CHANGES IN ANNUAL WAGE CREDITS AS WORKERS AGE: A COHORT ANALYSIS[a/]

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1. Introduction

The purpose of this paper is to examine the employment and wage histories of a cohort of wage earners as they aged 7 years during the 1951-57 period. These histories are not complete, and may not be completely representative of the history of the "typical" wage earner. From the records maintained by the Social Security Administration, however, it is possible to trace the experience of a cohort of 61,202 workers--39,018 men and 22,184 women wage earners--with respect to that part of their employment covered by the Social Security program, and to the wage credits they received as a result of such employment.

In this paper, we shall analyze the relationship between cyclical change and the wage credits of the cohort. We shall pay particular attention to the 1954 recession, and to its differing effects on the wage credits of the lower and higher paid male and female cohorts.

Characteristics of the Cohort

The cohort represents a 0.1 percent sampling of wage earners who in 1957 were working in jobs covered by the Social Security program.[1/] Workers were included in the cohort on the basis of two criteria: (1) In 1957, they were working in employment covered by the OASI program; and (2) when working in covered employment in any of the years in the 1951-57 period, they received wage credits[2/] solely from work as wage earners. Selection of the cohort on this retrospective basis guaranteed that the cohort members were alive in the period preceding 1957, and obviated the need for adjusting the wage data to take into account the incidence of mortality. The method of cohort selection, therefore, differs from the more usual method, and conceivably could affect the findings of this study. Our findings with respect to wage differentials and sex differentials, however, are consistent with the findings of other students of wage problems, and suggest that use of this method of cohort selection does not result in findings which would be appreciably different had a different mode of selection been used.

Wage histories of workers included in this study are classified by age in 1957, and by sex. In addition, they are grouped into four groups. Those whose average wage credits per year employed (PYE), 1951-57, were

(1) less than $1,200, constitute the low-paid cohort
(2) $1,200-$2,399, constitute the intermediate low-paid cohort
(3) $2,400-$3,599, constitute the intermediate high-paid cohort
(4) $3,600 or more, constitute the high-paid cohort

About two-thirds of the male cohort, and more than nine-tenths of the female cohort, had average wage credits of less than $3,600 per year employed during the 1951-57 period. While this proportion varied with age, among males 40 years of age or older, the proportion of lower-paid workers was surprisingly high. For men aged 50-54, 46 percent had average wage credits per year in covered employment (PYE), 1951-57, of less than $3,600, and for those aged 60-64, a little more than one-half the male cohort had average wage credits of less than $3,600 PYE, 1951-57. For only one group in the female cohort--age 55-59--was the proportion of workers with credits of $3,600 or more PYE, 1951-57, as high as 10 percent. Among women 25 to 69 years of age, the proportion with average credits of less than $1,200 PYE, 1951-57, varied from 35 percent to 45 percent. About 80 percent of all the women are to be found in the two lowest-paid cohorts--i.e., those with average credits of less than $2,400 PYE, 1951-57. (Tables 1 and 2.)

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a/ The data contained in this paper were tabulated by the Social Security Administration in accordance with the author's research design. The interpretation of the data presented is the author's and not necessarily that of the Social Security Administration or of the U. S. Department of Labor.

1/ For a description of the sample, see The Continuous Work History Sample Under Old-Age and Survivors Insurance in the United States of America, by B. J. Mandel, First International Conference of Social Security Actuaries and Statisticians, Brussels, November 1956. Also see Jacob Perlman and Benjamin Mandel, "Sampling the Federal OASI Records," Journal of the American Statistical Association, September 1953.

2/ Wages credited to a worker for work in covered employment in a given year for purposes of benefit computations--up to $3,600 for 1951-54, and $4,200 for 1955-57.

Table 1: Number of Wage Earners in the Cohorts, by Sex, Age, and Average Wage Credits Per Year in Covered Employment a/

Age in 1957	Male					Female				
	Average Wage Credits PYE, 1951-57					Average Wage Credits PYE, 1951-57				
	Total	Under $1,200	$1,200-$2,399	$2,400-$3,599	$3,600 and Over	Total	Under $1,200	$1,200-$2,399	$2,400-$3,599	$3,600 and Over
Total	39,018	8,989	7,497	9,811	12,721	22,184	10,481	7,215	3,542	946
1-15.....	324	320	3	1	---	150	148	2	---	---
16-19.....	3,243	2,812	374	55	2	2,290	1,991	289	10	---
20-24.....	5,096	2,472	1,882	716	26	3,040	1,658	1,194	188	---
25-29.....	4,829	870	1,495	1,861	503	2,371	984	902	455	30
30-34.....	4,775	461	769	1,634	1,911	2,397	1,090	751	472	84
35-39.....	4,599	419	614	1,267	2,299	2,500	1,064	805	512	119
40-44.....	3,957	339	486	1,017	2,115	2,390	953	829	463	145
45-49.....	3,542	324	493	844	1,881	2,326	834	824	502	166
50-54.....	2,887	275	358	694	1,560	1,788	630	622	382	154
55-59.....	2,318	216	332	651	1,119	1,365	457	471	296	141
60-64.....	1,731	148	280	465	838	848	325	293	158	72
65-69.....	1,064	154	231	334	345	479	216	157	79	27
70 and over	629	174	168	169	118	234	128	73	25	8

a/ 0.1 percent sample of workers with credits solely from work as wage earners in 1957 and when employed any time in the 1951-57 period.

Table 2: Percentage Distribution of Male and Female Age Cohorts by Average Wage Credits Per Year in Covered Employment

Age in 1957	Male				Female			
	Average Wage Credits PYE, 1951-57				Average Wage Credits PYE, 1951-57			
	Under $1,200	Under $2,400	Under $3,600	$3,600 and over	Under $1,200	Under $2,400	Under $3,600	$3,600 and over
Total..	23.0	42.2	67.3	32.6	47.2	79.7	95.7	4.3
1-15.....	98.8	99.7	100.0	---	98.7	100.0	100.0	---
16-19.....	86.7	98.2	99.9	0.1	86.9	99.5	99.9	---
20-24.....	48.5	85.4	99.5	0.5	54.5	93.8	100.0	---
25-29.....	18.0	49.0	89.6	10.4	41.5	79.5	98.7	1.3
30-34.....	9.7	25.8	60.0	40.0	45.5	76.8	96.5	3.5
35-39.....	9.1	22.5	50.0	50.0	42.6	74.8	95.3	4.8
40-44.....	8.6	20.9	46.6	53.4	39.9	76.6	94.0	6.1
45-49.....	9.1	23.0	46.8	53.1	35.9	71.3	92.9	7.1
50-54.....	9.5	21.9	45.9	54.0	35.2	70.0	91.4	8.6
55-59.....	9.3	23.6	51.7	48.3	33.5	68.0	89.7	10.3
60-64.....	8.5	24.7	51.6	48.4	38.3	72.9	91.5	8.5
65-69.....	14.5	36.2	67.6	32.4	45.1	77.9	94.4	5.6
70 and over..	27.7	54.4	81.3	18.8	54.7	85.9	96.6	3.4

Average Credits As A Wage Measure

Average annual wage credits of the cohort, as a wage measure, differ substantially from average hourly earnings or average annual wages, the most frequently used measure of wages. For each year from 1951 to 1956, average credits of the cohort reflect both the employment and non-employment of cohort members. Furthermore, the effects of nonemployment, or of an increase in the number of employed members, of the cohort on the average credits of the cohort can be measured from year to year. Differences in the direction and amount of year-to-year changes in employment levels, on the one hand, and the average credits of employed cohort members, on the other hand, can be isolated, and their relative effects on the average credits of the entire cohort studied.

Average hourly or annual earning data, however, are generally collected only for workers employed in a given time period, and year-to-year comparisons of these data--the usual cross-sectional method of analysis--can refer only to the wages of employed workers. For this reason, particularly when average hourly earnings in a prosperous year, for example, are compared with average hourly earnings in a recession year, the results obtained by such comparisons are difficult to interpret. Woytinsky objected to such cross-sectional wage comparisons as a means of approximating longitudinal analysis, warning that they

> are likely to be misleading in comparisons over time because of a change in the composition of the labor force; they may show, for instance, a rise of wages in depression because of a reduction in the number of less skilled and low-paid workers, whom it is customary to lay off first...3/

2. The Male Cohort

Male Low-Paid Cohort (Table 3)

The average annual wage credits of any of the cohorts are affected by changes in both the level of employment of the cohort and the level of wage credits of the employed members of the cohort. The indices represented in this figure permit us to determine the extent to which changes in either or both of these factors are responsible for the changes in the average annual credits of the members of the cohort.

Among all the members of the lowest-paid male cohort below age 65, average annual credits increased substantially during the 1951-57 period. Among the older and younger members of the cohort, however, there is a difference in the relationship between the extent of changes in employment and changes in annual wage credits of the employed cohort members. Among those who were 44 years of age or younger in 1957, the indices of average wage credits of the cohort increased at a faster rate than the indices of employment. For those 45 to 69 years of age, the indices of employment for most of the age groups tended to rise at a faster rate than the indices of the average annual credits of the cohort. Indeed, for workers who were 60 years of age or older the indices of annual wage credits of employed workers declined sharply below the 1951 level during the later years of the 1951-57 period.

As a result of the failure of the annual wage credits of the older employed males in the cohort to rise, the average wage credits of the entire older male cohort tended to increase to a lesser degree than the wage credits of the younger members of the cohort.

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An important characteristic of the wage credits of this cohort is their sensitivity to cyclical change. Variations in the average annual wage credits of the employed members of the cohorts are generally of much lesser magnitude than the variations in the average credits of the entire cohort. This is due to the greater responsiveness of employment to economic change, as opposed to fluctuations of generally lesser magnitude in average annual wage credits of the employed workers in the cohort. From 1953 to the recession year of 1954, for example, average annual wage credits of employed workers in the cohort declined sharply. Indeed, among all workers except those aged 20-24 in 1957, they declined below the 1951 level. The indices of employment for cohort members through age 54 also declined during this period. As a result, for virtually all cohort members the index of average wage credits for 1954 fell not only below the 1953 level, but also below the 1951 level.

Male Intermediate Low-Paid Cohort (Table 4)

Among male members of the intermediate low-paid cohort, average credits of the cohort members below age 65 increased during the

3/ Encyclopedia of Social Sciences, p. 303. See also Staff Report on Employment, Growth, and Price Levels, Joint Economic Committee, U. S. Congress, December 24, 1959, which at page 142, on the basis of cross-sectional comparisons concludes that from 1947 to 1958 wages tended "to continue to move upward, even during periods of substantial unemployment."

Table 3: Male Low-Paid Cohort*: INDICES OF ANNUAL EMPLOYMENT AND OF AVERAGE ANNUAL CREDITS OF EMPLOYED MEMBERS AND OF ENTIRE COHORT, 1951-57

