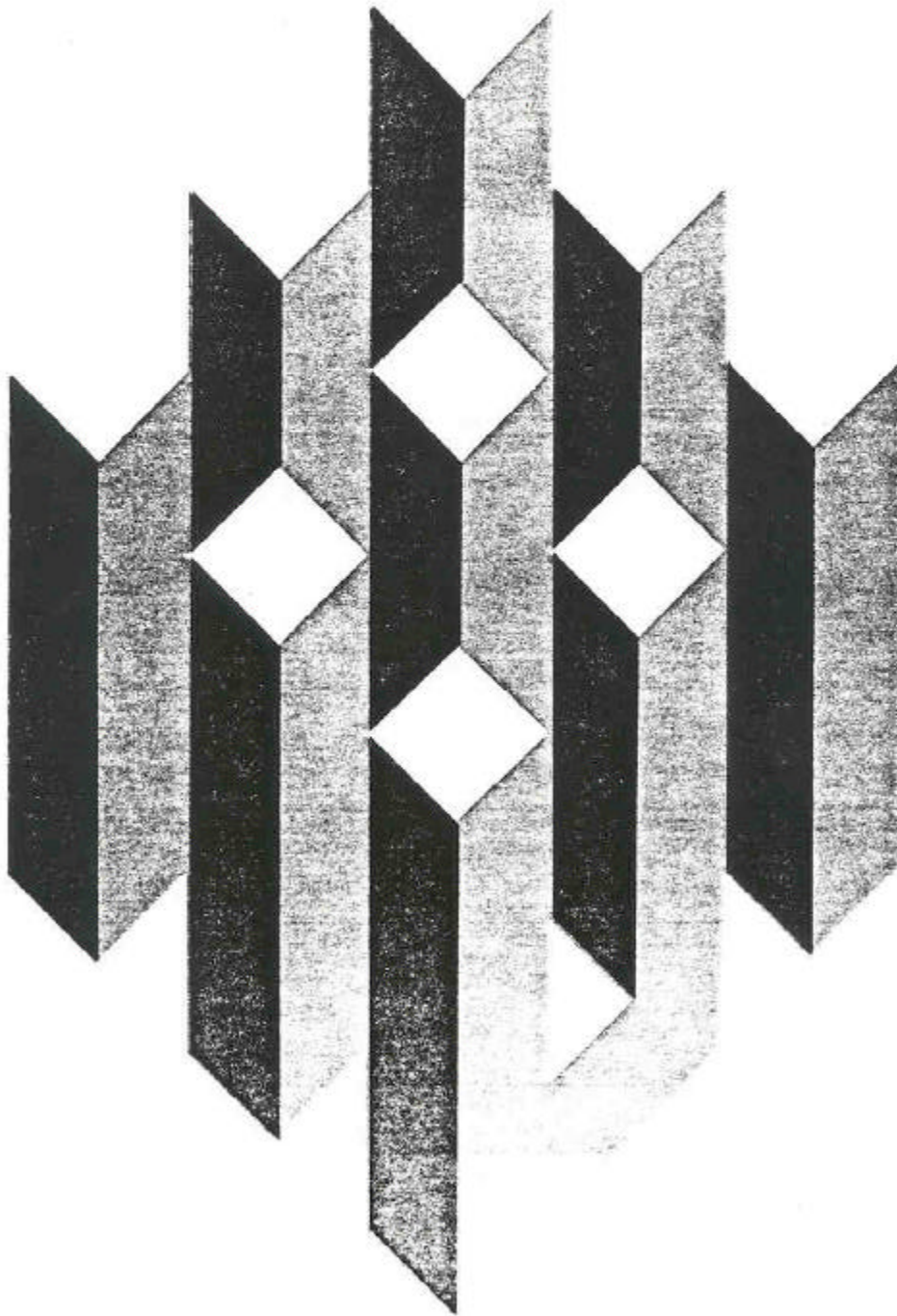


Benefit Adequacy and UI Program Costs: Simulations with Alternative Weekly Benefit Formulas



Unemployment Insurance
Occasional Paper 80-4

Department of Labor
Employment and Training Administration



CONTENTS

PREFACE.....	iii
PURPOSES OF THE STUDY.....	1
BACKGROUND FOR THE STUDY.....	3
ASSUMPTIONS FOR ESTIMATING THE COST EFFECTS OF BENEFIT FORMULA CHANGES.....	13
EMPIRICAL RESULTS OF SIMULATIONS.....	19
A FRAMEWORK FOR EVALUATING COST AND BENEFIT ADEQUACY CHANGES.....	32
SUMMARY.....	36
FOOTNOTES.....	40

PREFACE

This is the fourth in a series of reports based on the Arizona Benefit Adequacy (ABA) Study. The first report emphasized the measurement of benefit adequacy under the prevailing and selected alternative weekly benefit amount formulas. The second investigation focused on the adjustments undertaken by beneficiary households during periods of thirteen and twenty-five consecutive weeks of compensated unemployment. The third study analyzed the labor market experiences of study group claimants who exhausted their entitlement to benefits.

This report extends the analysis provided in the first ABA Study report. Emphasis is placed on the changes in total regular UI program costs and changes in benefit adequacy distributions that result from variations in the weekly benefit amount formula. Hence, Chapter V of the first report, The Adequacy of Unemployment Insurance Benefits: An Analysis of Weekly Benefits Relative to Preunemployment Expenditure Levels (U.S. Government Printing Office, 1978), may be utilized as background for the material developed in this report. Essential background material, however, also is provided in summary form in this report.

The authors wish to acknowledge the cooperation and support provided by the UI Research and Reports Section of the Arizona Department of Economic Security; Mr. Richard Porterfield, Coordinator of Contract Research, was especially helpful in project administration. We also wish to express our appreciation to Ms. Helen Manheimer and Dr. Mamoru Ishikawa of the Unemployment Insurance Service for their valuable suggestions during the course of the project. The careful review of an earlier draft of the report by Mr. Thomas Vaughn of the Arizona Department of Economic Security improved the final report. Mrs. Lynnette Winkelman expertly typed various drafts of the report and the final manuscript.

PURPOSES OF THE STUDY

The main purpose of this report is to provide estimates of the regular unemployment insurance (UI) program costs associated with selected changes in the formula used to determine the amount of weekly benefits received by a group of Arizona UI beneficiaries. Because inflation has eroded the purchasing power of these weekly benefits in recent years, interest has centered around the costs of increasing the amount of weekly UI support. Accordingly, most of the benefit formula changes considered in this report provide for higher weekly benefits for some or all of the claimants analyzed. A second objective of this study is to outline a general methodology for analyzing the effects of changes in the benefit formula on both regular UI program costs and the benefit adequacy levels experienced by individual beneficiaries. A simple example of applying this methodology to two formula changes analyzed for the study group also is provided.

The number of formula changes that could be considered in accomplishing the main objective of the study virtually is unlimited. Thus, the approach taken in this study is simply to illustrate some of the possibilities that might be considered. Selection of the particular benefit formulas to consider for this analysis obviously is a matter of judgment. With one exception, the benefit formulas examined are those that already have been analyzed for their impact on benefit adequacy in a previous report.¹ For each benefit formula considered, the benefit adequacy distribution is provided, together with the estimated costs of

providing benefits under that formula, relative to the original benefit formula. The formula changes considered that provide for higher weekly benefits may be grouped into the following general categories: (1) increases in the maximum weekly benefit amount (WBA); (2) increases in the fraction of high quarter earnings replaced by weekly benefits; (3) a dependents allowance, even though many persons argue that such allowances are inappropriate within the context of an "insurance" program; and (4) some combination of the above.

The second major objective of this report is to provide a policy framework for analyzing different changes in the benefit formula that might be considered. For example, an increase in the size of the weekly benefit payment, other things equal, would increase both benefit adequacy and UI program costs. For policy purposes, the nature of the "tradeoff" between changes in benefit adequacy and changes in cost is an important issue. This tradeoff, and the corresponding implications for decisions about changing the weekly benefit amount formula, can be more easily seen by considering the following questions: (1) For a given change in UI program costs, which formula change would provide the greatest "improvement" in the benefit adequacy distribution? or (2) What is the minimum change in total UI program costs required to achieve some given (target) benefit adequacy distribution? A simulation that approximates (1) above also is provided to further illustrate the utilization of this framework.

BACKGROUND FOR THE STUDY

The information contained in this section of the paper is provided as background for those who do not have access to the ABA Study report cited in the previous section. The design of the original study, the definition of the benefit adequacy measure utilized, and the characteristics of the sample analyzed in this report are summarized below.

