UNEMPLOYMENT BENEFITS

AND DURATION

Charles A. Lininger Jr.

UNEMPLOYMENT BENEFITS
AND DURATION

A Study of the Effect of Weekly Unemployment
Benefit Amounts on the Duration of
Unemployment Benefits

by

Charles A. Lininger Jr.

INSTITUTE FOR SOCIAL RESEARCH
THE UNIVERSITY OF MICHIGAN
ANN ARBOR, MICHIGAN

ACKNOWLEDGEMENTS

This study was initially submitted to the Faculty of
the Social Sciences at The University of Chicago in candidacy
for the degree Doctor of Philosophy, December 1962. Many persons
were particularly helpful or instrumental in this study. At the
University of Chicago, Professor H. Gregg Lewis provided guidance
and rigorous standards which are in some measure reflected in
the analysis of the data; Professor Albert Rees was specially
helpful during the analysis planning period, and Professors
Harry Johnson and George Shultz made useful suggestions and
criticisms of the manuscript.

The data used were collected by the Survey Research Center
under contract to Hope College which acted as agent of the Michigan
State Legislature with financial support from the Merrill Foundation
for the Advancement of Financial Knowledge. The cooperation of
the Michigan Employment Security Commission was essential to the
successful sampling and data collection program. Messrs. Max
Horton, James Jones, Guy Tracy, Norman Barcus and James Sagel of
the Michigan Employment Security Commission and Professors Leslie
Kish and Charles Cannell of the Survey Research Center were instru-
mental to the success of the Hope College data collection. Professors
Dwight B. Yntema of Hope College, Director of the study, gave me
the opportunity to assist with the data collection and to under-
take this separate analysis.

ii

TABLE OF CONTENTS

I am also pleased to acknowledge Professors Ignacy Aleksandrowicz and John Lydenberg, of the Hobart College faculty, who by their example introduced me as an undergraduate to that which is fine in our academic communities, and Professors Ithiel de Sola Pool and George Katona, who at different times were supervisor and colleague to me and from whom I have learned much.

Finally I would like to mention the continuous encouragement of my wife, Barbara Alleman Lininger, and the forebearance of my children, Liz and Andy Lininger.

iii

TABLE OF CONTENTS--Continued

Page

LIST OF TABLES

LIST OF TABLES--<u>Continued</u>

viii

LIST OF TABLES--Continued

CHAPTER I

INTRODUCTION

The incentive aspects of unemployment compensation payments have been a matter of controversy for many years. The assertion has frequently been made that higher levels of weekly unemployment compensation payments induce people to draw benefits for longer periods of time than they would at lower levels. Higher weekly payments have been seen as inhibiting some people from taking suitable jobs and others from withdrawing from the labor market completely. These assertions have been used in arguments against increasing the size of weekly benefits.

Others have denied that such relationships exist. They maintain that benefit claimants are industrious and do not want to continue in benefit status when employment is available. They also point out that the ratio of average weekly benefit size to average weekly wage has declined. They cite this finding as evidence that, in general, the level of support is now lower, and argue that increases in the size of weekly benefits are needed on welfare grounds.

An important part of the controversy about the incentive aspects of unemployment compensation payments centers, therefore, on the size of weekly benefits. The question is: Does the size of weekly unemployment compensation payments affect the length of time individuals draw benefits?

1

Attempts to answer this question have involved tabulating
the duration of benefits in weeks for various subgroups of the
claimant population by weekly benefit size in dollars. Average
weekly wage has also been tabulated. The critical deficiency here
is the absence of any attempt to control the influence of wide dif-
ferences in the kinds of employment opportunities available to dif-
ferent types of claimants.

It is contended in this study that, if the effects of other
appropriate variables are controlled, an association of longer dura-
tion of benefits with higher weekly wages prior to unemployment would
be evidence of the disincentive effect of benefit size. Furthermore,
the incentive question can be studied with data from a cross-section
sample of unemployment compensation recipients. This study, there-
fore, is focused on the relationships of two major variables, weekly
benefit size and the duration of benefits, while the effects of
other variables are statistically controlled.

The data for this study were collected for a cross-section
sample of benefit recipients in the state of Michigan in 1955 by
personal interviews and from administrative records. The range of
weekly benefit payments in Michigan during 1955 appears to have
been broad enough in dollar amounts and as a percentage of wages
to provide a test of the responsiveness of the duration to benefits
to weekly benefit size. It would have been desirable to extend
this analysis over data which contain even greater variability,
but benefit size could not, of course, be varied experimentally
under controlled conditions and comparable data for other states

3

and other years were not available. Thus the interpretations and
conclusions which are professed herein on the basis of one body of
data should be put to still more satisfactory tests.

The personal interview data are unique in that they resulted
from one of the first attempts to collect information for the ex-
press purpose of studying the incentive aspects of benefits. They
were gathered by the Survey Research Center under the direction of
Hope College acting as agent of the Michigan State Legislature and
with the financial support of the Merrill Foundation for the Ad-
vancement of Financial Knowledge. The Michigan Employment Security
Commission also made its staff and its files available for the
selection of a sample and for supplying certain administrative data.
Great care was taken to insure completeness and accuracy, and the
cooperation and skill of each of these institutions was essential
to the satisfactory completion of the data collection. As a mem-
ber of the research group at Hope College, the author had much of
the responsibility for directing the data collection through its
various stages, but little responsibility for the principal report.[1]

The sample was selected from benefit recipients who had
terminated benefits in Michigan during the summer of 1955. Prob-
ability sampling procedures were used which closely resemble simple
random sampling. Statistical tests of significance are therefore
valid, and such tests are used in this study to verify the sta-
tistical significance of hypothesized relationships and to choose
between competing hypotheses.

[1]Dwight B. Yntema, "Survey of Unemployment Compensation in
Michigan, 1955" (Hope College, Department of Economics and Business
Administration, February, 1957). (Mimeographed.)

At the time of the sample selection in 1955, employment
conditions in Michigan were generally good. Recipients of unem-
ployment benefits probably felt that they could pass up opportuni-
ties for employment because other jobs would soon be forthcoming.
As a result, they tended to exercise greater discretion in the number
of weeks of benefits they received than they would have had if
employment conditions had been worse.[1] Discretion does not necessarily
result in malingering however, or even in maximum utilization of
the benefit program. A national sample survey conducted by the
University of Michigan's Survey Research Center in 1958 revealed
that many persons who had legal rights to benefits under existing
state and federal laws had not received benefits for part or all
of the time they were unemployed.[2] When asked why, they said that
they just did not apply at all, or did not apply as soon as they
were eligible for unemployment benefits.

Discussions of the incentive aspects of benefits often
refer to the amount of malingering and known cases of violations of
the spirit of the unemployment compensation program as though they
were a direct measure of the disincentive effect of weekly benefit
size. Systematic collections of data on the incidence of fraud or
malingering could be analyzed in the same manner as the duration of

---

[1]Additional information on the economic setting in Michigan
during 1955 and the institutional background of the unemployment
compensation program is presented in Appendix A.

[2]Wilbur J. Cohen, William Haber, and Eva Mueller, The Impact
of Unemployment in the 1958 Recession, A Report to the Special Com-
mittee on Unemployment Problems, U. S. Senate, 86th Congress,
Second Session, pursuant to Senate Resolution 252, June, 1960
(Washington: Government Printing Office, 1960), p. 34.

benefits is studied herein. However, disqualifications based on fraudulent claims and violations of the spirit of the program are not in themselves evidence that the <u>amount</u> or even the <u>existence</u> of malingering is sensitive to moderate changes in the size of benefits. Furthermore, an increase in claims for benefit payments arising from an increase in weekly benefit size could occur, in the absence of any malingering. For example, unemployed workers who delayed or never filed for unemployment benefits during their unemployment might be influenced to file claims by higher benefit levels.

A review and interpretation of related studies is contained in chapter ii. The plan of analysis for this study is set forth in chapter iii, and is followed, in chapter iv, by a description of the data from the Hope College study. The analysis and interpretation of data from the Hope College sample survey is set forth in chapter v. (The stages in data collection are described in Appendix B.) Chapter vi contains concluding remarks.

CHAPTER II

RELATED STUDIES

The literature dealing directly with the influence of the
size of weekly unemployment benefits on the duration of such benefits
is very limited. Nevertheless, there have been many reports on
experience under the unemployment compensation programs, on types
of unemployment, and on the responses of persons to unemployment
experience, which suggest the characteristics of persons whose re-
sponse to a change in benefit amounts will be greatest.

Studies of the Characteristics of Unemployed Persons
and of Unemployment Insurance Claimants

Unemployment is the result of a variety of factors. During
1955-1957, years of relative prosperity, 20 per cent of the unem-
ployed were new entrants or re-entrants to the labor force.[1] Vol-
untary shifting about accounted for approximately 10 per cent of
the unemployment in that period, and at least 20 per cent was at-
tributable to seasonal factors. The Department of Labor study
estimated that another 10 per cent was due to structural changes
over the decade from goods production to service production, and
about 40 per cent was not measured. This study incorporated the
following observations about the significance of duration of un-
employment:

---

[1]U. S. Department of Labor, "The Extent and Nature of Fric-
tional Unemployment," Study Paper No. 6 for the Joint Economic Com-
mittee, Congress of the United States (Washington, D.C., 1959).

The shorter the period of time a person has been out of a job, the greater the likelihood he will be re-employed quickly. The reasons for these patterns is not so much that duration of unemployment itself renders the worker less employable, rather the point seems to be that duration of unemployment itself is related to the personal and economic characteristics of workers and whatever characteristics or situations caused them to be unemployed for varying times in the first place, also determines their chances for re-employment in any given month.[1]

Another study of unemployed persons made by the Department of Labor focused on labor surplus areas in 1956-1957.[2] At least one-fifth of total unemployment in those years originated in chronically depressed areas and other areas of substantial labor surplus and had much more serious welfare implications than did unemployment elsewhere. Long term unemployment was higher in these areas and was concentrated to a larger extent among adult men. The proportion of women in the labor force was higher than it was elsewhere, a result, in part of the types of industries in those areas.

Turning specifically to the characteristics of unemployment insurance recipients, national sample data started in 1956 made it possible to compare this group with the national labor force.[3] Certain groups were easily identified as different in their claims experience. The proportion of males, unskilled workers, and persons over forty-five years of age, were larger in the recipient population

---

[1]Ibid., p. 35.

[2]U.S. Department of Labor, "The Structure of Labor in Areas of Substantial Labor Surplus," Study Paper No. 23 for the Joint Economic Committee, Congress of the United States (Washington, D.C., 1960).

[3]U.S. Department of Labor, "Characteristics of the Insured Unemployed: (A Monthly Report)" (Washington, May, 1956-June, 1957). (Mimeographed.) U.S. Department of Labor, "Characteristics of the Unemployed: (A Monthly Report)" (Washington, July, 1957-September, 1958). (Mimeographed.) U.S. Department of Labor, "Monthly Report on the Labor Force" (Washington, July, 1959-present). (Mimeographed.)

than they were in the national labor force. The proportion of
construction workers in the recipient group was also above average
because of the seasonal nature of their unemployment. Clerical and
sales workers were well below average. Professional and managerial
workers, women, and persons sixty-five years or over received un-
employment compensation benefits for longer periods than other
groups.

A study in Utica, New York, of the financial experience of
benefit claimants reported that income loss while receiving benefits
was low for secondary earners, and lower still for claimants over
sixty-five years of age since they most often had other income.[1]
The income loss was greatest for single persons and one earner fam-
ilies.[2] (These studies were limited to two groups: single persons
and families of four.)[3] Half of the beneficiaries in a Portland,
Oregon study received the maximum weekly benefit rate allowed, and
the one earner families of four were much more frequently at the
maximum rate.[4] From 65 to 75 per cent of the one-earner families

---

[1]New York State Department of Labor, "Unemployment Benefits
and Family Finances, A Study of Incomes and Expenditures of Bene-
ficiaries and Their Families in Utica, New York, 1958" (New York,
February, 1960). (Mimeographed.)

[2]Duquesne University, "Summary Digest of the Survey of Un-
employment Compensation Beneficiaries" (Pittsburgh, March 15, 1955).
(Mimeographed.) U.S. Department of Labor and Duquesne University,
"A Digest of the Survey of Unemployment Compensation Beneficiaries
in Pittsburgh, Pennsylvania" (Washington, October, 1955). (Mimeo-
graphed.)

[3]Guidance was provided by the U.S. Department of Labor, fol-
lowing the work at Duquesne University, in "Proposed Method for a
Survey of Unemployment Compensation Beneficiaries" (Washington,
April, 1956). (Mimeographed.)

[4]Carl M. Stevens, "The Adequacy of Unemployment Benefits,
Experience of Unemployment Compensation Beneficiaries in the Portland
Metropolitan Area" (Salem, Oregon, March, 1959). (Mimeographed.)

of four received benefits which were less than half as large as
their former weekly take-home pay. From 50 to 75 per cent of the
persons in various groups studied had reduced their savings. Sub-
stantial numbers of single persons and one earner family heads in
St. Louis had dropped their medical insurance.[1]

Katz found that participation in the labor force by sec-
ondary workers was positively associated with longer duration of
unemployment of the family head.[2] Furthermore, the participation
was inversely related to the general level of unemployment in the
local area, indicating the effect of the economic environment on the
success of a desire to work. In general, the presence of small
children in the family restricted participation in the labor force
by secondary workers, but separate regressions for families with
children of various ages showed that women with pre-school children
reacted more strongly to their husbands' unemployment, perhaps
taking work while leaving the husband to care for the household.
Women with older children reacted more moderately to their husbands'
unemployment.

It appears that the length of unemployment in itself does
not necessarily render persons unemployable, but that selective
factors operate so that particular types of persons are more fre-
quently unemployed or more likely to be unemployed for longer
periods. The financial experience of different types of claimants

[1]Washington University School of Business and Public Adminis-
tration, "Survey of Unemployment Compensation Beneficiaries in St.
Louis City and St. Louis County, Missouri, April, 1958" (St. Louis,
June, 1959). (Mimeographed.)

[2]Arnold Katz, "Cyclical Unemployment and the Secondary Fam-
ily Worker" (Washington: By the author, 1962).

is not the same. The unemployment experienced by new entrants or
re-entrants to the labor force or by persons who are shifting about
is not likely to be compensable under present unemployment compensa-
tion programs. Unemployment originating from seasonal factors and
structural changes is likely to be compensable, and for some types
of seasonal unemployment which can be anticipated, unemployment
compensation is probably incorporated in the work and wage level
decisions. The relevance of need, which all economists would
postulate on a priori grounds to be influential in work decisions,
is confirmed by empirical data on the proportion of women and sec-
ondary earners in the labor force. Empirical data also reveal the
disproportionate frequency of certain types of workers among un-
employment compensation recipients and among the longer term un-
employed.

Studies of the Characteristics of Benefit Exhaustees

Benefit recipients who drew all the benefit payments to
which they were entitled during a period are called exhaustees.
They were frequently studied as a group during the 1950's, in many
different states and in various years.[1] There are marked similari-
ties in the findings from the different states and the differences
which appeared seem to be largely attributable to different indus-
trial compositions of the states and to the general economic condi-
tions which prevailed.

Two studies in Oregon, one in 1956 during relatively good
times and another in 1958 during relatively poor times indicate

---

[1]Many of these followed the lead of the U.S. Department of
Labor in "A Guide to the Conduct of Post-Exhaustion Studies," UIPL
No. 384 (Washington, August, 1955). (Mimeographed.)

11

that between 1956 and 1958 the exhaustion ratio increased many more
times for men than for women.[1] In Massachusetts when the durable
goods industries were depressed, proportionately more men exhausted
their benefits than at other times.[2] The most depressed areas in
Pennsylvania had the highest percentage of exhaustees who were able
to find some type of re-employment after their exhaustion.[3] How-
ever, re-employment does not always mean return to full-time work.
The Pennsylvania study showed that four months after they had
stopped drawing benefits, 20 per cent of the exhaustees who had
been re-employed were only working part-time.

　　A majority of exhaustees are married and have dependents,
but in general the exhaustees as a group contained more older per-
sons and more women than did all claimants for unemployment benefits.
The employment of exhaustees is typically less stable, and their
earnings in the base period are lower; they are less skilled and
generally have a lower level of education than do all claimants.
A study made in New Jersey following a relatively prosperous base
period revealed that one-half of the exhaustees had worked less
than thirty-five weeks during the twelve-month period and had

---

[1]Oregon State Department of Employment, "Experience of
Claimants Exhausting Benefit Rights Under Unemployment Insurance
in Oregon, 1958 and 1956 Surveys Compared" (Salem, July, 1959).
(Mimeographed.)

[2]Commonwealth of Massachusetts, Division of Employment
Security, "Characteristics and Labor Force Status as of November
22, 1958 of Claimants Who Had Exhausted Benefits Between January
1 and September 20, 1958" (Boston, January, 1960). (Mimeographed.)

[3]Pennsylvania Bureau of Employment Security, "Labor Force
Status of Workers After Exhausting Unemployment Compensation Ben-
efits in Pennsylvania, 1957-1958" (Harrisburg, 1960). (Mimeo-
graphed.)

earned less than $2,000.[1] One-half of the exhaustees did not qual-
ify for maximum duration of benefits. Nevertheless, 44 per cent
of the exhaustees did not exhaust their benefit rights in one spell
of unemployment.

Exhaustees studied in Michigan early in 1950 reported
differing means of support during the post-exhaustion period.[2] The
younger exhaustees more frequently had assistance from relatives
while the older exhaustees relied more heavily on savings. The mid-
dle aged exhaustees most often had casual employment.

Studies in several states showed that during the first two
months after exhausting their benefits, generally less than 15 per
cent of the exhaustees had withdrawn from the labor market. After
four months the proportions of the exhaustees who had left the labor
market ranged in the various states from 10 to 19 per cent. Women
and persons sixty-five years of age and over tended to withdraw
from the labor force more often than others.[3] The older workers who
withdrew from the labor force claimed to have done so because they
were discouraged about the possibility of being re-employed.[4]

[1]New Jersey Department of Labor and Industry, "After Unem-
ployment Insurance, An Analysis of the Characteristics and Post-
exhaustion Experience of Claimants Exhausting Unemployment Insurance
Benefits During the Six-Month Period July Through December, 1957"
(Trenton, March, 1960). (Mimeographed.)

[2]Ronald S. Johnson, "A Study of People Who Have Exhausted
Unemployment Benefits in an Active Labor Market" (Ann Arbor: Uni-
versity of Michigan Bureau of Business Research, 1951), p. 61.
(Paper.)

[3]U.S. Department of Labor, Bureau of Employment Security,
"Experience of Claimants Exhausting Unemployment Insurance Benefit
Rights, January-March 1956, 14 States," BES Report No. U-168
(Washington, D.C., April, 1957). (Mimeographed.)

[4]Pennsylvania Bureau of Employment Security, "Labor Force and
Claim Status of Workers During the Sixteen Months Following Exhaustion
of Unemployment Compensation Benefits in Pennsylvania" (Harrisburg,
n.d.). (Mimeographed.)

13

In two states, Vermont and Missouri, women under twenty-five years
of age withdrew from the labor market in disproportionate numbers.[1]
Exhaustees from the lowest income groups also tended to withdraw at
a higher rate.[2] There appeared to be no disproportionate withdrawal
from the labor force of exhaustees who had been employed in clerical,
sales, and service occupations or in the finance, insurance, and
real estate industries.[3]

One-half of the exhaustees were unemployed and looking for
work two months after they had exhausted their benefits; and 35 to
45 per cent were still unemployed and looking for work after four
months.[4]

Among the exhaustees the re-employment rate was highest
among the young and lowest among the old. Three-fourths of men and
women sixty-five and over found no work while only one-third of the
younger men and one-half of the younger women did not find work. It
was generally true that re-employment was highest among those who
had received maximum benefit amounts and lowest among those who had

---

[1]Vermont Unemployment Compensation Commission, "Labor Market
Experience of UC Exhaustees" (Montpelier, Vt., August, 1958).
(Mimeographed.) Idem, "Labor Market Experience of UI Exhaustees"
(Montpelier, Vt., May, 1960). (Mimeographed.)

[2]Missouri Division of Employment Security, "Characteristics
and Labor Market Status of Missouri Claimants Exhausting Unemploy-
ment Insurance Rights, February 1957-July 1957" (Jefferson City,
Mo., November, 1958). (Mimeographed.)

[3]"Experience of Claimants Who Have Exhausted UI Rights,"
Labor Market and Employment Security, November, 1957, pp. 1-5, 17.

[4]U.S. Department of Labor, Bureau of Employment Security,
"Experience of Claimants Exhausting Benefit Rights Under Unemploy-
ment Insurance, 17 Selected States," BES Report No. U-178 (Wash-
ington, D.C., December, 1958). (Mimeographed.)

received the low benefits. Similarly the re-employment rate was
high among those whose earnings had been high.

