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Aspects of Income Changes

When the output of an economy is curtailed, total real incomes decline; that is to say, the population has fewer goods and services at its disposal. Since a general contraction in output is usually accompanied by a decline in prices, the level of money incomes falls even more than that of real incomes. A striking example is the marked decline of average family incomes, in dollars, during the Great Depression after 1929. By 1933 the average income of more than 200,000 families sampled by the Financial Survey of Urban Housing in 33 large and middle-size cities had fallen 37 per cent.

Of course, the income of each family in the United States did not decline by the same percentage. Family incomes are composed of money receipts from many different sources, subject to varying rates of change during economic fluctuations; e.g., between 1929 and 1933 total income from dividends declined 60 per cent, from wages and salaries 45 per cent, and from interest 11 per cent; national income originating in mining 73 per cent, in manufacturing 67 per cent, and in government 16 per cent.[1]

Clearly, a change in income must reflect the special conditions affecting the occupational, industrial, and social group to which a family belongs. Differences in its composition, in the age of its members, their health, race, where they live, further complicate the variegated picture of family income trends; and the mass of unclassifiable circumstances we are accustomed to call chance make each income history virtually unique. Thus, behind the averages lie a vast number of divergent changes in the incomes of individual families. For instance, in Cleveland, Ohio, where the average yearly income of a sample of 52,000 families dropped from about $2,100 in 1929 to about $1,200 in 1933, 5 families with 1929 incomes of less than $250 reported 1933 incomes in excess of $7,500, and 25 families with 1929 incomes of more than $7,500 reported 'no income' in 1933.

The divergent changes in individual incomes cause changes in the distribution of income, by size, during cyclical fluctuations and shifts in income rank. These changes in distribution and shifts in rank are the subject matter of this study.

[1] Simon Kuznets, *National Income and Its Composition, 1919–1938* (National Bureau of Economic Research, 1941), I, Tables 12 and 22.

The first question relates to the external features of income distribution in different years: what changes occur in the shares of total income received by members of different income groups? We work chiefly with the concept of income dispersion among the population—absolute dispersion of dollar incomes of different sizes, and relative dispersion, or inequality, measured in units of the prevailing average income of the population. Measures of income dispersion are determined for each year and compared from year to year.

The second question relates to the internal changes in distribution from one year to another: how stable is the relative income status of particular families? Do they hold, improve, or lose their position in the income distribution? How do the families in certain income groups during one year fare in the process of income change?

Both problems are of considerable interest in connection with tax and social policy, and estimates of consumption and savings. Information on the total or average income of a population is essential in estimating tax revenue, aggregate savings, and so forth; but for many purposes it is insufficient. If, for instance, total individual savings are to be closely approximated, we need more than information on total individual income. For a certain range of income, savings can be estimated with the help of a quadratic function of income.[2] Obviously if in addition to total income the standard deviation of the income distribution is known, estimates of savings can be much more accurate.

The relation between incomes and savings will differ for two hypothetical societies, one in which the relative position of individuals in the income distribution changes very little from year to year, and another in which the poor of year 1 become—and expect to become—the rich of year 2, and vice versa. Let us assume that the level and shape of the distribution remain constant over time. The unstable society is likely to have a 'steeper' income-savings curve than the stable, i.e., larger dissavings of the poor and larger savings of the rich. The greater and more dependable the stability of the relative income status of individuals, the greater the proportion of current expenditures likely to be financed out of current income, and the smaller the saving likely to be undertaken for the purpose of financing consumption expenditures in the near future. A society in which individuals can expect to find themselves in rapid succes-

[2] Horst Mendershausen, 'Differences in Family Savings between Cities of Different Size and Location, Whites and Negroes', *Review of Economic Statistics*, Aug. 1940.

sion at the top, then at the bottom, and then again at the top of the income pyramid will presumably show considerable dissavings of those temporarily poor, counterbalanced to some extent by large savings of those temporarily rich.