Benefit Adequacy Study Design

The Arizona Benefit Adequacy Study began in the summer of 1975. A main objective of the study was to investigate the adequacy of unemployment insurance (UI) benefits relative to the preunemployment standard of living established by the beneficiary household. The study also was designed to assess adjustments undertaken by beneficiaries and their households during an unemployment spell of up to 25 consecutive weeks of compensated unemployment. Three series of household interviews were conducted. The first, which was administered after five consecutive weeks of compensated unemployment, was designed to obtain information about each beneficiary household's preunemployment income and expenditure levels during a month of typical employment. The second and third sets of interviews were conducted after the study group had recorded thirteen and twenty-five consecutive weeks of compensated unemployment; these interviews were designed to obtain information on the adjustments undertaken by each beneficiary household in response to the beneficiary's prolonged unemployment spell. In the fall of 1976 the study was expanded to include an analysis of the labor market experiences of those who had exhausted their entitlement to benefits. The survey work for all phases of the study was completed in February, 1978.

Measurement of Benefit Adequacy

The principal objectives of the analysis based on the fifth week interview data were to: (1) develop an operational measure of benefit adequacy; (2) utilize that measure to assess the extent of benefit adequacy achieved with the benefit formula prevailing at that time; and (3) determine what the impact on benefit adequacy would have been if certain alternative benefit formulas had been in effect. Because the analysis presented in this report represents an extension of the third phase of this earlier work, the concept of benefit adequacy developed is reviewed in considerable detail in this section.²

The size of the weekly benefit amount (WBA) to which the beneficiary is entitled depends on the claimant's prior earnings in covered employment. This wage income, combined with the earnings of other household members and any nonwage income received by the household, provides for a certain level and pattern of monthly expenditures to which the beneficiary household becomes accustomed prior to the onset of the beneficiary's unemployment spell.

Previous studies of the adequacy of UI benefits consistently have focused on a measure of benefit adequacy based upon a comparison of the WBA with the expenditures for specific types of goods and services. Which expenses should form the benchmark against which the WBA is to be compared has been a matter of judgment. The larger this expenditure set is, the less adequate UI benefits would appear to be, unless some offsetting reduction in the proportion of these expenditures that the WBA "should" replace is considered. For the purposes of this study, the relevant expenditure set encompasses paid expenses for "necessary/obligated"

goods or services during the preunemployment month--a month of employment prior to unemployment selected by the claimant as most "typical" of his/her usual employment situation. This expenditure set consists of "necessary" expenditures for goods and services acquired and consumed by the household on a regular basis or those "obligated" expenses that are expected to be met on a regular basis because of established commitments, legal or otherwise. The rationale for this definition is rooted in the concept of the standard of living established by the beneficiary household. Expenses which meet one or more of the above criteria are assumed to constitute the "core" component of the household living standard. Generally, the household unit becomes accustomed to this standard of living, and rapid downward adjustments in it are difficult to make following the onset of the beneficiary's unemployment spell.

The items included in the necessary/obligated expense definition are the following:³

- 1) housing (including utilities and necessary maintenance);
- 2) food purchased in grocery stores;
- 3) medical care (including prescriptions and payments on past medical care);
- 4) credit and loan payments;
- 5) clothing;
- 6) transportation (including gasoline and maintenance);
- 7) insurance (including union dues);
- 8) services and other regular payments;
- 9) continuing and regular support of persons outside of the household; and
- 10) lump-sum payments for property and income taxes.

It should be emphasized that the beneficiary's share of these necessary and obligated expenses may be considerably less than the total

for the entire household. Because UI benefits are wage-related, it reasonably can be argued that the weekly UI benefit payment should be expected to sustain (at most) only that share of the total of necessary and obligated expenses that the beneficiary's wages sustained while the beneficiary was employed. Hence, the total of the beneficiary household's necessary and obligated expenses in the preunemployment month was adjusted by the ratio of the beneficiary's gross wage in the preunemployment month to the total of gross recurring household income in the preunemployment month. The measure of benefit adequacy employed in the analysis, therefore, is the ratio of WBA to the beneficiary's "proportionate share" of the (weekly) necessary and obligated household expenses that were paid during the preunemployment month. This measure is given by:

$$\text{BENAD} = \frac{\text{WBA}}{(\text{EXPENSES}) \times (\text{BEN. SHARE})}$$

where:

BENAD is the measure of the adequacy of the weekly benefit payment for an individual beneficiary;

WBA is the maximum UI weekly benefit payment to which the beneficiary is entitled on the basis of earnings in the high quarter of the base period;

EXPENSES is the total of (weekly) necessary and obligated expenses of the beneficiary household during the preunemployment month;

BEN. SHARE is the ratio of the beneficiary's gross wages in the preunemployment month to total gross recurring household income during the same month; this ratio defines the beneficiary's "proportionate share" of the necessary and obligated expenses of the beneficiary household.

Once a particular measure of benefit adequacy has been developed, it is important to identify how the measure is to be interpreted. Some writers have developed other measures of benefit adequacy and have estab-

lished a decision rule that indicates that benefits are "adequate" for those beneficiaries who reach some predetermined value of benefit adequacy. In the present study, no specific level for the benefit adequacy measure has been developed to judge whether benefits are/are not adequate for an individual beneficiary. Rather, emphasis is placed on the distribution of benefit adequacy values for the entire group of beneficiary households encompassed by the analysis. This view explicitly recognizes that whether benefits are judged to be adequate, by the measure discussed above or by any other measure, is an almost totally subjective issue. In one sense, of course, this approach may be somewhat unsatisfactory because it leads to no "definitive" statements about the proportion of claimants for whom benefits were or were not adequate. The goal, however, is to provide the information required for each reader to make that value judgment for the alternative benefit formulas considered.

Characteristics of the Sample Analyzed

The sample for this study was drawn throughout the twelve-month period beginning in mid-September of 1975. During this period, approximately one-fourth of those who filed the first claim in their benefit years and had the necessary earnings to qualify for benefits under Arizona's benefit formula were selected randomly for potential inclusion in the study. Those who previously had initiated a benefit year were excluded, because adjustments to unemployment after thirteen and twenty-five consecutive weeks of compensated unemployment were to be analyzed as one part of the study. These claimants were screened again seven weeks after the effective dates of their new, initial claims. At this screening, those who had served a valid waiting week and had received payment for

five consecutive weeks of unemployment were selected for the preunemployment month interview, with the following exceptions:

- 1) those who had moved out of state, because household interviews could not be conducted for them;
- 2) those who had entered "approved training," because their adjustments to unemployment most likely would reflect their unusual circumstances;
- 3) those who had delayed filing for benefits for more than 21 days after their job separation dates, because of the possible difficulty involved in accurately obtaining accurate information from them about income and expenditures in a "typical" month of employment prior to unemployment;
- 4) those whose new, initial claims were transitional claims, because their adjustments to unemployment likely would differ substantially from those of persons just beginning unemployment; and
- 5) those who filed "true partial" claims (such persons continue to work for their last employer but receive partial UI benefits since their earnings have been reduced sufficiently to meet the UI qualifying requirements), because their adjustments to unemployment would reflect their "partial" earnings.

A total of 4452 beneficiaries were selected for inclusion in the study over the twelve-month sampling interval.⁴ From this group, completed household interviews were obtained for 3332 persons, or 75 percent of the total. Because extensive information was obtained on both the income and the expenditures of the beneficiary household during the preunemployment month, it was possible to obtain a rough check on the accuracy of the data obtained by conducting a "balancing differences" test. For

the preunemployment month, the total itemized cash outlays of each beneficiary household were compared with the household's total cash resources available to meet those outlays. If the ratio of cash outlays to cash resources available to meet those outlays fell between 0.75 and 1.25, the information was accepted as given (unless obvious problems were found by the project staff during the editing process). Any questionnaire with a ratio outside of these bounds was subjected to additional verification with the beneficiary to account for the apparently large discrepancy. Large discrepancies between household outlays and cash resources could not be reconciled for 152 cases (4.6% of the completed interviews), and these cases were excluded from the analysis. Of the remaining 3,180 persons, it was not possible to compute the benefit adequacy measure for 66 persons because of missing data for one or more components of the measure. Hence, the analysis in this report is based on 3,114 persons.

A comparison is provided in Table 1 of the characteristics of the 3,114 persons analyzed and the characteristics of the 1,388 persons excluded because of nonresponse, missing data or other problems. Because these groups can be viewed as independent, random samples (one from the population of claimants for whom "complete/accurate" information can be gathered, and the other from the population of claimants for whom "complete/accurate" information can not be gathered), the appropriate statistical test is one that indicates whether these two samples were drawn from the same or different populations. Given the 18 tests reported in Table 1, the probability is at least .05 that one or more of these results would be less than .05/14 (or .0036) due to chance alone, even if the two samples were drawn from the same population.⁵ Thus, only those proportions tests

TABLE 1
CHARACTERISTICS OF THE GROUP ANALYZED/NOT ANALYZED

Characteristic	Percentage Distributions for ^a		Probability of Obtaining Observed Difference Due to Chance Alone ^b
	Group Analyzed	Group Not Analyzed	
<u>Sex</u>			
Male	67.6	70.7	.0414
Female	32.4	29.3	.0414
<u>Age</u>			
Less than 25 yrs	23.4	18.1	.0020*
25-34 years	30.5	34.7	.0058
35-44 years	17.9	20.8	.0232
45-54 years	16.5	14.7	.1336
55 years & up	11.7	11.7	.9999
<u>Potential Duration</u>			
12-15 weeks	7.7	10.0	.0110
16-18 weeks	8.1	8.5	.6528
19-21 weeks	8.0	8.6	.5028
22-25 weeks	12.1	12.2	.9282
26 weeks	64.1	60.7	.0308
<u>Weekly Benefit Amt</u>			
\$15-\$44	11.9	14.2	.0340
\$45-\$54	8.5	10.5	.0332
\$55-\$64	10.0	8.8	.2150
\$65-\$74	9.0	8.2	.3844
\$75-\$84	9.2	7.8	.1310
\$85	51.3	50.5	.6242

^aThe group analyzed totals 3114 persons; the group not analyzed totals 1338.

