

# STATE ACTUARIAL PROBLEMS IN UNEMPLOYMENT COMPENSATION

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Under the Social Security Act considerable responsibility is placed upon the individual states to formulate their own provisions for specific benefits and rates of contribution in unemployment compensation. To aid them in this responsibility, there seems to be available a very scanty fund of statistical information directly applicable to the situation in the individual state.

The determination of the relationship between contributions and benefits in any new insurance line is necessarily and fundamentally dependent upon guesswork. Unemployment compensation involves the setting aside from income as earned of a given rate of contribution so that when certain types of unemployment arise compensation at some given rate may be paid for some specified period of time. Since the federal tax rate has been determined after a brief two year preliminary period at 3% of the total payroll of those employers with 8 or more employees in 20 different weeks, and since all but 10% of the tax is to be credited to the employers in those states which have approved plans in operation, and all of the contribution to the state must go into benefits, it is implied that the provision for benefits is at least 2.7% of payroll, more if the employees contribute in addition. The recommended benefit scale which has been adopted in most of the states provides a benefit of half-pay, with a maximum of \$15 a week. The basis of most investigations is aimed at the determination of a reasonable duration of benefits or, should specified duration also be determined, how much more than the minimum ought to be contributed to make it probable that the unemployment compensation plan will remain solvent.

The Committee on Economic Security has indicated, for the guidance of the states, a tentative estimate of the maximum duration of benefits indicated as tenable by their nation-wide surveys:

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TABLE I

Crude Estimates After Actuarial Adjustment of Maximum Duration of Benefits of Half-Pay with a Weekly Maximum of \$15 Based Upon:

<i>Waiting Period</i>	<i>3% Contribution 2.7% for Benefits</i>	<i>4% Contribution 3.6% for Benefits</i>	<i>5% Contribution 4.5% for Benefits</i>
2 weeks	10 weeks	15 weeks	21 weeks
3 “	11 “	17 “	24 “
4 “	12 “	18 “	26 “

The British experience with unemployment insurance, part of the coverage having been in force since 1911, has convinced the British students of the subject that even after many years of actual experience no clear certainty as to the progress of claim rates is yet possible. The great depression seems to show that if it is possible to do so, there must be accumulated from the good years provision to be available in the bad. It seems possible, also, that the forces which determine the adoption of social insurance indicate a recognition of changing attitudes towards employment and relief which will themselves react upon employment conditions. This does not necessarily indicate that the changed rates of unemployment result from the adoption of social insurance but that social insurance is adopted in a period of social development where the clearest indications are that recent history will not promptly repeat itself.

Other papers in this series outline the scope of the coverage expected under the Social Security Act and include an analysis of factors affecting our limiting benefits.<sup>1</sup> Where such factors drastically affect cost estimates, there will be some further discussion here.

Many of the most important factors affecting cost will be omitted in the following discussion. There is no attempt to estimate the varying rates of probable unemployment by wage categories, though herein lies a credit item since, presumably, unemployment rates are highest at the lowest wage levels. When a great hazard has been dealt with through insurance and efforts are made to cope with the hazard directly, such things as safety campaigns in industry and better driving programs are instituted to reduce the hazard against insurance as carried. This force must be developed in connection with unemployment, but in this study no attempt has been made to measure the conscious determination that unemployment shall be reduced; it is merely hoped that such effort will be aroused soon enough to check the apparent counter forces tending to increase unemployment. In this brief discussion, vital as the problem is, there is no effort expended to show the range in benefits between different years, though the distribution of good and bad years is a vital factor in the development of funds.