Seasonality of employment exercised an important influence
on the rate of re-employment. Occupation exercised little influ-
ence except as it was related to seasonality. In North Carolina
the re-employment rate was highest for non-whites and this was at-
tributable to the seasonal nature of their work.[1] In North Dakota
seasonality was mentioned as one of the most important factors as-
sociated with re-employment.[2]

The rate of re-employment by sex differed substantially from
state to state. In several states there was little difference in
the rates of re-employment of men and women, whereas in another
state men returned to work sooner than women and in still another
state more women returned to work more often than men.

Studies of the Characteristics of Violators and Disqualified Persons

Recipients of unemployment benefits are required to be
able, willing and available to work. Despite serious efforts to
judge each case carefully on pre-determined criteria, the necessary
time and effort is not always available. Suitable work and amount
of work, time of day, distance, sabbath considerations, seasonality,
former earnings level, customary occupation, prevailing wage con-
ditions, family responsibilities including childbearing affect

---

[1]North Carolina Employment Security Commission, "A Study of
the Characteristics and Labor Market Experience of Claimants Ex-
hausting Benefits in Calendar 1957" (Raleigh, November, 1958).
(Mimeographed.)

[2]North Dakota Unemployment Compensation Commission,
"Claimants' Experience After Exhausting Benefits" (Bismarck, 1959).
(Mimeographed.)

15

availability. Each of these factors produce marginal situations in
which objective operational rules cannot determine availability for
work.[1] In the most extensive study to date, Ralph Altman has con-
cluded that the role of the availability requirement is that of "a
gross sieve designed to block the clearly unfit from entering or re-
maining in the benefit system. . . . Some claimants will get past
such a preliminary examination despite their actual unwillingness
and inability to work."[2]

Work tests in the form of referrals to suitable work are
suggested as the "finer sieve."[3] The difficulties of finding open-
ings which would provide suitable work for each individual is clearly
recognized and are known to increase with higher levels of unem-
ployment. The administrative system cannot, therefore, be expected
to operate so as to exclude all violators from benefits. It op-
erates best in the case of workers to whom an actual work test can
be applied, and leaves more opportunity for violation in the remain-
ing cases. Violation, it must be noted, carries in this context
the whole range of motivation from outright fraud on the one hand
to the honest belief by the worker that he and society are bene-
fited by postponing his re-employment until he can find more suit-
able work.

Becker has estimated that violators received 3 to 4 per
cent of all unemployment benefit payments made during the

[1]Ralph Altman, Availability for Work: A Study in Unemploy-
ment Compensation (Cambridge, Mass.: Harvard University Press,
1950), pp. xv-350.

[2]Ibid., p. 87.   [3]Ibid.

reconversion period following World War II.[1] The results of the
experience of a test office operated in New York in 1950 seemed to
indicate that, in New York at least, "not more than 1 or 2 per
cent of all payments went to violators. . . ."[2] The proportion of
claimants who at some time during the year made an improper claim
was estimated at 10 per cent. Special investigations in Michigan
for the fiscal year 1961 found in an O.A.S.I. post-audit check
that possibly 2 per cent of the recipients had received over-
payments and in special industry surveys in establishments with
high turnover rates and numerous new hirings that about 3 per cent
had received improper payments.[3]

Becker found that women predominate among the non-working
violators, and Altman contends that women present the greatest
problems to administrators who are trying to apply criteria for
availability. Altman, who wrote in 1950 or earlier, felt that
this was not necessarily a permanent state of affairs since many
of their problems were due to the turbulent shifts in the employ-
ment status of women during and after the war. The results of a
more recent study show, however, that women are one of the groups
which have high disqualification rates, indicating that the problem
has not disappeared.[4] Refusal of suitable work was much more

---

[1]Joseph M. Becker, The Problem of Abuse in Unemployment
Benefits: A Study in Limits (New York: Columbia University Press,
1953), p. 412.

[2]Ibid., p. 312.

[3]Michigan Employment Security Commission, Annual Report for
Fiscal Year 1960 (Detroit: January, 1961), p. 15.

[4]Washington Employment Security Department, "Study of Dis-
qualified Claimants" (Olympia, 1961). (Mimeographed.)

prevalent as a reason for disqualification among women than among
men; and among women it was somewhat less prevalent at older age
levels than at younger levels. Disqualifications based on mis-
conduct were more frequent among men.

Violators tended to be more numerous, according to Becker,

among the lower income, less educated workers who have more to
gain financially and less to lose socially by violations. . . .
Violators are also more numerous among the employees of the
seasonal industries, in the industries which use piecework,
among the longshoremen, and in localities where many workers
habitually shift between industry and agriculture.[1]

Claimants from the aircraft, finance, insurance,
real estate, and services industries and those who were under
thirty-five years of age were recently found to have high dis-
qualification rates in the state of Washington.

Explanations may be inferred for the greater frequency
of violations of the unemployment compensation benefit program
among certain groups. To women and to workers who live in areas
where it is common practice to shift between industry and ag-
riculture, certain kinds of home work may frequently be avail-
able which are difficult to detect. This work may often be non-
disqualifying, yet it tends to obliterate the difference between
the weekly benefit rate and the wage rate from wage employment.
In the seasonal industries in which unemployment can usually be
anticipated, the wage rates are likely to reflect income which the
worker can expect to receive from unemployment compensation and to
attract workers who will avail themselves of unemployment benefits.

---

[1]Becker, p. 308.

Finally, the real value of income from fraud or marginal violations or abuse of the unemployment program is greatest for those who least fear, and are least likely, to be caught in violation.

Studies of the Characteristics of Those Who Delay Filing for Benefits

The occurrence of delay in filing for benefits has been verified by recent studies. In two labor market areas in Pennsylvania almost 30 per cent of initial claimants delayed filing,[1] and in other studies of delayed filing the proportions ranged upward to a high of 37 per cent in West Virginia.[2] About an additional 10 per cent of the initial claims in the West Virginia study were by persons out of the labor force the week prior to filing, so that only about 53 per cent of the initial claims for unemployment benefits were from persons who were employed the previous week. In a study made in the state of New York in 1957, delay in filing was found to be a major cause of the discrepancy between the number of weeks of unemployment and the number of weeks compensated by unemployment insurance.[3]

---

[1]Pennsylvania Bureau of Employment Security, "Delayed Filing of Initial Claims, Altoona, Pennsylvania, 1959" (Harrisburg, n.d.). (Mimeographed.) Idem, "Delayed Filing of Initial Claims, Lancaster, Pennsylvania, 1959" (Harrisburg, n.d.). (Mimeographed.)

[2]West Virginia Department of Employment Security, "Special Study of the Delayed Filing of Initial Claims in West Virginia's Labor Market, July, 1957-June, 1958" (Charleston, W. Va., December, 1959). (Mimeographed.)

[3]Columbia Bureau of Applied Social Research, "Benefits, Incomes, and Expenditures of Unemployed Workers; Experience of a Group of Unemployment Insurance Beneficiaries in Albany-Schenectady-Troy, Spring, 1957" (New York, September, 1958). (Mimeographed.)

19

Uniformly, persons who were making new claims for benefits delayed longer and more often than persons who had filed other claims for benefits earlier in the year. In Florida and West Virginia, looking for work was the most frequent reason given for delayed filing.[1] Age was not related to delay in the Oklahoma study, but in Pennsylvania the young and old delayed more. The proportions of men and women who delayed filing in Pennsylvania were equal, but in Oklahoma, where a special layoff during the survey period was of great influence, women delayed less.[2] There was more delayed filing among workers from clerical, sales, and service occupations, and less from semi-skilled and unskilled workers.

Two suppositions may be made about the two groups who differ in the promptness of filing claims. On the one hand, the prevalence of delayed filing indicated that claimants exercised some discretion over the number of weeks for which they were compensated. In response to a change in weekly benefit rates, this group could easily increase their duration of benefits, but it appears that they would be casual about exploiting such a change. On the other hand, those who did not delay appeared to use the program to the maximum extent. This group of claimants would probably be most responsive to changes in the system to the extent that they had discretion.

---

[1]Florida Industrial Commission, "Florida Study of Delayed Filing of Initial Claims" (Tallahassee, Fla., September, 1959). (Mimeographed.)

[2]Oklahoma Employment Security Commissions, "A Study of Delayed Filing of Initial Claims" (Oklahoma City, Okla., September, 1959). (Mimeographed.)

Summary

Both enabling conditions and motivations are important in considering sensitivity to increases in benefit rates. Exhaustees cannot draw benefits for additional weeks, yet those who have exhausted their benefit entitlement are often presumed to have been highly motivated by weekly benefits. Older persons and women exhausted benefits more frequently than other groups, and are therefor believed to be more sensitive to benefit rate levels, although demand conditions undoubtedly accounted for much of their longer duration.

Other claimants do not draw benefits for the maximum allowable duration. The possible responses that this group might make to higher benefit rates include attempts to delay return to work or postponement of withdrawal from the labor market, but this does not suggest that they would respond in a marked fashion to benefit rate increases. Unskilled workers, males, and persons forty-five years and over were found proportionately more frequently among claimants than in the labor force as a whole, yet this was probably more a result of the uneven incidence of unemployment than of disproportionate responses to the benefit program.

Those who delay in filing for benefits do not use the program as intensively as others, and can be presumed to be least influenced by benefits. Age and sex, however, are not clearly related to delayed filing. Workers from the clerical, sales, and service occupations delayed more than others, and initial claimants for benefits delayed more than did repeat claimants.

Women were found disproportionately more often among

violators and disqualified claimants. Since they tried to over-
utilize the program they would also be likely to be sensitive to
increases in benefit rates. Persons who have less to lose socially
from disqualification would also be more disposed to over-utilize
the program and to be sensitive to benefit increases.

The opportunity to engage in agriculture or other home
work, though non-disqualifying, would tend to lessen the differ-
ence between weekly benefits and wages. The opportunity for home
work would probably increase the sensitivity to the benefit rate.

The income loss during the period in which unemployment
benefits were received was found to be greater for single persons
and other one earner families than for families with two or more
earners. Those with the largest income loss may be expected to
use the system most intensively, and also to return to employment
most readily when the opportunity develops. Those whose income
loss is smallest would probably be more sensitive to changes in
benefit rates.

Since the influence of benefit size on duration has not
been the direct object of any previous study, the information from
these prior studies does not provide direct evidence on my main
problem. The conclusions which can be drawn from these studies
are therefore tentative and speculative, and should be used in
planning additional investigations rather than as the basis for
policy. Only one prior study (made in the state of New York)
tabulated the duration of benefits by benefit level.[1] The average

---

[1]New York State Department of Labor, "Unemployment Insurance
Claimants: Characteristics and Benefit Experience of New York Work-
ers Who Filed Claims to Establish Benefit Years Ending in 1955"
(New York, October, 1957). (Mimeographed.)

number of weeks of benefits was highest for the group receiving
the lowest weekly benefit rate, and lowest for the group receiving
the highest weekly benefit rate.

> This inverse relationship between benefit rates and benefit
> duration was evident for workers in all age groups except the
> very young. (In the group under 25 years, persons with high
> rates tended to be out of work longer than those with low
> rates.) In terms of beneficiaries' industrial attachment, the
> inverse relationship between benefit rates and benefit dura-
> tion was well defined in construction, trade, transportation--
> other public utilities and manufacturing other than apparel
> and metals and machinery. In metals and machinery manufactur-
> ing longer benefit duration accompanied higher rates. No rela-
> tionship was evident in other industries. Occupationally, a
> tendency for shorter duration to be coupled with higher rates
> was apparent in all but the professional-managerial and
> service fields.[1]

No attempt was made to exclude the differential demand conditions
facing workers except as tabulations were made within industry,
occupation, and age groups separately. These data showed no clear
relationship of longer duration of benefits to higher benefit
rates; rather, an inverse relationship of these factors generally
prevailed.

---

[1]Ibid., p. 81.

CHAPTER III

THE PLAN OF ANALYSIS

The purpose of this study is to answer the question, "Does the size of weekly unemployment benefits affect the length of time individuals draw benefits?" The general approach is a statistical analysis within the theoretical framework of a demand-supply relationship for labor. Wages are seen as competing with leisure and productive work around the home for the time of the worker. Positive weekly unemployment benefits, added to the value of leisure or home work, reduce the return for working over unemployment. Since many claimants have some discretion over the length of their unemployment, and since each has discretion over whether to apply for benefits for each week of unemployment, it is possible larger weekly benefits may result in longer individual durations of benefits. Larger weekly benefits may result in longer individual durations of benefits by encouraging other claimants to remain unemployed and in benefit status rather than withdraw from the labor market. In such cases the higher benefits increase the opportunity cost of pure leisure or home work.

Such reasoning places the effect of weekly benefit rates on the supply side, but it is also necessary to ask if the relation between weekly benefit size and duration may also be affected by demand. Do employers have any incentive to lay off for longer

23

periods workers with benefit amounts of a particular size? The
incentive tax system in Michigan provides each employer with a
rating based on the ratio of benefits paid his former employees to
the unemployment taxes he has paid. Workers who qualify for
higher weekly benefit amounts would receive benefits which are a
smaller proportion of their former wages than would workers who
qualify for smaller weekly benefits, for the same family class.
Workers with fewer dependents would receive benefits which are a
smaller proportion of their former wages than would workers with
more dependents, at each wage level. Therefore, employers would
incur lower charges against their benefit accounts for a given
dollar volume of wage unemployment by laying off workers with few
dependents and/or high earnings. Thus we might expect longer
duration of unemployment for such workers.

On the other hand the unemployment tax on employers is not
based on all wages paid, but only wages for each employee up to
$3,600 per year. Laying off workers whose earnings exceed $3,600
per year would mean giving up employees whose earnings above
$3,600 would be tax free. This would encourage employers not to
lay off workers whose earnings are highest. In practice, however,
union rules, job specialization, and the size of work units make
it unlikely that employers have much choice about whom to lay off,
and there is probably no net effect of demand considerations on
the benefit-duration hypothesis.

The differential demand for labor remains the major compli-
cating factor in the analysis of the relationship between the size
of weekly benefits and the duration of benefits. When total

unemployment varies with changes in the level of employment (as
distinct from variations arising from new accessions to the labor
force), the amount of unemployment compensation generally varies
through changes in the number of claimants and the duration of
benefits for claimants. The duration of benefits generally in-
creases in times or places of greater unemployment and, con-
versely, decreases in times and places of lesser unemployment.
The analysis of the relationship of benefit size and duration in
terms of the individual claimant has to incorporate some means of
eliminating the differences in the demand for labor which result
in differing durations of benefits.

      Variations in demand may be expressed through several
variables: occupation and industry, length of employment with the
separating employer, education, age, sex, race, and place of res-
idence. Two main approaches to the elimination of demand influ-
ences on duration are used in this study.

      1) The _residual_ approach involves adjustments to the
         actual duration of benefits for each sample member
         based on variations in duration attributable to the
         demand expressing variables. Group means and multi-
         variate coefficients from an iterative variance analysis
         computer run are each used in turn to create two forms
         of the residual duration variable. These are subse-
         quently tabulated by the benefit variables to provide
         information on the major problem of this study.

      2) The second approach uses multiple regressions and
         adjusts for variation in demand by including the demand

expressing variables in the equations along with the
benefit variables and using actual duration of benefits
as the dependent variable.

The Hope College data have been subjected to each of these
analyses and the results are presented in chapter v.

CHAPTER IV

THE HOPE COLLEGE DATA

The weekly benefit amount, the ratio of weekly benefit amount to prior weekly wages, and the difference between prior weekly wages and weekly benefit amount are the main formulations of benefit size in this study. The duration of benefits is the dependent variable. Each is introduced in turn in this chapter. Since subsequent analyses are carried out on the respondents of the Hope College survey, the population of these respondents is compared with the non-interview and short-sequence groups from the same sample selection, as well as with the covered labor force in Michigan of about the same period, and with non-agricultural employment in 1950.[1]

The Benefit Variables

The weekly benefit amount received by respondents in the Hope College sample ranged from less than $25 per week to over $50 per week; the weekly benefit amount/average weekly wage ratio ranged from less than 30 per cent to over 60 per cent. In both of these variables the maximum values were at least double the minimum

[1]Additional background on the unemployment compensation program and the situation in Michigan during 1955 is given in Appendix A. The sample survey procedure with particular reference to the Hope College Survey is presented in Appendix B.

values. With this considerable amount of variation in the variables
separately, it was nonetheless important to inquire whether they
correlate highly with one another so that one might act as a sta-
tistical substitute for the other. The distribution of respondents
cross-classified by these two variables reveals some systematic
variation, but considerable dispersion (Table 1). These variables
are distinct conceptually, and they were not good substitutes sta-
tistically. The correlation coefficient between them was 0.67 from
the data ungrouped.

TABLE 1

PERCENTAGE DISTRIBUTION OF RESPONDENTS BY WEEKLY BENEFIT
AMOUNT AND BENEFIT/WAGE RATIO

| Weekly Benefit Amount | Total % | Weekly Benefit Amount/Average Weekly Wage Ratio | | | | | |
		Under 30%	30-39%	40-49%	50-59%	60% or More	Per Cent N.A.
Under $25	11	1	***	***	5	4	1
$25-29	21	***	1	15	4	1	***
$30-34	33	3	19	7	***	***	4
$35-39	13	***	1	2	8	2	***
$40-44	14	***	1	3	9	***	1
$45 or more	8	***	1	2	5	***	***
Total	100	4	23	29	31	7	6

***Less than one-half of 1 per cent.

The weekly benefit rate was distributed roughly as a normal
curve in that it peaked, had one mode, and had about equal propor-
tions on both sides of the mode. The benefit/wage ratio distribu-
tion had a flatter mid-portion and fell off more abruptly at the
extremes.

The benefit levels presented here became effective July 15, 1955. Prior to that time the benefit maximum for each family class was lower, and the proportion of wages compensated at the higher wage levels was also somewhat lower. The revisions of 1955 affected only those whose benefits at the old rates would have been at the maximum for the particular family class. Supplemental unemployment benefits such as those subsequently negotiated by the United Automobile Workers and the major auto companies were not in effect during the summer of 1955.

In the course of preparing for the regression analyses, another benefit variable was formed for each individual, average weekly wages prior to benefits minus the weekly benefit rate. In the sample this variable has a mean of $44.2 and a standard deviation of $19.7, compared with means of $33.1 and 45.1% and standard deviations of $7.5 and 9.8% respectively for the weekly benefit rate and benefit wage ratio.

Duration of Benefits

The duration of benefits ranged from the three-week minimum established for the interview group to twenty-six weeks (the statutory maximum) or more.[1] The distribution of respondents by benefit duration was clearly J-shaped (Table 2). The distribution of respondents by duration residuals, which were formed in the analyses, approximated a normal distribution.

---

[1]The few cases which were over twenty-six weeks were unusual cases of unemployment benefits which extended past the end of one benefit year into the next one.

TABLE 2

PERCENTAGE DISTRIBUTION OF RESPONDENTS
BY THE DURATION OF BENEFITS

Duration of Benefits	Respondents
3-4 weeks	37%
5-6 weeks	30
7-9 weeks	11
10-14 weeks	10
15-19 weeks	5
20-24 weeks	2
25 or more weeks	5
Total	100%

Duration for each individual was defined as the number of
whole or partial weeks of benefits paid consecutively. A sequence
was considered terminated when it was followed by three consecutive
weeks for which no benefits were paid. Alternative definitions were
applied to determine the beginning of a sequence. One counted back
from the termination up to any break in consecutive compensation,
and the other applied the three-weeks-of-no-benefits rule to estab-
lish the beginning of a sequence. Under the second definition, a
gap of one or two weeks would not be considered an interruption
whereas by the first definition it would. In either case, only
the number of weeks for which compensation was actually received
were counted, that is, a one- or two-week gap was not counted in
determining duration. Finally, the waiting week was separately
recorded so that it could be either considered apart from or as part
of the sequence. Unless specifically mentioned to the contrary,
duration was defined as in the Hope College report, namely, the

waiting week was not counted and the initial point of a sequence
was determined by any break in weeks compensated.

Benefits and Duration

Since the major question is the relation between weekly
benefit size and duration, it is interesting to look at these vari-
ables forthwith in their raw form. Considering weekly benefit size
first, the raw data reveal the same inverse relation between weekly
benefit size and the duration of benefits as was found in the New
York data.[1] For the interviewed group from the Hope sample, mean
benefit duration declined with higher weekly benefits. For the
whole sample including the recipients of one and two weeks of ben-
efits, there was a similar relationship although average duration
was, of course, lower (Table 3). For the respondents, the correla-
tion coefficient between weekly benefit amount and duration was -.27.

Considering benefits in relation to average weekly wages
during the base period, average benefit duration tends to increase
with the size of the benefit/wage ratio (Table 4). For respondents,
the correlation coefficient was .12. It is not necessarily correct,
however, to conclude that higher relative benefit size brings about
longer duration of benefits because of a disincentive effect. Other
factors are possibly involved such as differing demand conditions
facing persons who differ by wage levels, age, sex, and area of
residence. Short layoffs in industries with high wage rates, for
example, might account for the relationship observed.

---

[1]See footnote 1 on p. 22.