Age in 1957, No. Employed, and Average Credits	Number of workers and average credits							Index (1951 = 100.0)					
	1951	1952	1953	1954	1955	1956	1957	1952	1953	1954	1955	1956	1957
Total:	Total												
Employed[1/]	2,740	3,216	3,698	3,852	4,890	5,861	8,989	117.4	135.0	140.6	178.5	213.9	328.1
Employed, $	576	553	564	516	593	679	871	96.0	97.9	89.6	103.0	117.9	151.2
Cohort, $	176	198	232	221	323	443	871	112.5	131.8	125.6	183.5	251.7	494.9
Age:	20-24												
Employed	825	1,214	1,499	1,463	1,549	1,572	2,472	147.2	181.7	177.3	187.8	190.5	299.6
Employed, $	301	395	495	515	651	814	1,193	131.2	164.5	171.1	216.3	270.4	396.3
Cohort, $	100	194	300	305	408	518	1,193	194.0	300.0	305.0	408.0	518.0	1193.0
Age:	25-29												
Employed	472	448	449	421	505	575	870	94.9	95.1	89.2	107.0	121.8	184.3
Employed, $	570	575	550	544	675	840	1,139	100.9	96.5	95.4	118.4	147.4	199.8
Cohort, $	309	296	284	263	392	555	1,139	95.8	91.9	85.1	126.9	179.6	368.6
Age:	30-34												
Employed	259	258	262	239	280	324	461	99.6	101.2	92.3	108.1	125.1	178.0
Employed, $	686	728	734	617	689	738	886	106.1	107.0	89.9	100.4	107.6	129.2
Cohort, $	385	407	417	320	418	519	886	105.7	108.3	83.1	108.6	134.8	230.1
Age:	35-39												
Employed	241	250	261	254	285	309	419	103.7	108.3	105.4	118.3	128.2	173.9
Employed, $	696	616	660	626	703	789	760	88.5	94.8	89.9	101.0	113.4	109.2
Cohort, $	400	368	411	379	478	582	760	92.0	102.8	94.8	119.5	145.5	190.0
Age:	40-44												
Employed	196	196	194	193	230	249	339	100.0	99.0	98.5	117.3	127.0	173.0
Employed, $	698	707	676	547	656	732	748	101.3	96.8	78.4	94.0	104.9	107.2
Cohort, $	404	409	387	311	445	538	748	101.2	95.8	77.0	110.1	133.2	185.1
Age:	45-49												
Employed	174	173	184	183	239	256	324	99.4	105.7	105.2	137.4	147.1	186.2
Employed, $	742	744	744	602	640	653	697	100.3	100.3	81.1	86.3	88.0	93.9
Cohort, $	398	397	423	340	472	516	697	99.7	106.3	85.4	118.6	129.6	175.1
Age:	50-54												
Employed	156	162	160	157	181	211	275	103.8	102.6	100.6	116.0	135.3	176.3
Employed, $	748	685	704	556	728	754	676	91.6	94.1	74.3	97.3	100.8	90.4
Cohort, $	424	404	410	317	479	579	676	95.3	96.7	74.8	113.0	136.6	159.4
Age:	55-59												
Employed	120	114	115	128	147	162	216	95.0	95.8	106.7	122.5	135.0	180.0
Employed, $	689	664	729	663	687	714	702	96.4	105.8	96.2	99.7	103.6	101.9
Cohort, $	383	350	388	393	468	536	702	91.4	101.3	102.6	122.2	139.9	183.3
Age:	60-64												
Employed	80	79	78	83	108	116	148	98.8	97.5	103.8	135.0	145.0	185.0
Employed, $	808	836	712	600	615	745	737	103.5	88.1	74.3	76.1	92.2	91.2
Cohort, $	437	446	375	336	449	584	737	102.1	85.8	76.9	102.7	133.6	168.6
Age:	65-69												
Employed	83	95	99	99	115	131	154	114.5	119.3	119.3	138.6	157.8	185.5
Employed, $	883	790	847	694	751	744	549	89.5	95.9	78.6	85.1	84.3	62.2
Cohort, $	476	487	544	446	561	633	549	102.3	114.3	93.7	117.9	133.0	115.3
Age:	70 and older												
Employed	104	100	103	107	125	142	174	96.2	99.0	102.9	120.2	136.5	167.3
Employed, $	1,014	840	716	606	633	679	520	82.8	70.6	59.8	62.4	67.0	51.3
Cohort, $	606	483	424	373	455	554	520	79.7	70.0	61.6	75.1	91.4	85.8

*Average credits of less than $1,200 PYE, 1951-57

1/ Detail will not add to total because ages of 24 cohort members were not known for specific years of employment.

Table 4: Male Intermediate Low-Paid Cohort*: INDICES OF ANNUAL EMPLOYMENT AND OF AVERAGE ANNUAL CREDITS OF EMPLOYED MEMBERS AND OF ENTIRE COHORT, 1951-57

Age in 1957, No. Employed, and Average Credit	Number of workers and average credits							Index (1951 = 100.0)					
	1951	1952	1953	1954	1955	1956	1957	1952	1953	1954	1955	1956	1957
Total:	Total												
Employed 1/	4,692	4,997	5,243	5,247	5,909	6,507	7,497	106.5	111.7	111.8	125.9	138.7	159.8
Employed, $	1,351	1,475	1,593	1,545	1,777	2,179	2,411	109.2	117.9	114.4	131.5	161.3	178.5
Cohort, $	846	983	1,114	1,081	1,401	1,891	2,411	116.2	131.7	127.8	165.6	223.5	285.0
Age:	20-24												
Employed	826	1,100	1,233	1,200	1,368	1,554	1,882	133.2	149.3	145.3	165.6	188.1	227.8
Employed, $	630	926	1,183	1,322	1,782	2,444	2,743	147.0	187.8	209.8	282.9	387.9	435.4
Cohort, $	277	541	775	843	1,295	2,018	2,743	195.3	279.8	304.3	467.5	728.5	990.3
Age:	25-29												
Employed	990	905	886	922	1,106	1,235	1,495	91.4	89.5	93.1	111.7	124.7	151.0
Employed, $	1,053	1,201	1,341	1,417	1,856	2,392	2,775	114.1	127.4	134.6	176.3	227.2	263.5
Cohort, $	697	727	795	874	1,373	1,976	2,775	104.3	114.1	125.4	197.0	283.5	398.1
Age:	30-34												
Employed	570	575	603	582	631	666	769	100.9	105.8	102.1	110.7	116.8	134.9
Employed, $	1,461	1,632	1,761	1,602	1,774	2,159	2,388	111.7	120.5	109.7	121.4	147.8	163.4
Cohort, $	1,083	1,220	1,381	1,212	1,456	1,870	2,388	112.7	127.5	111.9	134.4	172.7	220.5
Age:	35-39												
Employed	470	469	485	478	512	541	614	99.8	103.2	101.7	108.9	115.1	130.6
Employed, $	1,489	1,689	1,805	1,670	1,895	2,184	2,297	113.4	121.2	112.2	127.3	146.7	154.3
Cohort, $	1,140	1,290	1,426	1,300	1,580	1,924	2,297	113.2	125.1	114.0	138.6	168.8	201.5
Age:	40-44												
Employed	355	387	399	392	418	431	486	109.0	112.4	110.4	117.7	121.4	136.9
Employed, $	1,657	1,718	1,798	1,672	1,755	2,048	2,175	103.7	108.5	100.9	105.9	123.6	131.3
Cohort, $	1,210	1,368	1,476	1,349	1,509	1,816	2,175	113.1	122.0	111.5	124.7	150.1	179.8
Age:	45-49												
Employed	375	392	413	408	434	461	493	104.5	110.1	108.8	115.7	122.9	131.5
Employed, $	1,690	1,801	1,845	1,700	1,797	2,070	2,128	106.6	109.2	100.6	106.3	122.5	125.9
Cohort, $	1,285	1,432	1,546	1,407	1,582	1,936	2,128	111.4	120.3	109.5	123.1	150.7	165.6
Age:	50-54												
Employed	279	303	309	304	314	346	358	108.6	110.8	109.0	112.5	124.0	128.3
Employed, $	1,773	1,734	1,802	1,711	1,939	1,961	2,024	97.8	101.6	96.5	109.4	110.6	114.2
Cohort, $	1,382	1,468	1,555	1,453	1,701	1,895	2,024	106.2	112.5	105.1	123.1	137.1	146.5
Age:	55-59												
Employed	270	276	280	284	301	315	332	102.2	103.7	105.2	111.5	116.7	123.0
Employed, $	1,697	1,839	1,891	1,773	1,815	2,016	2,009	108.4	111.4	104.5	107.0	118.8	118.4
Cohort, $	1,380	1,529	1,595	1,517	1,646	1,913	2,009	110.8	115.6	109.9	119.3	138.6	145.6
Age:	60-64												
Employed	231	242	244	244	257	267	280	104.8	105.6	105.6	111.3	115.6	121.2
Employed, $	1,734	1,757	1,896	1,784	1,892	2,008	1,900	101.3	109.3	102.9	109.1	115.8	109.6
Cohort, $	1,431	1,519	1,652	1,555	1,737	1,915	1,900	106.1	115.4	108.7	121.4	133.8	132.8
Age:	65-69												
Employed	182	187	199	203	215	218	231	102.7	109.3	111.5	118.1	119.8	126.9
Employed, $	1,927	2,072	2,172	1,894	1,687	1,722	1,396	107.5	112.7	98.3	87.5	89.4	72.4
Cohort, $	1,518	1,677	1,871	1,664	1,570	1,625	1,396	110.5	123.3	109.6	103.4	107.0	92.0
Age:	70 and older												
Employed	133	140	139	140	146	156	168	105.3	104.5	105.3	109.8	117.3	126.3
Employed, $	2,285	2,143	1,972	1,655	1,566	1,590	1,305	93.8	86.3	72.4	68.5	69.6	57.1
Cohort, $	1,809	1,786	1,632	1,379	1,361	1,476	1,305	98.7	90.2	76.2	75.2	81.6	72.1

*Average credits of $1,200 - $2,399 PYE, 1951-57

1/ Detail will not add to total because ages of 24 cohort members were not known for specific years of employment.

1951-57 period as a whole. For these age groups, the index indicates that the rate of increase varied inversely with the age of the workers--the older the age group, the lower was the rate of increase. During the 1954 recession, however, the average annual credits of all cohort members aged 30 or older in 1957 declined sharply. Primarily responsible for this decline was the fall in the average annual credits of employed cohort members, the indices of which were from 5 to 14 points lower in 1954 than in 1953. On the whole, the indices of employment for this cohort remained relatively stable from 1953 to 1954, declining by only 1 to 4 points among the 6 younger age groups, and rising slightly for the remaining age groups. Among workers 65 years of age or older, despite increasing employment, the average credits of the age groups declined, primarily as the result of substantial declines in the average annual wage credits of the employed cohort members.

Male Intermediate High-Paid Cohort (Table 5)

The average annual wage credits of the male members of this cohort tended to rise throughout the 1951-57 period as a result of rising employment and rising annual wage credits of the employed members of the cohort. Of particular interest, however, is the change which occurred from 1956 to 1957. Among those younger than age 50, average annual credits moved upward from 1956 to 1957. Among those aged 50 or older in 1957, average annual wage credits declined from 1956 to 1957.

Among workers below age 50, average credits of the cohort members increased from 1956 to 1957--despite a decline in the average annual wage credits of the employed members of the cohort--because of a sharp increase in employment. Among the older age groups, however, the indices of employment rose by only an insignificant amount. As a result, the decline in the average annual wage credits of employed cohort members was sufficiently large to reduce average wage credits of these cohort members to levels below those prevailing in 1956.

Differences between changes in the annual wage credits of employed cohort members and the level of employment also help explain the differing effects of the 1954 recession on the average annual wage credits of the younger and older cohort members. For employed workers below the age of 40, average annual wage credits increased or remained unchanged from 1953 to 1954. Employment among these age groups rose from 1953 to 1954. Thus, average annual wage credits of these younger cohort members during the 1954 recession were higher than they had been in the preceding year.

Among cohort members aged 40 to 65 in 1957, employment increased moderately from 1953 to 1954. Average annual wage credits of the older employed cohort members, however, declined to a more than compensating degree, causing a decline in the average annual wage credits of these cohort members.

Male High-Paid Cohort (Table 6)

For the high-paid male cohort, average annual wage credits of employed cohort members for all age groups below 65 remained stable throughout the 1951-57 period. (The sharp rise in the wage credit indices from 1954 to 1955 in large part reflects the effects of the change in the maximum limit of wages subject to social security taxes.) During 1951-57, employment also tended to rise slightly. As a result, the indices indicate, average wage credits of the cohort members rose at a somewhat faster pace than the average annual wage credits of the employed cohort members.

Unlike the lower-paid cohorts, among members of this cohort the rate of increase in wage credits during the 1954 recession, as measured by the indices, was slowed somewhat for 6 of the 10 age groups--i. e., older workers 35 to 64 years of age in 1957.

Differentials In Wage Credits - Male Cohorts (Tables 7 and 8)

The data indicate that during the 1951-57 period there was a general tendency for the differentials between the average annual wage credits of employed workers and of the members of the highest and the two intermediate-paid cohorts to narrow. Differentials among those aged 55 or older widened somewhat in 1955, when the maximum taxable limit on wages subject to social security taxes was increased to $4,200. The tendency toward a narrowing of differentials, however, resumed during the following 2 years. Among those younger than 55, differentials generally narrowed from 1951-57, primarily as a result of the relatively greater increases in employment of the younger workers as compared to the older workers.

The 1954 recession, as might be expected, widened differentials in average annual wage credits of employed members of the cohorts and in annual wage credits of the cohorts as the level of employment of the lower-paid cohorts declined.