It is impossible to predict the attitude of administrators yet to be chosen as to rate adjustment after the period of good years, which we hope are immediately ahead of us, when contributions seem to be largely in excess of benefits. Whether they can

<sup>1</sup> See Lotwin, *Coverage of State Unemployment Compensation Laws, supra*, p. 7; Huntington, *The Benefit Provisions of State Unemployment Compensation Laws, supra*, p. 20.

resist the temptation to reduce the rates of contribution at the very time when their continuance is relatively easy may determine the solvency of the plan. Experience rating—the recognition of good experience—can be so handled as to wreck completely any prior attempt to prepare for the adverse periods. One cannot estimate today the statistical capacity of administrators in limiting the credence which they give to tiny areas of exposure. Some of the states have already ignored the fact that experience rating must go upwards as well as downwards.

The whole national experience is so inadequate as a guide to the general problems of cost analysis that the fragmentary state by state variations in the depression period should probably be looked at in their variation from the aggregate unemployment rates, but not used very much, recognizing the factors which have entered into these variations and in the first approximation discounting somewhat the variations and aiming at a base rate derived from broader, considerably more dependable evidence. In particular where certain states seem to show unemployment rates lighter than the average, in addition to the inadequacy of census material, such limitations as the fact of a relatively slight industrialization and the semi-absorption of excess industrial labor into the agricultural part of the community can be recognized. When benefits are available, however, one cannot expect the agricultural part of the community to absorb the loss. Where high recorded rates of unemployment are noted, the advanced industrialization of the states is in itself again somewhat responsible in that huge enterprises have attracted the citizens of other states in the boom times and then have massed the unemployed in large industrial communities, where their return to their home region is less possible but where their presence rather unduly accentuates depression conditions.

Published material which is of definite help to the individual states is practically absent. A few references may be desirable to show sources of information, pertinent should the state commission have a trained statistical member who can make the necessary translation:

Report of the Royal Commission on Unemployment Insurance in Great Britain.

Actuarial Report by Dr. I. M. Rubinow, included as Chapter XII of Part II of the Report of The Ohio Commission on Unemployment Insurance, January 1933.

Paper by Prof. Clarence A. Kulp, "Calculation of the Cost of Unemployment Benefits (With Particular Reference to Ohio and Pennsylvania)" with comments thereon, *Proceedings of the Casualty Actuarial Society*, Vol. XIX, pp. 268-278; Vol. XX, pp. 170-187.

Actuarial Reports on the Canadian Employment and Social Insurance Act of 1935 by A. D. Watson and Hugh H. Wolfenden (H. R. M. Printer, Ottawa).

"A Program for Unemployment Insurance and Relief in the United States" by Hansen, Murray, Stevenson and Stewart (The University of Minnesota Press, 1934).

The most adequate statistical studies available for the United States seem obviously to be those formulated by the Committee on Economic Security following in general the method outlined in "A Program for Unemployment Insurance and Relief in the United States." The material developed by the Committee is not yet

available, though a well-documented report has been prepared by the Committee and the results are reflected in the material presented elsewhere in this volume.

Some simplification of the procedure is made in the following discussion for the sake of condensing the report within suitable limits. The results are made to appear too simple and the whole process of the discussion must be regarded as illustrative and rather artificial.

For the 14 year period beginning with 1922 and now running through the year 1935, it is evident that the ratio of the unemployed to the employed in that group of industries included in the coverage of unemployment compensation has approximated 20%. Were benefits at the rate of half-pay granted to all the unemployed, through levying a tax against the payroll of those employed, a contribution of 10% would be essential.

Three excerpts from census returns indicate varying distributions of unemployment:

TABLE II  
Illustrative Distributions of the Unemployed by Duration of Unemployment  
Since the Last Employment

<i>Duration of Unemployment</i>	<i>Los Angeles April 1930</i>	<i>Los Angeles Jan. 1931</i>	<i>Composite</i>
Less than 4 weeks.....	42%	28%	21%
More than 4 weeks but less than 17 weeks....	40	41	36
More than 17 weeks.....	18	31	43
Total.....	100%	100%	100%

From this data the provision of a benefit of half-pay after a four weeks' waiting period for a maximum of 13 weeks would seem to require payment to about 40% of the unemployed in the first two censuses and to nearer 35% of the unemployed in the composite census. From the composite census, given a 4% contribution rate, the benefit period could be extended to 15 weeks after a waiting period of four weeks.