TABLE 3

MEAN BENEFIT DURATION BY WEEKLY BENEFIT SIZE

Weekly Benefit Amount	Respondents Only		Total Sample	
	Mean Duration	Number of Cases	Mean Duration	Number of Cases
$24 or less	12.4 weeks	87	9.1 weeks	144
$25-29	9.3	161	5.9	335
$30-34	6.4	249	4.1	582
$35-39	6.3	97	4.0	222
$40-44	5.9	105	3.5	255
$45 or more	5.5	61	3.7	137
Total	7.6 weeks	760	4.8 weeks	1,675

TABLE 4

MEAN BENEFIT DURATION BY RATIO OF WEEKLY BENEFIT SIZE TO
AVERAGE WEEKLY WAGE DURING BASE PERIOD

Weekly Benefit Size / Average Weekly Wage	Respondents Only		Total Sample	
	Mean Duration	Number of Cases	Mean Duration	Number of Cases
39% or less	5.9 weeks	201	3.9 weeks	450
40% - 49%	7.6	221	4.8	488
50% - 59%	7.5	239	4.8	499
60% or more	10.3	53	7.2	101
Ratio N.A.	12.3	46	5.7	137
Total	7.6 weeks	760	4.8 weeks	1,675

A similar relative measure of benefits would be to relate weekly benefit size to reported take-home pay of respondents prior to layoff. The relation of this variable to duration of benefits is less clear (Table 5).

TABLE 5

MEAN BENEFIT DURATION BY RATIO OF WEEKLY BENEFIT SIZE TO
TAKE-HOME PAY PRIOR TO LAYOFF

Weekly Benefit Size	Respondents Only[a]	
Average Take-Home Pay	Mean Duration	Number of Cases
29% or less	9.7 weeks	96
30% - 39%	5.9	250
40% - 49%	7.1	262
50% - 59%	9.8	104
60% or more	10.2	36
Ratio N.A.	9.9	12
Total	7.6 weeks	760

[a]Data on mean duration and number of cases for the total
sample are not available.

The correlation between the wage-minus-benefits variable
and duration was -.14, indicating a weak negative association.

The inverse association of duration of benefits with av-
erage weekly wage postulated earlier was confirmed by the data.
Average duration declines regularly with higher wage levels, con-
firming the necessity for additional analysis (Table 6). The
coefficient of correlation between average wage and duration for
the respondents was -.20.

Comparisons with Other Groups

The recipients of unemployment benefits who were inter-
viewed are a sub-group of all recipients in Michigan who terminated
during the summer of 1955. These two groups can be compared by
using information recorded from administrative records at the time
of the selection of the initial sample. The interviewed recipients

TABLE 6

MEAN BENEFIT DURATION WITHIN AVERAGE WEEKLY WAGE

Average Weekly Wage	Respondents Only		Total Sample	
	Mean Duration	Number of Cases	Mean Duration	Number of Cases
$49 or less	11.5 weeks	98	8.2 weeks	169
$50 - 59	10.7	48	6.7	99
$60 - 69	7.7	104	4.8	224
$70 - 79	6.4	150	4.1	346
$80 - 89	5.3	134	3.6	308
$90 - 99	5.5	101	3.9	200
$100 or more	6.7	78	4.0	191
Total	7.6 weeks	760	4.8 weeks	1,675

were from those terminees who had received three or more weeks of benefits. As a group they were older than all terminees by a one-year difference in median age; the interviewed recipients included 4 per cent more women, 2 per cent more in family class A, 5 per cent more exhaustees than all terminees.[1] The reason why the interviewed group differed from the sample of all terminees was that all terminees with less than three weeks of benefits were automatically excluded from the group from whom interviews were attempted, and among the group selected for interview some could not be located and others who were located were not successfully interviewed.

There were more older persons in the interviewed group because proportionately fewer of them were excluded on the basis of having less than three weeks of benefits and fewer of them were unavailable for interview. There were more women among the

[1]See Table 18 in Appendix C.

interviewed group primarily because proportionately more women than men were successfully interviewed. There were proportionately more recipients classified in family classes A and B among the interviewed group because disproportionately fewer of them were excluded on the short-sequence criterion. There were fewer respondents who returned to work for their former employers and more exhaustees among the interviewed group because so many of the short duration claimants returned to their former employers before they had exhausted their benefit entitlement. Comparison of the interviewed group with all terminees by region showed that they differ little; compensating differences accounted for this as fewer in Detroit were excluded on the basis of short sequences but proportionately more in Detroit were not interviewed successfully. The average weekly wage was higher for the interviewed group because there were disproportionately more recipients with lower-than-average weekly wage among the short duration and the unsuccessfully interviewed groups than among the total sample. There were disproportionately more recipients of low weekly benefit amounts among the interviewed group because the excluded groups had generally higher benefits than the total sample.

Comparisons of the interviewed group with the total population of covered unemployed in Michigan were not possible since not all the covered unemployed filed for benefits. A comparison of the interviewed group with the covered employed population shows a disproportionate number of the interviewees in motor vehicle and equipment manufacturing as compared with the proportion employed in

this industry.[1] The proportion of interviewees from construction
was the same as were employed in that industry, and in the other
manufacturing, trade and other industries, the proportion in the
interviewed group was well below the proportion employed in those
industries. Similar comparisons made with non-agricultural em-
ployment in 1950 reveals differences in the same direction, but of
a different magnitude. By sex and occupation groups, the inter-
viewed sample has larger proportions of semi-skilled workers of
both sexes and of women service workers than were present in Mich-
igan non-agricultural employment in 1950, and about the same propor-
tion of skilled workers of each sex and of unskilled male workers.[2]
The remaining groups were underrepresented in the interviewed
group. By age and sex, the main differences were that in the
interviewed group, there were more men over sixty-five, more women
thirty-five to forty-four years of age, and fewer women under
twenty-five, compared with 1950 non-agricultural employment in
Michigan.

National statistics of the unemployed were not wholly
satisfactory either. Current population reports identified the un-
employeds but did not classify them by whether they were eligible
for unemployment compensation benefits. The Survey Research Center
conducted four national surveys in 1958 and 1959 which contained
questions about the unemployed. It was reported[3] that 38 per cent

---

[1]See Table 19 in Appendix C.

[2]See Table 20 in Appendix C.

[3]Cohen, Haber and Mueller, p. 30, Table 20.

37

of the heads of spending units who had been unemployed during the
previous twelve months claimed that they had not received unem-
ployment benefits, and another 23 per cent said that they had re-
ceived benefits for only part of the time they were out of work.
From the two surveys in 1958 it was reported that of those who had
received no benefits, close to half had probably been in covered
employment. This suggests that about 20 per cent of the unemployed
heads of spending units from covered employment received no benefits
at all and that another 10 per cent received benefits for only
part of the time·they were unemployed.

The unemployed in the Hope College sample in Michigan were
not representative of the employed population in Michigan. It ap-
pears that the model-change layoffs were the main reason for this,
coupled with differences in the rates of unemployment in industries
and occupations not directly related to automobile production.
Since model-change layoffs have been commonplace in Michigan and
may only recently have become less severe as a consequence of new
contracts negotiated between the auto workers and the auto com-
panies, it seems reasonable to assume that a sample of terminees
taken during the summer of 1955 was not so very different from
what would have been found during a similar period in other years.
Current or recent data are not available and the analyses pre-
sented in the following chapter are restricted to the sample of
interviewed terminees from the summer of 1955.

CHAPTER V

ANALYSIS AND INTERPRETATION

The elimination of the effect of differences in the demand
for various types of labor on the duration of benefits is claimed
to be essential to a proper investigation of the effect of weekly
benefit size on duration. A pair of analyses are initially re-
ported in which residual duration variables are first generated as
a means of removing the influence of demand factors, and then tab-
ulated by the weekly benefit size variables to provide data on the
principal problem of the study. A multiple regression approach to
the main problem is reported in the final section of this chapter.
Benefit duration was taken as the dependent variable; the inde-
pendent variables included weekly benefit size, variables repre-
senting the demand factors, and some additional variables which
might obscure the benefit-duration relationship.

The Residual Approach

The influence of demand was expected to appear through
certain variables: occupation and industry, and the length of em-
ployment with the separating employer, education, age, sex, race
and place of residence. Differences in hiring and employment prac-
tices between occupation and industry groups are well known. For
example, periodic layoffs are common in the auto industry and are
frequently of short duration. Seasonal unemployment is typical of

38

the building trades where full year employment is not common.
Terminations in sales and clerical occupations are typically final.
Formal education and longer employment with the separating employer
were expected to be associated with shorter duration of benefits,
since both were expected to make the claimant a more valuable
worker. Age and sex were also believed to differentiate separate
demands for labor. Men and women are not good substitutes for one
another because of the assignment of certain jobs to men or women
as a result of acculturation and because of such fundamental dif-
ferences as physical capability to do strenuous work and the po-
tential interruption in availability for work due to pregnancies.
In addition, demand differs by age because of skill differences
which arise from experience and maturity, and from the decline in
energy, and because of ability to learn and adapt, and health and
retirement considerations for older workers. Racial discrimination
leads to greater unemployment and benefit duration for Negroes.
Area of residence reflects differing employment opportunities
throughout the state, as mobility is hindered by such things as
tastes and home ownership.

With these variables possibly reflecting demand differences,
the significance and direction of the variation in the mean duration
of benefits between the categories of each of the variables sep-
arately was estimated. Significant variation in the expected
direction was the criterion by which a variable for possible use
in removing the demand influences on duration was selected, al-
though more elaborate screening was carried out, including testing
variation in mean duration between the categories of one variable,

controlling on another variable. F-tests of the ratios of the mean square variances between and within categories were used to test significance at .95 or higher probabilities.

Industry, age and sex were found to be of chief consequence, and occupation and residence of smaller importance in distinguishing variation in benefit duration. The other possible demand-expressing variables distinguished little variation in duration, and not generally in the expected direction. Seventeen subgroups were formed on the basis of the three main variables and the variations in mean benefit duration between them are presented (Table 7). These were used as the expected values of benefit duration in the calculation of one residual benefit duration variable described later.

Mindful of the omission of occupation and residence in the formation of sub-groups based on industry, age, and sex, an iterative multiple classification analysis was run with benefit duration as the dependent variable and all the potential demand expressing variables as independent variables.[1] The result was a set of coefficients, one for each category of each independent variable expressed as a deviation from the grand mean, which minimizes the error variance of the set of predictions for the sample cases. An alternative expected value of benefit duration was then formed for each sample member by adding the coefficient (plus or minus) associated with the relevant category of each of the five

---

[1]The author expresses his appreciation to The University of Michigan Computing Center, on whose computer the analysis was run, and to John Sonquist and the Data Processing Section of the Institute for Social Research, who produced the computer program used.

important independent variables to the grand mean. The variables
education, length of employment, and race were omitted since their
coefficients did not vary systematically and in the expected direc-
tion. Mean duration and the multivariate coefficients on which
expected values were based are presented in Table 8.

TABLE 7

MEAN BENEFIT DURATION BY INDUSTRY-AGE-SEX GROUPS

Sub-group	Mean Duration (in weeks)	Number of Cases
Auto manufacturer X	4.8	319
Other auto mnfr, under 45, male	5.2	54
Other auto mnfr, under 45, female	7.2	28
Other auto mnfr, 45-64, male	8.4	37
Other auto mnfr, 45-64, female	15.2	13
Other auto mnfr, 65 and over	21.7	14
Other mnfr, under 45, male	6.7	54
Other mnfr, under 45, female	10.6	52
Other mnfr, 45-64, male	8.3	24
Other mnfr, 45-64, female	10.7	18
Other mnfr, 65 and over	14.3	13
Construction	8.2	41
Trade and other, under 45, male	6.5	18
Trade and other, under 45, female	14.3	28
Trade and other, 45-64, male	8.8	17
Trade and other, 45-64, female	12.4	21
Trade and other, 65 and over	19.9	9

TABLE 8

MEAN BENEFIT DURATION AND THE COEFFICIENTS
OF SELECTED PREDICTOR VARIABLES

Predictor Variables	Mean Duration (in weeks)	Number of Cases	Multivariate Coefficients (in weeks)
Total	7.6	760	0.0
Industry			
Auto mnfr X	4.8	319	-2.2
Other auto mnfr	8.8	145	1.1
Other manufacturer	9.4	154	1.8
Construction	8.2	44	1.7
Trade	12.9	41	2.6
Other	11.4	52	1.8
Not ascertained	9.0	8	2.4
Age-Sex			
Under 45, male	5.4	330	-1.5
Under 45, female	9.1	152	0.9
45-64, male	6.8	169	-0.7
45-64, female	11.4	63	2.1
65, or more	15.8	46	7.3
Occupation			
Professional	12.3	18	2.9
Clerical and sales	12.2	57	2.8
Skilled	8.0	124	-0.1
Semi-skilled	6.6	496	-0.5
Unskilled	8.6	42	-0.2
Service	13.4	15	3.1
Not ascertained	4.9	8	-0.9
Area of residence			
Detroit	7.1	551	0.2
Other SMA's, urban areas	7.6	91	-1.4
Other cities, lr. penin.	8.2	53	-1.4
Up.-lr. peninsula	11.3	24	1.4
Upper peninsula	11.7	35	1.7

TABLE 8--Continued

Predictor Variables	Mean Duration (in weeks)	Number of Cases	Multivariate Coefficients (in weeks)
Education			
0-8, no other training	8.0	266	0.1
0-8, other training	6.1	69	-0.8
9-11, no other training	7.2	141	-0.4
9-11, other training	7.7	87	0.6
12 yrs. or more, no other training	7.9	102	-0.2
12 yrs. or more, other training	7.2	67	0.2
Not ascertained	9.0	28	1.3
Length of Employment with Separating Employer			
Under 1 year	6.8	137	-0.7
1-2 years	7.9	120	-0.5
3-4 years	7.0	120	-0.4
5-9 years	7.5	203	1.0
10 years or more	8.4	180	0.1
Race			
Non-Negro	7.8	619	-0.1
Negro	6.5	141	0.3

Two residual duration variables were formed, based re-
spectively on the age-sex-industry means and the multivariate co-
efficients. In each case, the expected value of duration generated
for a particular individual in the sample was subtracted from his
actual duration of benefits, and the remainder retained for further
analysis. Mean values of the newly formed variables were then
separately calculated for categories of the benefit variables. A
positive value of the residual, or of a mean residual for a sub-
group, is interpreted as duration greater than expected; a negative
value as duration less than expected.

Benefits and Residual Duration

The main problem can now be studied with the two residual duration variables designed to be free of demand influences. Using the residuals formed from age-sex-industry means (A-S-I residuals) and from the iterative multivariate analysis coefficients (multivariate residuals), mean values and measures of variation were calculated across several benefit variables. The ratio of weekly benefit size to average weekly wage was considered a better variable to test the main hypothesis than the ratio of weekly benefit size to weekly take-home pay prior to layoff. The average weekly wage was based on many months' earnings prior to layoff and excluded weeks of unemployment whereas weekly take-home pay prior to layoff was believed to be distorted from usual earnings sometimes as a result of either overtime or shorter work weeks immediately preceding layoffs. Mean residuals by both variables, and by weekly benefit amount, are presented in Table 9.

Residual duration does not appear to increase systematically with the ratio of weekly benefits to average weekly wage. Nor is it positively related to the ratio of weekly benefits to take home pay prior to layoff. The benefit size in dollars also fails to show a positive association with either duration residual (Table 9).

Although the hypothesized relationships failed to be supported in the full sample of respondents, further investigation was carried out on three sub-groups of respondents: single adults residing alone, primary earners in families of two or more, and secondary earners who for the most part are wives.

45

TABLE 9

MEAN DURATION RESIDUALS FROM A-S-I MEANS AND MULTIVARIATE
COEFFICIENTS WITHIN SELECTED BENEFIT VARIABLES

Benefit Variables	A-S-I Residuals (in weeks)	Multivariate Residuals (in weeks)	Number of Cases
Weekly Benefits Average Weekly Wage			
Under 30%	0.74	1.48	29
30-39%	-0.56	-0.98	172
40-49%	0.20	0.14	221
50-59%	-0.18	0.01	239
60% or more	0.19	-0.14	53
Not ascertained	1.35	1.90	46
Weekly Benefits Take-Home Pay			
Under 40%	0.83	1.04	96
40-49%	-0.29	-0.49	250
50-59%	-0.38	-0.27	262
60-69%	0.76	0.90	104
70% or more	0.08	-0.60	36
Weekly Benefits In Dollars			
Less than $25	0.35	0.67	87
$25-29	0.20	0.28	161
$30-34	-0.28	-0.59	249
$35-39	0.12	0.02	97
$40-44	-0.01	0.15	105
$45 or more	-0.04	0.27	61

For the single person family, there is wide variation in
the mean values of the residuals over the three benefit variables
and the pattern of variation does not conform to longer duration
with more liberal weekly benefit amounts (Table 10). Furthermore
the patterns of variation are quite dissimilar between the

benefit variables, another indication of the absence of a strong
relationship.

TABLE 10

MEAN DURATION RESIDUALS WITHIN SELECTED BENEFIT
VARIABLES, FOR SINGLE PERSON FAMILIES

Benefit Variables	A-S-I Residuals (in weeks)	Multivariate Residuals (in weeks)	Number of Cases
Weekly Benefits Average Weekly Wage			
Under 40%	-0.47	-0.65	38
40-49%	0.99	1.05	41
50% or more	-1.10	-1.32	35
Significance	P>.05	P >.05	
Weekly Benefits Take-Home Pay			
Under 50%	0.35	- .08	66
50-59%	-0.66	- .16	34
60% or more	0.14*	- .38	21
Significance	P>.05	P>.05	
Weekly Benefit Amount			
Under $25	-2.13	-2.83	20
$25-29	0.88	0.71	44
$30 or more	0.11	0.33	59
Significance	P>.05	P<.05	

*Between mean square variance is less than the within
mean square variance.

For the primary earners too there is no pattern of variation
consistent with the hypothesis that longer duration will result
from more liberal benefits (Table 11). The three forms of the ben-
efit variable consistently form U-shaped curves: duration declines
toward the middle range of the benefit variable, and is higher above
and below.

TABLE 11

MEAN DURATION RESIDUALS WITHIN SELECTED BENEFIT
VARIABLES, FOR PRIMARY EARNERS

Benefit Variables	A-S-I Residuals (in weeks)	Multivariate Residuals (in weeks)	Number of Cases
Weekly Benefits Average Weekly Wage			
Under 40%	-0.07	0.02	98
40-49%	-0.55	-0.63	106
50% or more	-0.05	0.01	191
Significance	P>.05*	P>.05	
Weekly Benefits Take-Home Pay			
Under 50%	0.00	0.22	185
50-59%	-0.57	-0.59	163
60% or more	0.65	0.48	63
Significance	P>.05	P>.05	
Weekly Benefit Amount			
Under $25	0.77	2.58	16
$26-29	0.07	0.33	29
$30-34	-0.40	-0.64	130
$35-39	-0.02	-0.07	86
$40-44	-0.07	0.07	99
$45 or more	0.00	0.27	59
Significance	P<.05*	P>.05	

*Between mean square variance is less than the within mean square variance.

For the secondary earners and the ratio variables, the pattern of variation is quite consistent with longer duration associated with higher ratios of benefits to wages; for the ratio of benefits to average weekly wage for the multivariate residual, the variation is significant at a 95 per cent level of confidence (Table 12).

TABLE 12

MEAN DURATION RESIDUALS WITHIN SELECTED BENEFIT
VARIABLES, FOR SECONDARY EARNERS

Benefit Variables	A-S-I Residuals (in weeks)	Multivariate Residuals (in weeks)	Number of Cases
Weekly Benefits Average Weekly Wage			
Under 40%	-0.76	-1.56	65
40-49%	0.84	0.73	74
50% or more	0.24	0.69	66
Significance	P>.05	P<.05	
Weekly Benefits Take-Home Pay			
Under 50%	-0.17	-0.72	95
50-59%	0.26	0.48	65
60% or more	0.68	0.88	56
Significance	P>.05*	P>.05	
Weekly Benefit Amount			
Under $25	1.19	1.44	51
$25-29	-0.10	0.05	88
$30 or more	-0.10	-0.79	79
Significance	P>.05*	P>.05	

*Between mean square variance is less than the within mean square variance.

In summary, for the whole respondent population, there appears to be no discernible relationship between benefit size and duration, yet among secondary earners in families, the length of duration can be seen to increase somewhat with more liberal benefits. For primary earners, including single person families, no such relationship is revealed.

The Multiple Regression Approach

The duration of benefits, measured in the number of weeks
for which each individual in the sample received benefits, was the
dependent variable in the multiple regression approach. The general
form of the hypothesis was that differences in duration resulted
from (1) differences in demand conditions confronting each sample
member, (2) possibly also his response to the size of the weekly
benefit payment available to him, and (3) a random variation; (4) dif-
fering responses according to family circumstances of the respondent
were also postulated. Some modifications of the original formula-
tion of the regression equation based on the initial findings were
possible because of the availability of high speed computing equip-
ment; it was also possible to run regressions on several sub-groups
of respondents.