Among male cohort members under the age of 30, the annual changes in differentials probably reflect to some degree the effects of military service on the employment and wage credits of the age group during the Korean War. The wage

Table 5: Male Intermediate High-Paid Cohort*: INDICES OF ANNUAL EMPLOYMENT AND OF AVERAGE ANNUAL CREDITS OF EMPLOYED MEMBERS AND OF ENTIRE COHORT, 1951-57

Age in 1957, No. Employed, and Average Credits	Number of workers and average credits							Index (1951 = 100.0)					
	1951	1952	1953	1954	1955	1956	1957	1952	1953	1954	1955	1956	1957
Total:	Total												
Employed 1/	7,643	7,846	8,267	8,504	9,033	9,318	9,811	102.8	108.2	111.3	118.2	121.9	128.4
Employed, $	2,351	2,628	2,910	2,935	3,355	3,566	3,499	111.8	123.8	124.8	142.7	151.7	148.8
Cohort, $	1,831	2,104	2,452	2,544	3,089	3,387	3,499	114.9	133.9	138.9	168.7	185.0	191.1
Age:	20-24												
Employed	353	441	512	523	636	689	716	124.9	145.0	148.2	180.2	195.2	202.8
Employed, $	1,080	1,736	2,257	2,643	3,251	3,682	3,747	160.7	209.0	244.7	301.0	340.9	346.9
Cohort, $	532	1,069	1,614	1,931	2,888	3,543	3,747	200.9	303.4	363.0	542.9	666.0	704.3
Age:	25-29												
Employed	1,294	1,258	1,433	1,613	1,816	1,858	1,861	97.2	110.7	124.7	140.3	143.6	143.8
Employed, $	1,720	2,012	2,563	2,821	3,460	3,806	3,856	117.0	149.0	164.0	201.2	221.3	224.2
Cohort, $	1,135	1,291	1,873	2,320	3,204	3,606	3,856	113.7	165.0	204.4	282.3	317.7	339.7
Age:	30-34												
Employed	1,265	1,332	1,394	1,408	1,461	1,488	1,634	105.3	110.2	111.3	115.5	117.6	129.2
Employed, $	2,174	2,575	2,992	2,989	3,473	3,683	3,637	118.4	137.6	137.5	159.8	169.4	167.3
Cohort, $	1,683	2,099	2,553	2,576	3,105	3,354	3,637	124.7	151.7	153.1	184.5	199.3	216.1
Age:	35-39												
Employed	1,023	1,045	1,085	1,100	1,140	1,166	1,267	102.2	106.1	107.5	111.4	114.0	123.9
Employed, $	2,405	2,759	2,997	2,995	3,476	3,616	3,577	114.7	124.6	124.5	144.5	150.4	148.7
Cohort, $	1,942	2,276	2,566	2,600	3,128	3,328	3,577	117.2	132.1	133.9	161.1	171.4	184.2
Age:	40-44												
Employed	863	885	910	911	948	967	1,017	102.5	105.4	105.6	109.8	112.1	117.8
Employed, $	2,532	2,814	3,018	2,948	3,294	3,522	3,477	111.1	119.2	116.4	130.1	139.1	137.3
Cohort, $	2,149	2,449	2,700	2,641	3,071	3,349	3,477	114.0	125.6	122.9	142.9	155.8	161.8
Age:	45-49												
Employed	730	752	771	777	805	825	844	103.0	105.6	106.4	110.3	113.0	115.6
Employed, $	2,670	2,830	3,038	2,928	3,252	3,412	3,365	106.0	113.8	109.7	121.8	127.8	126.0
Cohort, $	2,309	2,522	2,775	2,696	3,102	3,335	3,365	109.2	120.2	116.8	134.3	144.4	145.7
Age:	50-54												
Employed	623	629	642	648	661	684	694	101.0	103.0	104.0	106.1	109.8	111.4
Employed, $	2,717	2,909	3,030	2,978	3,219	3,362	3,290	107.1	111.5	109.6	118.5	123.7	121.1
Cohort, $	2,439	2,637	2,803	2,781	3,066	3,314	3,290	108.1	114.9	114.0	125.7	135.9	134.9
Age:	55-59												
Employed	595	602	603	604	614	638	651	101.2	101.3	101.5	103.2	107.2	109.4
Employed, $	2,835	2,980	3,111	2,970	3,195	3,361	3,212	105.1	109.7	104.8	112.7	118.6	113.3
Cohort, $	2,591	2,756	2,882	2,756	3,013	3,294	3,212	106.4	111.2	106.4	116.3	127.1	124.0
Age:	60-64												
Employed	434	439	439	438	441	460	465	101.2	101.2	100.9	101.6	106.0	107.1
Employed, $	2,874	3,017	3,124	3,002	3,259	3,384	3,181	105.0	108.7	104.5	113.4	117.7	110.7
Cohort, $	2,682	2,848	2,949	2,828	3,091	3,348	3,181	106.2	110.0	105.4	115.2	124.8	118.6
Age:	65-69												
Employed	309	314	319	317	319	324	334	101.6	103.2	102.6	103.2	104.9	108.1
Employed, $	2,986	3,118	3,185	3,188	3,356	3,226	2,296	104.4	106.7	106.8	112.4	108.0	76.9
Cohort, $	2,762	2,931	3,042	3,026	3,205	3,129	2,296	106.1	110.1	109.6	116.0	113.3	83.1
Age:	70 and older												
Employed	150	155	155	157	163	165	169	103.3	103.3	104.7	108.7	110.0	112.7
Employed, $	3,028	3,101	3,210	3,204	3,253	3,078	2,385	102.4	106.0	105.8	107.4	101.7	78.8
Cohort, $	2,688	2,844	2,944	2,976	3,138	3,005	2,385	105.8	109.5	110.7	116.7	111.8	88.7

*Average credits of $2,400 - $3,599 PYE, 1951-57

1/ Detail will not add to total because ages of 24 cohort members were not known for specific years of employment.

Table 6: Male High-Paid Cohort*: INDICES OF ANNUAL EMPLOYMENT AND OF AVERAGE ANNUAL CREDITS OF EMPLOYED MEMBERS AND OF ENTIRE COHORT, 1951-57

Age in 1957, No. Employed, and Average Credits	Number of workers and average credits							Index (1951 = 100.0)					
	1951	1952	1953	1954	1955	1956	1957	1952	1953	1954	1955	1956	1957
Total:	Total												
Employed[1/]	11844	11959	12056	12117	12273	12443	12721	101.0	101.8	102.3	103.6	105.1	107.4
Employed, $	3,499	3,558	3,582	3,577	4,154	4,170	4,169	101.7	102.4	102.2	118.7	119.2	119.1
Cohort, $	3,258	3,345	3,395	3,407	4,008	4,079	4,169	102.7	104.2	104.6	123.0	125.2	128.0
Age:	20-24												
Employed	9	13	14	17	18	23	26	144.4	155.6	188.9	200.0	255.6	288.9
Employed, $	2,564	3,121	3,490	3,585	4,083	4,098	4,017	121.7	136.1	139.8	159.2	159.8	156.7
Cohort, $	888	1,560	1,879	2,344	2,827	3,625	4,017	175.7	211.6	264.0	318.4	408.2	452.4
Age:	25-29												
Employed	353	378	413	435	457	470	503	107.1	117.0	123.2	129.5	133.1	142.5
Employed, $	3,250	3,457	3,530	3,534	4,124	4,159	4,168	106.4	108.6	108.7	126.9	128.0	128.2
Cohort, $	2,281	2,598	2,898	3,056	3,747	3,886	4,168	113.9	127.0	134.0	164.3	170.4	182.7
Age:	30-34												
Employed	1,752	1,789	1,809	1,826	1,843	1,857	1,911	102.1	103.3	104.2	105.2	106.0	109.1
Employed, $	3,399	3,537	3,573	3,571	4,161	4,173	4,178	104.1	105.1	105.1	122.4	122.8	122.9
Cohort, $	3,116	3,311	3,382	3,412	4,013	4,055	4,178	106.3	108.5	109.5	128.8	130.1	134.1
Age:	35-39												
Employed	2,140	2,159	2,173	2,182	2,202	2,218	2,299	100.9	101.5	102.0	102.9	103.6	107.4
Employed, $	3,487	3,551	3,582	3,577	4,159	4,173	4,171	101.8	102.7	102.6	119.3	119.7	119.6
Cohort, $	3,246	3,335	3,386	3,395	3,984	4,026	4,171	102.7	104.3	104.6	122.7	124.0	128.5
Age:	40-44												
Employed	1,995	2,002	2,012	2,017	2,040	2,055	2,115	100.4	100.9	101.1	102.3	103.0	106.0
Employed, $	3,520	3,566	3,584	3,578	4,158	4,173	4,181	101.3	101.8	101.6	118.1	118.6	118.8
Cohort, $	3,320	3,375	3,409	3,412	4,011	4,055	4,181	101.7	102.7	102.8	120.8	122.1	125.9
Age:	45-49												
Employed	1,807	1,816	1,824	1,826	1,840	1,860	1,881	100.5	100.9	101.1	101.8	102.9	104.1
Employed, $	3,543	3,570	3,587	3,581	4,158	4,174	4,175	100.8	101.2	101.1	117.4	117.8	117.8
Cohort, $	3,404	3,447	3,478	3,476	4,067	4,127	4,175	101.3	102.2	102.1	119.5	121.2	122.6
Age:	50-54												
Employed	1,489	1,493	1,496	1,497	1,521	1,548	1,560	100.3	100.5	100.5	102.1	104.0	104.8
Employed, $	3,544	3,576	3,588	3,582	4,149	4,171	4,169	100.9	101.2	101.1	117.1	117.7	117.6
Cohort, $	3,383	3,422	3,441	3,437	4,045	4,139	4,169	101.2	101.7	101.6	119.6	122.3	123.2
Age:	55-59												
Employed	1,075	1,080	1,082	1,082	1,099	1,115	1,119	100.5	100.7	100.7	102.2	103.7	104.1
Employed, $	3,544	3,576	3,591	3,587	4,155	4,172	4,163	100.9	101.3	101.2	117.2	117.7	117.5
Cohort, $	3,405	3,451	3,472	3,468	4,081	4,157	4,163	101.4	102.0	101.8	119.9	122.1	122.3
Age:	60-64												
Employed	789	792	794	795	807	831	838	100.4	100.6	100.7	102.3	105.3	106.2
Employed, $	3,545	3,566	3,584	3,577	4,146	4,155	4,156	100.6	101.1	100.9	117.0	117.2	117.2
Cohort, $	3,338	3,370	3,396	3,393	3,993	4,120	4,156	101.0	101.7	101.6	119.6	123.4	124.5
Age:	65-69												
Employed	325	328	328	329	334	343	345	100.9	100.9	101.2	102.8	105.5	106.2
Employed, $	3,549	3,569	3,584	3,589	4,126	4,158	4,071	100.6	101.0	101.1	116.3	117.2	114.7
Cohort, $	3,343	3,393	3,407	3,423	3,994	4,134	4,071	101.5	101.9	102.4	119.5	123.7	121.8
Age:	70 and older												
Employed	107	106	107	107	108	117	118	99.1	100.0	100.0	100.9	109.3	110.3
Employed, $	3,531	3,577	3,578	3,599	4,149	4,103	4,093	101.3	101.3	101.9	117.5	116.2	115.9
Cohort, $	3,202	3,213	3,244	3,264	3,797	4,068	4,093	100.3	101.3	101.9	118.6	127.0	127.8

*Average credits of $3,600 or more PYE, 1951-57

1/ Detail will not add to total because ages of 24 cohort members were not known for specific years of employment.

Table 7: Male Cohorts: WAGE CREDIT DIFFERENTIALS OF EMPLOYED COHORT MEMBERS (Average Annual Credits of Employed Members of Lower-Paid Cohorts as a Percentage of Average Annual Credits of Employed Members of Highest-Paid Cohort, 1951-57)