In this study we are concerned with short period fluctuations in the distribution of income by size. Our main source of information, the Financial Survey of Urban Housing, supplies income data for two years, 1929 and 1933, which represent extremes of a violent swing in economic activity. We can establish changes in income distribution between the year marking the peak of the boom and the year marking the bottom of the depression. Our interest in this period, however, is not purely historical. We seek also a basis for evaluating the changes in distribution that may be expected in other depressions.

To get a broader basis for judgment we observed the changes in income distribution during other periods of declining business activity and of recovery as well. Some of the conclusions derived from the Financial Survey were checked against income tax statistics for the United States, Wisconsin, and Delaware; earnings data collected by the Social Security Board, and German income and wage tax data (App. A 1). Before the results are discussed, the income data are described briefly.

Character of Data Used

The Financial Survey of Urban Housing was a Civil Works Administration project sponsored by the Department of Commerce. From February to May 1934 field agents submitted questionnaires to the inhabitants of dwelling units (conveniently called families) in 61 large and middle-size cities.[3]

Each city sample of completed questionnaires consists of two subsamples: returns obtained through personal interview and returns obtained by mail, i.e., prepared by the family without the help of an agent. The questionnaires asked for the total family income in 1929 and 1933 as the sum of "income from wages or salary", "in-

[3] The family concept used by the Financial Survey was not clearly defined in the instructions issued to enumerators. In the absence of a specific definition of the family proper, both enumerators and persons interviewed presumably applied common sense concepts, such as the group of persons linked by blood, marriage, or adoption, and sharing living quarters. The 'family' may have consisted of one or more individuals. Instructions were definite as to the exclusion from the family proper of roomers, lodgers, and servants.

come from lodgers and roomers", and "other income including net income from investments" earned by members of the family proper.[4]

The questionnaires did not specifically mention other income items, or suggest ways of treating income in kind or capital gains and losses. In the absence of a sharp definition of income, the meaning of the replies is not altogether clear; but it seems reasonable to assume that the concept of income generally applied embraced the following: money received from work, capital investment and other services, and relief. No effort was made to get exact figures. The income data give a rough picture of *family cash receipts.*

The sampling procedure was planned as follows: [5] the enumerators were to approach each family in a specified number of city blocks. Every tenth block (in cities of 50,000 inhabitants or less, every seventh block) was to be canvassed by personal interview. In addition, in four other blocks out of each group of ten, each family was to be supplied with questionnaires to return by mail. Apart from the rule that the various 'personal-enumeration' blocks and 'mail-return' blocks must not be adjacent, district supervisors were free to select the blocks to canvass. In addition, they were supposed to canvass more than the required number of blocks whenever they felt this would render the sample "more representative". In some cities, however, limitations of time and money caused the local authorities to canvass fewer blocks or properties than the basic rule required. In areas outside city limits it was prescribed that one out of every group of ten properties be covered by personal enumeration, and four others supplied with questionnaires for mail returns.

Many returns were rejected in subsequent editing because they lacked information on the name of the state, the type of building, the market value, or annual rental bill if the dwelling was rented, or the number of persons living in the unit. For 33 cities the rejections amount to 10 per cent of the personal-enumeration question-

[4] The instructions to enumerators were little more explicit. Total income was defined as "all wages and salaries earned by all members of the family during the years indicated, allowing for periods of unemployment and part time work, as well as changes in number of persons from year to year", *plus* "amount received for the use of rooms by persons who are not members of the family proper", *plus* "any net income received from investments, from rental of a garage, from relatives, relief agencies, or any other sources".

[5] D. L. Wickens, 'The Financial Survey of Urban Housing', *Studies in Income and Wealth,* Vol. Five, Part II (Conference on Research in Income and Wealth, 1943, mimeographed).

naires and 28 per cent of the mail returns.[6] Some, but not all, of the rejected schedules contain information on income.