^bThese values indicate the probability of obtaining a difference between the two sample proportions, due to chance alone, as large or larger than the one actually observed, if the two samples were drawn from the same population. The probability is at least .05 that one or more of the probability values would be less than $.05/14 = .0036$ due to chance alone. Hence, only those probability coefficients that are .0036 or less are identified with an * in the table to indicate statistically significant differences.

for which the probability is less than or equal to .0036 are denoted with an asterisk in Table 1 to call attention to instances in which the difference between the sample proportions is statistically significant at the .05 level.

The results of the tests summarized in Table 1 indicate that there were no statistically significant differences (at the .05 level) between the group analyzed and the group not analyzed for sex, weekly benefit amount, potential duration of regular benefits and for four of the five age categories. However, a significantly greater percentage of the analyzed group than of the group not analyzed was under the age of 25 years (23.4% vs. 18.1%). It should be noted, however, that a larger percentage of the group not analyzed than of the group analyzed was aged 25-34 years (34.7% vs. 30.5%); accordingly, the percentage of each group under 35 years of age is very similar (53.9% for the analyzed group, compared with 52.8% for the group not analyzed). On the basis of the entire set of comparisons summarized in Table 1, there is no indication of any exclusion bias that would limit inferences to the broader population from which the 3,114 persons analyzed were selected.

It also is possible to make some limited comparisons between the characteristics of the 3,114 persons analyzed and the broader population of all Arizona UI claimants who received benefits during approximately the same period that the study group was receiving UI support.⁶ These comparisons are provided in Table 2. Even though the group analyzed was not drawn from the entire population of UI claimants during the twelve-month sampling interval, the extent of similarity between the sex and age characteristics of the study group and all Arizona claimants is quite

TABLE 2
CHARACTERISTICS OF GROUP ANALYZED VS. ALL ARIZONA UI CLAIMANTS

<u>Characteristic</u>	<u>Percentage Distributions For:</u>		<u>Probability of Obtaining Observed Difference Due to Chance Alone^c</u>
	<u>Study Group^a</u>	<u>All Arizona Claimants^b</u>	
<u>Sex</u>			
Male	67.6	68.0	.64
Female	32.4	32.0	.64
<u>Age</u>			
Less than 25 yrs	23.4	22.4	.18
25-34 years	30.5	30.7	.82
35-44 years	17.9	18.2	.66
45-54 years	16.5	15.6	.16
55 years and up	11.7	13.1	.02

^a Includes the 3114 persons analyzed in this report.

^b Based on information contained in the *Monthly Summary of Claims and Claimants* published by the Unemployment Insurance Administration of the Arizona Department of Economic Security. Included are those who filed continued claims for unemployment during the sample period for the study.

^c These values indicate the probability of obtaining, due to chance alone, a difference between sample and population proportions as large or larger than the one actually observed, if the sample were drawn from the population. The probability is at least .05 that one or more of the 7 probability values would be less than $.05/5 = .01$ due to chance alone. Hence, only those probability coefficients that are .01 or less are identified with an * to indicate statistically significant differences.

remarkable. In fact, none of the differences reported in Table 2 is statistically significant at the .05 level. This may suggest that some implications of the study could be generalized to all Arizona claimants who drew benefits during this period, although direct generalization would have to assume that the WBA, household income/expense and unemployment duration distributions for the study group also closely approximate the (unknown) distributions for all Arizona beneficiaries.

ASSUMPTIONS FOR ESTIMATING THE COST EFFECTS OF BENEFIT FORMULA CHANGES

Several important assumptions must be made in estimating the percentage change in total UI regular program costs that would result from a change in the benefit formula.⁷ Each of these assumptions is discussed below. In evaluating the importance of these assumptions, it should be noted that the emphasis of this report is on providing a methodology for evaluating benefit adequacy changes in light of the costs required to generate those benefit adequacy changes. Obviously, a range of cost estimates could be produced by making alternative assumptions for each of the factors discussed below.

Claimant Composition

The composition of the unemployed varies through time. The cost of providing benefits under any formula depends partly on the characteristics of those who draw benefits. In particular, the high quarter earnings distribution (which determines the WBA distribution in Arizona) is a critical factor in determining the weekly costs of providing benefits

under formulas such as the Arizona formula relevant for the study group. As previously noted, these persons drew benefits during a portion of the 1975-76 recession. As a result, relatively more unemployment was recorded for persons with relatively high earnings during this period than normally would be the case for Arizona's claims load. Thus, the weekly cost estimates for benefit formula changes that increase the maximum WBA for this group of claimants probably are somewhat higher than the typical weekly costs would be during more normal periods of economic activity.

Duration of Unemployment During the Benefit Year

The WBA distribution for the study group determines the weekly costs of providing benefits to the study group. In the estimates developed below, however, the measure analyzed is the cost of providing some change in the benefit formula for an entire benefit year. The total cost for this year-long period obviously depends on the number of weeks of compensated unemployment recorded for the study group, as well as the weekly benefits the group would receive under any given formula.

For this study, it is assumed that the study group would record the same number of weeks of compensated unemployment under all benefit formulas considered. The constant duration of unemployment assumed for each claimant is that actually recorded by that person in regular UI programs--excluding EB and FSB programs--for the entire benefit year that included the study period. Hence, the estimates of the absolute dollar changes in total costs (but not the percentage changes in total costs) depend importantly on the duration of regular benefits actually received by the study group during the benefit year.⁸

A major determinant of the unemployment recorded by the study group was the overall level of economic activity during the study period. As noted above, these claimants drew benefits during a portion of the most severe contraction of economic activity since the Great Depression of the 1930s. Moreover, Arizona was especially hard hit by this recession. During the 1975 recession, the Arizona unemployment rate actually exceeded the national average, and peaked in May of 1975 at 13.1 percent (seasonally adjusted). By September of 1975, a weak recovery had begun, but the Arizona unemployment rate of 12.5 percent was 4.2 points above the national average. By August, 1976--when the last claimants were selected--Arizona's unemployment rate (seasonally adjusted) was still 9.2 percent. The statewide average unemployment rate during the twelve-month sampling period was 10.8 percent. The economic conditions that prevailed during the study period indicate that the absolute dollar changes in total cost calculated in this report probably represent higher cost estimates than normally would prevail, because of the relatively long duration of benefits recorded for the study group. However, as noted above, the estimates of the percentage changes in regular UI program costs associated with different formula changes are unaffected by the constant duration of unemployment assumed. In the subsequent analysis, the emphasis is on the percentage changes in costs, rather than on the absolute dollar changes in costs.

WBA Effects on Unemployment Duration

In addition to economic conditions, which probably represent the major determinant of benefit-year unemployment duration, increases in the WBA also might create disincentive effects that could increase the duration of compensated unemployment. If so, UI program costs also would be

increased. In fact, studies of the effect of higher weekly benefits on individual spells of unemployment often have suggested that higher weekly benefits induce somewhat longer spells of unemployment.⁹ However, a recent study of benefit-year duration--rather than spell duration--indicates that the effect of higher weekly benefits on the duration of compensated unemployment for an entire benefit year may be very small.¹⁰ In any case, given the methodology of this study, the assumption is made that higher weekly benefits would have no effect on the weeks of unemployment recorded for the study group.¹¹ If higher weekly benefits actually would have induced more weeks of compensated unemployment during the benefit years of the study group, the cost estimates developed would underestimate the costs of increasing weekly benefits.

Variations in the Maximum Benefit Award

Changes in the benefit formula that increase the maximum weekly benefit amount also must incorporate provisions to increase the maximum benefit award, or the potential duration of benefits must be reduced. During the study period the maximum WBA in Arizona was \$85 and the maximum benefit award was \$2,210 ($\85×26 weeks of potential duration). An increase in the maximum WBA to \$95 (one of the formula changes subsequently considered) would, for example, reduce the potential duration of benefits to approximately 23 weeks ($\$2,210/\$95 = 23.26$ weeks) if the maximum benefit award were held constant at \$2,210. For the purposes of this analysis, it is assumed that the maximum benefit award would rise proportionately with increases in the WBA, up to the limit provided by Arizona law (which sets an upper bound on the maximum benefit award of one-third of base period wages). Under all formula changes considered, each person's com-

compensated unemployment was constrained to not exceed the maximum benefits that could have been received by that person, given his/her actual high quarter and base period earnings.