Age in 1957 and subcohort		1951	1952	1953	1954	1955	1956	1957
Total	3 lower-paid cohorts.....	49.1	52.1	55.9	55.7	53.1	56.8	54.9
	Low-paid[a]/.....	16.5	15.5	15.7	14.4	14.3	16.3	20.9
	Intermediate low-paid[b]/..	38.6	41.5	44.5	43.2	42.8	52.3	57.8
	Intermediate high-paid[c]/.	67.2	73.9	81.2	82.1	80.8	85.5	83.9
16-19	3 lower-paid cohorts.....	----	----	----	----	----	17.8	22.6
	Low-paid[a]/.....	----	----	----	----	----	12.3	16.7
	Intermediate low-paid[b]/..	----	----	----	----	----	40.7	57.7
	Intermediate high-paid[c]/.	----	----	----	----	----	69.0	86.6
20-24	3 lower-paid cohorts.....	22.4	26.4	29.7	32.6	38.0	48.7	53.0
	Low-paid[a]/.....	11.7	12.7	14.2	14.4	15.9	19.9	29.7
	Intermediate low-paid[b]/..	24.6	29.7	33.9	36.9	43.6	59.6	68.3
	Intermediate high-paid[c]/.	42.1	55.6	64.7	73.7	79.6	89.8	93.3
25-29	3 lower-paid cohorts.....	39.5	42.9	52.2	58.2	61.4	68.9	69.9
	Low-paid[a]/.....	17.5	16.6	15.6	15.4	16.4	20.2	27.3
	Intermediate low-paid[b]/..	32.4	34.7	38.0	40.1	45.0	57.5	66.6
	Intermediate high-paid[c]/	52.9	58.2	72.6	79.8	83.9	91.5	92.5
30-34	3 lower-paid cohorts.....	52.9	59.5	67.2	66.4	64.7	69.2	68.5
	Low-paid[a]/.....	20.2	20.6	20.5	17.3	16.6	17.7	21.2
	Intermediate low-paid[b]/	43.0	46.1	49.3	44.9	42.6	51.7	57.2
	Intermediate high-paid[c]/.	64.0	72.8	83.7	83.7	83.5	88.3	87.1
35-39	3 lower-paid cohorts.....	55.1	61.1	65.6	64.9	63.7	67.1	65.3
	Low-paid[a]/.....	20.0	17.3	18.4	17.5	16.9	18.9	18.2
	Intermediate low-paid[b]/	42.7	47.6	50.4	46.7	45.6	52.3	55.1
	Intermediate high-paid[c]/	69.0	77.7	83.7	83.7	83.6	86.7	85.8
40-44	3 lower-paid cohorts.....	58.5	62.9	66.7	64.4	60.4	65.0	63.0
	Low-paid[a]/.....	19.8	19.8	18.9	15.3	15.8	17.5	17.9
	Intermediate low-paid[b]/..	47.1	48.2	50.2	46.7	42.2	49.1	52.0
	Intermediate high-paid[c]/.	71.9	78.9	84.2	82.4	79.2	84.4	83.2
45-49	3 lower-paid cohorts.....	59.9	63.0	66.0	62.9	57.8	61.1	59.3
	Low-paid[a]/.....	20.9	20.8	20.7	16.8	15.4	15.6	16.7
	Intermediate low-paid[b]/	47.7	50.4	51.4	47.5	43.2	49.6	51.0
	Intermediate high-paid[c]/.	75.4	79.3	84.7	81.8	78.2	81.7	80.6
50-54	3 lower-paid cohorts.....	61.5	63.0	65.6	63.9	59.8	60.6	57.7
	Low-paid[a]/.....	21.1	19.2	19.6	15.5	17.5	18.1	16.2
	Intermediate low-paid[b]/..	50.0	48.5	50.2	47.8	46.7	47.0	48.5
	Intermediate high-paid[c]/.	76.7	81.3	84.4	83.1	77.6	80.6	78.9
55-59	3 lower-paid cohorts.....	63.8	67.0	69.4	65.4	59.1	62.2	58.3
	Low-paid[a]/.....	19.4	18.6	20.3	18.5	16.5	17.1	16.9
	Intermediate low-paid[b]/..	47.9	51.4	52.7	49.4	43.7	48.3	48.3
	Intermediate high-paid[c]/.	80.0	83.3	86.6	82.8	76.9	80.6	77.2
60-64	3 lower-paid cohorts.....	64.9	67.0	69.3	65.8	59.5	62.2	57.1
	Low-paid[a]/.....	22.8	23.4	19.9	16.8	14.8	17.9	17.7
	Intermediate low-paid[b]/..	48.9	49.3	52.9	49.9	45.6	48.3	45.7
	Intermediate high-paid[c]/.	81.1	84.6	87.2	83.9	78.6	81.4	76.5
65-69	3 lower-paid cohorts.....	66.1	67.8	69.3	65.9	56.7	54.3	40.1
	Low-paid[a]/.....	24.9	22.1	23.6	19.3	18.2	17.9	13.5
	Intermediate low-paid[b]/..	54.3	58.1	60.6	52.8	40.9	41.4	34.3
	Intermediate high-paid[c]/.	84.1	87.4	88.9	88.8	81.3	77.6	56.4
70 and over	3 lower-paid cohorts.....	63.2	61.2	59.5	55.0	46.5	44.9	34.1
	Low-paid[a]/.....	28.7	23.5	20.0	16.8	15.3	16.5	12.7
	Intermediate low-paid[b]/..	64.7	59.9	55.1	46.0	37.7	38.8	31.9
	Intermediate high-paid[c]/.	85.8	86.7	89.7	89.0	78.4	75.0	58.3

Workers with average credits PYE, 1951-57, of:

a/ Less than $1,200

b/ $1,200 to $2,399

c/ $2,400 to $3,599

Table 8: Male Cohorts: WAGE CREDIT DIFFERENTIALS OF COHORT MEMBERS
(Average Annual Credits of Members of Lower-Paid Cohorts as a Percentage of Average Annual Credits of Members of Highest-Paid Cohort, 1951-57)

Age in 1957 and subcohort		1951	1952	1953	1954	1955	1956	1957
Total	3 lower-paid cohorts.....	37.6	41.1	46.1	47.0	47.5	52.5	54.9
	Low-paid[a]/.....	5.4	5.9	6.8	6.5	8.1	10.9	20.9
	Intermediate low-paid[b]/..	26.0	29.4	32.8	31.7	35.0	46.4	57.8
	Intermediate high-paid[c]/.	56.2	62.9	72.2	74.7	77.1	83.0	83.9
16-19	3 lower-paid cohorts.....	----	----	----	----	----	12.6	22.6
	Low-paid[a]/.....	----	----	----	----	----	7.5	16.7
	Intermediate low-paid[b]/..	----	----	----	----	----	33.2	57.7
	Intermediate high-paid[c]/.	----	----	----	----	----	62.8	86.6
20-24	3 lower-paid cohorts.....	28.1	30.3	36.6	33.1	42.2	46.2	53.0
	Low-paid[a]/.....	11.3	12.4	16.0	13.0	14.4	14.3	29.7
	Intermediate low-paid[b]/..	31.2	34.7	41.2	36.0	45.8	55.7	68.3
	Intermediate high-paid[c]/.	59.9	68.5	85.9	82.4	102.2	97.7	93.3
25-29	3 lower-paid cohorts.....	36.7	35.6	43.8	51.6	58.7	66.4	69.9
	Low-paid[a]/.....	13.5	11.4	9.8	8.6	10.5	14.3	27.3
	Intermediate low-paid[b]/..	30.6	28.0	27.4	28.6	36.6	50.8	66.6
	Intermediate high-paid[c]/.	49.8	49.7	64.6	75.9	85.5	92.8	92.5
30-34	3 lower-paid cohorts.....	43.6	50.2	58.9	58.0	58.6	63.7	68.5
	Low-paid[a]/.....	12.4	12.3	12.3	9.4	10.4	12.8	21.2
	Intermediate low-paid[b]/..	34.8	36.8	40.8	35.5	36.3	46.1	57.2
	Intermediate high-paid[c]/.	54.0	63.4	75.5	75.5	77.4	82.7	87.1
35-39	3 lower-paid cohorts.....	46.5	52.3	57.8	57.5	58.5	62.9	65.3
	Low-paid[a]/.....	12.3	11.0	12.1	11.2	12.0	14.5	18.2
	Intermediate low-paid[b]/..	35.1	38.7	42.1	38.3	39.7	47.8	55.1
	Intermediate high-paid[c]/.	59.8	68.2	75.8	76.6	78.5	82.7	85.8
40-44	3 lower-paid cohorts.....	50.3	56.1	60.9	58.7	56.9	62.2	63.0
	Low-paid[a]/.....	12.2	12.1	11.4	9.1	11.1	13.3	17.9
	Intermediate low-paid[b]/..	36.4	40.5	43.3	39.5	37.6	44.8	52.0
	Intermediate high-paid[c]/.	64.7	72.6	79.2	77.4	76.6	82.6	83.2
45-49	3 lower-paid cohorts.....	51.4	55.7	60.1	57.5	54.9	59.3	59.3
	Low-paid[a]/.....	11.7	11.5	12.2	9.8	11.6	12.5	16.7
	Intermediate low-paid[b]/..	37.7	41.5	44.5	40.5	38.9	46.9	51.0
	Intermediate high-paid[c]/.	67.8	73.2	79.8	77.6	76.3	80.8	80.6
50-54	3 lower-paid cohorts.....	55.1	58.0	61.4	60.2	56.6	59.3	57.7
	Low-paid[a]/.....	12.5	11.8	11.9	9.2	11.8	14.0	16.2
	Intermediate low-paid[b]/..	40.9	42.9	45.2	42.3	42.1	45.8	48.5
	Intermediate high-paid[c]/.	72.1	77.1	81.5	80.9	75.8	80.1	78.9
55-59	3 lower-paid cohorts.....	58.4	62.0	64.3	60.9	55.7	60.2	58.3
	Low-paid[a]/.....	11.2	101.	11.2	11.3	11.5	12.9	16.9
	Intermediate low-paid[b]/..	40.5	44.3	45.9	43.7	40.3	46.0	48.3
	Intermediate high-paid[c]/.	76.1	79.9	83.0	79.5	73.8	79.2	77.2
60-64	3 lower-paid cohorts.....	61.5	64.5	66.8	63.4	57.7	61.0	57.1
	Low-paid[a]/.....	13.1	13.2	11.0	9.9	11.2	14.2	17.7
	Intermediate low-paid[b]/..	42.9	45.1	48.6	45.8	43.5	46.5	45.7
	Intermediate high-paid[c]/.	80.3	84.5	86.8	83.3	77.4	81.3	76.5
65-69	3 lower-paid cohorts.....	60.9	63.3	66.4	63.3	54.9	52.2	40.1
	Low-paid[a]/.....	14.2	14.4	16.0	13.0	14.0	15.3	13.5
	Intermediate low-paid[b]/..	45.4	49.4	54.9	48.6	39.3	39.3	34.3
	Intermediate high-paid[c]/.	82.6	86.4	89.3	88.4	80.2	75.7	56.4
70 and over	3 lower-paid cohorts.....	57.0	58.2	56.5	53.1	46.5	42.7	34.1
	Low-paid[a]/.....	18.9	15.0	13.1	11.4	12.0	13.6	12.7
	Intermediate low-paid[b]/..	56.5	55.6	50.3	42.2	35.8	36.3	31.9
	Intermediate high-paid[c]/.	83.9	88.5	90.8	91.2	82.6	73.9	58.3

Workers with average credits PYE, 1951-57, of:

a/ Less than $1,200

b/ $1,200 to $2,399

c/ $2,400 to $3,599

credit differentials for these younger workers, however, tended to follow the same patterns as those of the older workers.

Summary - The Male Cohort, 1951-57

Cyclical changes have a differing impact on the annual wage credits of male workers, depending upon their age and their average level of wage credits. In general, there is an inverse relationship between the age of workers and the extent to which their wage credits vary from year to year; the older the worker, the less the year-to-year variation in average annual wage credits.

The extent of fluctuation varies inversely with the average level of wage credits; the wage credits of the lower-paid cohorts are subject to much greater variation than are the wage credits of the higher-paid cohorts.

Changes in the average credits of the cohorts from 1953 to 1954 offer an interesting illustration of the differential effects of the 1954 recession on wage credits. Among the lowest-paid male cohort, the average credits of cohort members aged 24 or younger were greater in 1954 than in 1953. Among cohort members who were 25 years of age or older, however, with the exception of one age group, average credits in 1954 were lower than in 1953.

Among the intermediate low-paid male cohort, on the other hand, the average credits of workers who were 29 years of age or younger were higher in 1954 than in 1953; for those 30 years of age or older, average credits in 1954 were lower than in 1953.

In the case of the intermediate high-paid cohort, however, the average credits of cohort members who were 39 years of age or younger were higher in 1954 than in 1953; the average credits of the older cohort members declined from 1953 to 1954.

For the highest-paid cohort, the "turning" age was 45. The average wage credits of those cohort members who were younger than 45 years of age increased from 1953 to 1954; for those aged 45-64, average wage credits in 1954 were somewhat below 1953 levels.

Varying degrees of nonemployment among the age-wage cohorts substantially affected the level of average wage credits in each of the years, 1951-57. Among the highest-paid male cohorts aged 50-54, for example, the average annual wage credits of the employed cohort members in 1955 were approximately $4,150; for the cohort, the average was approximately $100 less, $4,050. Among the lowest-paid cohort in this age group, the difference between the average wage credits of the employed members and all the cohort members was even greater. For the employed members, average credits in 1955 were about $730; for all the cohort members, the average was approximately $480, a difference of about $250. In general, among all the cohorts, because of the greater intermittency in employment among the lower-paid workers, the disparity between the average wage credits of the employed members of the cohort and of all the members of the cohort was greatest among the lower-paid workers, and was least significant among the higher-paid cohorts.

Among the older workers in the higher-paid cohorts there was a perceptible tendency for nonemployment to affect average wage credits. In 1955, for example, among the 60-64 age group in the highest-paid cohort, average annual credits of the cohort were approximately $150 lower than the average annual credits of the employed members of the cohort. In that year, the difference between these two averages for the 55-59 group was $74, and for the 50-54 year group, $104. Among the younger members of the cohort, the difference between the average credits of the employed members and of all the cohort members of the age group was also relatively large. Among the highest-paid cohort members, therefore, nonemployment tended to affect the wage credits of workers at the youngest and oldest ages; only during the middle years of life did nonemployment have relatively little effect on average annual wage credits. In general, therefore, nonemployment adversely affected the wage credits of the cohort members inversely with the level of wage credits, 1951-57, i.e., the lower the level of average wage credits PYE, 1951-57, the greater was the effect of nonemployment on average wage credits within a given year.

Another general tendency during the 1951-57 period was the influence of increased employment on the average annual wage credits of all the cohort members. Among all the cohort members the increased employment during the 1951-57 period resulted in greater increases in the average wage credits of the cohort members than in the average credits of the employed members of the cohort.