There were two substantive objectives in forming equations
and groups. One was to determine whether there was a discernible
relation between the size of weekly unemployment benefits and the
number of weeks for which payments were made for the whole inter-
viewed sample of Michigan recipients.[1] It was a question of
whether the sample of recipients of that particular time and place

---

[1]The conclusions are derived from those who successfully
applied for benefits for three or more consecutive weeks ending
during the summer. The Hope College interview study omitted the
recipients of one and two weeks of benefits on the a priori assump-
tion that such persons would overwhelmingly be highly motivated to
work; it also omitted the disemployed who did not receive benefits
on grounds that there was no economically feasible way to sample
and interview them. Both omissions were unfortunate, for the de-
cision to claim benefits or not, or to delay in claiming benefits,
should have been better represented in the data on which conclu-
sions were based.

revealed a disincentive effect of benefits on duration. The other
was whether there were sub-groups of the recipient population
within which the size of benefits exerted an important influence on
the number of weeks of benefits compensated. Estimates of the
size of the relationships, if any, were also desired.

Mindful of the first objective, the respondents were first
analyzed as a single group. Separate regressions were run with one
of the formulations of the benefit variable in each as an independent
variable along with the same demand expressing variables used in the
iterative variance analysis: industry, occupation, sex, residence,
age, education, race, and length of employment. Three alternative
benefit formulations were tested here, and in subsequent analysis.
The benefit variables were: B, weekly benefit size in dollars;
B/W, the ratio of weekly benefit size in dollars to prior dollar
average weekly wage, in whole percentages; and W-B, the difference
between prior average weekly wage and weekly benefit size, in dol-
lars.

None of the forms of the benefit variable had a coefficient
which was significantly different from zero at a one sigma test
level, despite its having been run on 749 cases (Table 13, Regres-
sions 1, 2, 3). Only the B/W variable had a sign consistent with
the hypothesis that longer duration resulted from more liberal
weekly benefit amounts. The benefit coefficient which had the
largest absolute value, B = -.029, makes no theoretical sense, al-
though it is much closer to zero than the simple correlation coef-
ficient of weekly benefit size and duration, -.267.

TABLE 13

RESULTS OF REGRESSIONS ON BENEFIT DURATION, FOR SELECTED
GROUPS

Group Covered	Regression Number	r^2	No. of Cases	No. of Predictors	Regression Coefficients and Standard Errors		
					Coefficient	Standard Error	Variable
All respondents	1	.34	749	26	-.029	.035	B
	2	.34	749	25	.006	.022	B/W
	3	.34	749	25	.006	.011	W-B
Husbands, except those who returned to former job and did not delay in filing	4	.45	189	26	-.073	.078	B
	5	.44	189	25	-.063	.049	B/W
	6	.45	189	25	.043	.022	W-B
Wives, except those who returned to former job and did not delay in filing	7	.63	114	26	-.200	.320	B
	8	.63	114	25	.091	.097	B/W
	9	.63	114	25	-.046	.052	W-B
Other than husbands or wives, except those . . .	10	.49	77	26	.254	.178	B
	11	.46	77	25	.038	.086	B/W
	12	.46	77	25	.023	.042	W-B
Primary earners who found new employment	13	.25	105	17	-.207	.140	B
	14	.22	105	16	-.022	.051	B/W
	15	.23	105	16	.027	.021	W-B
Primary earners who exhausted benefits	16	.43	86	17	-.191	.211	B
	17	.42	86	16	-.092	.088	B/W
	18	.43	86	16	.061	.044	W-B
Primary earners who returned to former job	19	.21	332	17	-.012	.040	B
	20	.21	332	16	-.005	.021	B/W
	21	.21	332	16	.003	.010	W-B
Secondary earners who found new employment	22	.36	42	16	-.605	.535	B
	23	.34	42	15	.080	.116	B/W
	24	.33	42	15	-.021	.065	W-B
Secondary earners who exhausted benefits	25	.50	56	16	-.616	.489	B
	26	.50	56	15	.194	.150	B/W
	27	.48	56	15	-.037	.089	W-B
Secondary earners who returned to former job	28	.49	128	16	-.030	.178	B
	29	.48	128	15	.057	.054	B/W
	30	.49	128	15	-.044	.027	W-B

The demand expressing variables had almost identical coefficients in the three regressions on all respondents, and the multiple r^2 was 0.34 for each. It appeared that within the sample as a whole there was no clear indication that any formulation of the benefit variable indicated a positive relationship of longer duration with more liberal weekly benefit amounts.

The question remained, however, of whether there were subgroups of recipients who were sensitive to the size of weekly benefits. Two bases for forming sub-groups were considered for analysis: (1) the reason for termination of benefits, reflecting different degrees of discretion of benefit duration, and (2) position of the recipient in the family, reflecting wage earning responsibilities to the family, social pressure, and need.

One set of sub-groups was formed from the respondents who remained after those recipients who had terminated benefits by returning to their former employer and who had not delayed in filing for benefits were set aside. The recipients who were set aside were thought to have had the very least discretion in the number of weeks of benefits received. Three sub-groups,[1] husbands, wives, and others, were formed from the remaining recipients. Separate regressions for each formulation of the benefit variable were run for each of the three sub-groups (Table 13, Regressions 4 to 12).

In addition to the three benefit variables, the same demand-expressing variables which were used in the regressions on all respondents were included in the regressions on the sub-groups of

---

[1]The sub-group "wives" includes other secondary earners, and the sub-group "others" includes single persons and others of miscellaneous relationship to the family head.

husbands, wives, and others. This was done to make the effects of
the sub-groupings most apparent. The resulting benefit variable
coefficients were generally larger in absolute size than the cor-
responding coefficients based on the full sample, although only
four of the nine benefit variable coefficients had signs consistent
with the hypothesis of longer duration of benefits with more liberal
weekly benefit amounts. The signs of the coefficients of the three
benefit variables were not all correct in any of the sub-groups,
and no benefit variable had the correct signs for its coefficients
in each of the three sub-groups. The sign of the B/W variable was
correct twice (for the "wives," and "others"), and the B and W-B
variables each had correct signs once, but in neither case was it
for the sub-group "husbands." The coefficients of the benefit
variables from the regressions run on "husbands" were quite large
in relation to their respective standard errors, and this was prob-
ably not the effect of sampling variability. Rather, the size of
these coefficients was probably a result of one or more poorly
measured (or missing) explanatory variables, for the conclusion
that shorter duration resulted from more generous weekly benefit
amounts is not plausible.

New regressions were run and other variables believed to be
relevant were included along with a benefit variable and the demand
expressing variables which had been used in Regressions 1 to 12.
"Other earnings in the family" and "the number of dependents" were
added to the variables for they were expected to influence duration
through need. Higher other earnings were expected to lengthen
duration, and more dependents were expected to shorten duration,

particularly for respondents who terminated benefits for new employment. "Whether unemployment was unusual" was added because duration was expected to be longer for those for whom unemployment was unusual. "Whether respondent delayed in filing for benefits" was also added. Those who delayed in filing were expected to have generally shorter duration, particularly those who returned to their former employer.

The demand expressing variables were also modified to reduce the total number of variables in the equations. New variables were formed from categories of variables which overlapped substantially, such as the unskilled workers who lived in Detroit and worked for auto manufacturer x. In other instances contiguous categories of a variable were combined, such as in length of employment with the separating employer. Education was dropped entirely.

Finally, the sub-groups were modified so as to include all respondents. A basic assignment of respondents as a primary or secondary breadwinner was the first step. Single persons were identified and classified as primary earners if they lived alone.

The primary and secondary earners were further sub-divided by reason for terminating benefits. Those who returned to their former employer were grouped together, regardless of whether they had delayed in filing for benefits. It was felt that these persons had little discretion in the duration of their benefits apart from delayed filing. Those who ended benefits because they had found new employment were grouped together because these persons were believed to have had the greatest discretion in the duration of their benefits. The remaining cases, called the exhaustees,

included those who had exhausted their benefit entitlement and others
whose benefits had been terminated by action of the employment se-
curity office. In general they must have had little discretion in
the number of weeks for which they received benefits, except that
they probably continued as long as they could.

Three separate regressions, one for each form of the benefit
variable, were run for each of the six groups which, taken to-
gether, encompassed all the respondents.

The coefficients of the benefit variable B were negative
for each of the six groups, and except for the two groups who re-
turned to their former employers, the values of the coefficients
were large, and about as large or larger than their respective
standard errors. This positive association of longer duration of
benefits with lower weekly benefit amounts was contrary to what was
expected. As compared with the corresponding coefficients from
prior regressions on groups in which there was substantial overlap
of individuals, these coefficients were much larger and in the
wrong direction. The standard errors of the coefficients increased
proportionately less than did the coefficients themselves.

Average weekly wage was included in the regressions with
the B variable and the coefficients were generally positive, indi-
cating longer duration at higher wage levels. Weekly benefit size
and average weekly wage were positively correlated, and both were
negatively related to duration of benefits in two-way correlations.
Furthermore, when average wage was introduced into a regression,
the coefficient of the B variable tended to take on a larger nega-
tive value.

For the primary earner groups, the signs of the coefficients of the three benefit variables did not support the hypothesis of longer duration with more liberal weekly benefit amounts. The coefficients for the primary earners who returned to their prior employer were not significantly different from zero. The two other primary earner groups, exhaustees and those who found new employment, overlapped to a large extent with the "husbands" group of the earlier series. Whereas "husbands" had coefficients for the B/W and W-B variables which were wrong in sign and large in relation to their standard errors, the corresponding coefficients for the primary breadwinners who found new employment were closer to zero. For exhaustees, the coefficients were still more implausible, and even larger in relation to their standard errors than those for "husbands." In the group of primary earners with the greatest discretion (those who found new employment), the benefit variable coefficients are not significantly different from zero. Only among the exhaustees did benefit size and duration appear to be negatively related.

The signs of the benefit variable coefficients for B/W and W-B for the secondary earners confirmed the hypothesis of a positive relationship of longer duration to more liberal weekly benefits. The sign was correct in each of the three groups which had been formed on the basis of reason for benefit termination. The benefit coefficients are not large in relation to their standard errors, however, and are not statistically significant. The regressions reported earlier which were run on "wives" and "others" overlap considerably with the secondary earners who exhausted or who terminated benefits with new employment. Except for the run

on "others" using the W-B variable, the signs of the coefficients of
the benefit variables in these groups support the hypothesis of
longer duration associated with more liberal weekly benefits.

Summary

These regression findings confirm the earlier tentative
conclusions based on the residual analysis. The weekly dollar
amount formulation of the benefit variable resulted in generally
implausible findings in nearly all of the ways in which it was
used.

The dollar weekly benefit was not satisfactory in the re-
gression analysis since there was a curved relationship between
duration and benefits. This resulted in higher negative values
of the B coefficients when average weekly wages were added to the
equation. The positive coefficient for wages provided a large
offset to the large negative prediction of duration at high bene-
fit levels based on the (linear) coefficient of the benefit vari-
able. A large negative coefficient of the benefit variable was
appropriate to the rather rapid decline in duration with increases
in benefit rates at low levels of benefits.

In general, the forms of the benefit variable, B/W and
W-B, yielded plausible results. The main exceptions were the
"husbands" and primary earners who were classed as exhaustees.
Calculations for these recipients generally yielded implausible
values of the benefit coefficients and relatively low standard
errors of the coefficients. That is, duration was estimated to
decline with more liberal weekly benefit size. The findings from

the group "husbands" are not particularly relevant, however, for they were superseded by subsequent regressions and sub-groupings. The new variables added were not all successful, but those groups for whom implausible findings resulted were further narrowed to the primary earners who exhausted benefits.

The relatively low proportion of total variance explained in the primary earner regressions suggests that relevant variables are still not included, or that those which are included are poorly measured. In the latter category, perhaps, is the wage measure which is used implicitly as an indicator of the wage alternative to unemployment benefits. It may have been a poor proxy for the conceptual variable. Among the primary earners, the coefficients of the variables "number of dependents" and "delay in filing" were sometimes opposite to expectations.

In summary, among primary earners there is statistically insignificant evidence of a small negative response of duration of benefits to an increase in weekly benefit amount. The largest negative response was found among exhaustees, a group which also include all those whose benefits were terminated by action of the employment security office.

For secondary earners there is statistically insignificant evidence of a small positive response of duration to increases in weekly benefit amount. Thus the difference in response between primary and secondary earners is in the expected direction, but in an economic sense the estimated response for both groups is quite small, and not statistically significant at 95 per cent levels of confidence.

CHAPTER VI

SUMMARY

Certain statistics which have previously been presented are summarized below. Seventy per cent of the respondents in the Michigan sample were the primary earners in their families. As in other studies, the majority of exhaustees were found to be married with dependents. The multiple regression coefficients of the B/W and W-B variables for the primary earners in the Michigan sample were either implausible or not significantly different from zero (Table 14). Both results sustain the conclusion that an increase in the size of weekly unemployment benefits would not lead to longer durations of such benefits. For these people a rise in the weekly benefit rate would not result in cost increases in the program greater than the size of the weekly increase times the number of weeks which would have been compensated without the increase.

For the secondary earners, who made up 30 per cent of the respondents in the Michigan sample, the coefficients of the benefit variables B/W and W-B suggest that in addition to the direct costs of a benefit increase (the number of weeks for which compensation would be received times the weekly rate increase) an indirect cost would be incurred because some recipients would draw benefits for a longer duration as a result of the weekly rate increase. Estimates of this increase are presented as elasticities of duration

59

with respect to B, as well as in terms of increases in the weeks of duration associated with a one dollar increase in B (Table 15).

TABLE 14

SUMMARY OF THE REGRESSION COEFFICIENTS FOR THE B/W AND W-B
BENEFIT FORMULATIONS, WITHIN SELECTED GROUPS

Reason for Termination	Per Cent	Number of Cases	Regression Coefficients	
			B/W	W-B
Primary Earners				
New employment	14	105	-.022 (.051)	.027 (.021)
Exhaustion	12	86	-.092 (.088)	.061 (.044)
Customary employment	44	332	-.005 (.021)	.003 (.010)
Secondary Earners				
New employment	6	42	.080 (.116)	-.021 (.065)
Exhaustion	7	56	.194 (.150)	-.037 (.089)
Customary employment	17	128	.057 (.054)	-.044 (.027)
Total	100	749	--	--

Source: Tables 29-31, 34-36.

TABLE 15

ESTIMATED EFFECT OF BENEFIT INCREASES FOR
SECONDARY EARNERS IN THE MICHIGAN SAMPLE

Benefit Formulation	Average Coefficient	Average Benefit	Average Duration (weeks)	Elasticity of Duration[a]	Duration Increase From $1 Benefit Increase[b]
B/W	.095	$27.66	9.89	0.40%	0.14 weeks
W-B	-.038	$27.66	9.89	0.11%	0.04 weeks

[a]The interpretation is that a 1 per cent increase in weekly benefit amount leads to an x per cent increase in duration.

[b]The interpretation is that a one dollar increase in weekly benefit amount leads to an x weeks increase in duration.

Thus, for secondary earners, a 1 per cent increase in B, according to the B/W equation, leads to an increase of 0.4 per cent in duration. According to the W-B equation, a 1 per cent increase in B leads to an increase of 0.11 per cent in duration.

Viewed another way, a one dollar increase in B, according to the B/W equation, leads to a 0.14 week increase in average duration for secondary earners, or an increase of about 1.5 per cent. According to the W-B equation, a one dollar increase in weekly benefits leads to a 0.04 week increase in average duration for secondary earners, or an increase of less than a 0.5 per cent.

These changes are modest. One must also be modest in drawing implications for policy from this analysis only. As mentioned earlier, the absence of relevant data covering other states and other times limited the range of variation of, and between, the major variables--which in turn restricted the generalizations which could properly be drawn from the results of the analysis. It did not hamper the development and exploration of new hypotheses to explain the duration of benefits, however, and a useful approach to the study of the incentive aspects of weekly unemployment benefits has been developed for future use. Advances in the techniques of data collection together with increasing amounts of money being spent in gathering information give promise of relevant new data to analyze. In this way more satisfactory tests of the relationship of benefit duration to weekly benefit size will be forthcoming to complete with intuition, prejudice and inertia in the political process which results in public policy.

APPENDIX A

THE INSTITUTIONAL ENVIRONMENT OF UNEMPLOYMENT
BENEFITS AND THE ECONOMIC SETTING IN
MICHIGAN DURING 1955

A familiarity with the economic setting and the institutional
.nvironment in Michigan during 1955 is important to an evaluation
of this study of unemployment benefits. To further explain how
claimants whose interviews are incorporated in this study had some
discretion concerning the number of weeks of unemployment benefits
for which they were compensated, additional information on the legal
and administrative structure of the benefit program is presented.
An understanding of certain variations in the duration of benefits
between recipients requires knowledge of the manner in which en-
titlement limits the benefit duration. An understanding of variations
in the size of weekly benefits between recipients requires knowledge
of the basis on which weekly benefits are set for each claimant.
An understanding of the climate of opinion prevailing during the
period of data collection requires knowledge of the general economic
setting in Michigan during that time. These topics are covered in
this appendix.

The Federal-State Nature of the Unemployment
Benefits Program

In the United States the unemployment compensation program

has always been a federal-state program.[1] Certain similarities are
found among states as a result of federal legislation, but most
states, including Michigan, have unique features in unemployment
compensation because specific implementation of the program is de-
termined by the states. The importance of the federal government
in the program derives from a 3 per cent federal tax on taxable em-
ployer payrolls. In states with suitable unemployment compensation
programs, however, employers are not required to pay 2.7 per cent
of the federal tax, although the remaining 0.3 per cent is levied
and is used to make grants to the states to cover the administrative
costs of the state unemployment compensation programs. Since in
fact every state now has an operative unemployment compensation
program which has been deemed suitable, all employers taxed under
the federal law pay to the federal government only the 0.3 per cent
tax on taxable payrolls. Each state has, however, levied additional
taxes on employers to provide funds to be paid as benefits to un-
employed workers who meet the requirements of its particular pro-
gram. In all states benefits are paid as a matter of right, but
not automatically; unemployed workers must make a claim for bene-
fits in accordance with the regulations of the state in which they
reside.

The standards which the federal government has established
for the states do not seriously limit the kinds of programs which
are acceptable. Wide variations exist between the states in the
tax rates and in the size and duration of weekly benefit amounts

---

[1]The Social Security Act passed by the Congress of the
United States of America, approved August 14, 1935, as amended.

which are allowed. Only the specific features of the Michigan pro-
gram are relevant to this study. Although the details of the Mich-
igan program have frequently been modified, its general character
has not been substantially changed since 1955. The conditions which
prevailed during 1955 are described below.

Legal and Administrative Aspects of the Michigan Program, and Entitlement to Benefits

The unemployment compensation program in Michigan[1] requires
the active participation of the claimant in the claim and benefit
payment procedure. The total amount of compensation received by
two individuals with identical employment and unemployment experi-
ence will be different if one of them delays filing a claim for
benefits while the other files immediately after the onset of unem-
ployment. At the time a claim for unemployment compensation bene-
fits was received from an unemployed worker during 1955, a separate
record was established for that claimant based on information he
supplied and on information secured from his most recent employer.
Employers are obliged to supply information requested by the Em-
ployment Security Commission. On the basis of information received,
an individual benefit year of 52 weeks was established for each
claimant which began from the week he notified the commission that
he was unemployed and applying for benefits. For each claimant,
eligibility for benefits was based upon his earnings during his
base period, that is, the 52-week period prior to the week in which
he filed his claim.

---

[1]Michigan Employment Security Act (Act No. 1 of the Public
Acts of the Extra Session of 1936, as amended, including Act No.
281 of the Public Acts of 1955).

The minimum requirement for eligibility for benefits was earnings in covered employment[1] during the base period of more than $15.00 per week for 14 weeks. Two weeks of eligibility for benefits were allowed for every three weeks during the base period in which he earned more than $15.00 per week, up to a maximum of 26 weeks during any one benefit year. It follows that 39 weeks of work in covered employment was sufficient to entitle the worker to the maximum duration of benefits. If a claimant had more weeks of unemployment during his benefit year than he had weeks of entitlement, no benefits could be paid to him for the excess weeks of unemployment. Only at the expiration of his benefit year could he file a new claim, based on his earnings in a new base period, that is, the 52-week period prior to the date of the new claim. In the new determination of eligibility for benefits, benefit payments would not be considered as earnings in covered employment.

In Michigan the first week of unemployment following the filing of a claim for benefits in a benefit year is called the "waiting week" and no benefits are paid for this initial week. Unemployment benefits could be paid to an eligible claimant for every week he was unemployed during his benefit year subsequent to the waiting week, subject to the maximum eligibility determined for him. No weeks of unemployment were compensated which occurred prior to the filing of a claim, and claims could not be filed retroactively.

---

[1]Covered employment refers to employment to which the unemployment fund tax applies. During 1955 this included services performed for remuneration for employers of eight or more individuals, but excluded agricultural labor, domestic service, professional service or service performed in the employ of the state or any political sub-divisions thereof.