Partial Benefit Weeks

Another difficulty confronted in calculating estimates of the cost differences between the 1975-76 Arizona benefit formula and hypothetical changes in that formula relates to the treatment of persons who reported earnings for weeks during which benefits were received. Under Arizona law as of 1975-76, a person was allowed an earnings disregard for the first \$15 of earnings each week; after the first \$15 of earnings, benefits were reduced one dollar for each additional dollar of earnings below the claimants WBA. Once weekly earnings for a claimant were equal to his/her WBA, the claimant was ineligible for any benefits under Arizona law. Claimants who reported earnings thus may be classified into one of two groups: 1) those totally disqualified from benefits because of excessive earnings for one or more weeks; and 2) persons who received benefits in a given week, even though they reported some earnings for that week. The latter group presented no problems in the cost change calculations, because any claimant who qualified for some benefits during a week with reported earnings also would have qualified for any increase in benefits (justified by high quarter earnings) during that same week under a revised benefit formula. For this group, the cost change that would result from an increased maximum WBA for a week of benefits simply depended on how many of these claimants would have been eligible for increased benefits under the new formula. This is the case because these claimants already had met the weekly benefit reduction due to partial earnings under the

original formula and each would have received the full dollar increase indicated by the formula change.

Unfortunately, group (1) above could not be treated in an analogous manner. Although information was available on the number of weeks during which the beneficiary was fully disqualified from benefits because of excessive earnings, information was not available on the exact amount of reported earnings during each week of the benefit period. Hence, there was no way to calculate whether a claimant formerly disqualified from all benefits because of excessive weekly earnings for one or more weeks would have been able to qualify for some benefits under a different benefit formula. Obviously, the maximum increase in benefits for any such claimant would be limited to the increase in the WBA to which the claimant would be entitled under the revised benefit formula. It was not possible, however, to determine the exact increase (less than or equal to this maximum) in weekly benefits to which such persons would be entitled under the altered benefit formula. Hence, the cost-change estimates have been developed on the assumption that any claimant totally disqualified from benefits because of excessive earnings under the original benefit formula also would have been disqualified from benefits under the revised benefit formulas considered. This assumption may result in some understatement of costs under some formula changes considered. Any such understatement is likely to be very minor, however, because very few of these claimants had even one week disqualified due to excessive earnings during their benefit years.

EMPIRICAL RESULTS OF SIMULATIONS

The results of costing the benefit formula changes that previously have been analyzed for their impact on benefit adequacy are presented in this section.¹² Emphasis is placed on the costs associated with the various changes in the benefit adequacy distribution generated by alternative formula changes. As already noted, the cost estimates are based on the costs of providing benefits under the regular state program only. Five different types of formula changes are considered: (1) increases in only the maximum WBA; (2) increases in the high quarter earnings qualifying requirement (hereafter referred to in this report as an increase in the minimum WBA);¹³ (3) increases in the maximum and minimum WBA, given a fixed high quarter earnings fraction of 1/25 (the replacement fraction currently provided by Arizona law); (4) increases in the maximum and minimum WBA, combined with a change in the high quarter earnings fraction from 1/25 to 1/22; and (5) a formula with a dependents allowance. It should be emphasized once again that these benefit formula changes are only representative of the types of formula changes considered by many states.

The Prevailing Benefit Formula

The provisions of the 1975-76 Arizona employment security law in effect during the study are summarized briefly as background for the formula changes considered. Arizona's weekly UI benefit payment for each claimant was equal to the lesser of \$85 or 1/25 of that person's earnings in covered employment during the "high quarter" of his/her UI "base period." The maximum weekly benefit amount of \$85 amounted to 47 percent of the statewide average weekly wage in covered employment during the

study period. On this basis, and excluding the dependents allowances paid by any UI jurisdiction, Arizona (and Missouri) were 44th among all jurisdictions ranked from high to low by the ratio of the maximum WBA to the statewide average weekly wage in covered employment.¹⁴ The minimum high quarter earnings required to qualify for UI support was \$375; given the 1/25 high quarter earnings replacement rate, the minimum WBA was \$15. Total wages in the UI base period had to be at least 1½ times earnings in the high quarter to qualify for benefits.¹⁵ No dependents allowances were provided under the Arizona benefit formula.

In addition to the monetary requirements for eligibility, Arizona claimants are required to satisfy certain nonmonetary requirements for benefit eligibility. Generally, claimants are able to qualify for benefits only if they have been laid off their last jobs for lack of work or have quit for "good" cause. Claimants must be able and available for work, and must not refuse "suitable" employment in order to receive benefits. Under Arizona law, claimants also are required to serve a "waiting week" without compensation prior to receipt of benefits during the benefit year.

The total (regular) benefits that could be received during the benefit year were defined as the lesser of base period wages divided by three or 26 times the weekly benefit amount to which the claimant was entitled on the basis of his/her high quarter earnings. Thus, the upper limit on receiving the full weekly benefit amount is 26 weeks, although workers could receive partial benefits for a longer period because of odd-job income (which would reduce benefits for each dollar of earnings after the \$15 earnings disregard, as described above).

The relative degree of benefit adequacy found for the total sample under the benefit formula prevailing during 1975-76 is reported in Table 3. Almost one-third of the beneficiaries received a weekly benefit amount that covered half or less of their "proportionate share" of the household's necessary/obligated expenses during their preunemployment months. In contrast, 14 percent of the beneficiaries were in the highest benefit adequacy category (100% or more), and nearly one-fourth of the beneficiaries were in the highest two benefit adequacy categories (86% or more). The median value of benefit adequacy for the study group under the 1975-76 formula was 62 percent.

The total costs of providing regular UI program benefits (excluding any payments under EB and FSB) also is reported in Table 3. Based on total weeks of compensated unemployment during an entire benefit year, the total costs of providing regular benefits to this group amounted to \$4,088,028. This total amounts to an average benefit payment of approximately \$1,313 for each beneficiary included in the study. These cost levels form the benchmark against which the UI program costs of most other benefit formulas are compared.

Increases in the Maximum Weekly Benefit Amount

Simulations were performed for three different benefit formulas that changed only the maximum WBA; the minimum WBA of \$15 and the high quarter earnings replacement rate of 1/25 were retained. The formula changes considered include an increase in the maximum WBA to \$95, \$105, and \$127; these levels reflect, respectively, 50 percent, 55 percent and 67 percent of the statewide average weekly wage of \$190 that prevailed during the study period. Furthermore, the maximum WBA of \$127 would be consistent

TABLE 3
 BENEFIT ADEQUACY DISTRIBUTIONS AND TOTAL REGULAR UI PROGRAM COSTS UNDER
 ALTERNATIVE FORMULAS THAT INCREASE ONLY THE MAXIMUM WEEKLY BENEFIT AMOUNT

Benefit Adequacy Category	BENCHMARK: 1975-76 Benefit Formula With a Maximum WBA = \$85		Alternative Benefit Formula With a Maximum WBA = \$95		Alternative Benefit Formula With a Maximum WBA = \$105		Alternative Benefit Formula With a Maximum WBA = \$127	
	Actual %	Cumulative %	Actual %	Cumulative %	Actual %	Cumulative %	Actual %	Cumulative %
0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-35%	10.7	10.7	8.0	8.0	6.6	6.6	5.1	5.1
36-50%	20.9	31.6	18.9	26.9	16.2	22.8	12.6	17.7
51-65%	23.4	55.0	22.9	49.8	23.0	45.8	21.7	39.4
66-85%	21.8	76.8	24.3	74.1	26.0	71.8	27.8	67.2
86-99%	9.2	86.0	10.0	84.1	10.8	82.6	12.7	79.9
100% or More	14.0	100.0	15.9	100.0	17.4	100.0	20.1	100.0
Median Benefit Adequacy ^a	62.0		66.2		69.1		73.2	
Sample Size	3114		3114		3114		3114	
Total Cost ^b	\$4,088,028		\$4,337,397		\$4,545,478		\$4,898,696	
Percentage Change From Total Cost Under the 1975-76 Benefit Formula	----		6.1%		11.2%		19.8%	

^aMedians are calculated from the distribution of claimants by the benefit adequacy categories reported in the table, rather than by arraying all claimants by their actual benefit adequacy values. To determine the median value, it is assumed that the claimants in any benefit adequacy interval are distributed uniformly throughout that interval.

^bTotal cost of regular UI program payments during the entire benefit year; this cost excludes any payments made under the EB and FSB programs.

with the Nixon administration's proposal to raise the maximum WBA to 2/3 of the statewide average weekly wage. Hence, this latter simulation of benefit adequacy and the associated cost estimates provide an indication of how that proposal would have influenced these dimensions of the UI program, had they been introduced in Arizona during the study period.