Some accepted schedules do not contain information on family income for either of the two base years (*the nonreporting sample*). The remaining *usable sample* consists of two types of schedules: those with information on income in one year only (*half-reporting sample*),[7] and those with information on income for both 1929 and 1933 (*identical sample*). The aggregate sample was composed of: Usable (identical + half-reporting) + Nonreporting + Rejected (with and without income data). Although interested primarily in the identical samples, we made some use of data on the usable samples and the schedules in the rejected samples that contain income data (see Ch. 3).

Through the courtesy of the Department of Commerce, the National Bureau of Economic Research obtained tabulations of the usable samples, and of the rejected samples with income data, for 33 cities. For each city separate tabulations were made for tenants and owner-occupants (henceforth called owners in the text). Thus we had four basic tables for each city: [8]

Sample of tenants by	Sample of owners by
Personal enumeration	Personal enumeration
Mail return	Mail return

The Financial Survey covered sizable fractions of the city populations. The aggregate samples comprise between 5 and 49 per cent, the identical samples between 3 and 48 per cent, of the occupied

[6] *Ibid.*, Table 1.

[7] The half-reporting sample consists of two groups: (1) families reporting a 1933 income but (a) failing to report a 1929 income or (b) furnishing evidence that they were not in existence as families in 1929, and (2) families reporting a 1929 income but failing to report a 1933 income. Group 2 is very small. In none of the 10 cities treated in this volume did it comprise more than 1 per cent of the families in the usable sample (see Table 1).

[8] In each table the families of the identical sample are cross-classified according to their incomes in 1929 and 1933. In addition, the table shows the half-reporting sample for 1929 and 1933 and the mean and total incomes in 1929 and 1933 of all families reporting 1929 income. The families in the rejected sample that furnished income data for 1933 were tabulated separately, classified according to 1933 income.

These tables contain the bulk of the Financial Survey material used in this analysis. Supplementary information was obtained from the *Financial Survey of Urban Housing* (Department of Commerce, Washington, D. C., 1937), from direct communications with the Department of Commerce, and from D. L. Wickens, *Residential Real Estate* (National Bureau of Economic Research, 1941). The original tables were completed and rearranged for the purposes of this study. The procedure is discussed in Appendix A 2 and the final tables for each city are presented in Appendix B.