Especially worthy of note are the data for 1953 and 1954. The 1954 recession had significant effects on the average annual credits of the employed members of the three lower-paid cohorts and on the average annual credits of all the members of these cohorts. For workers aged 30 or older in 1957, the 1954 recession resulted in significant declines in the average annual credits of the cohort members and in the average

annual credits of the employed members of these cohorts. For the highest-paid cohort, however, the effects of the 1954 recession on wage credits were virtually nil.

Among the very oldest and very youngest members of the cohort, however, the effects of age appear to be at least as significant as those of cyclical change in terms of their effects on wage credits. Among workers below the age of 30, average wage credits in each of the years, 1951-57, tended to rise among members of all of the wage cohorts. Among cohort members 65 years of age or older, however, there was a tendency for average wage credits to fall during the last 3 or 4 years of the 1951-57 period, a tendency that was particularly prevalent among the three lower-paid cohorts.

3. The Female Cohort

Female Low-Paid Cohort (Table 9)

For members of this female cohort below the age of 65 in 1957, employment rates increased greatly from 1951 to 1957. Despite only relatively modest increases in the indices of average annual wage credits of employed cohort members, the sharp rise in employment resulted in a substantial increase in average wage credits of the cohort.

From 1956 to 1957, employment among women aged 65 or older, however, did not increase at a sufficiently rapid rate to overcome the substantial fall in annual wage credits of the employed cohort members. As a consequence, for these oldest age groups the index of average wage credits declined from 1956 to 1957.

Unlike the low-paid male cohort, the low-paid female cohort generally suffered no declines in average annual wage credits during the 1954 recession. Although the indices of average annual wage credits of the employed members declined somewhat during the 1954 recession, principally among those aged 30 to 44, in general the increase in the employment index more than offset the declines in the index of average wage credits of the employed members of the cohort. The index of average annual wage credits for most of the age groups in the cohort, therefore, rose from 1953 to 1954. Among those aged 25 to 34 and 40 to 44, however, the index of average wage credits declined somewhat from 1953 to 1954.

Female Intermediate Low-Paid Cohort (Table 10)

The index of average annual wage credits of the members of this female cohort rose sharply during the 1951-57 period. In general, the rate of increase tended to rise with increasing age to a peak at age 35 to 39. The rate of increase varied inversely with increasing age among older members, reaching its lowest point among cohort members age 65 or older.

Among the cohort members, the index of average annual wage credits of the employed women aged 40 to 59 tended to rise at a somewhat faster pace than the index of employment. As a consequence, the index of average annual wage credits of these women rose substantially from 1951 to 1957. Among those in the younger age groups, the indices of employment and of annual wage credits of the employed women tended to rise at different rates. In the case of both indices, however, these rates increased more rapidly than those of the older women and the average annual credit index increased more rapidly for the younger than the older groups.

The effects of the 1954 recession on the credits of this cohort--as compared to the lowest-paid female cohort--were not substantial. The indices of employment of this cohort generally rose from 1953 to 1954. In most instances, also, the decline in the indices of annual wage credits of women employed in 1954 was not as severe in this cohort as among their lower-paid sisters. For this reason, the substantial rise in the indices of employment resulted in a significant increase in the indices of average annual wage credits of this cohort.

Female Intermediate High-Paid Cohort (Table 11)

The indices of average annual wage credits of this female cohort rose at a faster rate than did the two component indices of employment and average annual wage credits of the employed cohort members. The indices of average annual wage credits for the cohort rose uninterruptedly, each year, 1951-57. The 1954 recession did not affect the indices of employment, wage credits of employed cohort members, or average wage credits of this female cohort.

From 1956 to 1957, the index of the average credits of employed women aged 25 to 29 declined somewhat, for reasons which are not readily apparent. The rise in the index of employment was not sufficient to offset the decline in the index of average annual wage credits of the employed members, and as a consequence, for this age group, the index of the average annual wage credits of the cohort for 1956 was below the 1957 level. It is possible that the fall in the index may reflect a decline in the proportion of full-year workers in this age group, since the index of employment for the age group rose. For those women 65 years of age or older, the indices of employment, average annual wage credits of

Table 9: Female Low-Paid Cohort*: INDICES OF ANNUAL EMPLOYMENT AND OF AVERAGE ANNUAL CREDITS OF EMPLOYED MEMBERS AND OF ENTIRE COHORT, 1951-57

Age in 1957, No. Employed, and Average Credits	Number of workers and average credits							Index (1951 = 100.0)					
	1951	1952	1953	1954	1955	1956	1957	1952	1953	1954	1955	1956	1957
Total:	Total												
Employed[1/]	3,419	3,854	4,417	4,644	5,909	7,440	10481	112.7	129.2	135.8	172.8	217.6	306.6
Employed, $	589	585	598	593	616	711	728	99.3	101.5	100.7	104.6	120.7	123.6
Cohort, $	192	215	252	263	347	505	728	112.0	131.2	137.0	180.7	263.0	379.2
Age:	20-24												
Employed	433	667	913	949	1,085	1,260	1,658	Not computed					
Employed, $	296	385	482	550	654	866	866						
Cohort, $	77	155	265	315	428	658	866						
Age:	25-29												
Employed	517	512	541	500	582	665	984	99.0	104.6	96.7	112.6	128.6	190.3
Employed, $	587	626	612	630	615	748	734	106.6	104.3	107.3	104.8	127.4	125.0
Cohort, $	308	326	336	320	364	506	734	105.8	109.1	103.9	118.2	164.3	238.3
Age:	30-34												
Employed	463	504	548	547	639	783	1,090	108.9	118.4	118.1	138.0	169.1	235.4
Employed, $	636	607	636	594	643	720	736	95.4	100.0	93.4	101.1	113.2	115.7
Cohort, $	270	281	320	298	377	517	736	104.1	118.5	110.4	139.6	191.5	272.6
Age:	35-39												
Employed	423	456	465	498	617	740	1,064	107.8	109.9	117.7	145.9	174.9	251.5
Employed, $	589	577	616	597	613	731	738	98.0	104.6	101.4	104.1	124.1	125.3
Cohort, $	234	247	269	279	355	508	738	105.6	115.0	119.2	151.7	217.1	315.4
Age:	40-44												
Employed	396	418	474	497	582	722	953	105.6	119.7	125.5	147.0	182.3	240.7
Employed, $	651	627	663	626	690	760	805	96.3	101.8	96.2	106.0	116.7	123.7
Cohort, $	271	275	330	326	421	576	805	101.5	121.8	120.3	155.4	212.5	297.0
Age:	45-49												
Employed	360	391	434	416	535	650	834	108.6	120.6	115.6	148.6	180.6	231.7
Employed, $	631	629	616	653	677	763	771	99.7	97.6	103.5	107.3	120.9	122.2
Cohort, $	272	295	321	326	434	595	771	108.5	118.0	119.9	159.6	218.7	283.5
Age:	50-54												
Employed	287	304	314	324	412	493	630	105.9	109.4	112.9	143.6	171.8	219.5
Employed, $	661	670	639	665	687	759	739	101.4	96.7	100.6	103.9	114.8	111.8
Cohort, $	301	323	318	342	449	594	739	107.3	105.6	113.6	149.2	197.3	245.5
Age:	55-59												
Employed	202	216	243	242	299	353	457	106.9	120.3	119.8	148.0	174.8	226.2
Employed, $	648	683	673	701	701	755	722	105.4	103.9	108.2	108.2	116.5	111.4
Cohort, $	286	323	358	371	459	583	722	112.9	125.2	129.7	160.5	203.8	252.4
Age:	60-64												
Employed	144	161	173	177	225	266	325	111.8	120.1	122.9	156.2	184.7	225.7
Employed, $	642	611	645	675	696	713	690	95.2	100.5	105.1	108.4	111.1	107.5
Cohort, $	284	303	343	368	482	584	690	106.7	120.8	129.6	169.7	205.6	243.0
Age:	65-69												
Employed	110	111	121	127	166	197	216	100.9	110.0	115.5	150.9	179.1	196.4
Employed, $	675	737	763	741	724	708	633	109.2	113.0	109.8	107.3	104.9	93.8
Cohort, $	344	379	427	436	556	646	633	110.2	124.1	126.7	161.6	187.8	184.0
Age:	70 and older												
Employed	80	86	86	88	105	114	128	107.5	107.5	110.0	131.2	142.5	160.0
Employed, $	815	750	762	657	633	679	600	92.0	93.5	80.6	77.7	83.3	73.6
Cohort, $	509	504	512	452	519	605	600	99.0	100.6	88.8	102.0	118.9	117.9

*Average credits of less than $1,200 PYE, 1951-57

1/ Detail will not add to total because ages of 6 cohort members were not known for specific years of employment.

Table 10: Female Intermediate Low-Paid Cohort*: INDICES OF ANNUAL EMPLOYMENT AND OF AVERAGE ANNUAL CREDITS OF EMPLOYED MEMBERS AND OF ENTIRE COHORT, 1951-57

Age in 1957, No. Employed, and Average Credits	Number of workers and average credits							Index (1951 = 100.0)					
	1951	1952	1953	1954	1955	1956	1957	1952	1953	1954	1955	1956	1957
Total:	Total												
Employed[1/]	4,471	4,972	5,386	5,646	6,241	6,752	7,215	111.2	120.5	126.3	139.6	151.0	161.4
Employed, $	1,358	1,495	1,637	1,663	1,808	2,022	2,095	110.1	120.5	122.5	133.1	148.9	154.3
Cohort, $	842	1,030	1,222	1,301	1,564	1,892	2,095	122.3	145.1	154.5	185.7	224.7	248.8
Age:	20-24												
Employed	400	614	775	885	1,046	1,134	1,194	Not Computed					
Employed, $	559	865	1,230	1,491	1,834	2,270	2,354						
Cohort, $	187	445	798	1,105	1,607	2,156	2,354						
Age:	25-29												
Employed	684	707	743	722	782	823	902	103.4	108.6	105.6	114.3	120.3	131.9
Employed, $	1,294	1,555	1,662	1,788	1,886	2,105	2,002	120.2	128.4	138.2	145.7	162.7	154.7
Cohort, $	981	1,219	1,369	1,431	1,635	1,921	2,002	124.3	139.6	145.9	166.7	195.8	204.1
Age:	30-34												
Employed	514	541	566	576	631	682	751	105.3	110.1	112.1	122.8	132.7	146.1
Employed, $	1,467	1,563	1,699	1,727	1,841	2,063	2,108	106.5	115.8	117.7	125.5	140.6	143.7
Cohort, $	1,004	1,126	1,280	1,325	1,547	1,873	2,108	112.2	127.5	132.0	154.1	186.6	210.0
Age:	35-39												
Employed	511	559	604	629	682	738	805	109.4	118.2	123.1	133.5	144.4	157.5
Employed, $	1,423	1,504	1,676	1,635	1,834	2,007	2,103	105.7	117.8	114.9	128.9	141.0	147.8
Cohort, $	903	1,044	1,258	1,278	1,554	1,840	2,103	115.6	139.3	141.5	172.1	203.8	232.9
Age:	40-44												
Employed	556	612	645	678	735	788	829	110.1	116.0	121.9	132.2	141.7	149.1
Employed, $	1,383	1,510	1,691	1,618	1,801	1,985	2,078	109.2	122.3	117.0	130.2	143.5	150.3
Cohort, $	928	1,115	1,316	1,323	1,597	1,887	2,078	120.2	141.8	142.6	172.1	203.3	223.9
Age:	45-49												
Employed	579	629	680	703	747	793	824	108.6	117.4	121.4	129.0	137.0	142.3
Employed, $	1,458	1,578	1,704	1,700	1,844	1,993	2,109	108.2	116.9	116.6	126.5	136.7	144.7
Cohort, $	1,024	1,205	1,406	1,450	1,672	1,918	2,109	117.7	137.3	141.6	163.3	187.3	206.0
Age:	50-54												
Employed	448	479	508	514	559	589	622	106.9	113.4	114.7	124.8	131.5	138.8
Employed, $	1,465	1,636	1,708	1,701	1,777	1,968	2,028	111.7	116.6	116.1	121.3	134.3	138.4
Cohort, $	1,055	1,260	1,395	1,406	1,597	1,864	2,028	119.4	132.2	133.3	151.4	176.7	192.2
Age:	55-59												
Employed	355	378	397	414	433	456	471	106.5	111.8	116.6	122.0	128.5	132.7
Employed, $	1,470	1,669	1,768	1,743	1,829	1,953	2,006	113.5	120.3	118.6	124.4	132.9	136.5
Cohort, $	1,108	1,339	1,490	1,532	1,681	1,891	2,006	120.8	134.5	138.3	151.7	170.7	181.0
Age:	60-64												
Employed	232	250	257	265	278	288	293	107.8	110.8	114.2	119.8	124.1	126.3
Employed, $	1,588	1,698	1,792	1,767	1,867	1,926	1,868	106.9	112.8	111.3	117.6	124.4	117.6
Cohort, $	1,257	1,449	1,572	1,598	1,771	1,942	1,868	115.3	125.1	127.1	140.9	154.5	148.6
Age:	65-69												
Employed	126	132	136	143	148	150	157	104.8	107.9	113.5	117.5	119.0	124.6
Employed, $	1,698	1,808	1,835	1,842	1,763	1,706	1,425	106.5	108.1	108.5	103.8	100.5	83.9
Cohort, $	1,363	1,520	1,590	1,678	1,662	1,630	1,425	111.5	116.7	123.1	121.9	119.6	104.5
Age:	70 and older												
Employed	63	65	65	67	66	72	73	103.2	103.2	106.3	104.8	114.3	115.9
Employed, $	1,606	1,736	1,819	1,724	1,734	1,550	1,530	108.1	113.3	107.3	108.0	96.5	95.3
Cohort, $	1,386	1,546	1,620	1,582	1,568	1,529	1,530	111.5	116.9	114.1	113.1	110.3	110.4

*Average credits of $1,200 - $2,399 PYE, 1951-57

1/ Detail will not add to total because ages of 6 cohort members were not known for specific years of employment.