The benefit adequacy distributions that would result from these three increases in the maximum WBA are reported in Table 3. The rise in the maximum WBA to \$95 produces no marked increase in the benefit adequacy distribution, compared with that prevailing under the 1975-76 formula. For example, the percentage of beneficiaries found in the bottom benefit adequacy categories (50% or less) would fall from approximately 32 percent under the original formula to 27 percent under a formula that provided a maximum WBA of \$95; median benefit adequacy would rise from 62.0 percent to 66.2 percent under this formula change. An increase in the maximum WBA to \$105 would further reduce the percentage of beneficiaries in the bottom adequacy categories to 23 percent, whereas median benefit adequacy would rise to 69.1 percent under this formula. A further increase in the maximum WBA to \$127 would reduce the percentage of beneficiaries in these bottom benefit adequacy categories (50% or less) to about 18 percent (vs. 32% under the original formula); median benefit adequacy would rise to 73.2 percent under this formula change. Under this largest increase in the maximum WBA, the percentage of beneficiaries in the top two benefit adequacy categories (86% or more) would rise to approximately one-third, compared with about 23 percent under the original benefit formula.

The cost associated with these increases in the maximum WBA also are reported in Table 3. The increase in the maximum WBA from \$85 to \$95

would increase total regular UI program costs by an estimated 6.1 percent; on a per claimant basis, this increase amounts to a change from \$1,313 per year to \$1,393 per year. If the maximum weekly benefit amount were increased to \$105, total regular UI program costs would increase by an estimated 11.2 percent; on a per claimant basis, costs would increase from \$1,313 to \$1,460 per year for the study group. Finally, a rise in the maximum WBA to \$127 would substantially increase regular UI program costs--by an estimated 19.8 percent; on a per claimant basis, the increase would amount to \$260 for the entire benefit year. These latter figures represent the estimated cost that would have resulted had the Nixon administration's proposal been in effect during the study period.

Increases in the Minimum Weekly Benefit Amount

Another type of weekly benefit formula change considered was an increase in the high quarter earnings qualifying requirement; for purposes of illustration, a fairly large increase in high quarter earnings (from \$375 to \$875) was selected for analysis. Under this revision, the minimum WBA paid would be \$35 rather than \$15. In this simulation the maximum WBA remained at \$85 and the high quarter earnings replacement rate remained at 1/25.

The only relevant impact of a benefit formula change such as this is to reduce the number of claimants who are eligible for benefits. As indicated in Table 4, this change would reduce the number of beneficiaries eligible for benefits by 5.9 percent. Because these persons no longer would receive benefits under the new benefit formula, benefit adequacy would be zero for them. Apart from this change, no other major effect on the benefit adequacy distribution is apparent. Interestingly, however,

TABLE 4
 BENEFIT ADEQUACY DISTRIBUTIONS AND TOTAL REGULAR UI PROGRAM COSTS UNDER A FORMULA THAT
 INCREASES THE MINIMUM WEEKLY BENEFIT AMOUNT TO \$35 AND THE MAXIMUM WEEKLY BENEFIT AMOUNT TO \$105

Benefit Adequacy Category	BENCHMARK: 1975-76 Benefit Formula With A Maximum WBA of \$85 and a Min. WBA of \$15		Alternative Benefit Formula With a Maximum WBA of \$85 and a Minimum WBA of \$35		Alternative Benefit Formula With a Maximum WBA of \$105 and a Minimum WBA of \$35	
	Actual %	Cumulative %	Actual %	Cumulative %	Actual %	Cumulative %
0%	0.0	0.0	5.9	5.9	5.9	5.9
1-35%	10.7	10.7	8.8	14.7	4.7	10.6
36-50%	20.9	31.6	19.9	34.6	15.2	25.8
51-65%	23.4	55.0	22.4	57.0	22.0	47.8
66-85%	21.8	76.8	20.8	77.8	25.0	72.8
86-99%	9.2	86.0	9.0	86.8	10.7	83.5
100% or More	14.0	100.0	13.2	100.0	16.5	100.0

Median Benefit Adequacy ^a	62.0	60.6	67.7
Sample Size	3114	3114	3114
Total Cost ^b	\$4,088,028	\$4,013,501	\$4,470,950

Percentage Change In Total Cost Due to the Increase in the Minimum WBA to \$35	-1.8%	----
Percentage Change in Total Cost Due to the Increase in the Maximum WBA to \$105, Given a \$35 Minimum	----	11.4%
Percentage Change in Total Cost Due to the Increase in the Minimum WBA to \$35 and the Increase in the Maximum WBA to \$105	----	9.4%

^aMedians are calculated from the distribution of claimants by the benefit adequacy categories reported in the table, rather than by arraying all claimants by their actual benefit adequacy values. To determine the median value, it is assumed that the claimants in any benefit adequacy interval are distributed uniformly throughout that interval.

^bTotal cost of regular UI program payments during the entire benefit year; this cost excludes any payments made under the EB and FSB programs.

some claimants out of each benefit adequacy category were affected by this change in the benefit formula. The effect on median benefit adequacy value is quite small (the median falls from 62.0 percent under the original formula to 60.6 percent under this formula).

The formula that changes the minimum WBA from \$15 to \$35 also has a rather small effect on the total cost of providing benefits to the study group. It is estimated that the cost of providing benefits for an entire benefit year would be cut by approximately 1.8 percent under this benefit formula change. This reduction in cost is, of course, due totally to the exclusion of 5.9 percent of the study group from the receipt of benefits. Claimants who continue to receive weekly UI support under this altered benefit formula would receive the same support as they had under the original benefit formula.

Increases in the Minimum and Maximum Weekly Benefit Amounts

A simulation of the effects on both benefit adequacy and regular UI program costs also was conducted for a hypothetical benefit formula that increased the minimum WBA to \$35 and the maximum WBA to \$105. As was the case in the previous simulation, an increase in the minimum WBA to \$35 excludes 5.9 percent of the total sample from benefits. Overall, the effect of this change on benefit adequacy is to increase the median value for the study group from 62.0 percent to 67.7 percent (see Table 4). Although 5.9 percent of the beneficiaries would receive no benefits under the new benefit formula, only about one-fourth of the study group (compared with 32% under the original benefit formula) would have benefits under this formula sufficient to cover only half or less of their proportionate share of necessary/obligated expenses. Interestingly, the major

impact on benefit adequacy, excluding those denied benefits, seems to be concentrated among those in the lowest two benefit adequacy categories under the original formula. For example, the percentage of the study group in the 1-35 percent benefit adequacy category falls from 10.7 percent to 4.7 percent under this revised benefit formula, and the percentage of the study group in the next benefit adequacy category (36-50%) falls from 21 percent to 15 percent under the revised benefit formula. The positive impact on benefit adequacy of increasing the maximum WBA, given an increase in the minimum WBA to \$35, is much more pronounced than the negative impact on benefit adequacy of denying benefits to all claimants who previously qualified for a WBA of \$34 or less.

The impact of this formula change on regular UI program costs is to raise total costs for the entire benefit year by an estimated 9.4 percent. This percentage increase, of course, represents the netting out of opposite influences. On the one hand, the increase in the minimum WBA to \$35 actually reduces total costs (by an estimated 1.8%). On the other hand, if the maximum WBA were to be increased to \$105, given a minimum WBA of \$35, the estimated increase in cost would amount to 11.4 percent.

Increase in Minimum and Maximum WBAs and an Increase in High Quarter Earnings Replacement

Under the Arizona law prevailing during the study period, the WBA was equal to 1/25 of high quarter earnings, up to the maximum WBA of \$85. A simulation was conducted to determine the impact on benefit adequacy and UI program costs of changing the 1975-76 formula in the following ways:

- (1) an increase in the minimum WBA to \$35;
- (2) an increase in the maximum WBA to \$95; and
- (3) the WBA was calculated as 1/22 of high quarter earnings (rather than 1/25 of high quarter earnings as was the case under the original formula).

The impact on the benefit adequacy distribution of implementing these hypothetical changes is reported in Table 5. The overall effect of all these changes taken together is to increase median benefit adequacy from 62.0 percent under the 1975-76 formula to 70.1 percent under the revised formula. As shown in Table 5, the net impact on the benefit adequacy distribution is the result of three different factors:

- (1) the increase in the minimum WBA to \$35 obviously reduces median benefit adequacy by excluding 5.9 percent of the sample from benefits;
- (2) the increase in the maximum WBA to \$95 (given no change in high quarter earnings replacement) increases median benefit adequacy; and
- (3) the change in the high quarter earnings fraction from 1/25 to 1/22 also increases median benefit adequacy.

As can be seen from the distributions reported in Table 5, the major effect of this formula change on benefit adequacy would be due to the change in the high quarter earnings replacement rate. This is the case because the increase in the maximum WBA alone affects only those who previously received the maximum WBA of \$85, whereas the change in the high quarter earnings fraction affects all persons who would qualify for a WBA of at least \$35 under the new formula.