TABLE 1

Number of Families in Samples

Financial Survey

CITY & AREA COVERED BY FINANCIAL SURVEY[1]	NON-REPORTING	HALF-REPORTING 1929	HALF-REPORTING 1933	IDENTICAL	USABLE[2] (2)+(3)+(4)	REJECTED Total	REJECTED With information on 1933 income	AGGREGATE (1)+(5)+(6)	CITY FAMILY POPULATION[3]	AGGREGATE SAMPLE AS A % OF POPULATION (8)÷(9)	USABLE SAMPLE AS A % OF AGGREGATE SAMPLE (5)÷(8)	IDENTICAL SAMPLE AS A % OF USABLE SAMPLE (4)÷(5)	IDENTICAL SAMPLE AS A % OF POPULATION (4)÷(9)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Atlanta, M.D.	197	38	1,431	12,151	13,620	4,601	2,386	18,418	95,582	19.3	73.9	89.2	12.7
Tenants	6	23	1,210	8,304	9,537	3,800	2,016	13,343	68,702	19.4	71.5	87.1	12.1
Owner-occ.	191	15	221	3,847	4,083	801	370	5,075	26,880	18.9	80.5	94.2	14.3
Butte, C.P.	15	16	224	3,745	3,985	336	265	4,336	10,727	40.4	91.9	94.0	34.9
Tenants	1	10	208	1,791	2,009	323	255	2,333	6,643	35.1	86.1	89.1	27.0
Owner-occ.	14	6	16	1,954	1,976	13	10	2,003	4,084	49.0	98.7	98.9	47.8
Birmingham, M.D.	101	18	623	10,427	11,068	1,557	723	12,726	101,721	12.5	87.0	94.2	10.3
Tenants	4	5	537	6,632	7,174	1,140	556	8,318	74,498	11.2	86.2	92.4	8.9
Owner-occ.	97	13	86	3,795	3,894	417	167	4,408	27,223	16.2	88.3	97.5	13.9
Boise, C.P.	30	1	193	2,198	2,392	347	189	2,769	6,477	42.8	86.4	91.9	33.9
Tenants	0	1	144	969	1,114	265	137	1,379	3,567	38.7	80.8	87.0	27.2
Owner-occ.	30	0	49	1,229	1,278	82	52	1,390	2,910	47.8	91.9	96.2	42.2
Cleveland, M.D.	963	240	6,221	42,098	48,559	11,713	5,339	61,235	319,181	19.2	79.3	86.7	13.2
Tenants	48	87	5,104	22,246	27,437	6,941	2,920	34,426	196,352	17.5	79.7	81.1	11.3
Owner-occ.	915	153	1,117	19,852	21,122	4,772	2,419	26,809	122,829	21.8	78.8	94.0	16.2
Dallas, C.P.	158	12	925	5,956	6,893	2,798	1,484	9,849	71,274	13.8	70.0	86.4	8.4
Tenants	5	2	768	3,056	3,826	2,015	1,119	5,846	48,069	12.2	65.4	79.9	6.4
Owner-occ.	153	10	157	2,900	3,067	783	365	4,003	23,205	17.3	76.6	94.6	12.5
Des Moines, C.P.	159	42	960	5,379	6,381	1,768	926	8,308	41,603	20.0	76.8	84.3	12.9
Tenants	4	10	677	2,427	3,114	1,100	574	4,218	23,290	18.1	73.8	77.9	10.4
Owner-occ.	155	32	283	2,952	3,267	668	352	4,090	18,313	22.3	79.9	90.4	16.1