Additional conditions for receiving benefits were that the claimants be able, willing and available to work. The administrative tests that these conditions were met included the following: the claimant had to report to the employment security commission office at scheduled times either weekly or bi-weekly; the claimant had to register with the employment service and accept referrals for employment which they deemed suitable for him; the claimant had to carry out an independent search for work and report on his efforts. Since there were seldom enough referrals at the employment service to apply an actual work test to most claimants, the other requirements were in practice more important in identifying reluctant workers or malingerers.

Because of the limited effectiveness of these administrative controls, many claimants who wanted to delay their return to work successfully postponed their re-employment and at the same time continued to collect unemployment benefits.

A different type of control over the number of weeks of benefits collected arises from the requirement that the claimant take an active part in the claims procedure. Delays in filing a claim for benefits and failure to report for appointments at the claims office result in loss of compensation because retroactive filing is not allowed.

If a claimant delays filing he may receive benefits for a smaller number of weeks of unemployment than he otherwise would, although if he remains unemployed long enough to receive benefits for the maximum number of weeks to which he is entitled, this would not be the case. Evidence from the Hope College survey

indicates that those who did not file for benefits as soon as
possible had higher exhaustion rates than those who did not delay
(17 per cent and 13 per cent, respectively), but the difference
is not striking. Although some claimants who delayed filing did
not shorten their benefit sequence since they received the maximum
number of weeks to which they were entitled, most who delayed ap-
parently did shorten their benefit sequence.

Weekly Benefit Amounts

The size of the weekly benefit amount for each eligible un-
employed worker was determined from a schedule of benefits based
upon each claimant's average weekly wage during his base period
and upon the number and relationship of dependents. Separate ben-
efit schedules were established for each of six different dependency
classes in which the size of the weekly benefit varied with the
level of the average weekly wage (Table 16). Children counted for
more than other dependents in determining dependency status; in
some instances two dependents who were not children were equated
to one child. The father was the only parent who could claim the
children as dependents unless the mother provided all or most of
their support. The dependency classes were identified by the
letters A through F. Dependency Class A included single persons
with no dependents, and husbands and wives whose spouses also work.
Dependency Class B was for persons who had one dependent other than
a child--typically a husband whose wife does not work. Class C
was for persons who had one child or two adult dependents; Class
D was for persons with two children, or one child and one adult
dependent, or three adult dependents. Class E and Class F were for

68

TABLE 16

WEEKLY BENEFIT SIZE BY FAMILY CLASS AND AVERAGE
WEEKLY WAGE, MICHIGAN, JULY, 1955[a]

Wage Classes			
Family Class "A"	Family Class "B"	Family Class "C"	Family Class "D"
$15.01-16.50	$15.01-16.50	$ . . .	$ . . .
16.51-18.00	16.51-18.00	. . .	. . .
18.01-19.50	18.01-19.50	15.01-16.50	. . .
19.51-21.00	19.51-21.00	16.51-18.00	
21.01-22.50	21.01-22.50	18.01-19.50	15.01-16.50
22.51-24.00	22.51-24.00	19.51-21.00	16.51-18.00
24.01-25.50	24.01-25.50	21.01-22.50	18.01-19.50
25.51-27.00	25.51-27.00	22.51-24.00	19.51-21.00
27.01-28.50	27.01-28.50	24.01-25.50	21.01-22.50
28.51-30.00	28.51-30.00	25.51-27.00	22.51-24.00
30.01-33.00	30.01-33.00	27.01-28.50	24.01-25.50
33.01-36.00	33.01-36.00	28.51-30.00	25.51-27.00
36.01-39.00	36.01-39.00	30.01-33.00	27.01-28.50
39.01-42.00	39.01-42.00	33.01-36.00	28.51-30.00
42.01-45.00	42.01-45.00	36.01-39.00	30.01-33.00
45.01-48.00	45.01-48.00	39.01-41.50	33.01-36.00
48.01-51.00	48.01-51.00	41.51-44.00	36.01-39.00
51.01-57.50	51.01-54.50	44.01-46.00	39.01-41.50
57.51-66.50	54.51-57.50	46.01-48.00	41.51-44.00
66.51-75.50	57.51-60.00	48.01-51.00	44.01-46.00
75.51 or more	60.01-65.00	51.01-54.00	46.01-48.00
	65.01-70.00	54.01-57.00	48.01-51.00
	70.01-72.00	57.01-61.00	51.01-54.00
	72.01 or more	61.01-65.00	54.01-57.00
		65.01-68.00	57.01-61.00
		68.01-70.00	61.01-65.00
		70.01-72.00	65.01-69.00
		72.01 or more	69.01-73.00
			73.01-76.00
			76.01-78.00
			78.01-80.00
			80.01-82.00
			82.01 or more

[a]Effective July 15, 1955)

TABLE 16--Continued

Wage Classes		
Family Class "E"	Family Class "F"	Weekly Benefit Rate
$ . . .	$ . . .	10
. . .	. . .	11
. . .	. . .	12
. . .	. . .	13
15.01-16.00	15.01-16.00	14
16.01-17.00	16.01-17.00	15
17.01-18.00	17.01-18.00	16
18.01-19.00	18.01-19.00	17
19.01-20.00	19.01-20.00	18
20.01-21.00	20.01-21.00	19
21.01-22.50	21.01-22.00	20
22.51-24.00	22.01-23.00	21
24.01-25.50	23.01-24.00	22
25.51-27.00	24.01-25.00	23
27.01-28.50	25.01-26.00	24
28.51-30.00	26.01-27.00	25
30.01-33.00	27.01-28.00	26
33.01-36.00	28.01-30.00	27
36.01-39.00	30.01-33.00	28
39.01-41.50	33.01-36.00	29
41.51-44.00	36.01-39.00	30
44.01-46.00	39.01-41.00	31
46.01-48.00	41.51-44.00	32
48.01-51.00	44.01-46.00	33
51.01-54.00	46.01-48.00	34
54.01-57.00	48.01-51.00	35
57.01-61.00	51.01-55.00	36
61.01-66.00	55.01-60.00	37
66.01-71.00	60.01-66.00	38
71.01-76.00	66.01-72.00	39
76.01-79.00	72.01-76.00	40
79.01-82.00	76.01-80.00	41
82.01-84.00	80.01-83.00	42
84.01-86.00	83.01-86.00	43
86.01-88.00	86.01-88.00	44
88.01-90.00	88.01-90.00	45
90.01-92.00	90.01-92.00	46
92.01-94.00	92.01-94.00	47
94.01 or more	94.01-96.00	48
	96.01-98.00	49
	98.01-100.00	50
	100.01-102.00	51
	102.01-104.00	52
	104.01-106.00	53
	106.01 or more	54

persons who had three and four children respectively, or other
combinations of dependents in the same general pattern reported
for Class D. Wives who worked for wages were not allowed as de-
pendents.

The calculation of average weekly wage was done separately
for each claimant. Only wages from covered employment earned during
the claimant's base period were included in the calculation. For
claimants who had worked for more than one employer during the base
period, wages with the most recent employer were considered first.
An individual's average weekly wage with a base period employer was
determined by dividing his total wages during weeks in which he
earned more than $15.00 by the number of such weeks.[1] Subject to
the limitation of a maximum of 26 weeks of entitlement in any
benefit year, a claimant who had two successive employers during
his base period and who remained unemployed long enough to use up
the weeks of benefit entitlement derived from his most recent em-
ployer would be eligible to receive additional benefits based on
his average weekly wage calculated separately for earnings re-
ceived from his prior employer during his base period.

The size of weekly benefits in dollars increased with both
dependency class (determined by the number of dependents) and higher
average wages. Maximum weekly benefits differed with each de-
pendency class. They were higher for dependency classes representing
more dependents. Furthermore, at every wage level, a larger weekly

---

[1]It follows that part-time work which lessens the average
weekly wage also results in lower weekly benefit amounts; overtime
work tends to increase the average weekly wage and thus the size
of weekly benefits.

benefit was generally paid to claimants in family classes repre-
senting more dependents. Consequently at every wage level generally
a larger proportion of average weekly wage was compensated in the
family classes representing more dependents. On the other hand,
within each dependency class, the percentage of average weekly
wage compensated declined with increases in the average weekly
wage (Table 17). Benefits paid to claimants who had low wage rates
amounted to more than two-thirds of average weekly wage. At higher
wage rates less than half of the average weekly wage was compen-
sated.

TABLE 17

WEEKLY BENEFIT SIZE AS A PERCENTAGE OF AVERAGE WEEKLY WAGE
WITHIN AVERAGE WEEKLY WAGE LEVELS AND FAMILY CLASS
GROUPS, MICHIGAN, 1955[a]

Average Weekly Wage	Family Class					
	A	B	C	D	E	F
$30	67%	67%	70%	77%	83%	90%
$40	58	58	62	68	72	78
$50	52	52	58	62	66	70
$60	47	48	53	57	60	62
$70	41	44	50	53	54	56
$80	38	41	46	50	51	51
$90	33	37	41	47	50	50
$100	30	33	37	42	48	50
$125	24	26	30	34	38	43

[a]Michigan Employment Security Act, Act No. 281, Public
Acts of 1955, effective July 15, 1955.

The Economic Setting in Michigan during 1955

In Michigan's economy in the 1950's a single industry,
automobile manufacturing, accounted for about 20 per cent of total
wage and salary employment, and almost half of manufacturing

employment. In 1955, a record year for the output for cars and
trucks in the United States, 9.2 million units were produced. Un-
employment in Michigan during 1955 averaged below 4 per cent, or
about 2 per cent less than the average unemployment figure for
Michigan in 1954 and 1956. Nevertheless, total wage and salaried
employment was below the record year of 1953 and most of the de-
cline from 1953 was registered in the automobile industry. The
decline in employment in the Michigan automobile industry over the
past decade has been steady. Increases in worker productivity and
a continuing tendency for the industry to decentralize and reduce
Michigan's total share of the industry output have contributed to
the decline.

The sample of unemployment compensation recipients to be
interviewed was selected during the summer of 1955. Employment
was high and unemployment was low in Michigan during these summer
months. Nevertheless, employment was declining and unemployment
was increasing slightly. Manufacturing--predominantly auto manu-
facturing--was responsible for the decline in employment because
of model-change layoffs which occurred during this period. In
general, workers were not recalled to the plants of two automobile
manufacturers during the summer. Workers who had been laid off as
a result of the model changeovers made by these two companies were
a very small proportion of the sample. Workers were recalled to
the plants of a third automobile manufacturer during the summer and
a sizeable portion of the sample is from this company. During the
1954-56 period this third company was considered to have been the
least reliable of the big three in terms of the steadiness and pre-
dictability of employment in its plants.

During 1955 the number of unemployment compensation claims filed[1] decreased steadily each month from the beginning of the year until June, and then increased month by month until October, when the number began to decline. The number of "first payments" (indicating new unemployment) followed the same pattern except that the low point was reached earlier, in May, so that by June an increase was already apparent. Each month from January, 1955, on the number of claimants who exhausted their benefit rights declined, with the sharpest declines occurring in April, May, and June. The increased manpower demands of the automobile companies which resulted from the high production rates of 1955 were largely met by an intensive use of overtime rather than by an increase in the number of workers.

---

[1]Each week claimants must attest to unemployment and claim benefits so the total number of claims filed is roughly equal to the number of people-weeks of unemployment attested to. Because of "waiting weeks" and findings of ineligibility, the total number of claims filed typically exceeds the number of weeks compensated.

APPENDIX B

THE SAMPLE SURVEY PROCEDURE

Survey Research Background

The sample survey is a relatively new research tool. A body of knowledge has developed about the sample survey which is sufficiently extensive to constitute a new discipline. There is, however, much overlapping with other research disciplines, as mentioned earlier by Campbell and Katona.

> The basic survey procedure, as used in the social sciences, is made up of a combination of techniques which have been developed in various research disciplines. The procedures of interviewing, for example, are based largely on the experience of psychologists, anthropologists, and others who used the personal interview both as a research tool and as a means of diagnosis or therapy long before it was adapted for survey use. Techniques of scaling and other methods of measurement have been borrowed from both sociology and psychology. Sampling methods have come in part from agricultural economics. Methods of content analysis have been drawn from a variety of fields, including political science. Techniques of statistical analysis of mass data are common to all fields of quantitative research in the social sciences.[1]

Despite the origins of these techniques in other fields, much research has already been directed explicitly at improving sample surveys and toward a better understanding of the method. The groups which pioneered in survey research are no longer alone

---

[1] Angus Campbell and George Katona, "The Sample Survey: A Technique for Social Science Research," Research Methods in the Behavioral Sciences, ed. Leon Festinger and Daniel Katz (New York: The Dryden Press, 1953), pp. 15-16.

in the field. In varying degrees of institutionalization, new
survey research groups in academic settings have developed in re-
cent years to increase the use of the survey research method in
social research.[1] Although survey research methods have become in-
creasingly understood throughout the academic profession, the
central importance of survey data to this study warrants a review
of the processes of its collection. The validity of the data are as
important to the success of a research report as the validity of
the analysis.

The Hope College Survey

The period during which a research goal is made opera-
tional varies extensively from study to study and with the experi-
ence of the researchers. In the Hope College survey, the request
for the study was made in late 1953 by the Legislature, and the
research team which executed most of the study was assembled in
February, 1954. The remainder of the year 1954 was spent in trans-
lating the general goals into a research plan which would be eco-
nomically feasible and in conducting a search for funds to finance
the study. The grant from the Merrill Foundation was made early in
1955, but major tasks still remained to be done. These included
specification of the universe to be sampled and the selection of

---

[1]The National Opinion Research Center of The University of
Chicago was formed in 1941; the Bureau of Program Surveys of the
U.S. Department of Agriculture was operating in this area in the
late 1930's and a group from the Bureau formed the Survey Research
Center in 1946 at The University of Michigan. More recently survey
research centers have been established at universities in California,
Wisconsin, and Minnesota. Methodological research is also being
carried out under the direction of Professor Robert Ferber at the
University of Illinois, and the Bureau of Applied Social Research
of Columbia University has conducted surveys.

the sample, the design of the questionnaire, the actual collection
of data in the field, and, finally, coding and tabulating of the
data prior to analysis. Each of these stages of the survey process
is illustrated through further description of the Hope survey.

Sampling.--The universe chosen was recipients of unemploy-
ment benefits who terminated benefits during the months of July,
August, and the first two weeks of September of 1955. A probability
sample of these recipients was selected from the administrative
records of the Michigan Employment Security Commission. Recipients
were sampled by their terminations so there would be definite in-
formation covering their duration of unemployment benefits and to
insure that interviewing could take place shortly after the termina-
tion. The sample was further classified into recipients who had
(1) received only one or two weeks of benefits, and those who had
(2) received three or more weeks of benefits. Interviews were
only attempted with recipients in the second group.

The sampling was closer to simple random sampling than that
usually achieved in large-scale empirical investigations. It was
a two-stage area sample in which the administrative offices of the
Michigan Employment Security Commission were identified with coun-
ties because the Michigan Area Sample of the Survey Research Center
was expressed by counties. At the Commission offices within the
county areas selected as part of the Michigan Area Sample, lists
provided by the claim cards of individuals filed by the last four
digits of their social security numbers were systematically sampled
at rates which resulted in an over-all uniform sampling fraction.
Of the total sample of claimants, over 80 per cent were selected

in self-representing areas, that is, in areas from which the se-
lected claimants represented that particular area and no other.
Less than 20 per cent were selected from areas which represent one
or more counties in addition to the county from which the selec-
tion was made. In both types of areas, multiplication of the se-
lection probabilities at each stage yielded the same over-all
probability. The sample was therefore self-weighting.

Because of the thinness of the population in some counties
it was necessary to resort to non-self-representing areas. Inter-
viewing costs would otherwise have been prohibitively expensive.
Separate strata based on geographic location and economic character-
istics were formed from counties of lesser population density. One
county in each stratum was selected to represent both itself and
the other counties in the stratum. The selection of recipients
from a county so chosen was made at a rate to represent the whole
stratum.

The Upper Peninsula was divided into two strata, as was the
upper portion of the Lower Peninsula. Seven additional strata were
formed from the portions of the Lower Peninsula which remained
after the self-representing areas of the Detroit Metropolitan Area
and the counties around the cities of Flint, Saginaw, and Bay City,
Lansing, Grand Rapids, and Muskegon were removed.

Prior to the final sample selection, a pilot sampling was
carried out which served two purposes. First, it yielded an esti-
mate with confidence intervals of the size of the claimant uni-
verse, by means of which the sampling fraction of the final sampling
was established. Secondly, it provided an opportunity for testing

78

sampling procedures, including the instructions to the personnel of
the Michigan Employment Security Commission who carried out the
actual sample selection with liaison through the Research and
Statistics Division of the Commission.[1]

Administrative information.--For each of the benefit re-
cipients in the initial sample, information was transcribed from
the individual claim card and eventually recorded on punch-
cards for easy tabulation. Data about the following items were
recorded: actual duration of benefits, weekly benefit rate,
qualifying average weekly wage, family class, reason for termina-
tion of benefits, place of residence, and some other information.
Thus it was possible, after the interviews were completed, to com-
pare the respondents and the non-respondents on these character-
istics.

Questionnaire and pre-testing.--The questionnaire went
through many drafts as is usual for studies in new areas. Each
major version was tested in a set of interviews with recent re-
cipients of benefits selected from the pilot sampling operation.
It was possible to validate some of the responses by comparing
them with the information which had been transcribed from the ad-
ministrative records, but the pre-tests were mostly used to assess
the interview for length, respondent acceptance, ease of adminis-
tration, and the apparent salience of its questions. The question-
naire was for the most part constructed on a fixed-question, open-
answer basis, in which the interviewers wrote the verbatim or

---

[1]See also the author's more detailed report, "Sampling in
the Study of Recipients of Compensation for Hope College" (Survey
Research Center, October, 1956), included as Appendix D.

near-verbatim answers of the respondents on the schedule. The ques-
tionnaire schedules were returned to the field office of the Survey
Research Center in Ann Arbor where a check on the disposition of each
selected respondent was maintained, and where the identity of the
sample address and the interview were separated except through a
special code to assure the anonymity of the respondents.

On their own initiative representatives of employer groups
had been in touch with the development of the questionnaire and
union groups were invited to inspect the questionnaire as it neared
the final-draft stage. The union representatives raised some ob-
jections to several question sequences and although several changes
based on their comments were incorporated, the objections remained.[1]
The questionnaire was completed and made ready for interview during
the fall of 1955.

Interviewers' instruction book.--In addition to the face-
to-face training typical of Center operation, an instruction book
was prepared as a guide for each interviewer concerning the spe-
cific features of the survey. The background of the survey, the
sample, definitions and concepts peculiar to the study, suggested
introductions, field notes, and statements of the objectives of
each question in the interview schedule were included. This book
was completed in October, 1955, and was distributed to all inter-
viewers as part of their training for the study.

Field operations.--Professional interviewers of the Survey
Research Center were used to undertake personal interviews with the

---

[1]Memorandum from Ralph Showalter to Clayton E. Johnson,
"Hope College Study on Unemployment Compensation--Questionnaire"
(RS:bs,liu72cio, November 7, 1955).

selected claimants in their homes. Several supervisors from other parts of the country assisted with interviewing in areas where a regular interviewing staff was not maintained. "In order to concentrate on a group with more meaningful unemployment experience,"[1] persons whose sequence of payments lasted for less than three weeks were excluded from the interview group.

There were 760 respondents who were successfully interviewed. It was frequently necessary for the interviewer to make several calls on one respondent for in many cases the initial contact was not at a time when the claimant was able to grant an interview. Of all potential respondents, 88 per cent were found to reside at the addresses given on the original claim cards, or at forwarding addresses. The other 12 per cent were not located at the addresses given on the claim cards. Among those who were found, 92 per cent were successfully interviewed, for a combined coverage rate of 82 per cent. Interviews typically lasted about 55 minutes.

Coding, or content analysis.--Cross-section samples of several hundred cases can only be efficiently analyzed if the data are processed on mechanical or electronic equipment. In practice, the variables which will be available for analysis are limited by the decisions made at this stage. Although new variables can later be formed through combinations of one or more variables, the original decisions about what information to code and what variables and categories to use are most important. The inconvenience and

---

[1]Yntema, p. 3:1.

expense of going back to the original interviews after most of the
data are coded is the major limitation on recording.

Data from the personal interviews were initially coded on
six punchcards for each respondent. One additional punchcard for
each respondent selected in the original sample contained informa-
tion from the administrative records of the Michigan Employment
Security Commission. A unique identifying number was recorded on
all of the punchcards for one respondent so that information for
that individual could be freely transferred among the original
cards or to still other cards made up explicitly for the purpose
of providing certain combinations of data. Most IBM mechanical
equipment requires that information which is to be analyzed
together be on the same card. On the electronic computers the
cost usually depends on the number of cards on which data is stored
for each sample case.

Tabulations.--An unusually extensive set of cross-tabula-
tions was initially provided to Hope College according to specifi-
cations which were established by its research staff and it was
from these tabulations that the initial report was prepared. One
set of punchcards was provided to Hope College while a duplicate
set was retained by the Survey Research Center. After leaving Hope
College the author had permission to conduct this independent
analysis using the material at the Survey Research Center.

