	44.0	52.6	57.2	59.6	60.6	60.8	60.5
15	18.7	31.5	40.2	46.2	50.3	53.1	55.0	56.2
20	13.5	23.6	31.5	37.4	42.0	45.6	48.0	50.3
25	10.1	18.4	25.1	30.7	35.2	38.9	41.9	44.4
30	8.1	15.0	20.9	26.0	30.3	34.0	37.1	39.9
35	6.7	12.7	17.9	22.6	26.6	30.1	33.3	36.1
40	5.8	10.9	15.6	19.8	23.7	27.1	30.3	33.1
45	5.0	9.5	13.8	17.6	21.2	24.5	27.5	30.3
50	4.3	8.4	12.2	15.8	19.1	22.1	25.1	27.8
	Duration interval of 2 to 28 weeks							
1	70.1	57.9	50.2	44.9	41.0	38.0	35.5	33.5
2	75.8	70.2	63.5	58.1	53.9	50.4	47.5	45.1
3	72.2	74.2	69.8	65.1	61.2	57.7	54.8	52.3
4	66.0	73.9	72.2	68.7	65.3	62.3	59.5	57.0
5	59.0	70.9	71.8	69.8	67.2	64.5	62.0	59.7
10	34.9	51.6	59.5	63.0	64.3	64.3	63.8	62.9
15	23.4	38.1	47.3	53.1	56.6	58.8	60.0	60.5
20	17.1	29.4	38.2	44.6	49.1	52.4	54.3	55.3
25	12.9	23.0	30.8	37.0	41.8	45.5	48.5	50.7
30	10.4	19.0	26.0	31.6	36.5	40.5	43.8	46.5
35	8.6	15.9	22.3	27.6	32.3	36.3	39.7	42.7
40	7.5	13.9	19.7	24.8	29.3	33.3	36.8	39.9
45	6.4	12.2	17.4	22.1	26.4	30.3	33.7	36.9
50	5.6	10.7	15.5	19.9	23.9	27.5	31.0	34.1

shown in tables 3, 4, and 6. The approximate deflation coefficients are:

Unemployment as percent of labor force	*Coefficient by which hypothetical figures in table 3 should be deflated*
2	1.000
3	.990
4	.975
5	.950
10	.850
15	.800
20	.775
25	.750
30	.755
35	.775
40	.810
45	.850
50	.900

With this correction, table 3 is replaced by table 8 and table 4 by table 9.

In summary, heterogeneity of the labor market reduces significantly the size of compensable unemployment suggested by the extremely simplified model set up at the beginning of this article. The administrative provisions of State unemployment insurance laws, especially the method of measuring duration of benefits, benefit disallowances, and disqualifications, act in the same direction. The impact of these factors on the size of compensable unemployment will be discussed in the next article.

Reorganization Plan No. 1 of 1948: Legislative History and Background

By Gladys R. Friedman*

Because of the considerable amount of interest in the relationship between the employment service and the unemployment insurance program at the Federal level, the Bulletin believes that this brief outline of the legislative background of Reorganization Plan No. 1 of 1948 will be of aid to persons who wish to study this phase of employment security developments.

ON MARCH 16, 1948, the Senate, following action by the House, approved House Concurrent Resolution 131, which provided for the disapproval of the President's Reorganization Plan No. 1 of 1948. This plan would have transferred Federal unemployment insurance functions to the Department of Labor and kept the United States Employment Service permanently in that Department. The Social Security Administration, in the Federal Security Agency, thus retains the Federal unemployment insurance functions that it has had since the passage of the Social Security Act, and 6 months after the official termination of the war the U. S. Employment Service is scheduled to revert to the Federal Security Agency, where it was lodged from July 1939 to September 1942.

Prewar Congressional Consideration

The Federal Government's first attempt at permanent provision for handling the problem of unemployment was the establishment of a national system of public employment offices where workers could go to find suitable jobs and employers could obtain needed labor. This Federal legislation preceded by 2 years the enactment of the Social Security Act.

The Wagner-Peyser Act,[1] enacted in June 1933, set up a national system of public employment offices to be administered by the States with the financial assistance of the Federal Government. The United States Employment Service was created as a separate Bureau in the Department of Labor; $1.5 million was appropriated for the first year of operation and $4 million for each of the next 4 fiscal years, $3 million of which was to be used to match State appropriations for State services and $1 million for the operation of the Federal arm, the U. S. Employment Service. At that time there was no question but that the Employment Service should be located in the Department of Labor, which by the Organization Act of 1913[2] had the responsibility "to foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions, and to advance their opportunities for profitable employment."

While this action served as a genuine inducement to the States to establish public employment offices, State systems could not be created immediately since State legislative action was required. Meanwhile the inauguration of a Nation-wide program of public works and expansion of work relief projects, which called for the selection and placement of several million unemployed workers, necessitated the establishment of employment offices throughout the country. The National Reemployment Service, financed completely by Federal funds, was therefore established in the Department of Labor to place workers in relief and public works jobs in areas where no State service existed. In June 1935, 2 months before the enactment of the Social Security Act, only 25 State services with 184 local offices had affiliated with the U. S. Employment Service.[3] At the same time the National Reemployment Service was operating 1,769 local offices,[3] and Federal expenditures for the Service amounted to about two-thirds of the total expenditures for all employment service activities in the country.

The Committee on Economic Security, in its report[4] to the President in January 1935, recommended establishing a Federal-State system of unemployment insurance and a Federal system of old-age benefits to be administered by a Social Insurance Board in the Department of Labor. The Economic Security Bill, as introduced in both Houses on January 17, 1935 (S. 1130, H. R. 4120 and 4142), embodied those recommendations. The House Ways and Means Committee, after conducting public hearings, reported out a new bill, H. R. 7260, the Social Security Act, in which administrative responsibility was lodged in an independent Social Security Board.

* Bureau of Employment Security, Program Division.

[1] 48 Stat. 113.

[2] 37 Stat. 736, approved Mar. 4, 1913.

[3] *Annual Report of the Secretary of Labor, Fiscal Year Ended June 30, 1935*, p. 33.

[4] Published also as H. Doc. 81, 74th Cong., 1st sess.