Erie, C.P.	160	38	706	5,149	5,893	1,395	663	7,448	29,080	25.6	79.1	87.4	17.7
Tenants	1	5	538	2,384	2,927	791	345	3,719	16,673	22.3	78.7	81.4	14.3
Owner-occ.	159	33	168	2,765	2,966	604	318	3,729	12,407	30.1	79.5	93.2	22.3
Indianapolis, C.P.	201	40	936	4,816	5,792	3,610	800	9,603	110,416	8.7	60.3	83.1	4.4
Tenants	3	10	744	2,456	3,210	2,755	485	5,968	73,188	8.2	53.8	76.5	3.4
Owner-occ.	198	30	192	2,360	2,582	855	315	3,635	37,228	9.8	71.0	91.4	6.3
Lansing, C.P.	35	7	184	1,901	2,092	455	261	2,582	20,815	12.4	81.0	90.9	9.1
Tenants	1	2	133	841	976	315	201	1,292	11,468	11.3	75.5	86.2	7.3
Owner-occ.	34	5	51	1,060	1,116	140	60	1,290	9,347	13.8	86.5	95.0	11.3
Lincoln, C.P.	88	9	372	2,541	2,922	688	345	3,698	23,242	15.9	79.0	87.0	10.9
Tenants	4	1	258	1,032	1,291	396	194	1,691	12,572	13.5	76.3	79.9	8.2
Owner-occ.	84	8	114	1,509	1,631	292	151	2,007	10,670	18.8	81.3	92.5	14.1
Little Rock, C.P.	128	20	521	3,941	4,482	2,092	703	6,702	20,191	33.2	66.9	87.9	19.5
Tenants	3	6	427	2,179	2,612	1,500	475	4,115	13,045	31.5	63.5	83.4	16.7
Owner-occ.	125	14	94	1,762	1,870	592	228	2,587	7,146	36.2	72.3	94.2	24.7
Minneapolis, C.P.	265	41	1,862	14,635	16,538	2,770	1,259	19,573	127,832	15.3	84.5	88.5	11.4
Tenants	3	11	1,455	7,815	9,281	1,274	485	10,558	75,761	13.9	87.9	84.2	10.3
Owner-occ.	262	30	407	6,820	7,257	1,496	774	9,015	52,071	17.3	80.5	94.0	13.1
Oklahoma City, C.P.	126	20	794	5,698	6,512	1,990	1,248	8,628	44,302	19.5	75.5	87.5	12.9
Tenants	4	11	635	3,044	3,690	1,559	1,038	5,253	28,313	18.6	70.2	82.5	10.8
Owner-occ.	122	9	159	2,654	2,822	431	210	3,375	15,989	21.1	83.6	94.0	16.6
Peoria, C.P.	108	18	632	4,312	4,962	1,117	619	6,187	26,101	23.7	80.2	86.9	16.5
Tenants	1	3	462	1,864	2,329	599	323	2,929	13,759	21.3	79.5	80.0	13.5
Owner-occ.	107	15	170	2,448	2,633	518	296	3,258	12,342	26.4	80.8	93.0	19.8
Portland, Me., C.P.	84	6	542	3,573	4,121	1,115	617	5,320	19,689	27.0	77.5	86.7	18.1
Tenants	4	4	467	2,282	2,753	690	384	3,447	13,774	25.0	79.9	82.9	16.6
Owner-occ.	80	2	75	1,291	1,368	425	233	1,873	5,915	31.7	73.0	94.4	21.8
Portland, Ore., C.P.	217	28	971	7,872	8,871	1,771	1,063	10,859	96,225	11.3	81.7	88.7	8.2
Tenants	1	9	675	3,338	4,022	950	615	4,973	52,894	9.4	80.9	83.0	6.3
Owner-occ.	216	19	296	4,534	4,849	821	448	5,886	43,331	13.6	82.4	93.5	10.5
Providence, M.D.	146	27	1,021	7,988	9,036	2,337	1,153	11,519	170,175	6.8	78.4	88.4	4.7
Tenants	5	3	839	5,045	5,887	1,520	770	7,412	108,127	6.9	79.4	85.7	4.7
Owner-occ.	141	24	182	2,943	3,149	817	383	4,107	62,048	6.6	76.7	93.5	4.7

TABLE 1 (concl.)