Table 11: Female Intermediate High-Paid Cohort*: INDICES OF ANNUAL EMPLOYMENT AND OF AVERAGE ANNUAL CREDITS OF EMPLOYED MEMBERS AND OF ENTIRE COHORT, 1951-57

Age in 1957, No. Employed, and Average Credits	Number of workers and average credits							Index (1951 = 100.0)					
	1951	1952	1953	1954	1955	1956	1957	1952	1953	1954	1955	1956	1957
Total:	Total												
Employed[1/]	2,876	3,000	3,106	3,184	3,365	3,499	3,542	104.3	108.0	110.7	117.0	121.7	123.2
Employed, $	2,268	2,553	2,795	2,897	3,128	3,304	3,368	112.6	123.2	127.7	137.9	145.7	148.5
Cohort, $	1,842	2,162	2,451	2,604	2,972	3,264	3,368	117.4	133.1	141.4	161.3	177.2	182.8
Age:	20-24												
Employed	88	112	136	156	173	186	188	127.3	154.5	177.3	196.6	211.4	213.6
Employed, $	993	1,740	2,364	2,660	2,990	3,335	3,552	175.2	238.1	267.9	301.1	335.8	357.7
Cohort, $	465	1,037	1,710	2,207	2,751	3,300	3,552	223.0	367.7	474.6	591.6	709.7	763.9
Age:	25-29												
Employed	382	396	414	418	441	451	455	103.7	108.4	109.4	115.4	118.1	119.1
Employed, $	1,970	2,415	2,681	2,864	3,182	3,434	3,372	122.6	136.1	145.4	161.5	174.3	171.2
Cohort, $	1,654	2,102	2,439	2,631	3,084	3,404	3,372	127.1	147.5	159.1	186.5	205.8	203.9
Age:	30-34												
Employed	406	420	432	439	454	466	472	103.4	106.4	108.1	111.8	114.8	116.3
Employed, $	2,273	2,531	2,811	2,903	3,237	3,386	3,411	111.4	123.7	127.7	142.4	149.0	150.1
Cohort, $	1,955	2,252	2,573	2,700	3,114	3,343	3,411	115.2	131.6	138.1	159.3	171.0	174.5
Age:	35-39												
Employed	430	443	459	463	486	500	512	103.0	106.7	107.7	113.0	116.3	119.1
Employed, $	2,272	2,589	2,837	2,978	3,180	3,313	3,401	114.0	124.9	131.1	140.0	145.8	149.7
Cohort, $	1,908	2,240	2,543	2,793	3,019	3,235	3,401	117.4	133.3	141.1	158.2	169.5	178.2
Age:	40-44												
Employed	373	392	405	423	446	461	463	105.1	108.6	113.4	119.6	123.6	124.1
Employed, $	2,302	2,570	2,824	2,902	3,150	3,320	3,452	111.6	122.7	126.1	136.8	144.2	150.0
Cohort, $	1,855	2,176	2,470	2,651	3,034	3,306	3,452	117.3	133.2	142.9	163.6	178.2	186.1
Age:	45-49												
Employed	409	427	439	449	473	497	502	104.4	107.3	109.8	115.6	121.5	122.7
Employed, $	2,398	2,640	2,860	2,885	3,077	3,245	3,371	110.1	119.3	120.3	128.3	135.3	140.6
Cohort, $	1,954	2,246	2,501	2,580	2,899	3,213	3,371	114.9	128.0	132.0	148.4	164.4	172.5
Age:	50-54												
Employed	316	327	332	337	357	376	382	103.5	105.1	106.6	113.0	119.0	120.9
Employed, $	2,405	2,634	2,847	2,886	3,060	3,256	3,372	109.5	118.4	120.0	127.2	135.4	140.2
Cohort, $	1,989	2,255	2,474	2,546	2,860	3,205	3,372	113.4	124.4	128.0	143.8	161.1	169.5
Age:	55-59												
Employed	253	259	262	267	285	295	296	102.4	103.6	105.5	112.6	116.6	117.0
Employed, $	2,461	2,664	2,806	2,901	3,097	3,252	3,281	108.2	114.0	117.9	125.8	132.1	133.3
Cohort, $	2,103	2,331	2,484	2,717	2,982	3,241	3,281	110.8	118.1	124.4	141.8	154.1	156.0
Age:	60-64												
Employed	137	140	142	144	150	154	158	102.2	103.6	105.1	109.5	112.4	115.3
Employed, $	2,598	2,734	2,869	2,940	3,018	3,141	3,180	105.2	110.4	113.2	116.2	120.9	122.4
Cohort, $	2,253	2,423	2,578	2,679	2,865	3,061	3,180	107.5	114.4	118.9	127.2	135.9	141.1
Age:	65-69												
Employed	62	62	63	65	70	78	79	100.0	101.6	104.8	112.9	125.8	127.4
Employed, $	2,505	2,710	2,874	2,981	3,067	3,134	2,843	108.2	114.7	119.0	122.4	125.1	113.5
Cohort, $	1,966	2,127	2,292	2,453	2,718	3,094	2,843	108.2	116.6	124.8	138.2	157.4	144.6
Age:	70 and older												
Employed	19	21	21	22	25	25	25	110.5	110.5	115.8	131.6	131.6	131.6
Employed, $	2,547	2,799	3,028	3,109	3,147	3,112	2,722	109.9	118.9	122.1	123.6	122.2	106.9
Cohort, $	1,936	2,351	2,544	2,736	3,147	3,112	2,722	121.4	131.4	141.3	162.6	160.7	140.6

*Average credits of $2,400 - $3,599 PYE, 1951-57

1/ Detail will not add to total because ages of 6 cohort members were not known for specific years of employment.

the employed women, and average annual wage credits behaved similarly.

Female High-Paid Cohort (Table 12)

The average annual wage credits of the highest-paid female cohort increased steadily throughout the 1951-57 period, including the recession year of 1954. The indices of employment rose more rapidly for those female cohort members 45 years of age or older than for the younger groups. Because the indices of annual wage credits of the employed cohort members, on the whole, rose more or less uniformly for all age groups, the indices of average annual wage credits were substantially higher for the older age groups than for the younger age groups. Among the two oldest age groups, the decline in the indices of average annual wage credits of the employed cohort members from 1956 to 1957 was accompanied by relative stability in the indices of employment; the index of average annual wage credits, therefore, declined during this 2-year period.

Differentials In Wage Credits--Female Cohorts (Tables 13 and 14)

For the lowest-paid female cohort, there was a general tendency for the differentials in average annual wage credits to narrow. Differentials in average annual wage credits of the employed members of the cohort, however, tended to widen slightly or to remain constant.

For the intermediate low-paid female cohort, the differential between average annual wage credits of the employed members of this cohort and those of the higher-paid cohort tended to remain constant, except among the very oldest and the very youngest age groups. The differential in average wage credits tended to decline, however, as a result of the greater relative increase in employment among the intermediate low-paid cohort members.

(Because of the relatively few women in the highest-paid cohort differentials for the female cohorts were computed by using the weighted average credits of women in the intermediate high-paid and the high-paid cohorts as a base.)

Aging and Wage Credits

The emphasis in this analysis has centered on changes in wage credits and employment levels. Implicit in the discussion is the conviction that "aging" is not a status which workers achieve at the end of the working lifetime, but rather an ongoing process, beginning at birth and terminating only at death. In terms of this latter conception--akin to the physiological view of aging as a development, maturation, and gradual erosion of the living organism--we have sought to trace the changing employment and wage patterns of workers as they aged through time.

Our data suggest that "aging" and wage changes are not simple, monolithic processes. Instead, we have found that the changes in employment and in the wage credits of the employed cohort members can and have moved in opposing directions, depending on the age, sex, and customary level of wage credits. The 1954 recession, for example, affected the wage credits of women not at all; for men, the higher the level of wage credits PYE, 1951-57, the older were the workers whose wage credits were adversely affected.

The data also suggest that for some men, aging in the immediate preretirement years does not result in a climactic rise of wages. Instead, 8.5 percent of the men in our cohort aged 60-64 had average credits per year employed, 1951-57, of $1,200 or less; for 24.7 percent of the men, credits per year employed, 1951-57 averaged $2,400 or less. It also appears that for most of these workers, relative wage credits were quite low throughout the 1937-57 period, and throughout their entire working lifetimes (Table 15). For most workers, wage credit levels tend to be relatively constant throughout their lifetimes. For men and women workers in the lowest portions of the wage credit structure, our data suggest, the low level of credits is the result not only of relatively low wage credits when they are employed but of relatively low levels of employment. For these workers, an increased level of living, therefore, requires not only an increase in wage credits when employed, but also a substantial rise in employment.

Table 12: Female High-Paid Cohort*: INDICES OF ANNUAL EMPLOYMENT AND OF AVERAGE ANNUAL CREDITS OF EMPLOYED MEMBERS AND OF ENTIRE COHORT, 1951-57

Age in 1957, No. Employed, and Average Credits	Number of workers and average credits							Index (1951 = 100.0)					
	1951	1952	1953	1954	1955	1956	1957	1952	1953	1954	1955	1956	1957
Total:	Total												
Employed 1/	733	737	744	753	851	932	946	100.5	101.5	102.7	116.1	127.1	129.1
Employed, $	3,374	3,500	3,567	3,578	4,086	4,132	4,136	103.7	105.7	106.0	121.1	122.5	122.6
Cohort, $	2,614	2,727	2,805	2,848	3,676	4,071	4,136	104.3	107.3	109.0	140.6	155.7	158.2
Age:	20-24												
Employed	---	---	---	---	---	---	---	Not computed					
Employed, $	---	---	---	---	---	---	---						
Cohort, $	---	---	---	---	---	---	---						
Age:	25-29												
Employed	21	21	22	22	24	28	30	100.0	104.8	104.8	114.3	133.3	142.9
Employed, $	3,028	3,398	3,497	3,574	4,082	4,132	4,144	112.2	115.5	118.0	134.8	136.5	136.9
Cohort, $	2,120	2,379	2,564	2,621	3,266	3,857	4,144	112.2	120.9	123.6	154.1	181.9	195.5
Age:	30-34												
Employed	74	75	76	77	82	83	84	101.4	102.7	104.1	110.8	112.2	113.5
Employed, $	3,203	3,462	3,529	3,586	4,058	4,159	4,134	108.1	110.2	112.0	126.7	129.8	129.1
Cohort, $	2,822	3,091	3,193	3,287	3,961	4,109	4,134	109.5	113.1	116.5	140.4	145.6	146.5
Age:	35-39												
Employed	99	99	100	102	109	113	119	100.0	101.0	103.0	110.1	114.1	120.2
Employed, $	3,354	3,514	3,572	3,577	4,079	4,107	4,122	104.8	106.5	106.6	121.6	122.5	122.9
Cohort, $	2,790	2,923	3,002	3,066	3,736	3,900	4,122	104.8	107.6	109.9	133.9	139.8	147.7
Age:	40-44												
Employed	121	121	121	121	134	142	145	100.0	100.0	100.0	110.7	117.4	119.8
Employed, $	3,364	3,485	3,577	3,572	4,066	4,136	4,164	103.6	106.3	106.2	120.9	122.9	123.8
Cohort, $	2,807	2,908	2,985	2,981	3,758	4,050	4,164	103.6	106.3	106.2	133.9	144.3	148.3
Age:	45-49												
Employed	124	127	129	133	151	166	166	102.4	104.0	107.3	121.8	133.9	133.9
Employed, $	3,396	3,490	3,568	3,569	4,087	4,156	4,157	102.8	105.1	105.1	120.3	122.4	122.4
Cohort, $	2,537	2,670	2,773	2,860	3,718	4,156	4,157	105.2	109.3	112.7	146.6	163.8	163.9
Age:	50-54												
Employed	119	119	119	119	135	152	154	100.0	100.0	100.0	113.4	127.7	129.4
Employed, $	3,398	3,510	3,570	3,582	4,111	4,122	4,163	103.3	105.1	105.4	121.0	121.3	122.5
Cohort, $	2,626	2,712	2,759	2,768	3,604	4,068	4,163	103.3	105.1	105.4	137.2	154.9	158.5
Age:	55-59												
Employed	104	104	106	108	125	141	141	100.0	101.9	103.8	120.2	135.6	135.6
Employed, $	3,461	3,516	3,571	3,580	4,098	4,124	4,136	101.6	103.2	103.4	118.4	119.2	119.5
Cohort, $	2,553	2,593	2,685	2,742	3,633	4,124	4,136	101.6	105.2	107.4	142.3	161.5	162.0
Age:	60-64												
Employed	52	52	52	52	62	72	72	100.0	100.0	100.0	119.2	138.5	138.5
Employed, $	3,487	3,554	3,593	3,586	4,071	4,121	4,077	101.9	103.0	102.8	116.7	118.2	116.9
Cohort, $	2,518	2,567	2,595	2,590	3,506	4,121	4,077	101.9	103.1	102.9	139.2	163.7	161.9
Age:	65-69												
Employed	13	13	13	13	22	27	27	100.0	100.0	100.0	169.2	207.7	207.7
Employed, $	3,486	3,554	3,582	3,600	4,164	4,142	3,949	102.0	102.8	103.3	119.4	118.8	113.3
Cohort, $	1,678	1,711	1,725	1,733	3,393	4,142	3,949	102.0	102.8	103.3	202.2	246.8	235.3
Age:	70 and older												
Employed	6	6	6	6	7	8	8	100.0	100.0	100.0	116.7	133.3	133.3
Employed, $	3,597	3,600	3,600	3,600	4,188	4,058	4,042	100.1	100.1	100.1	116.4	112.8	112.4
Cohort, $	2,698	2,700	2,700	2,700	3,664	4,058	4,042	100.1	100.1	100.1	135.8	150.4	149.8