Compared with the original benefit formula, the impact on regular UI program costs during the entire benefit year of implementing this revised benefit formula would be to increase total costs by an estimated 8.4 percent (see Table 5). Obviously, this net increase in cost reflects an

TABLE 5

BENEFIT ADEQUACY DISTRIBUTIONS AND TOTAL REGULAR UI PROGRAM COSTS UNDER ALTERNATIVE BENEFIT FORMULAS THAT CHANGE THE MINIMUM WBA TO \$35, THE HIGH QUARTER EARNINGS FRACTION TO 1/22 AND THE MAXIMUM WBA TO \$95

Benefit Adequacy Category	BENCHMARK: 1975-76 Benefit Formula With a Maximum WBA of \$85, a Minimum WBA of \$15, and a HQE Fraction of 1/25		Alternative Benefit Formula With a Maximum WBA of \$85, a Minimum WBA of \$35, and a HQE Fraction of 1/25		Alternative Benefit Formula With a Maximum WBA of \$95, a Minimum WBA of \$35, and a HQE Fraction of 1/25		Alternative Benefit Formula With a Maximum WBA of \$95, a Minimum WBA of \$35, and a HQE Fraction of 1/22	
	Actual %	Cumulative %	Actual %	Cumulative %	Actual %	Cumulative %	Actual %	Cumulative %
0%	0.0	0.0	5.9	5.9	5.9	5.9	4.1	4.1
1-35%	10.7	10.7	8.8	14.7	6.0	11.9	5.3	9.4
36-50%	20.9	31.6	19.9	34.6	17.8	29.7	16.4	25.8
51-65%	23.4	55.0	22.4	57.0	22.0	57.7	19.1	44.9
66-85%	21.8	76.8	20.8	77.8	23.4	75.1	23.9	68.8
86-99%	9.2	86.0	9.0	86.8	9.9	85.0	10.6	79.4
100% or More	14.0	100.0	13.2	100.0	15.0	100.0	20.6	100.0

Median Benefit Adequacy ^a	62.0	60.6	63.9	70.1
Sample Size	3114	3114	3114	3114
Total Cost ^b	\$4,088,028	\$4,013,501	\$4,262,842	\$4,430,394
Percentage Change in Total Cost Due to \$35 Minimum	----	-1.8%	----	----
Percentage Change in Total Cost Due to \$35 Minimum and \$95 Maximum	----	----	4.3%	----
Percentage Change in Total Cost Due to \$35 Minimum, \$95 Maximum and 1/22 HQE Fraction	----	----	----	8.4%

^aMedians are calculated from the distribution of claimants by the benefit adequacy categories reported in the table, rather than by arraying all claimants by their actual benefit adequacy values. To determine the median value, it is assumed that the claimants in any benefit adequacy interval are distributed uniformly throughout that interval.

^bTotal cost of regular UI payments during the entire benefit year; this cost excludes any payments made under the EB and FSB programs.

actual decrease in cost due to the increase in the minimum WBA, combined with an increase in cost due to both the increase in the maximum WBA and the change in the high quarter earnings fraction (see Table 5 for the cost effect of each separate change).

A Dependents Allowance

One formula with a dependents allowance is considered in this section, even though it is recognized that many persons oppose this feature on the grounds that dependents allowances violate the insurance concept of unemployment insurance. The formula selected for analysis would provide \$5 for any nonearning spouse and for each child who is under eighteen years of age and depends on the beneficiary/spouse for half or more of his/her support. The maximum dependents allowance under this formula would be the lesser of \$15 or one half of the beneficiary's WBA. Because relatively few claimants received weekly benefits of \$30 or less, the effective constraint for virtually the entire sample was the \$15 maximum. Because sufficient information was not available to calculate the dependents allowance for 44 persons, this simulation is based on only 3,070 beneficiaries, rather than the 3,114 analyzed above. For comparison purposes, the benefit adequacy distribution under the original formula is shown in Table 6 for both the entire study group of 3,114 persons and for the 3,070 persons for whom complete dependents information was available.

This dependents allowance has a definite impact on the benefit adequacy distribution. The proportion of beneficiaries who received UI benefits sufficient to cover half or less of their share of household expenses is reduced from 32 percent under the original formula to 25 percent under the dependents formula. Overall, the median level of benefit adequacy is

TABLE 6
 BENEFIT ADEQUACY DISTRIBUTIONS AND TOTAL REGULAR UI PROGRAM COSTS UNDER
 HYPOTHETICAL DEPENDENTS ALLOWANCE

Benefit Adequacy Category	BENCHMARK: 1975-76 Benefit Formula with No Dependents Allowance for 3114		BENCHMARK: 1975-76 Benefit Formula (\$85 Maximum; \$15 Minimum) with No Dependents Allowance for 3070 Claimants ^a		Alternative Benefit Formula With a Maximum WBA up to \$100 and a Minimum WBA of \$15 with the Addition of a Dependents Allowance for 3070 Claimants ^{a, b}	
	Actual %	Cumulative %	Actual %	Cumulative %	Actual %	Cumulative %
0%	0.0	0.0	0.0	0.0	0.0	0.0
1-35%	10.7	10.7	10.7	10.7	6.8	6.8
36-50%	20.9	31.6	20.9	31.6	18.2	25.0
51-65%	23.4	55.0	23.3	54.9	22.3	47.3
66-85%	21.8	76.8	21.9	76.8	24.5	71.8
86-99%	9.2	86.0	9.2	86.0	11.2	83.0
100% or More	14.0	100.0	14.0	100.0	17.0	100.0
Median Benefit Adequacy ^c	62.0		62.1		68.1	
Sample Size	3114		3070		3070	
Total Cost ^d	\$4,088,028		\$4,028,469		\$4,277,317	
Percentage Change From Total Cost Under the Original Benefit Formula Due to Exclusion of Missing Observations	----		-1.5%		----	
Percentage Change in Total Cost for 3070 Claimants Due to Dependents Allowance	----		----		6.2%	

^a Dependents allowance could not be computed for 44 persons because of missing data on the number of dependents

^b The dependents allowance considered here provides \$5 for a nonearning spouse and each dependent under the age of 18 years, up to a maximum of the lesser of \$15 or 50% of the WBA.

^c Medians are calculated from the distribution of claimants by the benefit adequacy categories reported in the table, rather than by arraying all claimants by their actual benefit adequacy values. To determine the median value, it is assumed that the claimants in any benefit adequacy interval are distributed uniformly throughout that interval.

^d Total cost of regular UI program payments during the entire benefit year; this cost excludes payments made under the EB and FSB programs.

increased from 62 percent under the original formula to 68 percent under the dependents allowance. The cost of providing this dependents allowance to the study group is estimated to be 6.2 percent for the entire benefit year. On a per claimant basis, the increase amounts to a change from \$1,313 under the original formula to \$1,393 under the dependents formula.

A FRAMEWORK FOR EVALUATING COST AND BENEFIT ADEQUACY CHANGES

The simulation results discussed in the previous section indicate that the various weekly benefit formulas considered impact differently on both the benefit adequacy distribution and regular UI program costs. Even if these two factors were the only relevant ones for policy purposes, it would be difficult to formulate any strong recommendations as to how the benefit formula "should" be altered on the basis of the above results. This is the case because both benefit adequacy and regular UI program costs are allowed to vary in the simulation analysis presented above. A useful approach for considering different formula changes in the present context would be to hold constant across the different benefit formulas considered either the benefit adequacy distribution or UI program costs. This would allow the policymaker to determine which of the proposed benefit formula changes would: (1) provide for the largest increase in benefit adequacy, for some specified increase in UI program costs; or (2) minimize the increase in UI program costs required to achieve some specified distribution of benefit adequacy. It obviously is more difficult to determine if two or more benefit adequacy distributions are identical than it is to determine if selected benefit formula changes produce the same change in total UI program costs.

To illustrate a simple application of the first approach described above, the two formula changes analyzed in the previous section that coincidentally had approximately equal increases in total program costs are discussed below. It should be emphasized that the purpose is only to illustrate this methodology. Within an actual policy setting, a large number of different types of benefit formula changes, each of which resulted in the same increase in UI program costs, presumably would be compared; the types of formula changes considered would be a policy question, and a large number of simulations probably would be required to develop the precise details of a number of different formulas within the constraints identified by policymakers. The two benefit formula changes utilized to illustrate the approach are: (1) the increase in the maximum WBA to \$95, given a minimum WBA of \$15 and a high quarter earnings replacement rate of 1/25; and (2) a dependents allowance that would provide \$5 for any nonearning spouse and \$5 for each child who is under 18 years of age and depends on the beneficiary/spouse for half or more of his/her support. The maximum dependents allowance would be the lesser of \$15 or half of the beneficiary's WBA.¹⁶ Because the cost increase of changing the benefit formula under either of these approaches would be nearly the same (just over 6% in each case), the focus here is to compare the benefit adequacy distributions that would result from the application of these two formula changes. For convenience, the cumulative percentage distributions for each formula change are reported below:

CUMULATIVE PERCENTAGE DISTRIBUTIONS.