The composite table is based upon the analysis by the Committee on Economic Security of 92 sample censuses of unemployment, including the two Los Angeles censuses mentioned in Table II, 3 showing rates of unemployment measured against the total potential gainful workers of less than 7%, 21 showing rates of unemployment between 7% and 11%, 43 between 11% and 20%, 21 between 20% and 30%, and only 4 between 30% and 43%. In order to develop a working table which alone could make possible such measures of relative benefits as are subsequently discussed, there were prepared composite percentage distributions of the unemployed from all this census material. One composite table is given herein as Table III and indicates the number of unemployed as a percentage of the total who have been unemployed one week or less, and then the successive percentages at weekly intervals up to 52, with a final single summation of those whose unemployment period is over 52 weeks.

TABLE III. Percentage and Cumulative Distribution of the Unemployed Able and Willing to Work by Duration of Unemployment at Date of Census or Survey

DURATION OF UNEMPLOYMENT		Distribution of Unemployed Per Cent by Weeks		DURATION OF UNEMPLOYMENT		Distribution of Unemployed Per Cent by Weeks	
TOTAL		TOTAL		TOTAL		TOTAL	
1 week or less	1 week	7.2	7.2	27 weeks or less but more than 26 weeks	1.0	72.9	72.9
2 weeks " " but more than 1 week	2 weeks	5.8	13.0	" " " " " "	0.9	73.8	73.8
3 " " " " " "	3 " "	4.5	17.5	" " " " " "	0.9	74.7	74.7
4 " " " " " "	4 " "	3.9	21.4	" " " " " "	0.8	75.5	75.5
5 " " " " " "	5 " "	3.5	24.9	" " " " " "	0.7	76.2	76.2
6 " " " " " "	6 " "	3.3	28.2	" " " " " "	0.7	76.9	76.9
7 " " " " " "	7 " "	3.2	31.4	" " " " " "	0.7	77.6	77.6
8 " " " " " "	8 " "	3.0	34.4	" " " " " "	0.7	78.3	78.3
9 " " " " " "	9 " "	3.0	37.4	" " " " " "	0.6	78.9	78.9
10 " " " " " "	10 " "	2.9	40.3	" " " " " "	0.6	79.5	79.5
11 " " " " " "	11 " "	2.7	43.0	" " " " " "	0.6	80.1	80.1
12 " " " " " "	12 " "	2.6	45.6	" " " " " "	0.6	80.7	80.7
13 " " " " " "	13 " "	2.5	48.1	" " " " " "	0.6	81.3	81.3
14 " " " " " "	14 " "	2.4	50.5	" " " " " "	0.6	81.9	81.9
15 " " " " " "	15 " "	2.3	52.8	" " " " " "	0.6	82.5	82.5
16 " " " " " "	16 " "	2.2	55.0	" " " " " "	0.6	83.1	83.1
17 " " " " " "	17 " "	2.0	57.0	" " " " " "	0.6	83.7	83.7
18 " " " " " "	18 " "	2.0	59.0	" " " " " "	0.6	84.3	84.3
19 " " " " " "	19 " "	1.9	60.9	" " " " " "	0.6	84.9	84.9
20 " " " " " "	20 " "	1.8	62.7	" " " " " "	0.7	85.6	85.6
21 " " " " " "	21 " "	1.8	64.5	" " " " " "	0.7	86.3	86.3
22 " " " " " "	22 " "	1.7	66.2	" " " " " "	0.7	87.0	87.0
23 " " " " " "	23 " "	1.6	67.8	" " " " " "	0.7	87.7	87.7
24 " " " " " "	24 " "	1.5	69.3	" " " " " "	0.8	88.5	88.5
25 " " " " " "	25 " "	1.4	70.7	" " " " " "	0.8	89.3	89.3
26 " " " " " "	26 " "	1.2	71.9	" " " " " "	0.9	90.2	90.2
	Over 52 weeks				9.8	100.0	100.0