*Average credits of $3,600 or more PYE, 1951-57

1/ Detail will not add to total because ages of 6 cohort members were not known for specific years of employment.

Table 13: Female Cohorts: WAGE CREDIT DIFFERENTIALS OF EMPLOYED COHORT MEMBERS (Average Annual Credits of Employed Members of Lower-Paid Cohorts as a Percentage of Average Annual Credits of Employed Members of Two Highest-Paid Cohorts, 1951-57)

Age in 1957 and subcohorts		1951	1952	1953	1954	1955	1956	1957
Total	2 low-paid subcohorts....	41.1	40.1	39.7	39.0	36.9	38.3	36.4
	Low-paid[a]/.....	23.6	21.4	20.3	19.6	18.5	20.4	20.6
	Intermediate low-paid[b]/..	54.5	54.6	55.6	54.9	54.3	58.1	59.3
16-19	2 low-paid subcohorts....	30.6	8.3	7.0	7.3	17.9	24.0	26.6
	Low-paid[a]/.....	0.8	3.8	6.0	6.6	14.3	17.6	19.7
	Intermediate low-paid[b]/..	149.9	36.7	19.0	11.2	35.9	55.5	74.4
20-24	2 low-paid subcohorts....	42.5	35.3	34.9	37.8	41.2	45.9	41.9
	Low-paid[a]/.....	29.8	22.1	20.4	20.7	21.9	26.0	24.4
	Intermediate low-paid[b]/..	56	49.7	52.0	56.1	61.3	68.1	66.3
25-29	2 low-paid subcohorts....	48.9	47.3	44.8	45.3	41.5	43.1	39.2
	Low-paid[a]/.....	29.0	25.4	22.5	21.7	19.0	21.5	21.5
	Intermediate low-paid[b]/..	63.9	63.1	61.1	61.7	58.2	60.5	58.5
30-34	2 low-paid subcohorts....	44.4	41.2	40.3	39.1	36.8	38.4	36.8
	Low-paid[a]/.....	26.3	22.7	21.8	19.8	19.1	20.6	20.9
	Intermediate low-paid[b]/..	60.7	58.5	58.2	57.5	54.8	58.9	59.9
35-39	2 low-paid subcohorts....	42.2	39.4	41.0	38.1	37.4	39.5	37.5
	Low-paid[a]/.....	23.8	20.9	20.8	19.3	18.3	21.1	20.9
	Intermediate low-paid[b]/..	57.5	54.5	56.5	53.0	54.7	58.0	59.5
40-44	2 low-paid subcohorts....	42.1	41.3	41.9	39.2	38.9	39.8	38.6
	Low-paid[a]/.....	25.4	22.5	22.1	20.5	20.5	21.6	22.2
	Intermediate low-paid[b]/..	54.0	54.2	56.4	53.0	53.5	56.5	57.4
45-49	2 low-paid subcohorts....	43.4	42.9	42.4	43.1	40.8	41.5	40.2
	Low-paid[a]/.....	24.0	22.2	20.4	21.5	20.3	22.0	21.6
	Intermediate low-paid[b]/..	55.4	55.7	56.4	55.9	55.4	57.4	59.1
50-54	2 low-paid subcohorts....	43.0	44.0	42.8	42.4	39.1	40.4	38.3
	Low-paid[a]/.....	24.7	23.4	21.0	21.7	20.4	21.7	20.5
	Intermediate low-paid[b]/..	54.7	57.0	56.2	55.4	52.9	56.1	56.3
55-59	2 low-paid subcohorts....	42.6	45.1	44.7	43.9	40.0	40.5	38.6
	Low-paid[a]/.....	23.5	23.5	22.2	22.6	20.5	21.4	20.3
	Intermediate low-paid[b]/..	53.4	57.4	58.4	56.3	53.5	55.3	56.4
60-64	2 low-paid subcohorts....	43.1	43.0	43.5	42.7	40.4	39.0	36.1
	Low-paid[a]/.....	22.6	20.7	21.1	21.7	20.9	20.7	19.9
	Intermediate low-paid[b]/..	55.9	57.4	58.5	56.8	56.1	55.9	54.0
65-69	2 low-paid subcohorts....	45.6	46.2	44.4	42.9	36.5	33.6	30.9
	Low-paid[a]/.....	25.2	25.8	25.5	24.0	21.7	20.9	20.3
	Intermediate low-paid[b]/..	63.5	63.3	61.3	59.7	53.0	50.3	45.6
70 and over	2 low-paid subcohorts....	41.6	39.4	38.6	34.8	31.4	30.4	30.8
	Low-paid[a]/.....	29.1	25.2	24.2	20.4	18.8	20.3	19.7
	Intermediate low-paid[b]/..	57.4	58.3	57.7	53.6	51.4	46.4	50.3

Workers with average credits PYE, 1951-57, of:

a/ Less than $1,200

b/ $1,200 to $2,399

Table 14: Female Cohorts: WAGE CREDIT DIFFERENTIALS OF COHORT MEMBERS (Average Annual Credits of Members of Lower-Paid Cohorts as a Percentage of Average Annual Credits of Members of Two Highest-Paid Cohorts, 1951-57)

Age in 1957 and subcohorts		1951	1952	1953	1954	1955	1956	1957
Total	2 low-paid subcohorts....	28.0	29.5	31.1	31.3	31.1	33.9	36.4
	Low-paid[a]/.....	9.6	9.4	10.0	9.9	11.1	14.7	20.6
	Intermediate low-paid[b]/..	42.0	45.1	48.4	49.0	50.0	55.1	59.3
16-19	2 low-paid subcohorts....	1.0	1.0	3.3	10.5	13.1	16.1	26.6
	Low-paid[a]/.....	----	0.3	3.1	9.2	9.4	10.3	19.7
	Intermediate low-paid[b]/..	5.0	5.2	5.2	18.3	32.0	44.9	74.4
20-24	2 low-paid subcohorts....	27.9	28.3	29.8	31.6	36.6	41.4	41.9
	Low-paid[a]/.....	16.6	14.9	15.5	14.3	15.6	19.9	24.4
	Intermediate low-paid[b]/..	40.2	42.9	46.7	50.1	58.4	65.3	66.3
25-29	2 low-paid subcohorts....	41.1	39.8	38.1	37.1	35.2	37.5	39.2
	Low-paid[a]/.....	18.3	15.4	13.7	12.2	11.7	14.7	21.5
	Intermediate low-paid[b]/..	58.3	57.5	55.9	54.4	52.7	55.9	58.5
30-34	2 low-paid subcohorts....	31.4	30.2	30.3	29.6	29.5	33.1	36.8
	Low-paid[a]/.....	12.9	11.8	12.0	10.7	11.6	14.9	20.9
	Intermediate low-paid[b]/..	48.1	47.3	48.0	47.5	47.7	54.1	59.9
35-39	2 low-paid subcohorts....	28.9	29.0	31.5	30.3	31.1	34.9	37.5
	Low-paid[a]/.....	11.3	10.4	10.2	10.1	11.2	15.1	20.9
	Intermediate low-paid[b]/..	43.5	44.1	47.9	46.3	49.2	54.7	59.5
40-44	2 low-paid subcohorts....	31.5	32.9	34.7	33.0	33.5	36.1	38.6
	Low-paid[a]/.....	13.0	11.7	12.7	11.9	13.1	16.5	22.2
	Intermediate low-paid[b]/..	44.6	47.4	50.8	48.5	49.7	54.1	57.4
45-49	2 low-paid subcohorts....	35.1	36.4	38.3	38.9	37.2	38.4	40.2
	Low-paid[a]/.....	13.0	12.5	12.5	12.3	14.0	17.3	21.6
	Intermediate low-paid[b]/..	48.8	51.3	54.7	54.7	53.8	55.7	59.1
50-54	2 low-paid subcohorts....	35.0	37.5	38.5	38.1	35.9	37.2	38.3
	Low-paid[a]/.....	13.9	13.5	12.4	13.1	14.5	17.2	20.5
	Intermediate low-paid[b]/..	48.6	52.8	54.6	53.9	51.7	54.0	56.3
55-59	2 low-paid subcohorts....	36.0	40.1	41.6	41.5	36.8	37.4	38.6
	Low-paid[a]/.....	12.7	13.4	14.1	14.0	14.3	16.5	20.3
	Intermediate low-paid[b]/..	49.3	55.4	58.5	57.6	52.4	53.6	56.4
60-64	2 low-paid subcohorts....	37.9	40.5	41.7	41.7	39.0	38.0	36.1
	Low-paid[a]/.....	12.2	12.3	13.3	13.9	15.7	17.2	19.9
	Intermediate low-paid[b]/..	53.8	58.7	60.8	60.3	57.8	57.3	54.0
65-69	2 low-paid subcohorts....	46.9	49.4	48.6	48.2	37.3	31.9	30.9
	Low-paid[a]/.....	18.2	18.8	19.9	19.2	19.2	19.2	20.3
	Intermediate low-paid[b]/..	72.0	75.2	74.1	74.0	57.5	48.5	45.6
70 and over	2 low-paid subcohorts....	42.2	39.1	38.3	34.5	28.2	28.8	30.8
	Low-paid[a]/.....	24.0	20.7	19.8	16.6	15.9	18.1	19.7
	Intermediate low-paid[b]/..	65.4	63.5	62.8	58.0	47.9	45.8	50.3

Workers with average credits PYE, 1951-57, of:

a/ Less than $1,200

b/ $1,200 to $2,399

Table 15: Male Cohort: AVERAGE CREDITS PER ELAPSED YEAR, 1937-50 and 1951-57

Age in 1957	Average Credits Per Year Employed, 1951-57							
	Under $1,200		$1,200-$2,399		$2,400-$3,599		$3,600 & over	
	1937-1950 (1)	1951-1957 (2)	1937-1950 (1)	1951-1957 (2)	1937-1950 (1)	1951-1957 (2)	1937-1950 (1)	1951-1957 (2)
Total..	$ 88	$ 352	$ 313	$1,390	$ 711	$2,701	$1,507	$3,666
1-15.....	---	49	---	524	1,146	2,486	---	---
16-19.....	---	170	---	606	---	964	---	1,144
20-24.....	1	431	5	1,213	20	2,189	41	2,449
25-29.....	67	463	128	1,317	226	2,469	379	3,233
30-34.....	165	479	299	1,516	430	2,715	696	3,638
35-39.....	224	483	393	1,565	619	2,774	1,085	3,649
40-44.....	267	463	513	1,558	901	2,834	1,553	3,680
45-49.....	284	463	652	1,617	1,081	2,872	1,850	3,739
50-54.....	291	470	704	1,640	1,215	2,904	2,001	3,719
55-59.....	346	460	736	1,656	1,411	2,929	2,140	3,742
60-64.....	401	481	819	1,673	1,456	2,990	2,112	3,681
65-69.....	344	528	843	1,617	1,596	2,913	2,184	3,681
70 and over.	600	488	1,035	1,535	1,571	2,854	2,068	3,554