Benefit Adequacy Category	BENCHMARK: 1975-76 Benefit Formula	Dependents Allowance	\$95 Maximum WBA
1-35%	10.7%	6.8%	8.0%
36-50%	31.6%	25.0%	26.9%
51-65%	55.0%	47.3%	49.8%
66-85%	76.8%	71.8%	74.1%
86-99%	86.0%	83.0%	84.1%
100% or more	100.0%	100.0%	100.0%
Median Adequacy Benefit	62.0%	68.1%	66.2%

As indicated in the above summary table, the dependents allowance would have a slightly stronger effect on the benefit adequacy distribution than would an increase in the maximum WBA to \$95. For example, median benefit adequacy rises from 62.0 percent to 68.1 percent under the dependents allowance, compared with an increase to 66.2 percent under the \$95 maximum WBA formula. Similarly, the percentage of claimants in each of the lowest three benefit adequacy categories (1% through 65%) is somewhat smaller under the dependents allowance than under the \$95 maximum WBA. Thus, whether the entire distribution or the median values of benefit adequacy are compared, these results indicate that for the same percentage change in estimated cost, the dependents allowance would result in a slightly larger increase in benefit adequacy than would a \$95 maximum WBA.

Obviously, the simple comparison provided above would not provide a sufficient basis for an informed policy decision as to which formula should be chosen. As noted above, many persons object to dependents allowances on philosophical grounds. Also, a number of different benefit formula changes that each increased total UI program costs by about 6 percent should be analyzed if the goal were to increase benefit adequacy

for a cost increase of this magnitude. Because such simulations necessarily are based on a number of assumptions, a policymaker also probably would want a range of cost estimates produced under different assumptions about:

- (1) the composition of the claims load;
- (2) the state of the economy;
- (3) the mean duration of unemployment;
- (4) the disincentive effects of increased benefits on the duration of unemployment; and
- (5) changes in other features of the benefit formula, such as the potential duration of benefits.

It also is recognized that policymakers must consider more factors than just the costs and the benefit adequacy distributions that result from different formulas. Notwithstanding these additional complexities, the simple illustration provided in this section indicates how a policymaker might approach changes in the benefit formula. Perhaps this discussion might serve to stimulate a more thoughtful approach to future benefit formula changes. Available evidence indicates that most changes in state benefit formula changes have not been based on a careful analysis of both the benefits and costs of altering the benefit formula.

SUMMARY

The main purpose of this study was to provide cost estimates for selected benefit formula changes that previously have been analyzed for their impact on the benefit adequacy distribution recorded for the study group. The main assumptions made in developing these cost estimates were that: 1) only regular UI program costs were included (the costs of any extended benefits were excluded); 2) the estimates were made for the entire benefit year for each claimant; 3) the claimant composition of the study group was held constant for the entire benefit year; 4) the duration of compensated unemployment during the benefit year was held constant under all benefit formulas, and this duration reflects the very poor economic conditions confronted by these claimants during 1975 and 1976 (this relatively long duration affects the estimates of absolute dollar cost changes, but not the percentage cost changes estimated); 5) up to the limit specified in Arizona's law, each claimant's maximum benefit award was increased in proportion to any increase in the weekly benefit for that claimant under each formula change; and 6) any claimant actually disqualified for a week of benefits under Arizona's 1975-76 benefit formula also was assumed to be disqualified from benefits for that week under the alternative formulas considered. The benchmark against which hypothetical formula changes were compared was Arizona's 1975-76 benefit formula under which the study group actually drew benefits. This formula provided for a weekly benefit equal to $1/25$ of each claimant's high quarter earnings, up to a maximum WBA of \$85. Because at least \$375 in high quarter earnings was required to receive any benefits, the minimum

WBA was \$15. Total (regular) benefits that could be received during the benefit year by any claimant were given by the lesser of base period wages divided by three or 26 times the claimant's WBA.

Under the 1975-76 formula, the median value of benefit adequacy recorded by the study group was 62 percent, and the total (regular) program costs of providing benefits to them for an entire benefit year was \$4,088,028. These figures for the original formula provide the benchmark against which alternative formulas were compared. The results for each of these other formulas are summarized below:

- FORMULA 1. The maximum WBA was increased to \$95, and all other original formula features were retained. Under this formula, median benefit adequacy would rise to 66.2 percent and estimated costs would increase by 6.1 percent.
- FORMULA 2. The maximum WBA was increased to \$105, and all other original formula features were retained. Under this formula, median benefit adequacy would rise to 69.1 percent and estimated costs would increase by 11.2 percent.
- FORMULA 3. The maximum WBA was increased to \$127, and all other original formula features were retained. Under this formula, median benefit adequacy would rise to 73.2 percent and estimated costs would increase by 19.8 percent. These results would approximate the effects of having implemented the Nixon administration's proposed benefit standard in Arizona during the study period.

- FORMULA 4. The "minimum" WBA was increased to \$35, and all other original formula features were retained. Under this formula, median benefit adequacy would fall to 60.6 percent and estimated costs would decrease by 1.8 percent.
- FORMULA 5. The minimum and maximum WBA values were increased by \$35 and \$105, respectively, and all other original formula features were retained. Under this formula, median benefit adequacy would rise to 67.7 percent and estimated costs will increase by 9.4 percent.
- FORMULA 6. The minimum and maximum WBA values were increased to \$35 and \$95, respectively, and all other original formula features were retained. Under this formula, benefit adequacy would rise to 63.9 percent and estimated costs would increase by 4.3 percent.
- FORMULA 7. The minimum and maximum WBA values were increased to \$35 and \$95, respectively, and the high quarter earnings replacement rate was increased to 1/22; all other original formula features were retained. Under this formula, median benefit adequacy would rise to 70.1 percent and estimated costs would increase by 8.4 percent.
- FORMULA 8. A dependents allowance was added that provides \$5 for a nonearning spouse and each dependent under the age of 18 years, up to a maximum of the lesser of \$15 or 50 percent of the claimant's WBA; all other formula features were retained. Under this formula, benefit adequacy would rise to 68.1 percent and estimated costs would increase by 6.2 percent.

The other objective of the report was to outline a simple framework for explicitly analyzing the "trade-off" between benefit adequacy and program costs in considering various benefit formulas. It is suggested that this issue may be approached from either of two approaches. For a given change in UI program costs, one could determine the formula change that would provide the largest "improvement" in the existing benefit adequacy distribution. Alternatively, for a given target benefit adequacy distribution, one could determine the minimum cost increase associated with any formula change that would produce the target benefit adequacy distribution. A simple example of viewing this trade-off under the first of these two approaches is provided to clarify this approach. The hope is that the approach outlined might stimulate a more thoughtful approach to future benefit formula changes than often has been evidenced when past formula changes have been considered.

FOOTNOTES

¹Paul L. Burgess, Jerry L. Kingston and Chris Walters, *The Adequacy of Unemployment Insurance Benefits: An Analysis of Weekly Benefits Relative to Preunemployment Expenditure Levels*. U.S. Department of Labor, Employment and Training Administration, Unemployment Insurance Service (Washington, D.C.: Government Printing Office) 1978. The analysis of alternative benefit formulas is contained in Chapter 5 of this report.

²For more detail on the benefit adequacy measure utilized, see *The Adequacy of Unemployment Insurance Benefits: An Analysis of Weekly Benefits Relative to Preunemployment Expenditure Levels*, op. cit., pp. 10-16.

³Further perspective on this expense concept is provided by indicating what items were excluded by the necessary and obligated criterion. The following expenditures were excluded:

- (1) expenses for remodeling, rather than maintaining a house;
- (2) contributions to charity;
- (3) payments for gifts;
- (4) the purchase of meals/snacks away from home;
- (5) entertainment expenses;
- (6) out-of-town travel or vacation expenses;
- (7) educational expenses;
- (8) other important payments (e.g., legal or accounting fees); and
- (9) lump-sum payoffs of past debts or purchases of major consumer durables.

⁴Earlier project reports have shown this total to be 4,468 persons. In processing data from the benefit year history files, it was found that 16 cases actually did not satisfy the original criteria for inclusion in the ABA study data base. In most instances, revised wage statements (not available at the time the sample first was drawn) indicated that claimants were not entitled to benefits under the Arizona Employment Security Law. In a few other cases, benefits were paid under SUA or other special programs not encompassed by the ABA Study. Because 16 cases were removed from the potential data base used for this study, the number of claimants analyzed in this study is 16 fewer than the number originally analyzed in developing the benefit adequacy distributions for the study group.