The cumulative summation presents an excellent working tool, but like all statistical technique, has certain limitations. For example, given a waiting period of 2 weeks, a maximum benefit period of 10 weeks, the table shows that 45.6% of the unemployed fall under 12 weeks of unemployment, 13% under 2 weeks of unemployment. The benefit group is shown by the difference in these two percentages, or 32.6%. This table does not furnish a correct statement of the proportion of unemployed over any specific period since that will depend upon which years are observed.

The various state acts so far enacted have developed personal idiosyncrasies. They include, however, the following general provisions:<sup>2</sup>

(1) The benefit rate is half-pay, up to a maximum of generally \$15 per week, and, in some states, not less than a minimum of from \$5 to \$7 per week.

(2) To qualify for benefits, an unemployed person must have been employed by a contributing employer for a minimum period ranging from 15 to 26 weeks in the preceding year.

(3) The maximum number of weekly benefit payments is 15 or 16, but these must not exceed a ratio of 1 week of benefit for 3 or 4 weeks of employment by a contributing employer. Extra weeks of benefit payments are provided in some states on the basis of 1 week of benefit for each 20 weeks of contributing employment for which no corresponding benefit payment has been made, up to a maximum of 10 extra weeks.

(4) The waiting period prior to benefit payments ranges from 2 to 6 weeks.

(5) Disqualification for benefit payments is provided during the period of unemployment resulting from strikes, lock-outs, or trade disputes.

(6) Disqualification for benefit payments is provided for specified periods following voluntary termination of employment, discharge for misconduct, or refusal to accept suitable employment.

(7) Provision is made for possible administrative settlement of benefits by lump sum payments.

(8) Special provision is made in most states for benefit payments in case of partial employment, the partial wages and benefit payments together to equal the ordinary benefit payment or to exceed it by \$1 or \$2.

(9) Some statutes make possible the according, through administrative action, of special treatment to seasonal unemployment.

Illustrations of cost considerations for these numerous factors follow, assuming a sort of hypothetical state for purposes of illustration:

1. *Waiting Period:* The relative importance of varying waiting periods has been indicated in Table I and more completely by reference to Table III which shows the exclusion of 7.2% of the unemployed by a waiting period of 1 week, 13.0% by a waiting period of 2 weeks, 17.5% by a waiting period of 3 weeks, 21.4% by a waiting period of 4 weeks. Were unemployment compensation with a long waiting period adopted in accordance with Mr. Sam Lewisohn's recommendation so that the funds go to cases of extreme need and are not dissipated for short and relatively unimportant periods of unemployment, a waiting period of 15 weeks would exclude half the unemployment.

<sup>2</sup>These provisions are discussed at length in Huntington, *The Benefit Provisions of State Unemployment Insurance Laws*, *supra*, p. 20.

Another indication of the use of the waiting period in conjunction with a fixed rate of contribution to find the effect upon the duration of benefits which can be covered by varying the waiting period, suggests the use of Table I with an added column showing the percentage of the unemployed corresponding to the varying durations. With units of only one week, the results are a little crude.

TABLE IV  
Percentage of Unemployment Compensable by Waiting Period and  
Maximum Duration of Benefits

Waiting Period	2.7% Contrib.		3.6% Contrib.		4.5% Contrib.	
	Duration	%	Duration	%	Duration	%
2 weeks	10 weeks	32.6	15 weeks	44.0	21 weeks	54.8
3 "	11 "	33.0	17 "	45.2	24 "	55.4
4 "	12 "	33.6	18 "	44.8	26 "	54.1

Thus, a contribution of 2.7% on the basis of the composite unemployment table, would provide benefits to approximately 33% of the unemployed. With a waiting period of 2 weeks, this would indicate a duration of 10 weeks; against a waiting period of 3 weeks, a duration of 11 weeks. Similarly, with a contribution of 4.5% all applicable to benefits, 55% of the unemployed could be covered, justifying a 21 weeks' duration of benefits for a 2 weeks' waiting period, a 26 weeks' duration of benefits for a 4 weeks' waiting period.