CITY & AREA COVERED BY FINANCIAL SURVEY[1]	NON-REPORTING	HALF-REPORTING		IDENTICAL	USABLE[2] (2)+(3)+(4)	REJECTED		AGGREGATE (1)+(5)+(6)	CITY FAMILY POPULATION[3]	AGGREGATE SAMPLE AS A % OF POPULATION (8)÷(9)	USABLE SAMPLE AS A % OF AGGREGATE SAMPLE (5)÷(8)	IDENTICAL SAMPLE AS A % OF	
		1929	1933			Total	With information on 1933 income					USABLE SAMPLE (4)÷(5)	POPULATION (4)÷(9)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Racine, C.P.	107	28	548	3,767	4,343	1,541	714	5,791	17,952	32.3	75.0	86.7	21.0
Tenants	105	22	148	1,486	1,656	686	328	2,447	9,384	26.1	67.7	89.7	15.8
Owner-occ.	2	6	400	2,281	2,687	655	386	3,344	8,568	39.0	80.4	84.9	26.6
Richmond, C.P.	96	17	845	5,456	6,318	1,268	502	7,682	45,673	16.8	82.2	86.4	11.9
Tenants	5	4	693	3,474	4,171	820	296	4,996	31,753	15.7	83.5	83.3	10.9
Owner-occ.	91	13	152	1,982	2,147	448	206	2,686	13,920	19.3	79.9	92.3	14.2
Sacramento, C.P.	75	14	476	3,946	4,436	750	478	5,261	28,021	18.8	84.3	89.0	14.1
Tenants	2	4	357	1,805	2,166	411	287	2,579	17,201	15.0	84.0	83.3	10.5
Owner-occ.	73	10	119	2,141	2,270	339	191	2,682	10,820	24.8	84.6	94.3	19.8
St. Joseph, C.P.	50	2	322	2,170	2,494	753	365	3,297	19,932	16.5	75.6	87.0	10.9
Tenants	1	0	248	1,033	1,281	448	215	1,730	12,154	14.2	74.0	80.6	8.5
Owner-occ.	49	2	74	1,137	1,213	305	150	1,567	7,778	20.1	77.4	93.7	14.6
St. Paul, C.P.	45	7	285	3,392	3,684	845	371	4,574	71,570	6.4	80.5	92.1	4.7
Tenants	0	3	200	1,627	1,830	460	193	2,290	38,101	6.0	79.9	88.9	4.3
Owner-occ.	45	4	85	1,765	1,854	385	178	2,284	33,469	6.8	81.2	95.2	5.3
Salt Lake City, C.P.	87	15	899	6,240	7,154	1,572	986	8,813	37,299	23.6	81.2	87.2	16.7
Tenants	4	6	675	2,969	3,650	789	520	4,443	20,787	21.4	82.2	81.3	14.3
Owner-occ.	83	9	224	3,271	3,504	783	466	4,370	16,512	26.5	80.2	93.4	19.8
San Diego, M.D.	234	30	1,510	7,767	9,307	2,434	1,307	11,975	63,695	18.8	77.7	83.5	12.2
Tenants	4	2	1,151	3,649	4,802	1,385	767	6,191	38,896	15.9	77.6	76.0	9.4
Owner-occ.	230	28	359	4,118	4,505	1,049	540	5,784	24,799	23.3	77.9	91.4	16.6
Seattle, M.D.	214	33	1,198	11,255	12,486	2,195	1,498	14,895	135,609	11.0	83.8	90.1	8.3
Tenants	8	6	933	5,045	5,984	1,427	1,060	7,419	75,278	9.9	80.7	84.3	6.7
Owner-occ.	206	27	265	6,210	6,502	768	438	7,476	60,331	12.4	87.0	95.5	10.3

Springfield, Mo., C.P.	48	23	337	2,383	2,743	727	384	3,518	16,200	21.7	78.0	86.9	14.7
Tenants	0	0	226	971	1,197	423	173	1,620	8,786	18.4	73.9	81.1	11.1
Owner-occ.	48	23	111	1,412	1,546	304	161	1,898	7,414	25.6	81.5	91.3	19.0
Syracuse, C.P.	50	5	298	2,487	2,790	651	232	3,491	56,340	6.2	79.9	89.1	4.4
Tenants	0	1	229	1,296	1,526	414	129	1,940	34,147	5.7	78.7	84.9	3.8
Owner-occ.	50	4	69	1,191	1,264	237	103	1,551	22,193	7.0	81.5	94.2	5.4
Topeka, C.P.	120	17	517	3,942	4,476	1,235	583	5,831	19,092	30.5	76.8	88.1	20.6
Tenants	2	2	382	1,692	2,076	694	361	2,772	9,944	27.9	74.9	81.5	17.0
Owner-occ.	118	15	135	2,250	2,400	541	222	3,059	9,148	33.4	78.5	93.8	24.6
Trenton, C.P.	107	37	404	3,900	4,341	1,226	455	5,674	28,476	19.9	76.5	89.8	13.7
Tenants	0	2	314	1,767	2,083	750	223	2,833	14,936	19.0	73.5	84.8	11.8
Owner-occ.	107	35	90	2,133	2,258	476	232	2,841	13,540	21.0	79.5	94.5	15.8
Wheeling, M.D.	110	10	521	3,929	4,460	999	485	5,569	44,656	12.5	80.1	88.1	8.8
Tenants	0	2	387	1,830	2,219	564	226	2,783	25,397	11.0	79.7	82.5	7.2
Owner-occ.	110	8	134	2,099	2,241	435	259	2,786	19,259	14.5	80.4	93.7	10.9
Wichita, C.P.	103	29	674	4,151	4,854	1,480	698	6,437	31,536	20.4	75.4	85.5	13.2
Tenants	3	3	508	1,864	2,375	1,015	475	3,393	19,192	17.7	70.0	78.5	9.7
Owner-occ.	100	26	166	2,287	2,479	465	223	3,044	12,344	24.7	81.4	92.3	18.5
Worcester, C.P.	109	14	671	3,448	4,133	1,312	539	5,554	48,534	11.4	74.4	83.4	7.1
Tenants	5	2	572	2,239	2,813	900	332	3,718	33,244	11.2	75.7	79.6	6.7
Owner-occ.	104	12	99	1,209	1,320	412	207	1,836	15,290	12.0	71.9	91.6	7.9