APPENDIX C

SUPPLEMENTARY TABLES

TABLE 18

DISTRIBUTION OF SAMPLE GROUPS BY SELECTED CHARACTERISTICS[a]

Characteristic	Total	Selected for Interviewing		Excluded from Interviewing
		Interviewed	Non-Response	
Duration of Benefits				
1-2 weeks	44	. . .	. . .	100
3-4 weeks	21	37	43	. . .
5-9 weeks	23	41	38	. . .
10-14 weeks	5	10	10	. . .
15-19 weeks	3	5	5	. . .
20-24 weeks	1	2	2	. . .
25 weeks and over	3	5	2	. . .
Age				
To 24 years	12	11	16	13
25-34 years	29	28	31	30
35-44 years	28	27	28	30
45-64 years	27	29	21	25
65 and over	4	5	4	2
Sex				
Male	75	71	85	76
Female	25	29	15	24
Residence				
Detroit metropoli- tan area	71	72	74	69
Other cities 25,000 and over	12	11	15	12
Cities under 25,000 and rural areas	17	17	11	19

TABLE 18--Continued

Characteristic	Total	Selected for Interviewing		Excluded from Interviewing
		Interviewed	Non-Response	
Family Class				
A	45	47	48	43
B	15	16	18	14
C	5	4	3	5
D	12	11	12	13
E	11	11	10	11
F	12	11	9	14
Reason for End of UC Payments				
Returned to former employer	62	56	51	72
Returned to new employer or N.A.	16	17	15	15
Payments exhausted	8	13	11	1
Ineligible, disqualified, benefit year expired	4	6	3	3
Information not available	10	8	20	9
Average Weekly Wage				
To $39	5	6	4	4
$40-59	11	13	11	9
$60-79	34	34	39	34
$80-99	31	31	29	30
$100-124	8	8	9	8
$125 and over	3	2	2	4
Reported at cut-off point[b]	8	6	6	11
Weekly Benefit Amount				
To $24	9	11	8	6
$25-29	20	21	23	18
$30-34	35	33	37	36
$35-39	13	13	15	13
$40-44	15	14	10	18
$45 and over	8	8	7	9
Weekly Benefit Amount/Average Weekly Wage				
To 29%	4	4	4	4
30-39%	23	23	23	23
40-49%	29	29	34	28

TABLE 18--<u>Continued</u>

Characteristic	Total	Selected for Interviewing		Excluded from Interviewing
		Interviewed	Non-Response	
50-59%	30	36	28	29
60-69%	6	6	5	5
70% and over	. . .	. 1 .	. . .	. . .
Wage reported at cut-off point[b]	8	6	6	11
Total	100	100	100	100
Number of cases	1,675	760	177	738

[a]Dwight B. Yntema, "Survey of Unemployment Compensation in Michigan, 1955" (Hope College, Department of Economics and Business Administration, February, 1957). (Mimeographed.)

[b]Persons whose average weekly wage was reported as the amount needed to qualify for the maximum benefit of the recipient's family class though the actual wage figure may have been higher.

TABLE 19

PERCENTAGE DISTRIBUTION OF RESPONDENTS AND SELECTED EMPLOYMENT DATA, BY INDUSTRY[a]

Industry	Hope College Respondents	Michigan Workers Covered by Unemployment Insurance		Michigan Non-Farm Wage and Salary Workers	
		1954 Average	Jan.-June 1955 Average	1954 Average	Jan.-June 1955 Average
Motor vehicle and equipment manu-facturing	62	25	26	20	21
Other manufacturing	21	36	36	29	30
Construction	5	5	4	5	4
Trade	5	18	18	19	19
Other	7	16	16	27	26
Total	100	100	100	100	100

[a]Yntema, p. 4:8.

TABLE 20

PERCENTAGE DISTRIBUTION OF RESPONDENTS AND OF 1950 NON-AGRICULTURAL
EMPLOYMENT, BY OCCUPATION AND AGE, TOTAL, MEN, AND WOMEN [a]

Respondents	Hope College Interviewees			Michigan Non-Agricultural Employment, 1950		
	Total	Men	Women	Total	Men	Women
Occupation						
Professional, managerial, and self-employed	2	3	2	18	18	17
Clerical and sales	8	3	18	21	13	41
Skilled	16	22	3	18	24	2
Semi-skilled	66	64	71	28	32	19
Unskilled	6	7	2	10	6	20
Service	2	1	4	5	7	1
Age						
To 24 years	11	12	6	16	13	24
25-34	27	28	26	26	26	25
35-44	25	21	37	23	24	23
45-64	31	31	29	31	33	25
65 and over	6	8	2	4	4	3
Total	100	100	100	100	100	100

[a]Yntema, pp. 4:8-4:9.

TABLE 21

VARIANCE ANALYSIS OF DURATION OF BENEFITS BY INDUSTRY GROUPS

Industry	n_i	$T_i = \sum x_{ij}$	$\dfrac{T_i^2}{n_i}$	$\sum x_{ij}^2$
Auto mnfc "X"	318	1521	7274.922	8579
Other auto mnfc	146	1272	11082.082	18132
Other mnfc	154	1430	13278.571	20374
Construction	41	338	2786.439	3998
Trade	41	516	6494.049	9746
Other; NA	60	664	7348.267	10724
Total	760	5741	48264.380	17553

Variance Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square Variance	F
Total	28185.788	759	. . . . .	
Between	4897.168	5	979.434	31.71
Within	23288.620	754	30.887	

F-test

$P[F_{5,754} = 31.71] < 0.001$

TABLE 22

VARIANCE ANALYSIS OF DURATION OF BENEFITS BY OCCUPATIONAL GROUPS

Occupation	n_i	T_i	$\dfrac{T_i^2}{n_i}$	$\sum x_{ij}^2$
Professional	18	222	2738.000	3660
Cler. & Sales	57	696	8498.526	11942
Skilled	124	995	7984.072	13645
Semi-skilled	496	3239	21151.454	33767
Unskilled	42	362	3120.095	4496
Service	23	227	2240.391	4043
Total	760	5741	45732.538	71553

Variance Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square Variance	F
Total	28185.788	759	. . .	
Between	2365.326	5	473.065	13.81
Within	25820.462	754	34.245	

F-test

$P[F_{5,754} = 13.81] < 0.001$

TABLE 23

F-TEST AND MEAN BENEFIT DURATION BY OCCUPATIONAL GROUPS, WITHIN
EACH INDUSTRY GROUP SEPARATELY

Industry	F-Test	Mean Duration
Auto mnfc "X"	$P[F_{312,5} = 3.86] > 0.05$[a]	4.8 weeks
Other auto mnfc	$P[F_{5,140} = 1.66] > 0.05$	8.7
Non-auto mnfc	$P[F_{148,5} = 1.72] > 0.05$[a]	9.3
Construction	$P[F_{35,5} = 1.39] > 0.05$[a]	8.2
Trade	$P[F_{35,5} = 3.31] > 0.05$[a]	12.6
Other; NA	$P[F_{5,54} = 1.31] > 0.05$	11.4

[a]Between mean square variance is less than the within mean square variance.

TABLE 24

F-TEST AND MEAN BENEFIT DURATION BY INDUSTRY GROUPS, WITHIN
EACH OCCUPATION GROUP SEPARATELY

Occupation	F-Test	Mean Duration
Professional	$P[F_{12,5} = 1.53] > 0.05$[a]	12.3 weeks
Clerical and Sales	$P[F_{5,50} = 1.39] > 0.05$	12.3
Skilled	$P[F_{5,116} = 2.78] < 0.05$	7.9
Semi-skilled	$P[F_{5,485} = 16.56] < 0.001$	6.5
Unskilled	$P[F_{5,36} = 2.29] > 0.05$	8.6
Service	$P[F_{4,10} = 1.75] > 0.05$	13.4

[a]Between mean square variance is less than the within mean square variance.

TABLE 25

VARIANCE ANALYSIS OF DURATION OF BENEFITS BY INDUSTRY-AGE-SEX GROUPS

Sub-Group	n_i	$T_i = \sum x_{ij}$	$\dfrac{T_i^2}{n_i}$	$\sum x_{ij}^2$
Auto mnfr X	319	1524	7280.803	8588
Other auto mnfr, under 45,M	54	281	1462.241	1801
Other auto mnfr, under 45,F	28	202	1457.286	1970
Other auto mnfr, 45-64,M	37	309	2580.568	3477
Other auto mnfr, 45-64,F	13	198	3015.692	4334
Other auto mnfr, 65 and over	14	304	6601.143	7166
Other mnfr, under 45, M	54	361	2413.352	3403
Other mnfr, under 45, F	52	549	5796.173	8235
Other mnfr, 45-64, M	24	200	1666.667	2770
Other mnfr, 45-64, F	18	192	2048.000	2806
Other mnfr, 65 and over	13	186	2661.231	3640
Construction	41	338	2786.439	3998
Trade and other, under 45,M	18	118	773.556	950
Trade and other, under 45,F	28	401	5742.893	7703
Trade and other, 45-64, M	17	150	1323.529	2002
Trade and other, 45-64, F	21	273	3549.000	4777
Trade and other, 65 and over	9	179	3560.111	4223
Total	760	5765	54718.684	71843

Variance Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square Variance	F
Total	28112.441	759	. . .	
Between	10988.125	16	686.76	29.79
Within	17124.316	743	23.05	

F-test

$P[F_{16,743} = 29.79] < 0.001$

TABLE 26

MEAN DURATION RESIDUALS FROM INDUSTRY-AGE-SEX
MEANS WITHIN SELECTED VARIABLES

Selected Variables	Mean Residual (In weeks)	Number of Cases
Education		
0-8 years, no other training	0.0	266
0-8 years, other training	-1.2	69
9-11 years, no other training	-0.4	141
9-11 years, other training	0.7	87
12 or more years, no other training	0.0	102
12 or more years, other training	0.6	67
Length of Employment with Separating Employer		
Under 1 year	-0.3	137
1-2 years	-0.4	120
3-4 years	-0.5	118
5-9 years	0.7	203
10-19 years	0.2	85
20 or more years	-0.1	95
Race		
Negro	0.3	141
Non-Negro	0.0	614

TABLE 27

MULTIPLE REGRESSIONS ON BENEFIT DURATION FOR ALL RESPONDENTS
USING DEMAND-EXPRESSING AND BENEFIT SIZE VARIABLES ONLY

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Summary Statistics				
No. of predictors	26	25	25	
No. of cases	749	749	749	
Multiple r	.58	.58	.58	
Coefficient of determination	.34	.34	.34	
Mean duration	7.88 weeks	7.88 weeks	7.88 weeks	
S_y	5.90 weeks	5.90 weeks	5.90 weeks	
$S_{y \cdot x}$	4.89 weeks	4.89 weeks	4.89 weeks	
Values of Multiple Regression Coefficients[a]				
Constant term	7.77	7.10	7.02	
Industry:				
Auto manufacturer X	-3.35 (.52)	-3.32 (.52)	-3.34 (.52)	319
Other auto mnfr	. . .	. . .	. . .	. . .
Other mnfr	.81 (.62)	.78 (.62)	.83 (.62)	151
Construction	.40 (.98)	.56 (.96)	.39 (.98)	41
Trade	1.45 (.99)	1.40 (.98)	1.52 (.98)	39
Other	.55 (.92)	.51 (.92)	.60 (.92)	51
Occupation:				
Professional, clerical, sales	3.56 (.82)	3.56 (.82)	3.58 (.82)	87
Skilled	. . .	. . .	. . .	. . .
Semi-skilled	-.14 (.55)	-.14 (.55)	-.13 (.55)	494
Unskilled	.54 (.91)	.51 (.90)	.58 (.91)	41
Sex:				
Male	. . .	. . .	. . .	. . .
Female	2.13 (.52)	2.22 (.46)	2.28 (.47)	215
Place of residence:				
Detroit SMA	. . .	. . .	. . .	. . .
Other SMA's	-1.80 (.63)	-1.86 (.62)	-1.79 (.63)	97
Other lower peninsula cities	-1.77 (.77)	-1.87 (.77)	-1.78 (.77)	53
Upper lower peninsula	1.44 (1.09)	.97 (1.10)	1.13 (1.09)	24
Upper peninsula	1.68 (.99)	1.57 (.99)	1.67 (.98)	33
Age:				
Under 45 years	. . .	. . .	. . .	. . .
45-64 years	.90 (.49)	.96 (.48)	.97 (.48)	229
65 and over	7.62 (.97)	7.83 (.94)	7.78 (.94)	39

TABLE 27--Continued

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Education:				
0-8 years	- .26 (.43)	- .30 (.43)	- .28 (.43)	326
9-11 years	. . .	. . .	. . .	. . .
12 or more years	- .24 (.50)	- .20 (.50)	- .23 (.50)	169
Other training:				
Other formal training	.10 (.41)	.11 (.41)	.10 (.41)	220
No other formal training	. . .	. . .	. . .	. .
Race:				
Negro	.40 (.50)	.32 (.50)	.37 (.50)	151
Non-Negro	. . .	. . .	. . .	. .
Length of prior employment:				
Under 1 year	- .29 (.63)	- .31 (.64)	- .28 (.64)	137
1-2 years	- .02 (.65)	- .02 (.65)	.01 (.65)	120
3-4 years	. . .	. . .	. . .	. . .
5-9 years	1.12 (.58)	1.13 (.58)	1.11 (.58)	202
10-19 years	.23 (.72)	.23 (.72)	.20 (.73)	85
20 or more years	.16 (.80)	.22 (.80)	.18 (.80)	87
Benefit size formulation	- .029[b](.035)	.006[c](.022)	.006[d](.011)	749
Average weekly wage	.008[e](.011)	. . .	. . .	749

Related Data

Simple correlation of the benefit size formulation and benefit duration	- .270	.118	- .137	749

[a]In weeks, unless otherwise specified.

[b]Weeks per dollar weekly benefit.

[c]Weeks per percentage which weekly benefits are of average weekly wage.

[d]Weeks per dollar difference between weekly benefits and average weekly wage.

[e]Weeks per dollar average weekly wage.

TABLE 28

MULTIPLE REGRESSIONS ON BENEFIT DURATION FOR HUSBANDS EXCLUDING THOSE
WHO TERMINATED BENEFITS WITH REEMPLOYMENT WITH PRIOR EMPLOYER
AND WHO DID NOT DELAY IN FILING FOR BENEFITS, USING
DEMAND-EXPRESSING AND BENEFIT SIZE VARIABLES ONLY

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Summary Statistics				
No. of predictors	26	25	25	
No. of cases	189	189	189	
Multiple r	.67	.66	.67	
Coefficient of determination	.45	.44	.45	
Mean duration	8.44 weeks	8.44 weeks	8.44 weeks	
S_y	6.44 weeks	6.44 weeks	6.44 weeks	
$S_{y.x}$	5.16 weeks	5.18 weeks	5.14 weeks	
Value of Multiple Regression Coefficients[a]				
Constant term	7.16	11.45	6.16	
Industry:				
Auto manufacturer X	-3.43 (1.14)	-3.53 (1.15)	-3.43 (1.14)	40
Other auto mnfr	. . .	. . .	. . .	. .
Other mnfr	- .86 (1.19)	- .85 (1.20)	- .88 (1.19)	44
Construction	-1.87 (1.61)	-1.44 (1.58)	-1.92 (1.61)	21
Trade	1.96 (2.05)	1.73 (2.05)	1.97 (2.04)	10
Other	-1.06 (1.88)	- .96 (1.88)	-1.09 (1.87)	14
Occupation:				
Professional, clerical, sales	2.48 (1.76)	2.68 (1.77)	2.52 (1.75)	16
Skilled	. . .	. . .	. . .	. .
Semi-skilled	.05 (1.02)	- .03 (1.02)	.04 (1.01)	104
Unskilled	1.21 (1.85)	1.15 (1.86)	1.23 (1.84)	12
Sex:				
Male	. . .	. . .	. . .	. .
Female	2.18 (5.50)	2.09 (5.50)	2.34 (5.47)	1
Place of residence:				
Detroit SMA	. . .	. . .	. . .	. .
Other SMA's	- .96 (1.17)	-1.14 (1.17)	- .93 (1.17)	39
Other lower peninsula cities	-2.35 (2.06)	-2.58 (2.06)	-2.41 (2.05)	9
Upper lower peninsula	.98 (2.25)	.75 (2.29)	.88 (2.22)	7
Upper peninsula	3.78 (1.80)	3.59 (1.84)	3.77 (1.80)	14
Age:				
Under 45 years	. . .	. . .	. . .	. .
45-64 years	1.81 (1.07)	1.72 (.96)	2.01 (.95)	63
65 and over	10.02 (1.85)	10.04 (1.67)	10.39 (1.60)	20

TABLE 28--Continued

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Education:				
0-8 years	- .67 (.90)	- .71 (.91)	- .67 (.90)	96
9-11 years	. . .	. . .	. . .	. . .
12 or more years	- .96 (1.18)	- .98 (1.19)	- .91 (1.18)	30
Other training:				
Other formal training	-1.33 (.88)	-1.30 (.89)	-1.28 (.87)	65
No other formal training	. . .	. . .	. . .	. .
Race:				
Negro	.40 (1.10)	.35 (1.10)	.39 (1.10)	42
Non-Negro	. . .	. . .	. . .	. .
Length of prior employment:				
Under 1 year	.61 (1.35)	.52 (1.36)	.64 (1.35)	56
1-2 years	-1.39 (1.58)	-1.60 (1.58)	-1.35 (1.58)	23
3-4 years	. . .	. . .	. . .	. . .
5-9 years	1.88 (1.39)	1.75 (1.40)	1.86 (1.38)	47
10-19 years	-2.65 (1.65)	-2.78 (1.65)	-2.74 (1.63)	20
20 or more years	.92 (1.89)	.91 (1.91)	.89 (1.88)	18
Benefit size formulation	- .073[b](.078)	- .063[c](.049)	.043[d](.022)	189
Average weekly wage	.046[e](.023)	. . .	. . .	189

Related Data

	B	B/W	W-B	
Simple correlation of the benefit size formulation and benefit duration	- .274	- .185	- .141	189

[a]In weeks, unless otherwise specified.

[b]Weeks per dollar weekly benefit.

[c]Weeks per percentage which weekly benefits are of average weekly wage.

[d]Weeks per dollar difference between weekly benefits and average weekly wage.

[e]Weeks per dollar average weekly wage.

TABLE 29

MULTIPLE REGRESSIONS ON BENEFIT DURATION FOR PRIMARY EARNERS
WHO TERMINATED BENEFITS WITH NEW EMPLOYMENT, USING
DEMAND-EXPRESSING AND BENEFIT SIZE VARIABLES
AND SELECTED OTHER VARIABLES

Item	Multiple Regression Using Benefit Size Formulation					Number of Cases
	B		B/W		W-B	
Summary Statistics						
No. of predictors	17		16		16	
No. of cases	105		105		105	
Multiple r	.50		.47		.48	
Coefficient of determination	.25		.22		.23	
Mean duration	8.35 weeks		8.35 weeks		8.35 weeks	
S_y	5.37 weeks		5.37 weeks		5.37 weeks	
$S_{y.x}$	5.09 weeks		5.15 weeks		5.10 weeks	
Values of Multiple Regression Coefficients[a]						
Constant terms	9.04		7.26		4.64	
Industry-Occupation:						
Semi-skilled; Detroit auto mnfr X	1.12	(1.99)	.82	(1.99)	1.15	(1.99)	9
Professional, clerical, sales; trade	- .34	(1.62)	.22	(1.61)	- .01	(1.61)	15
Unskilled; "other" industries	- .13	(1.46)	- .48	(1.46)	- .33	(1.46)	18
Place of residence:						
Upper peninsula; upper lower peninsula	.62	(2.05)	.45	(2.11)	.57	(2.06)	8
Lower, lower peninsula excluding SMA's	- .71	(1.21)	-1.11	(1.22)	- .88	(1.21)	35
Length of prior employment:						
Under 5 years	-1.97	(1.48)	-1.94	(1.50)	-1.94	(1.48)	72
10 or more years	-2.06	(1.85)	-2.55	(1.85)	-2.44	(1.83)	16
Miscellaneous:						
Aged 55 yrs. or more	2.85	(1.44)	3.10	(1.41)	3.30	(1.40)	22
Female	7.44	(2.74)	7.14	(2.79)	7.66	(2.74)	6
Negro	- .64	(1.78)	- .37	(1.78)	- .29	(1.76)	11
Single person family	1.07	(1.86)	2.06	(1.73)	2.05	(1.71)	17
Delayed filing for benefits	- .93	(1.25)	-1.14	(1.26)	-1.07	(1.25)	31
Unemployment is unusual	1.05	(1.34)	1.17	(1.35)	1.25	(1.24)	27
Number of dependents	1.18	(.48)	.74	(.37)	.73	(.34)	105
Other earnings in the family	.52	(.59)	.78	(.56)	.77	(.56)	105

TABLE 29--Continued

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Benefit size formulation	- .207 (.140)	- .022 (.051)	.027 (.021)	105
Average weekly wage	.039 (.023)	. . .	. . .	105
Simple correlation of the benefit size formulation and benefit duration	- .122	.040	.050	105

[a]For the units of measurement of the variables, see Table 37.