2. *Rate of Contribution:* It has already been indicated that a certain balance exists between rate of contribution, waiting periods, and duration of benefits. For the sake of completeness, this factor is set down. It should be noted that in Table III an increase of two-thirds in the rate of contribution more than doubles the possible period of benefits.

3. *Basing Benefits on Customary Full-Time Wage Rates:* The first modification in the simple structure of rate making occurs when it is recognized that while contributions are based on actual wages received, benefits do not depend upon actual wages. They are predicated against some theoretic norm of full-time wages. Administrative routine and practical experience may eventually make the two bases agree, but it appears that in prosperous years 95% of the full-time may have been worked by those eligible to benefits, while in depression years less than 90% of full-time seems to have been worked by such employees. Thus, for the whole period benefits would be on a basis 5% or 6% higher than contributions. An upward correction in cost estimate will probably have to be made to the extent of 5%.

4. *Limitation of Benefits Because of Requisite Minimum Number of Weeks of Contributions:* In the hypothetic state we will assume the provision of the Alabama act, with its 26 weeks of contributing employment within the previous 52 weeks, as the norm for this limitation. No data exists to show the distribution of the unemployed by preceding length of employment. Two years are to elapse before benefits are to be paid under any of these plans. The extent of the disqualification because

of too short a period of immediately preceding employment can only be subject to a crude guess today. Recognizing somewhat that those last employed may be the first laid off, it seems conservative, however, to credit no more than 5% in cost estimates through this saving feature.

5. *Discharge for Proved Misconduct, Voluntary Terminations Without Reasonable Cause, and Refusal of Suitable Employment:* Picking Massachusetts because it treats all these factors alike, with 4 extra weeks of ineligibility as well as the week determining membership in the category, there is also a reduction of maximum benefit period. Massachusetts, with a 4 weeks' waiting period and a 16 weeks' period of benefit would seem to provide 62.7% minus 21.4%, or 41.3%, of the unemployed with benefits. By adding 4½ more weeks to the waiting period, the proportion of those within these categories getting benefits is apparently cut to about 27%, or by about 35%. The assignment of such reasons for ineligibility will vary in the administration of the plan from the assignment of such reasons when no financial importance attaches to the categories. If 20% of the unemployed were subject to a reduction of 35%, this might reduce those eligible to benefits by as much as 7%. The logical credit in expected costs in the hypothetical state's case may be set at 5%.

6. *Labor Disputes:* Save for the rather extreme penalty of a 10 weeks' waiting period in New York, the customary method is to count only that time lost during the trade dispute as time of ineligibility. The Monthly Labor Review of July 1934 seemed to indicate that in 1927 possibly 8% of lost time was due to such causes, but that in 1932 the proportion had dropped to only 2%. Labor disputes are customarily more serious in good times and less serious in bad times. In measuring the results in such a period as 1922-1935, the reduction in cost because of this ineligibility probably should not be considered as effective beyond 1%.

7. *Unemployment Because of Sickness or Inability to Work:* The basis of unemployment benefits is the ability to work and willingness to take a job. The census data which has entered into the composite distribution of the unemployed has included some sickness, but probably many of those out because of illness would not have considered themselves unemployed for the purposes of a census of this type. Most analyses of time lost because of sickness seem to show that about 2% of normal time is lost for this reason, and yet many studies of the unemployed show as low a percentage of unemployment due to sickness as 2% or 3%. From the standpoint of correcting the statistical data for its inclusion of sickness, it is probably wise not to allow a credit of more than 1% for this cause.