Table 16: Female Cohort: AVERAGE CREDITS PER ELAPSED YEAR, 1937-50 and 1951-57

Age in 1957	Average Credits Per Year Employed, 1951-57							
	Under $1,200		$1,200-$2,399		$2,400-$3,599		$3,600 & over	
	1937-1950 (1)	1951-1957 (2)	1937-1950 (1)	1951-1957 (2)	1937-1950 (1)	1951-1957 (2)	1937-1950 (1)	1951-1957 (2)
Total..	$ 107	$ 357	$ 303	$1,421	$ 650	$2,666	$1,124	$3,268
1-15.....	---	32	---	939	---	---	---	---
16-19.....	---	141	---	543	56	1,087	---	---
20-24.....	3	395	2	1,236	13	2,146	---	---
25-29.....	76	413	144	1,508	222	2,669	338	2,993
30-34.....	181	400	333	1,466	586	2,764	805	3,514
35-39.....	188	376	355	1,426	696	2,720	1,014	3,363
40-44.....	186	429	381	1,463	725	2,706	1,107	3,379
45-49.....	179	431	411	1,541	796	2,681	1,133	3,267
50-54.....	157	438	436	1,515	830	2,672	1,264	3,243
55-59.....	153	443	494	1,578	898	2,720	1,305	3,209
60-64.....	163	436	572	1,637	997	2,720	1,367	3,139
65-69.....	169	489	565	1,553	1,002	2,499	794	2,619
70 and over.	241	529	622	1,537	871	2,650	1,918	3,223

MR. FARBER'S REJOINDER TO COMMENTS OF THE DISCUSSANTS

Messrs. Miller and Wernick apparently agree that, in Mr. Miller's words, "the results of... /my/ study are often treated as though they represent the entire universe instead of a segment of it." Mr. Wernick expresses the hope that findings uncovered in my paper be reconciled with other existing data. To some extent this was attempted in the discussion of wage credit differentials, a subject to which I shall address myself in a moment.

In a larger sense, however, I believe this type of criticism to be irrelevant. The universe in a cohort study is multi-dimensional -- it has both a temporal and a worker-population paramater. Changes in the level of employment of the cohort, and in the wage credits of the employed members -- and the interactional effects of these two variables on the average credits of the entire cohort -- are measured for each of the seven successive years in the 1951-57 period. Since membership in the cohort was based on employment in 1957 in work covered by the Social Security Act, but the employment and wage credit histories (concededly only in "covered" employment) of the cohort encompass the entire 1951-57 period, defining just these two time dimensions of the universe presents difficulties. Discussion of these problems at this meeting would be time consuming, and because of the undeveloped state of the art of cohort analysis, would probably contribute relatively little to our knowledge. While I do not pretend to have entirely defined the universe of a cohort sample, I am certain that a theoretical discussion of this magnitude could not possibly be presented within the confines of my allotted time -- certainly not if I wished to present any of the findings disclosed by my study.

On this subject I am content merely to note briefly some of the theoretical difficulties, perhaps even the theoretical impossibility, of reconciling inferences based on cross-sectional trends with findings based on longitudinal or cohort data. While I am aware that such inferences, in fact, have been made, I am not persuaded that the results of a longitudinal analysis can reasonably be expected to be consistent with trends disclosed by cross-sectional comparisons. If longitudinal inferences can be successfully drawn from cross-sectional comparisons there is little need to undertake any longitudinal analysis. Furthermore, as we shall see in a moment, comparison of cross-sectional income or wage data for different time periods involves problems of defining the universe which are even more difficult and more complex than those involved in defining the universe for a cohort sample.

* * *

Some of the problems which the discussants found in the analysis, I believe, result from a misunderstanding of the research design on which the study is based. Basically, my paper compares the employment and wage credit histories of identical age groups in each of the 4 wage subcohorts. Thus, in the comparisons, age and aging, are held constant. The relative impact of changes in two variables -- employment of the cohort and the wage credits of the employed cohort members -- on the wage credits of the entire cohort are distinguished from the effects of age and aging, the precise changes in these two variables is measured separately, and the effects of these changes -- both jointly and singly -- on the average credits of the entire subcohort are indicated.

Much of Mr. Miller's criticism, it appears to me, is therefore irrelevant. It is based on the erroneous assumption that each of the tables -- and each of the indices for a given age group -- are to be considered separately, and their reasonableness evaluated against findings from cross-sectional data. Precisely because, as Mr. Miller points out, Social Security wage data are circumscribed by limitations of coverage and by taxable limits, my paper compares the joint effects of changes in the employment and wage experience of the higher-paid subcohorts with those of the lower paid subcohorts. The significance of this study, therefore, should be judged on the basis of the inter-cohort comparisons, not, as Mr. Miller assumes, on a comparison of the longitudinal data for one cohort, or of one of the indices for a given cohort, with trends disclosed by separate cross-sectional studies of employment or wages.

These comparisons can be made most conveniently by referring to the changes disclosed by the indices in the several tables. In 1954, for example, for 25-29 year old men in the highest paid cohort, the index of employment was 123.2; the index of wage credits of employed members of the cohort was 108.6. For men in this cohort aged 50-54, the 1954 index of employment was 100.5; and of average credits of employed cohort members, 101.1. Because the employment index of the younger cohort for 1954 rose 6 index points above the 1953 level, while the index of credits of employed members of this age-wage cohort remained stable, the index of average credits of this age cohort rose from 127.0 in 1953 to 134.0 in 1954. For 50-54 year old men in the highest paid cohort, however, the indices of average credits of the entire cohort were unchanged, because the indices of employment and of the credits of the employed members were stable in both 1953 and 1954 (Table 6).

If we compare these data with those for low paid males of identical age by disaggregating the effects of changes in the two variables, an entirely different picture emerges. For the 25-29 year old group, the indices reveal a decline in the number of employed subcohort members which, when coupled with a decline in the average credits of its employed members forced the index of average credits of the entire cohort some 6.8 index points below, the 1953 level. For the lowest paid men aged 50-54, the decline in the employment index was not as severe as in the case of the 25-29 year old men, but because the index of average credits of the employed subcohort fell from 94.1 in 1953 to 74.3 in 1954, the index of average credits of the entire cohort declined by more than 21 index points. For men aged 50-54, therefore, the 1954 recession had an adverse effect on the wage credits of the lowest paid cohort, but had no adverse effects on the highest paid cohort.

Thus, disaggregation -- one of Mr. Wernick's desiderata -- is not only possible in the analysis of cohort data, but is actually accomplished in the study. Far from being a mere identification, as Mr. Miller believes, age of a particular subcohort is used to demonstrate, for example, that the age at which a worker "ages" or becomes "old," in terms of demand for his services, tends to vary with his status in the wage structure. Higher paid workers, the data indicates, were adversely affected by the 1954 recession at an older age than were the lower paid workers.

My critics also challenge the finding that wage credit differentials narrowed in the 1951-57 period. Mr. Miller would attribute this finding to the limitations of the maximum taxable limit on wages subject to Social Security taxation, and to a certain naivete in the analysis. Mr. Wernick's critique suggests that I cite sources for the statement that this finding is consistent with the findings of other labor economists. So be it: Citation No. 1. In the Evolution of Wage Structure, by Lloyd Reynolds and Cynthia Taft, published in 1956, the authors note that

> "Most types of wage differential have tended to narrow, not only in the United States but in other countries." (p. 194)

Citation No. 2. Clark Kerr, in Dunlop's the Theory of Wage Determination, published in 1957, also indicates that occupational differentials have been much reduced, and firm wage differentials have also been reduced or occasionally eradicated, as have industry wage differentials. Lastly, I cite Mr. Miller's Technical Paper No. 8, Trends in the Income of Families and Persons in the United States: 1947 to 1960, published in 1963 by the U. S. Bureau of the Census. Tables A and B below, based on Tables A and B in Technical Paper No. 8, indicate that in 1951 families in the lowest income stratum (the classification scheme is Mr. Miller's) were 5-3/4 times as numerous as those in the highest income stratum. In each succeeding year, this ratio declined, until by 1957, the lowest income families were somewhat less than 2-1/2 times as numerous as those in the highest income stratum (Table A). A similar trend is revealed by the data for unrelated individuals, as shown in Table B. Mr. Miller's data, therefore, although they relate to income rather than to wage trends, tend to support the conclusion that wage differentials in fact did narrow during the 1951-57 period.

Table A: Number and Proportion of Families, By Total Money Income in Constant (1959) Dollars

Families, by Total Money Income	Year						
	1951	1952	1953	1954	1955	1956	1957
Number: (000)							
Total	40,442	41,020	------	41,934	42,843	43,445	43,714
$10,000 and over	2,165	2,374	------	3,152	3,563	4,350	4,187
Under $3,000	12,470	12,034	------	12,012	11,074	10,247	10,296
$3,000 - $4,999	13,360	12,935	------	11,915	11,502	10,768	10,678
$5,000 - $9,999	12,447	13,677	------	14,885	16,704	18,080	18,553
As Percent of Number of "$10,000 and over" Families							
Under $3,000	576.0	506.9	------	381.1	310.8	235.6	245.9
$3,000 - $4,999	617.1	544.9	------	378.0	322.8	247.5	255.0
$5,000 - $9,999	574.9	576.1	------	472.2	468.8	415.6	443.1

Based on Table A, Trends in the Income of Families and Persons in the United States: 1947 to 1960. Technical Paper No. 8, U. S. Government Printing Office, Washington, D. C., 1963, pp. 6-11.

Table B: Number and Proportion of Unrelated Individuals by Total Money Income in Constant (1959) Dollars

Unrelated Individuals	Year						
	1951	1952	1953	1954	1955	1956	1957
Number: (000)							
Total	9,015	9,774	-----	9,623	9,766	9,658	10,313
$5,000 or more	450	680	-----	684	750	918	1,125
Under $1,000	3,757	3,542	-----	3,950	3,720	3,549	3,669
$1,000 - $2,999	3,108	3,707	-----	3,325	3,481	3,379	3,603
$3,000 - $4,999	1,700	1,845	-----	1,664	1,815	1,812	1,916
As Percent of Number of "$5,000 or more" Individuals							
Under $1,000	834.9	520.9	-----	577.5	496.0	386.6	326.1
$1,000 - $2,999	690.7	545.2	-----	486.1	464.1	368.1	320.3
$3,000 - $4,999	377.8	271.3	-----	243.3	242.0	197.4	170.3

Based on Table B, Trends in the Income of Families and Persons in the United States: 1947 to 1960. Technical Paper No. 8, U. S. Government Printing Office, Washington, D. C., 1963, pp. 6-11.

I conclude with a brief reference to Mr. Miller's dismissal of Social Security data, of cohort data in general, and to his insistence that these wage data should be inflated to reflect average total wages rather than average taxable wage credits. I believe this to be a species of guessing which can distort real data. In Technical Paper No. 8 Mr. Miller abides by his own precepts, and utilizes the Consumer Price Index to estimate "real" income for the income groups into which he classifies the families and unrelated individuals in his study. Although he cautions that "the same index was used for all groups because separate price indices have not been developed for various income levels," he nonetheless utilizes the Consumer Price Index, regardless of the possibility that prices of food or of medical services may have increased at a faster rate for low income groups than for the high income groups, or that an increase in these prices may have a more significant effect on the "real" income of the low income group than on the high income group. This procedure, it seems to me, provides the appearance, but not the substance, of precision. Mrs. Selma Goldsmith, noted that "Income for a single year is not a satisfactory measure of income inequality"; that failure to develop cost-of-living indices appropriate for various income groups means "that we cannot measure with precision changes in the distribution of real income." Finally, in judging the value of cohort analysis, I urge Mr. Miller to reconsider his judgment in the light of one other comment made by Mrs. Goldsmith:

> "When we compare income shares of a given quintile or the top 5 percent in two periods, we are not comparing what has happened to an identical group of families, because the families comprising the quintile may be quite different in the two periods. For certain purposes, as for example, in interpreting the change in the income share of the top quintile...over, say, a five-to-ten-year time span, it would be extremely helpful to know the extent to which the families comprising the top sector differed in the terminal periods."[1/]

To end this rejoinder, I refer again to the problem raised by Mr. Miller. But this time, I ask him, "What is the universe when we compare cross-sectional income data for two different time periods?"

Despite Mr. Miller's observation concerning the limitations of unadjusted cohort wage data based on Social Security records, precise and disaggregated measurement of changes through time for an identical sample are possible. Can Mr. Miller claim the same for his cross-sectional data?

It appears to me that Mr. Perlman's comments are completely correct. No set of statistics is without limitations. Our knowledge of wage and employment changes is sufficiently meager -- and our insights so few -- that it takes a brave man indeed to point the finger and say, "This is useless."

1/ The quotations attributed to Mrs. Goldsmith may be found in her article, "Changes in the Size Distribution of Income," American Economic Review, May 1957, p. 511.