[1] M.D. refers to Metropolitan District; C.P. refers to City Proper.
[2] Regardless of year. For 1929, the usable sample is the sum of columns 2 and 4: for 1933, the sum of columns 3 and 4.
[3] According to Real Property Inventory of 1934.

dwelling units in the various cities (Table 1).[9] The sampling procedure followed by the Financial Survey renders the income data imperfect. The nature of their shortcomings and the effect on this investigation are discussed in Appendix A 3.

In the 33 cities covered by the Financial Survey populations range from 22,000 (Boise, Idaho) to 1.2 million (Cleveland, Ohio, metropolitan district), according to the Census of 1930. The cities vary widely in geographical location, occupational and racial structure, and rates of expansion in recent times. Among them are cities of various types and regions: a mining center (Butte, Montana), manufacturing cities (Erie, Pennsylvania; Racine, Wisconsin; Providence, Rhode Island; Trenton, New Jersey), and cities predominantly commercial in character (Lincoln, Nebraska; St. Joseph, Missouri; Wichita, Kansas). Extremes of racial composition are Birmingham, Alabama, with a colored population of 38 per cent, and Portland, Maine, with .5 per cent. There are expanding cities, such as San Diego, California, whose population almost tripled between 1920 and 1940, and cities with a stationary (Portland, Maine) or declining population (Butte, Montana).

This diversified material enables us to discover whether the changes in income distribution follow a similar pattern in cities of different types. It does not lend itself to the computation of comprehensive national income distributions for the two years, primarily because small cities, rural areas, and the great metropolitan centers are not covered. We made no attempt, therefore, to measure changes in the distribution of national income. The one 'total' of the various city distributions that was used—for illustrative purposes—is the simple, unweighted aggregate of the city samples computed by Wickens.[10] It is not designed to give a representative picture of the

[9] The Real Property Inventory, another Civil Works Administration project sponsored by the Department of Commerce, collected information on total rented and owner-occupied dwelling units in 64 cities, including our 33. Although the completeness of the Real Property Inventory is somewhat doubtful, it may be taken as an almost complete census of the statistical universes from which the Financial Survey samples were drawn.

The Inventory, taken early in 1934, was followed immediately by the Financial Survey which was conceived as its more intensive complement. The field staff of the Financial Survey consisted of the enumerators who had proved most successful in the Real Property Inventory. All dwelling units covered by the Financial Survey were covered also by the Real Property Inventory. Some of the latter's materials have been published by the Department of Commerce in mimeographed tables; and part of them are reproduced in the *Financial Survey of Urban Housing*.

[10] *Residential Real Estate*, pp. 146, 147.

income distribution for the nation as a whole, but it probably does provide a fairly good approximation to the distribution in large and middle-size cities.

The material is analyzed city by city, and all results are given for each city separately. Such tentative conclusions as can be drawn with respect to changes in the distribution of national income must be derived from the individual city studies so far as they reveal similar changes in all or in the great majority of the cities covered. If all or most of the 33 cities show a similar pattern of change, and if no offsetting change is observed in income differentials among cities, we may assume that the pattern holds for the urban population of the nation as a whole. Unfortunately lack of data precludes verification of this assumption at present.