8. *Four-to-One Ratio:* The Alabama ratio of one week of benefits to four weeks of contribution in the preceding 104 weeks, with the object of safeguarding the funds against too exclusive a use by the habitually unemployed, is a means of guarding against hidden seasonal unemployment. The concept that the whole program is insurance and that benefits arise only through the loss of employment customarily to be expected, finds expression in this use of a limiting ratio. In the good times



where unemployment is commonly available, the reasonably prompt termination of benefit is sometimes considered desirable in giving added stimulus to the unemployed in their search for available work. This limitation is similar to the limitation, number 4, above. An investigation of the guarded reports of British experience suggest a possible credit to cost of 10%.

9. *Seasonal Unemployment:* None of the states has yet dealt to any considerable extent with this problem. The Canadian program has eliminated large numbers of categories where clear seasonality occurs and where, in a common unemployment insurance program, altogether too large a proportion of the benefits would go to people who had never built up that expectation of continuous employment. On the whole the administrative attitude toward dealing with seasonal unemployment may be a major element of cost. It was understood by the staff working on the national data that much seasonality is hidden to some extent because of the combination of data where seasonal slack seasons seem to counterbalance each other in different parts of the country. This hidden unemployment can be quite serious. It affects both coverage and possible benefits. The actual numerical coverage may be larger than that indicated by the average employment figures, while the extent of part-time employment may thereby be understated. Important as this factor is, evaluation of it is left to the special contingency recognition later discussed.

10. *Part-Time Unemployment:* The New York law establishing the unemployment compensation administration, calls upon them to make a report early in 1937 carrying recommendations for the treatment of part-time workers. This, again, is a major factor in cost. Should employers commonly adopt a share-the-work program with work in each day, contributions may be paid upon a lower than so-called "normal" rate of earnings, no benefits being paid during the period of part-time work. When benefits do become payable through complete termination of employment, it will be at a considerably higher level than the basis of contributions. On the other hand, if the employer worked each individual full-time when he works, but laid off successive portions of the staff, contributions would be based upon full-time rates but much more unemployed time would be compensated. The general suggestion that where an employee works less than half a week he shall draw in unemployment benefits enough to furnish him \$2.00 more than the benefits he would get through full-time unemployment, after crediting one-half week per week towards the waiting period, may function as a credit against unemployment benefits or may work as an additional charge. Until special reports are prepared on this subject, it might be advisable to estimate this part-time benefit as increasing the cost by 4%, with the understanding that when there is conscious selection against the fund by an employer, *some* recognition has been allotted in determining the special contingency provision.

11. *Commutation of Benefits:* Whenever the privilege of commuting benefits into a lump sum is offered under a state program, this will result in either a slight

gain or a slight loss to the fund. Due to the inability to value completely the probability of remaining unemployed and subject to benefits, most such flexible options tend to work against the financial interests of a fund. In the hypothetical state it may be desirable to recognize the weight of this factor as increasing the financial strain by 1%.

12. *Extra Weeks Unemployment Benefit for Long Service Without Prior Benefits:* The New Hampshire Act, aiming to give a maximum grant to the most worthy individuals, provides that long periods of contribution without accepting benefits shall build up rights to added benefits when unexpected unemployment occurs; one week for 22 weeks when the employee has contributed 1% within the preceding six years, up to a maximum of 10 weeks. The shifting employee, who gets a new job so promptly that he never qualifies for benefits, and the man with an uninterrupted service with a single employer, will both build up rights to added benefits. The experience in Great Britain seemed to indicate that at least 60% of the employees were subject to no unemployment creating benefit rights within a year, and that over a period of several years probably 40% of all employees secured no benefits whatever. In times of depression, lay-offs subject to benefits occur not only among the customary claimants but also among this group who had come to regard their service as permanent or who had felt no doubt as to their ability, when leaving one job, to secure another. In depression times it is conceivable that the unemployed would qualify for these added benefits, as follows:

TABLE V

20%	eligible to	no extra weeks		
20%	"	"	2	"
20%	"	"	4	"
20%	"	"	7	"
20%	"	"	10	"

This might result in eligibility to as much as 5 weeks' extra benefits in the depression period for the entire body of unemployed. The benefit in the early years of operation when statistics are being built up, will probably be negligible—another case of the lag in costs making itself felt. The probable extent of extra benefits may be so large that in the hypothetical states its recognition adds 10% to costs.