TABLE 30

MULTIPLE REGRESSIONS ON BENEFIT DURATION FOR PRIMARY EARNERS
WHO TERMINATED BENEFITS AS EXHAUSTEE, USING DEMAND-
EXPRESSING AND BENEFIT SIZE VARIABLES
AND SELECTED OTHER VARIABLES

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Summary Statistics				
No. of predictors	17	16	16	
No. of cases	86	86	86	
Multiple r	.66	.65	.66	
Coefficient of determination	.43	.42	.43	
Mean duration	13.66 weeks	13.66 weeks	13.66 weeks	
S_y	8.29 weeks	8.29 weeks	8.29 weeks	
$S_{y.x}$	6.98 weeks	6.99 weeks	6.95 weeks	
Values of Multiple Regression Coefficients[a]				
Constant terms	5.63	9.96	3.41	
Industry-Occupation: Semi-skilled; Detroit auto mnfr X	-3.81 (3.92)	-4.35 (3.89)	-4.11 (3.88)	4
Professional, clerical, sales; trade	4.74 (2.40)	5.00 (2.41)	4.92 (2.38)	19
Unskilled; "other" industries	2.59 (2.24)	2.85 (2.20)	2.90 (2.17)	16

TABLE 30--Continued

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Place of residence:				
Upper peninsula; up-				
per lower peninsula	- .15 (2.25)	- .29 (2.27)	- .16 (2.24)	20
Lower, lower peninsu-				
la excluding SMA's	-1.76 (2.03)	-1.97 (2.07)	-1.80 (2.02)	21
Length of prior				
employment:				
Under 5 years	.19 (2.23)	.13 (2.26)	.25 (2.22)	44
10 or more years	.35 (2.52)	.53 (2.46)	.68 (2.45)	25
Miscellaneous:				
Aged 55 yrs. or more	5.88 (2.16)	6.08 (2.15)	6.00 (2.14)	34
Female	5.19 (2.34)	4.94 (2.37)	5.14 (2.33)	18
Negro	1.09 (2.42)	1.12 (2.42)	1.20 (2.40)	14
Single person family	1.44 (2.48)	1.39 (2.48)	1.36 (2.47)	14
Delayed filing for				
benefits	.63 (2.41)	.27 (2.39)	.55 (2.40)	14
Unemployment is				
unusual	4.12 (1.90)	4.09 (1.90)	4.14 (1.89)	34
Number of dependents	.60 (.83)	.39 (.59)	.22 (.57)	86
Other earnings in				
the family	.73 (1.08)	.83 (1.06)	.87 (1.05)	86
Benefit size				
formulation	- .191 (.211)	- .092 (.088)	.061 (.044)	86
Average weekly				
wage	.076 (.050)	. . .	. . .	86
Simple correlation of the benefit size formulation and benefit duration	- .253	- .111	.094	86

[a]For the units of measurement of the variables, see Table 37.

TABLE 31

MULTIPLE REGRESSIONS ON BENEFIT DURATION FOR PRIMARY EARNERS
WHO TERMINATED BENEFITS WITH CUSTOMARY EMPLOYMENT, USING
DEMAND-EXPRESSING AND BENEFIT SIZE VARIABLES
AND SELECTED OTHER VARIABLES

Item	Multiple Regression Using Benefit Size Formulation						Number of Cases
	B		B/W		W-B		
Summary Statistics							
No. of predictors	17		16		16		
No. of cases	332		332		332		
Multiple r	.46		.46		.46		
Coefficient of determination	.21		.21		.21		
Mean duration	5.76 weeks		5.76 weeks		5.76 weeks		
S_y	2.97 weeks		2.97 weeks		2.97 weeks		
$S_{y.x}$	2.70 weeks		2.70 weeks		2.70 weeks		
Values of Multiple Regression Coefficients[a]							
Constant terms	6.38		6.47		6.13		
Industry-Occupation:							
Semi-skilled; Detroit auto mnfr X	-1.06	(.37)	-1.06	(.37)	-1.05	(.37)	182
Professional, clerical, sales; trade	.52	(.68)	.53	(.68)	.53	(.68)	20
Unskilled; "other" industries	.26	(.68)	.26	(.68)	.27	(.68)	20
Place of residence:							
Upper peninsula; upper lower peninsula	2.62	(.87)	2.64	(.87)	2.63	(.86)	130
Lower, lower peninsula excluding SMA's	- .70	(.56)	- .70	(.56)	- .70	(.56)	41
Length of prior employment:							
Under 5 years	- .23	(.37)	- .22	(.37)	- .22	(.37)	118
10 or more years	- .94	(.42)	- .94	(.42)	- .93	(.42)	100
Miscellaneous:							
Aged 55 yrs. or more	.86	(.50)	.87	(.49)	.88	(.50)	51
Female	2.38	(.66)	2.42	(.62)	2.43	(.63)	26
Negro	.08	(.37)	.08	(.36)	.08	(.36)	89
Single person family	- .35	(.48)	- .34	(.48)	- .33	(.48)	58
Delayed filing for benefits	1.39	(.73)	1.40	(.72)	1.41	(.72)	16
Unemployment is unusual	1.07	(.47)	1.06	(.47)	1.06	(.47)	47
Other earnings in the family	.07	(.19)	.08	(.18)	.08	(.18)	332
No. of dependents	- .03	(115)	- .04	(.13)	- .05	(.11)	332

TABLE 31--Continued

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Benefit size formulation	.012 (.040)	- .005 (.021)	.003 (.010)	332
Average weekly wage	.003 (.010)	. . .	. . .	332
Simple correlation of the benefit size formulation and benefit duration	- .226	.069	- .107	332

[a]For the units of measurement of the variables, see Table 37.

TABLE 32

MULTIPLE REGRESSIONS ON BENEFIT DURATION FOR WIVES EXCLUDING THOSE
WHO TERMINATED BENEFITS WITH REEMPLOYMENT WITH PRIOR EMPLOYER
AND WHO DID NOT DELAY IN FILING FOR BENEFITS, USING
DEMAND-EXPRESSING AND BENEFIT SIZE VARIABLES ONLY

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Summary Statistics				
No. of predictors	26	25	25	
No. of cases	114	114	114	
Multiple r	.63	.63	.63	
Coefficient of determination	.40	.40	.40	
Mean duration	11.84 weeks	11.84 weeks	11.84 weeks	
s_y	7.69 weeks	7.69 weeks	7.69 weeks	
$s_{y.x}$	6.78 weeks	6.76 weeks	6.73 weeks	
Values of Multiple Regression Coefficients[a]				
Constant term	12.03	2.19	7.83	
Industry:				
Auto mnfr X	-1.44 (2.34)	-1.56 (2.32)	-1.37 (2.31)	22
Other auto mnfr	. . .	. . .	. . .	
Other mnfr	3.99 (2.16)	3.86 (2.18)	4.04 (2.14)	36
Construction	.07 (5.44)	- .11 (5.42)	- .09 (5.33)	2
Trade	- .09 (3.07)	.11 (3.06)	.29 (3.00)	11
Other	.21 (2.75)	.32 (2.76)	.52 (2.67)	20

TABLE 32--Continued

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Occupation:				
Professional, cleri-cal, sales	2.23 (4.31)	1.56 (4.21)	1.56 (4.19)	31
Skilled	. . .	. . .	. . .	. .
Semi-skilled	-1.22 (4.02)	-1.87 (3.91)	-1.96 (3.88)	74
Unskilled	- .53 (5.21)	-1.02 (5.17)	- .96 (5.12)	4
Sex:				
Male	. . .	. . .	. . .	. .
Female	2.82 (1.93)	2.71 (1.92)	2.74 (1.91)	84
Place of residence:				
Detroit SMA	. . .	. . .	. . .	. .
Other SMA's	-2.66 (2.25)	-2.57 (2.24)	-2.50 (2.14)	16
Other lower peninsula cities	-2.62 (2.71)	-2.58 (2.72)	-2.43 (2.64)	10
Upper lower peninsula	-1.79 (3.69)	-1.76 (3.71)	-1.58 (3.62)	5
Upper peninsula	- .45 (3.37)	- .58 (3.35)	- .65 (3.25)	6
Age:				
Under 45 years	. . .	. . .	. . .	. .
45-64 years	2.09 (2.14)	1.96 (2.14)	2.07 (2.07)	19
65 and over	8.06 (4.71)	7.77 (4.68)	7.85 (4.66)	4
Education:				
0-8 years	.76 (1.80)	.63 (1.79)	.69 (1.77)	32
9-11 years	. . .	. . .	. . .	. .
12 or more years	1.72 (1.80)	1.69 (1.79)	1.64 (1.75)	39
Other training:				
Other formal training	.84 (1.67)	.85 (1.66)	.89 (1.61)	33
No other formal training	. . .	. . .	. . .	. .
Race:				
Negro	.15 (2.27)	- .10 (2.26)	. . .	14
Non-Negro	. . .	. . .	. . .	. .
Length of prior employment:				
Under 1 year	- .50 (2.36)	- .66 (2.36)	- .57 (2.34)	29
1-2 years	3.03 (2.44)	3.24 (2.41)	3.35 (2.37)	28
3-4 years	. . .	. . .	. . .	. .
5-9 years	4.22 (2.41)	4.20 (2.40)	4.20 (2.38)	24
10-19 years	5.50 (3.37)	5.58 (3.36)	5.52 (3.34)	8
20 or more years	8.08 (3.89)	8.13 (3.88)	8.08 (3.86)	6
Benefit size formulation	- .200[b](.320)	.091[c](.097)	- .046[d](.052)	114
Average weekly wage	- .016[e](.065)	. . .	. . .	114
Simple correlation of the benefit size formulation and benefit duration	- .201	+ .214	- .206	114

TABLE 32--_Continued_

---

[a]In weeks, unless otherwise specified.

[b]Weeks per dollar weekly benefit.

[c]Weeks per percentage which weekly benefits are of average weekly wage.

[d]Weeks per dollar difference between weekly benefits and average weekly wage.

[e]Weeks per dollar average weekly wage.

TABLE 33

MULTIPLE REGRESSIONS ON BENEFIT DURATION FOR SINGLE, OTHER EXCLUDING
THOSE WHO TERMINATED BENEFITS WITH REEMPLOYMENT WITH PRIOR
EMPLOYER AND WHO DID NOT DELAY IN FILING FOR BENEFITS,
USING DEMAND-EXPRESSING AND BENEFIT SIZE
VARIABLES ONLY

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Summary Statistics				
No. of predictors	26	25	25	
No. of cases	77	77	77	
Multiple r	.70	.68	.68	
Coefficient of determination	.49	.46	.46	
Mean duration	10.66 weeks	10.66 weeks	10.66 weeks	
s_y	7.03 weeks	7.03 weeks	7.03 weeks	
$s_{y.x}$	6.20 weeks	6.23 weeks	6.29 weeks	
Values of Multiple Regression Coefficients[a]				
Constant term	3.39	9.45	10.85	
Industry:				
Auto mnfr X	-3.93 (2.70)	-3.23 (2.63)	-3.64 (2.73)	11
Other auto mnfr	. . .	. . .	. . .	. . .
Other mnfr	- .86 (2.58)	- .90 (2.34)	- .54 (2.61)	22
Construction	-1.32 (4.02)	.27 (3.57)	- .95 (4.07)	7
Trade	1.25 (3.73)	. . .	.57 (3.76)	8
Other	.14 (3.55)	- .63 (2.90)	- .40 (3.58)	11
Occupation:				
Professional, clerical, sales	4.78 (3.43)	4.59 (3.28)	3.56 (3.40)	17

TABLE 34

MULTIPLE REGRESSIONS ON BENEFIT DURATION FOR SECONDARY EARNERS
WHO TERMINATED BENEFITS WITH NEW EMPLOYMENT, USING
DEMAND-EXPRESSING AND BENEFIT SIZE VARIABLES
AND SELECTED OTHER VARIABLES

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Summary Statistics				
No. of predictors	16	15	15	
No. of cases	42	42	42	
Multiple r	.60	.58	.57	
Coefficient of determination	.36	.34	.33	
Mean duration	10.57 weeks	10.57 weeks	10.57 weeks	
s_y	5.82 weeks	5.82 weeks	5.82 weeks	
$s_{y.x}$	5.83 weeks	5.83 weeks	5.87 weeks	
Values of Multiple Regression Coefficients[a]				
Constant terms	30.08	9.41	13.35	
Industry-Occupation:				
Semi-skilled; Detroit auto mnfr X	-1.85 (4.51)	-3.29 (4.38)	-3.13 (4.41)	4
Professional, clerical, sales; trade	-2.80 (2.84)	-2.88 (2.84)	-2.61 (2.85)	20
Unskilled; "other" industries	.94 (2.62)	.66 (2.60)	.89 (2.63)	12
Residence:				
Upper peninsula; upper lower peninsula	-1.09 (3.77)	-1.69 (3.79)	-1.32 (3.79)	6
Lower, lower peninsula excluding SMA's	-2.57 (2.56)	-2.25 (2.54)	-2.07 (2.54)	14
Length of prior employment:				
Under 5 years	-2.51 (3.42)	-1.82 (3.36)	-1.52 (3.34)	34
10 or more years	-11.99 (7.38)	-10.09 (7.17)	-10.05 (7.25)	1
Miscellaneous:				
Aged 55 yrs. or more	. . .	. . .	. . .	0
Female	.25 (4.62)	-.85 (4.60)	-.29 (4.63)	23
Negro	-1.60 (3.17)	-2.33 (3.14)	-2.16 (3.16)	5
Single person family	. . .	. . .	. . .	. .
Delayed filing for benefits	-1.63 (2.84)	-.56 (2.70)	-.78 (2.76)	10
Unemployment is unusual	5.24 (2.28)	4.72 (2.23)	4.39 (2.18)	20

TABLE 33--Continued

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Skilled	. . .	. . .	. . .	. . .
Semi-skilled	-1.11 (2.94)	- .88 (2.93)	-1.72 (2.96)	40
Unskilled	2.58 (3.48)	1.55 (3.44)	1.51 (3.47)	80
Sex:				
Male	. . .	. . .	. . .	. . .
Female	4.71 (2.16)	4.16 (2.25)	4.83 (2.19)	28
Place of residence:				
Detroit SMA	. . .	. . .	. . .	. . .
Other SMA's	-2.35 (2.50)	-2.25 (2.50)	-2.26 (2.54)	12
Other lower peninsula cities	-3.31 (2.67)	-3.94 (2.62)	-3.92 (2.68)	9
Upper lower peninsula	.11 (3.68)	- .14 (3.59)	.40 (3.74)	5
Upper peninsula	-5.13 (3.47)	-6.23 (3.39)	-5.34 (3.52)	7
Age:				
Under 45 years	. . .	. . .	. . .	. . .
45-64 years	1.21 (2.10)	.26 (2.04)	.54 (2.09)	29
65 and over	6.67 (3.72)	5.67 (3.66)	5.50 (3.70)	7
Education:				
0-8 years	- .33 (2.17)	.44 (2.14)	.28 (2.16)	24
9-11 years	. . .	. . .	. . .	. . .
12 or more years	1.71 (2.43)	2.33 (2.36)	1.95 (2.46)	25
Other training:				
Other formal training	- .94 (2.04)	-1.13 (2.03)	-1.33 (2.06)	26
No other formal training	. . .	. . .	. . .	. . .
Race:				
Negro	3.04 (2.54)	2.48 (2.54)	2.90 (2.57)	11
Non-Negro	. . .	. . .	. . .	. . .
Length of prior employment:				
Under 1 year	-5.76 (2.61)	-5.62 (2.61)	-5.54 (2.65)	16
1-2 years	-3.25 (2.53)	-3.24 (2.57)	-2.82 (2.55)	17
3-4 years	. . .	. . .	. . .	. . .
5-9 years	1.61 (3.25)	1.92 (3.22)	1.40 (3.30)	12
10-19 years	-5.39 (3.41)	-4.34 (3.38)	-4.92 (3.45)	11
20 or more years	.79 (3.99)	.90 (3.96)	.17 (4.03)	7
Benefit size formulation	.254[b] (.178)	.038[c] (.086)	.023[d] (.042)	77
Average weekly wage	.004[e] (.043)	. . .	. . .	77
Simple correlation of the benefit size formulation and benefit duration	- .089	.138	- .025	77

[a] In weeks, unless otherwise specified.

[b] Weeks per dollar weekly benefit.

[c] Weeks per percentage which weekly benefits are of average weekly wage.

[d] Weeks per dollar difference between weekly benefits and average weekly wage.

[e] Weeks per dollar average weekly wage.

TABLE 34--Continued

| Item | Multiple Regression Using Benefit Size Formulation | | | Number of Cases |
	B	B/W	W-B	
Number of dependents	-4.21 (3.03)	-4.61 (3.04)	-4.31 (3.05)	42
Other earnings in the family	- .95 (2.58)	1.03 (2.03)	.92 (2.04)	42
Benefit size formulation	- .605 (.535)	.080 (.116)	- .021 (.065)	42
Average weekly wage	.074 (.103)	. . .	. . .	42
Simple correlation of the benefit size formulation and benefit duration	- .074	.044	- .042	42

[a]For the units of measurement of the variables, see Table 37.

TABLE 35

MULTIPLE REGRESSIONS ON BENEFIT DURATION FOR SECONDARY EARNERS
WHO TERMINATED BENEFITS AS EXHAUSTEE, USING DEMAND-
EXPRESSING AND BENEFIT SIZE VARIABLES
AND SELECTED OTHER VARIABLES

| Item | Multiple Regression Using Benefit Size Formulation | | | Number of Cases |
	B	B/W	W-B	
Summary Statistics				
No. of predictors	16	15	15	
No. of cases	56	56	56	
Multiple r	.71	.71	.69	
Coefficient of determination	.50	.50	.48	
Mean duration	16.43 weeks	16.43 weeks	16.43 weeks	
s_y	8.35 weeks	8.35 weeks	8.35 weeks	
$s_{y.x}$	7.00 weeks	6.94 weeks	7.07 weeks	
Values of Multiple Regression Coefficients[a]				
Constant terms	23.89	4.47	12.60	
Industry-Occupation: Semi-skilled; Detroit auto mnfr X	-3.01 (4.31)	-1.71 (4.26)	-2.69 (4.36)	5
Professional, cleri- cal, sales; trade	1.70 (3.20)	2.47 (3.07)	2.99 (3.09)	15
Unskilled; "other" industries	-3.03 (3.07)	-3.77 (3.06)	-3.25 (3.10)	13

TABLE 35--<u>Continued</u>

Item	Multiple Regression Using Benefit Size Formulation						Number of Cases
	B		B/W		W-B		
Residence:							
Upper peninsula; up- per lower peninsula	4.42	(3.73)	3.69	(3.69)	4.17	(3.77)	7
Lower, lower peninsula excluding SMA's	1.66	(2.87)	1.16	(2.83)	2.20	(2.87)	14
Length of prior employment:							
Under 5 years	-3.70	(2.93)	-4.78	(2.92)	-4.10	(2.95)	34
10 or more years	4.29	(3.91)	3.67	(3.83)	3.48	(3.90)	11
Miscellaneous:							
Aged 55 years or more	6.26	(4.99)	7.71	(4.68)	8.34	(4.80)	5
Female	7.60	(3.30)	5.97	(3.21)	6.66	(3.26)	44
Negro	5.01	(3.69)	3.48	(3.60)	3.99	(3.65)	7
Single person family	. . .		. . .		. . .		. .
Delayed filing for benefits	3.23	(3.30)	1.93	(3.12)	1.88	(3.18)	7
Unemployment is unusual	1.93	(2.30)	1.94	(2.28)	1.79	(2.32)	29
Number of dependents	.14	(.85)	.11	(.84)	.07	(.86)	56
Other earnings in the family	- .97	(2.53)	- .92	(2.46)	- .60	(2.55)	56
Benefit size formulation	- .616	(.489)	.194	(.150)	- .037	(.089)	56
Average weekly wage	.066	(.116)	. . .		. . .		56
Simple correlation of the benefit size formulation and benefit duration	- .141		.153		- .042		56

[a]For the units of measurement of the variables, see Table 37.