⁵Since the differences across any variable must sum to zero, only 14 of the 18 tests reported in Table 1 are independent. Therefore, the probability is at least .05 that one of the probability values reported in Table 1 would be less than $(.05/14) = .0036$, even if the true value for all of the differences were zero. See Leo A. Goodman, "Simultaneous Confidence Intervals for Contrasts Among Multinomial Populations," *Annals of Mathematical Statistics*, Vol. 35, 1964, pp. 716-720.

⁶The number of comparisons possible is quite limited because little information is published regularly on the characteristics of all claimants. For example, comparisons for WBA and potential benefit duration similar to those provided in Table 1 could not be developed.

⁷All cost calculations exclude the effect of paying additional benefits under federally extended programs which provide for EB or FSB benefits.

⁸The percentage changes in regular UI program costs that result from altering the benefit formula would not be affected by the fixed amount of unemployment duration (within the benefit year) assumed in the analysis. Because the amount of UI-compensated unemployment within the benefit year is (by assumption) invariant in this analysis, percentage changes in regular UI program costs reflect only changes in the weekly benefit rate, and not the amount of unemployment in the benefit year. Under either the original or a revised benefit formula, the weekly benefit rate is multiplied by the fixed amount of UI-compensated weeks of unemployment to determine total regular UI program costs under the two formulas. Thus, the constant amount of duration assumed cancels in calculating the percentage difference in costs between any two formulas.

⁹For summaries of empirical evidence, see: Gary Fields, "Direct Labor Market Effects of Unemployment Insurance," *Industrial Relations* 16 (February, 1977), pp. 1-14; Finish Welch, "What Have We Learned from Empirical Studies of Unemployment Insurance," *Industrial and Labor Relations Review* 30 (July, 1977), pp. 451-461; and Daniel Hamermesh, *Jobless Pay and the Economy* (Baltimore: The Johns Hopkins University Press, 1977). Whereas Fields concludes the effect on spell duration is quite small, both Welch and Hamermesh conclude the effect may be considerably larger.

¹⁰See Paul L. Burgess and Jerry L. Kingston, "The Effects of UI Benefits on Compensated Unemployment: Some New Evidence," Unpublished paper, Department of Economics, Arizona State University, 1979.

¹¹It also should be noted that available studies of the effects of UI benefits on unemployment duration have been conducted for periods of relatively strong economic activity, especially compared with the recession confronted by the persons included in this study.

¹²See *The Adequacy of Unemployment Insurance Benefits: An Analysis of Weekly Benefits Relative to Preunemployment Expenditures Levels*, op. cit., Chapter 5. With one exception, each of the formula changes discussed in this section was analyzed in that report. However, the costs associated with each formula change could not be determined at the time this earlier report was prepared.

¹³An increase in the high quarter earnings qualifying requirement does not increase the amount of benefits available to any claimant. Rather, such a formula change would result in the disqualification of some claimants from benefits because of an insufficient level of high quarter earnings. The minimum WBA paid under the revised benefit formula would

be higher, however, and for this reason this type of formula change is referred to in the text as an increase in the minimum WBA.

¹⁴See Paul L. Burgess, Jerry L. Kingston, Robert D. St. Louis and Chris Walters. *The Unemployment Insurance Weekly Benefit Amount: A Comparison of Arizona Provisions With Other States*. Phoenix: Arizona Department of Economic Security, Unemployment Insurance Bureau, November, 1976.

¹⁵The impact of Arizona's benefit formula may be illustrated with data for claimants who filed for benefits during FY 1976. During this period, 79,319 claimants were certified as monetarily eligible for benefits, whereas 31,201 claims for benefits were disallowed because those who filed them did not satisfy the prior earnings requirements. The relatively large number of claimants who failed to qualify for benefits because of monetary eligibility requirements is an indication that even relatively modest earnings requirements screen a substantial number out of Arizona's UI program because of insufficient labor market attachment. Furthermore, some persons never file for benefits because they know they lack the earnings necessary to meet the eligibility requirements.

¹⁶As noted above, there is one minor difference between the two formula changes. Because sufficient information was not available to calculate the dependents allowance for 44 persons, the dependents allowance estimates were based on only 3,070 beneficiaries, rather than the 3,114 beneficiaries for whom the \$95 WBA was analyzed.

UI Occasional Paper Series

Papers are available from: DOL/ETA, Office of Communications,
Patrick Henry Building, Room 10225, 601 D Street, N.W.,
Washington, D.C. 20213.

Papers which are out of print are indicated with an asterisk.

<u>1977</u>	<u>Series No.</u>
*Joachim Elterich and Linda Graham, <u>Impact of Extension of Coverage to Agricultural Workers Under P.L. 94-566, Their Characteristics and Economic Welfare,</u> University of Delaware	77-1
Joachim Elterich and Linda Graham, <u>Impact of P.L. 94-566 of Agricultural Employers and Unemployment Insurance Trust Funds in Selected States,</u> University of Delaware	77-2
David Stevens, <u>Unemployment Insurance Beneficiary Job Search Behavior: What Is Known and What Should Be Known for Administrative Planning Purposes,</u> University of Missouri	77-3
Michael Klausner, <u>Unemployment Insurance and the Work Disincentive Effect: An Examination of Recent Research,</u> Unemployment Insurance Service	77-4
Gary Solon, <u>Weekly Benefit Amounts and Normal Weekly Wages of Unemployment Insurance Claimants, Unemployment Insurance Service</u>	77-5
Ruth Entes, <u>Family Support and Expenditures Survey of Unemployment Insurance Claimants in New York State, September 1972-February 1974,</u> New York State Department of Labor	77-6

1977 (Cont.)

Series No.

Saul Blaustein and Paul Mackin, Development of the Weekly Benefit Amount in Unemployment Insurance, Upjohn Institute

77-7

Saul Blaustein and Paul Mackin, Job Loss, Family Living Standards, and the Adequacy of Weekly Unemployment Benefits, Upjohn Institute

77-8

1978

Henry Felder and Richard West, The Federal Supplemental Benefits Program: National Experience and the Impact of P.L. 95-19, SRI International

78-1

*Paul Burgess, Jerry Kingston and Chris Walters, The Adequacy of Unemployment Insurance Benefits: An Analysis of Weekly Benefits Relative to Preunemployment Expenditure Levels, Arizona Department of Economic Security and Arizona State University

78-2

Christopher Pleatsikas, Lawrence Bailis and Judith Dernburg, A Study of Measures of Substantial Attachment to the Labor Force, Volumes I and II, Urban Systems Research and Engineering, Inc.

78-3

Henry Felder and Randall Pozdena, The Federal Supplemental Benefits Program: Impact of P.L. 95-19 on Individual Recipients, SRI International

78-4

Peter Kauffman, Margaret Kauffman, Michael Werner and Christine Jennison, An Analysis of Some of the Effects of Increasing the Duration of Regular Unemployment Insurance Benefits, Management Engineers, Inc.

78-5

*Paul Burgess, Jerry Kingston and Chris Walters, The Adequacy of Unemployment Insurance Benefits: An Analysis of Adjustments Undertaken Through Thirteen and Twenty-Five Weeks of Unemployment, Arizona Department of Economic Security and Arizona State University

78-6

1978 (Cont.)

Series No.

Walter Corson and Walter Nicholson, The Effect of State Laws and Economic Factors on Exhaustion Rates for Regular Unemployment Insurance Benefits: A Statistical Model, Mathematica Policy Research, Inc. 78-7

Louis Benenson, Incidence of Federal Retirees Drawing UCFE Benefits, 1974-75, Unemployment Insurance Service 78-8

1979

Henry Felder, A Statistical Evaluation of the Impact of Disqualification Provisions of State Unemployment Insurance Laws, SRI International 79-1

Arthur Denzau, Ronald Oaxaca and Carol Taylor, The Impact of Unemployment Insurance Benefits on Local Economies--Tucson, University of Arizona 79-2

Paul Burgess, Jerry Kingston and the Research and Reports Section of the Unemployment Insurance Bureau, Arizona Department of Economic Security, Labor Market Experiences of Unemployment Insurance Exhaustees, Arizona Department of Economic Security and Arizona State University 79-3

Carolyn Sperber, An Evaluation of Current and Alternative Methods of Determining Exhaustion Ratios, Unemployment Insurance Service 79-4

Mamoru Ishikawa, Unemployment Compensation in Varying Phases of Joblessness, Unemployment Insurance Service 79-5

Nicholas Kiefer and George Neumann, The Effect of Alternative Partial Benefits Formulas on Beneficiary Part-Time Work Behavior, National Research Center 79-6

1980

Series No.

Mamoru Ishikawa, Unemployment Insurance and Proliferation of Other Income Protection Programs for Experienced Workers, Unemployment Insurance Service 80-1

UI Research Exchange (semiannual). Information on unemployment insurance research. First issue: 1980. Unemployment Insurance Service 80-2

Raymond P.H. Fishe and G.S. Maddala, Effects of Unemployment Insurance on Duration of Unemployment: A Study Based on CWBH Data for Florida, Florida State University and University of Florida. 80-3