13. *Correction for Disparity Between Data Derived from Censuses and the Benefit Provisions of the Plan:* Census figures which have entered into the preparation of Table III have inquired only into the duration of the past period of unemployment. Benefits under the unemployment compensation plans depend upon the accumulation of successive periods of unemployment. There is also the element of omission from censuses of a considerable number of individuals with short periods of unemployment who are practically certain to return to work and who would not report themselves as unemployed in this type of census but whose unemployment would count toward the waiting period preceding benefits. Thus the figures of

unemployment for short periods are undoubtedly understated and the proportion of unemployed at the lower periods would tend to be increased. On the other hand, if the type of census were translated into one which gave, during the past year, the amount of unemployment in cumulative periods, the whole tendency of such a correction in census would be to raise the proportion unemployed for the longer period. This calls for a complete recasting of the entire framework, which is completely impossible. A guess is hazarded that the result of such recasting might reduce those eligible to benefits by 5% and be a credit in cost of this amount.

14. *Increased Unemployment Following the Use of the Plan and a General Contingency Provision for Inadequate Statistics and Temporary Abuse of the Plan:* There is in almost all insurance a lag in the recording of complete benefits. There are frequently elements of selection which result in a steadily increasing rate of benefit over many years, forces which could be recognized at the inception of a program were the statistical information more extensive. There seems also to be a point of sudden speeding-up in acquiring an understanding of how to make valid claims, at the same time that ability to "get away with" incorrect claims develops, so that the normal increased use of the coverage is intertwined with an actual abuse thereof. Possibly this is best illustrated in recent insurance history by the permanent-total-disability provision issued in connection with life insurance. For many years, particularly the years following recent medical selection of the insured lives, the claim rates were relatively light. Then education among the insured lives as to the methods of securing benefits seemed to develop claims very rapidly, while the early depression years seemed to create also a moral hazard which made exorbitant demands for benefits beyond those which had been intended in this form of insurance. In unemployment compensation we have a rather close parallel, since in both it is the termination of the income against which the protection is carried.

In unemployment insurance a few illustrative factors of such education are here set down:

(a) Many a conscientious employer has carried on payroll individual excess workers whom he really did not need because, in the absence of any benefit program, he hesitated to throw them on relief. When men so carried cannot be effectively used, when their continuance on payroll creates a waste from the standpoint of production cost, the availability of unemployment benefits would logically, and without creating a sense of fraudulent use of the plan, eliminate unnecessary workmen more promptly.

(b) Administration of health insurance has shown that there is a group requiring very close observation to prevent malingering. In developing competent administration, a certain amount of this abuse seems inherent in unemployment insurance.

(c) Married Women: In Great Britain an increasing number of married women entered the labor market after the introduction of unemployment insurance, increasing the coverage eligible to benefits without increasing the available employment.

Anything which forces a keener recognition of the limitation of income, as do the tax rates upon the employee and the employer in social insurance, will tend to force a considerable additional number of other members of a family into the market to increase family income through adding another wage earner. A special attempt to reduce this hazard to its income has developed in the administration of the British unemployment insurance.

(d) Increased Efficiency: The process of industrial technique functions all the time to increase per capita output and to eliminate wastes. When the employer's attention has been directed to the added necessity of efficiency through new forms of taxation, this process will probably be speeded up. The men eliminated will also generally be the less efficient workmen and the men who, with commonly rising employment standards, are most unable to find other work. The measurement of the extent of the increase in this existing factor is now beyond the scope of the statistician.