TABLE 36

MULTIPLE REGRESSIONS ON BENEFIT DURATION FOR SECONDARY EARNERS
WHO TERMINATED BENEFITS WITH CUSTOMARY EMPLOYMENT, USING
DEMAND-EXPRESSING AND BENEFIT SIZE VARIABLES
AND SELECTED OTHER VARIABLES

Item	Multiple Regression Using Benefit Size Formulation						Number of Cases
	B		B/W		W-B		
Summary Statistics							
No. of predictors	16		15		15		
No. of cases	128		128		128		
Multiple r	.70		.69		.70		
Coefficient of determination	.49		.48		.49		
Mean duration	6.80 weeks		6.80 weeks		6.80 weeks		
S_y	4.73 weeks		4.73 weeks		4.73 weeks		
$S_{y \cdot x}$	3.62 weeks		3.63 weeks		3.61 weeks		
Values of Multiple Regression Coefficients[a]							
Constant terms	6.53		.52		5.02		
Industry-Occupation:							
Semi-skilled; Detroit auto mnfr X	-1.34	(.86)	-1.49	(.85)	-1.40	(.85)	56
Professional, cleri- cal, sales; trade	5.33	(1.17)	5.51	(1.16)	5.41	(1.15)	14
Unskilled; "other" industries	-2.35	(1.81)	-2.24	(1.81)	-2.35	(1.80)	5
Residence:							
Upper peninsula; up- per lower peninsula	5.23	(2.51)	5.60	(2.53)	5.44	(2.45)	3
Lower, lower peninsula excluding SMA's	.57	(1.06)	.80	(1.08)	.58	(1.05)	31
Length of prior employment:							
Under 5 years	-1.49	(.78)	-1.50	(.78)	-1.52	(.78)	73
10 or more years	- .97	(1.11)	-1.02	(1.12)	-1.01	(1.10)	19
Miscellaneous:							
Aged 55 yrs. or more	5.96	(1.87)	5.99	(1.88)	5.97	(1.86)	5
Female	.23	(.87)	.29	(.88)	.22	(.87)	98
Negro	1.28	(1.15)	1.02	(1.12)	1.13	(1.10)	13
Single person family	. . .		. . .		. . .		. .
Delayed filing for benefits	- .12	(1.99)	- .17	(1.99)	- .05	(1.97)	4
Unemployment is un- usual	1.51	(.94)	1.45	(.95)	1.47	(.94)	20
Number of dependents	- .20	(.35)	- .23	(.35)	- .22	(.35)	70
Other earnings in the family	1.35	(.88)	1.38	(.88)	1.34	(.87)	128

TABLE 36--Continued

Item	Multiple Regression Using Benefit Size Formulation			Number of Cases
	B	B/W	W-B	
Benefit size formulation	- .030 (.178)	.057 (.054)	- .044 (.027)	128
Average weekly wage	- .037 (.032)	. . .	. . .	128
Simple correlation of the benefit size formulation and benefit duration	- .411	.398	- .416	128

[a]For the units of measurement of the variables, see Table 37.

TABLE 37

UNITS OF MEASUREMENT FOR VARIABLES IN TABLES 29-31, 34-36

Item	Unit of Measurement
Benefit Size Variables	
Weekly benefit amount, B	Dollars
Ratio of weekly benefit amount to average weekly wage, B/W	Percentage which weekly benefit amount (in dollars) is of average weekly wage (in dollars)
Difference of weekly benefit amount from average weekly wage, W-B	Dollars
Other Predictor Variables	
Number of dependents	0. None 5. Five 1. One 6. Six 2. Two 7. Seven 3. Three 8. Eight 4. Four 9. Nine or more
Other earnings in the family	0. No other earnings in the family 1. Other earnings in the family of $1-1999 3. Other earnings in the family of $2000 or more
Remaining predictor variables	1. Of indicated characteristic 0. Not of indicated characteristic
Dependent Variable	
Duration of benefits, D	Weeks of benefits received plus waiting week

APPENDIX D

SAMPLING IN THE STUDY OF RECIPIENTS OF UNEMPLOYMENT
COMPENSATION FOR HOPE COLLEGE

The target population of the sampling consisted of
recipients of unemployment compensation in Michigan whose benefits
ceased during the summer of 1955 for any reason. It was decided
to interview only those recipients of unemployment compensation
who received payment for at least three consecutive weeks ending
during the summer period, although recipients whose payments stopped
during the summer after only one or two weeks of benefits were
included in the originally selected sample. Data were transcribed
for the recipients of both groups (the "interview" group and the
"short sequence" group respectively) so they could be differentiated
and compared later on.

The "summer period" was defined as the weeks July 3-9
to September 4-10, 1955, and a recipient was eligible for selection
in the sample if his last week compensated was one of MESC week
numbers 27-36 inclusive. The working rule for deciding when a
sequence of benefits ended -- when a week compensated was a "last
week" compensated -- required that the last week be followed by at
least three consecutive weeks for which no unemployment compensation
was paid.

108

Recipients of half-week benefits were considered in benefit status along with recipients of full-week benefits, and recipients who were compensated on interstate claims, or under special programs for veterans, government employees or railroad workers were not included in the target population.

The sample was selected by a method whereby every element in the population (every UC recipient defined above) had an equal probability of being selected. In addition, the design took advantage of both the office procedures of the MESC and the existence of trained S.R.C. interviewers in sample PSU's[1] (counties) of the Michigan Area Sample of the Survey Research Center.

The offices of the Michigan Employment Security Commission were identified with the PSU's of the Michigan Area Sample, although in several instances itinerant offices had to be assigned differently from the branch offices which operated them. Recipients of unemployment compensation in Michigan were readily identified with the local offices where they drew benefits.

For most of the sample (81%) the PSU's served as strata boundaries, and sampling of recipients within them was done directly. In the rest of the sample (19%) the PSU's represented the selection of a county from its stratum, and following this step the selection of recipients in each PSU was done directly, though at a rate so as to represent the strata. In all, Michigan was divided into five regions. The Detroit Metropolitan Area (Wayne, Oakland and Macomb

---

[1] Primary Sampling Units

counties) made up the first region, and five other areas dense
enough to be self representing made up the second. The third region,
from which seven PSU's were chosen, was the remaining area of
Michigan below the Grand Rapids - Bay City latitude. The portion
of the lower peninsula above this latitude comprised the fourth
region and the fifth region was the upper peninsula. Two PSU's
were selected from each of the fourth and fifth regions. This
sampling procedure is known as two stage area sampling -- area
sampling because the procedure involved the identification of
elements (recipients) with areas and the selection of elements
was dependent on the selection of PSU's. The second stage involved
the selection of "sample" recipients from all the eligible recipients
within the PSU's selected in the first stage. Table 38 below
shows the sample PSU's and their probability of selection.

It was the thinness of the population over the broad areas
of the third, fourth and fifth regions which made it necessary
to choose sample PSU's to represent the regions for only that
way could the travel portion of interviewing costs be kept within
an acceptable limit.

The selection of sample recipients within the chosen PSU's
was built around the MESC's system of handling claims and payments.
In Michigan, every eligible claimant has a permanent claim card
containing much information about him and on which every benefit
payment is automatically recorded. These permanent cards are kept
in the local offices where the claimants report and the selection
of sample recipients was made by systematic cluster sampling the
cards filed in the local offices by the last four digits of the

claimants social security number.

Previous inquiry into the method of assigning social security numbers convinced us that the last four digits taken alone provided a good "mix" of the population, and it seemed likely that the systematic cluster sampling approximated simple random sampling since many different sets of last four digits were chosen from a table of random numbers. In this stage selections were made of both the "interview" and "short sequence" groups and data was transcribed for both.

TABLE 38

SAMPLE PSU's AND PROBABILITY OF SELECTION,
SRC MICHIGAN SAMPLE

Sample PSU	Probability of Selection
Wayne-Oakland-Macomb	1
Kent	1
Genesee	1
Clinton-Eaton-Ingham	1
Muskegon-Ottawa	1
Bay-Saginaw	1
Huron	.1639
Jackson	.4760
Kalamazoo	.5163
Midland	.1645
St. Clair	.5590
Van Buren	.2238
Grand Traverse	.1396
Iosco	.0678
Chippewa	.1926
Marquette	.2981

With the goal of about 800 interviews and a design for

a probability sample, it was necessary to estimate an overall sampling rate which would produce enough names when applied to the target population to get the desired number of interviews, but which was not so high as to require unnecessary work. Since there would be no chance to sample a second time, we had to set the sampling rate high enough to get at least enough names, even though this made it likely that we would get more than enough.

No satisfactory estimate of the target population existed, so a pilot sampling study was planned and carried out which served the purpose of testing the sampling procedures in the field as well as providing the needed estimate of the target population.

In the pilot study the sampling instructions were sent with a letter from the Director of the MESC to 12 branch offices, and a representative from both the Commission and the study visited a number of the offices to observe the sampling and discuss the procedure with the office managers and the personnel carrying out the instructions. The valuable experience gained from this pilot study made it possible to improve the final instructions, and in addition, an estimate of the target population, with confidence intervals, was calculated from the product of the pilot sampling.

The overall sampling rate was set[1] and final instructions

---

[1]The procedure for setting the overall sampling rate was as
follows: overall sampling rate $= \dfrac{E'}{Y'}$;

where $E' = \dfrac{I}{(f\ min)\ (r\ min)}$, and $I =$ number of interviews wanted

$f\ min =$ the minimum expected "found" or "located" rate

$r\ min =$ the minimum expected respons[e] rate among found recipients

and where $Y' = Y'' - 2\ s.e.\ (Y'')$, and Y'' is the estimate of the target population from the pilot study

2

prepared. The final sampling was carried out in much the same way

as the pilot study. The Director of the Commission sent a memorandum

describing the Commission's part in the study to the managers of all

the branches identified with the sample PSU's. A week later the

sampling instructions were sent with another letter from the Director

which included instructions to return the completed work to the

Commission's planning and research department. A representative

from the study was available to visit any office if difficulties

arose, but none developed.

The work of the Commission was completed as planned and

somewhat more than enough eligible recipients were selected. A

final systematic subsampling was carried out to tailor the inter-

view group to the size (937) likely to produce the desired number

of completed interviews. The short sequence group was subsampled

at the same rate so the resulting groups could be directly compared.

Table 39 below shows the sampling yield at various stages

and the coverage.

The 111 recipients not located are the sum of cases

classified as recipients unknown at the address or moved from the

address and not traced, address not a dwelling or no such address.

The 66 non-interviews are made up of recipients not contacted, or

no one at home after repeated calls, recipients incapacitated,

---

[2] The sampling rate of recipients within each PSU was set
so that the probability of selection of the PSU times the probability
of selection of a recipient within the PSU was equal to the overall
sampling rate. For a general discussion of multistage area sampling,
see Kish, Leslie, "Selection of Sample",Chapter 5 in Festinger and
Katz, Research Methods in the Behavioral Sciences, (New York: The
Dryden Press, 1953).

refusals, and miscellaneous other reasons.

TABLE 39

SAMPLING YIELD AND COVERAGE

Stage	Number
(1) Recipients selected from branch offices (not available from records at SRC)	
(2) Sample recipients subselected	937[1]
(3) Less: recipients not located	111
(4) Sample recipients found	826
(5) Less: non-interviews	66
(6) Interviews completed	760
Found rate (4)/(2)	88.2%
Response rate (6)/(4)	92.0%
Coverage (6)/(2)	81.1%

[1]
   It was decided not to interview recipient from the short
sequence group, i.e., those who drew but one or two consecutive
weeks of benefits. 738 such recipients were subselected at stage
2 in addition to the 937 recipients shown.

   Properly conducted sample interview surveys yield useful

estimates but they do not yield exact values. Errors arise from three

major sources: sampling, non-response and reporting. Only sampling

errors are dealt with here. Because the sample was carefully selected

on a probability basis, the findings in the sample can be expected

to vary from what is true of the whole population by an amount,

called sampling error, which can be specified. The following tables

show the sampling error for various estimates based on a procedure

expected to give correct results 95 times out of 100. Tables based

on a greater or smaller "level of confidence" than this can be con-

structed, but 95% is the generally accepted level applied to social

data.

TABLE 40

APPROXIMATE SAMPLING ERRORS OF PERCENTAGES*
(expressed in percentages)

Reported Percentage	Number of Interviews					
	700	500	400	300	200	100
50	3.8	4.5	5.0	5.8	7.1	10.
30 or 70	3.5	4.1	4.6	5.3	6.5	9.2
20 or 80	3.0	3.6	4.0	4.6	5.7	8.0
10 or 90	2.3	2.7	3.0	3.5	4.2	6.0
5 or 95	1.6	1.9	2.2	2.5	3.1	

*For most items the value being estimated (the percentage of recipients possessing a given attribute) can with 95% confidence be said to lie within a range equal to the reported percentage plus or minus the sampling error.

Differences between survey estimates are often of even greater interest than the level of the estimates. Table 41 is a table of sampling errors of differences among groups of the same survey, also at 95% confidence.

TABLE 41

SAMPLING ERRORS OF DIFFERENCES**

Size of Group	Size of Group					
	700	500	400	300	200	100
	For percentages from about 35 percent to 65 percent					
700	5.3	5.9	6.3	6.9	8.0	11
500		6.3	6.7	7.3	8.4	11
400			7.1	7.6	8.7	11
300				8.2	9.1	12
200					10	12
100						14

116

TABLE 41 --Continued

Size of Group	Size of Group					
	700	500	400	300	200	100
	For percentages around 20 percent and 80 percent					
700	4.3	4.7	5.0	5.5	6.4	8.6
500		5.1	5.4	5.8	6.7	8.8
400			5.7	6.1	6.9	8.9
300				6.5	7.3	9.2
200					8.0	9.8
100						11
	For percentages around 10 percent and 90 percent					
700		3.2	3.5	3.8	4.1	4.8
500			3.8	4.0	4.4	5.0
400				4.2	4.6	5.2
300					4.9	5.5
200						6.0
	For percentages around 5 percent and 95 percent					
700		2.3	2.6	2.7	3.0	3.5
500			2.8	2.9	3.2	3.6
400				3.1	3.3	3.8
300					3.6	4.0

**The values shown are the differences required for significance, at 95% confidence, in comparisons of percentages from two different subgroups of the sample.

BIBLIOGRAPHY

Altman, Ralph. Availability for Work: A Study in Unemployment
     Compensation. Cambridge, Mass.: Harvard University
     Press, 1950.

Becker, Joseph M. The Problem of Abuse in Unemployment Benefits:
     A Study in Limits. New York: Columbia University Press,
     1953.

Campbell, Angus, Katona,George. "The Sample Survey: A
     Technique for Social Science Research, " Research
     Methods in the Behavioral Sciences, ed. Leon
     Festinger and Daniel Katz (New York: The Dryden
     Press, 1953).

Cohen, Wilbur J., Haber, William, and Mueller, Eva. The Impact
     of Unemployment in the 1958 Recession. A Report to the
     Special Committee on Unemployment Problems, U. S.
     Senate, 86th Congress, Second Session, pursuant to
     Senate Resolution 252, June, 1960. Washington: Gov-
     ernment Printing Office, 1960.

Columbia Bureau of Applied Social Research. "Benefits, Incomes,
     and Expenditures of Unemployed Workers; Experience of
     a Group of Unemployment Insurance Beneficiaries in
     Albany-Schenectady-Troy, Spring, 1957." New York,
     September, 1958. (Mimeographed.)

Commonwealth of Massachusetts, Division of Employment Security.
     "Characteristics and Labor Force Status as of November
     22, 1958 of Claimants Who Had Exhausted Benefits Between
     January 1 and September 20, 1958." Boston, January,
     1960. (Mimeographed.)

Duquesne University. "Summary Digest of the Survey of Unemployment
     Compensation Beneficiaries." Pittsburgh, March 15,
     1955. (Mimeographed.)

"Experience of Claimants Who Have Exhausted UI Rights," Labor
     Market and Employment Security, November, 1957.

Florida Industrial Commission. "Florida Study of Delayed Filing
     of Initial Claims." Tallahassee, Fla., September, 1959.
     (Mimeographed.)

Johnson, Ronald S. "A Study of People Who Have Exhausted Unemploy-
     ment Benefits in an Active Labor Market." Ann Arbor:
     University of Michigan Bureau of Business Research, 1951.
     (Paper.)

117

118

Katz, Arnold. "Cyclical Unemployment and the Secondary Family Worker." Washington: By the author, 1962.

Kish, Leslie. "Selection of Sample", Chapter 5 in Festinger and Katz, Research Methods in the Behavioral Sciences, (New York: The Dryden Press, 1953).

Michigan Employment Security Commission. Annual Report for Fiscal Year 1960. Detroit: January, 1961.

Missouri Division of Employment Security. "Characteristics and Labor Market Status of Missouri Claimants Exhausting Unemployment Insurance Rights, February 1957-July 1957." Jefferson City, Mo., November, 1958. (Mimeographed.)

New Jersey Department of Labor and Industry. "After Unemployment Insurance, An Analysis of the Characteristics and Post-exhaustion Experience of Claimants Exhausting Unemployment Insurance Benefits During the Six-Month Period July Through December, 1957." Trenton, March, 1960. (Mimeographed.)

New York State Department of Labor. "Unemployment Benefits and Family Finances, A Study of Incomes and Expenditures of Beneficiaries and Their Families in Utica, New York, 1958." New York, February, 1960. (Mimeographed.)

_____. "Unemployment Insurance Claimants: Characteristics and Benefit Experience of New York Workers Who Filed Claims to Establish Benefit Years Ending in 1955." New York, October, 1957. (Mimeographed.)

North Carolina Employment Security Commission. "A Study of the Characteristics and Labor Market Experience of Claimants Exhausting Benefits in Calendar 1957." Raleigh, November, 1958. (Mimeographed.)

North Dakota Unemployment Compensation Commission. "Claimants' Experience After Exhausting Benefits." Bismarck, 1959. (Mimeographed.)

Oklahoma Employment Security Commissions. "A Study of Delayed Filing of Initial Claims." Tallahassee, Fla., September, 1959. (Mimeographed.)

Oregon State Department of Employment. "Experience of Claimants Exhausting Benefit Rights Under Unemployment Insurance in Oregon, 1958 and 1956 Surveys Compared." Salem, July, 1959. (Mimeographed.)

Pennsylvania Bureau of Employment Security. "Delayed Filing of Initial Claims, Altoona, Pennsylvania, 1959." Harrisburg, n.d. (Mimeographed.)

_____. "Delayed Filing of Initial Claims, Lancaster, Pennsylvania, 1959." Harrisburg, n.d. (Mimeographed.)

_____. "Labor Force and Claim Status of Workers During the Sixteen Months Following Exhaustion of Unemployment Compensation Benefits in Pennsylvania." Harrisburg, n.d. (Mimeographed.)

_____. "Labor Force Status of Workers After Exhausting Unemployment Compensation Benefits in Pennsylvania, 1957-1958." Harrisburg, 1960. (Mimeographed.)

Stevens, Carl M. "The Adequacy of Unemployment Benefits, Experience of Unemployment Compensation Beneficiaries in the Portland Metropolitan Area." Salem, Ore., March, 1959. (Mimeographed.)

U.S. Department of Labor. "Characteristics of the Insured Unemployed: (A Monthly Report)." Washington, May, 1956-June, 1957. (Mimeographed.)

_____. "Characteristics of the Unemployed: (A Monthly Report)." Washington, July, 1957-September, 1958. (Mimeographed.)

_____. "The Extent and Nature of Frictional Unemployment." Study Paper No. 6 for the Joint Economic Committee, Congress of the United States. Washington, D.C., 1959.

_____. "A Guide to the Conduct of Post-Exhaustion Studies," UIPL, No. 384. Washington, August, 1955. (Mimeographed.)

_____. "Monthly Report on the Labor Force." Washington, July, 1959-present. (Mimeographed.)

_____. "Proposed Method for a Survey of Unemployment Compensation Beneficiaries." Washington, April, 1956. (Mimeographed.)

_____. "The Structure of Labor in Areas of Substantial Labor Surplus." Study Paper No. 23 for the Joint Economic Committee, Congress of the United States. Washington, D.C., 1960.

U.S. Department of Labor, Bureau of Employment Security. "Experience of Claimants Exhausting Benefit Rights Under Unemployment Insurance, 17 Selected States." BES Report No. U-178. Washington, D.C., December, 1958. (Mimeographed.)

_____. "Experience of Claimants Exhausting Unemployment Insurance Benefit Rights, January-March 1956, 14 States." BES Report No. U-167. Washington, D.C., April, 1957. (Mimeographed.)

120

U.S. Department of Labor and Duquesne University. "A Digest of
the Survey of Unemployment Compensation Beneficiaries in
Pittsburgh, Pennsylvania." Washington, D.C., October,
1955. (Mimeographed.)

Vermont Unemployment Compensation Commission. "Labor Market
Experience of UC Exhaustees." Montpelier, Vt., August,
1958. (Mimeographed.)

_____. "Labor Market Experience of UI Exhaustees." Mont-
pelier, Vt., May, 1960. (Mimeographed.)

Washington Employment Security Department. "Study of Disqualified
Claimants." Olympia, 1961. (Mimeographed.)

Washington University School of Business and Public Administration.
"Survey of Unemployment Compensation Beneficiaries in
St. Louis City and St. Louis County, Missouri, April,
1958." St. Louis, June, 1959. (Mimeographed.)

West Virginia Department of Employment Security. "Special Study
of the Delayed Filing of Initial Claims in West
Virginia's Labor Market, July, 1957-June, 1958."
Charleston, W. Va., December, 1959. (Mimeographed.)

Yntema, Dwight B. "Survey of Unemployment Compensation in
Michigan, 1955." Hope College, Department of Economics
and Business Administration, February, 1957. (Mimeo-
graphed.