(e) While working rules are now postponed as to seasonal and part-time benefits and state administrators are doubtful as to the exact basis for early tentative rulings thereon, liberality of treatment may result in granting additional benefits in payments beyond those expected by the framers of the law.

(f) Effective Number of Hours in Working Week: The 30 week maximum advocated in many of the labor demands is believed by them to be a force to reduce unemployment. The delay in official recognition of any change may continue a nominally longer work-week against which much total and partial unemployment benefits may be paid. The method of making changes in the length of working week may have a vital influence upon the cost of unemployment insurance.

(g) Inadequacy of Basic Data: We have known so little about the actual facts of employment and unemployment that the construction of tabular data for the determination of probable costs of unemployment insurance may seriously understate the necessary provision, or it could conceivably overstate the necessary provision. Scarcity of data as to the actual number of potentially gainfully employed is complicated by the steady influx of the unemployed in recent years just above school age. Their absorption into the labor market may progress at the expense of older workers, particularly when the older workers are somewhat substandard. The arbitrary character of the composite census table must be understood, and it must be understood that radically different corrections will develop from the use of data of, let us say, 1927-1935, than will follow from the use of data of the period 1922-1929. There is so large an element of error in the entire data utilized that a reasonable contingency allowance must be established in recognition of this factor.

(a) to (g) Inclusive: Summarizing all of these factors, with no claim that the correct valuation of possible use or abuse of the program, the inadequacy of basic material, or a recognition of catastrophic changes is accorded thereby, a crude increase in costs for all of these factors is recommended at approximately one-third, or 33%.

When all of these factors leading to adjustment have been summarized, we seem to have a modification of the costs which would develop from the first two numbered factors, by using factors numbered 3-14, calling for an increase in probable cost of 26%, or roughly, 25%. Assuming that the hypothetical state had determined upon a waiting period of 3 weeks with a maximum benefit payment of 15 weeks, but with 10 extra possible weeks of benefit for long periods of employment without claim making, Table III indicates that 41.5% of the unemployed would be eligible for benefits. This would correspond to a contribution rate of 4.15% to the state fund. Increasing this by 25% suggests a contribution rate of 5.2%, against the rate of 2.7% actually provided in several of the state laws, or, assuming the additional employee contribution of 1.35% provided in some acts, a total contribution rate of 4.05%.

The use of preliminary term insurance is very common in life insurance sales. Young men with prospects for certain advancement but with current low incomes, buy five year term policies which they later change to adequate level premium life or life and annuity protection. In the light of the hope that unemployment is about to be reduced and recovery to proceed, it is expected that new unemployment would be lighter in the next few years than in the period observed in the studies outlined. All the evidence indicates that in such relatively good years the 4.0% rate, even the 2.7% rate, ought to be adequate. The postponement of any benefit payment for two complete years after contributions begin will, in a state with a 1936 contribution rate of 1% and a 1937 contribution rate of 2%, build up advance provision of about 3% of one year's wages, or the approximate equivalent of one year's contribution when the full rate of 3% has become effective. Provided, therefore, the administrators understood that the initial rate schedule may not be an adequate long-time rate schedule, there seems no immediate cause for alarm in the adoption of the contribution rates which have been so far provided. The unknown contingencies and the rate correction might be a credit instead of a debit. Moreover, there is the further reason for optimism that the force which has not been measured, directed conscientiously, coöperatively and intelligently to the reduction of unemployment, might conceivably become so important as to forestall the need of any higher rates. It is recommended, however, that each state seriously recognize the considerations leading to the *possible* deficiency in the rates so far enunciated by other states, when surveying the statistical problems that face them.

The best approach open to any state commission is to request the fullest coöperation on the part of the Social Security Board, so as to gain access to as much of the limited data as may be available.