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Appendix 3

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Section A: Sample Calculation of Income Share of Top 1 Percent, Basic Variant, Total Population, 1929

Net Income Class, Tax Definition	No. of Returns	Population Represented by Col. 2	Economic Income of Tax Return Population Total ($000)	Per Capita ($)	Rank of Per Capitas from Highest to Lowest	Population in Col. 3 Cumulated by Rank in Col. 6	Col. 7 as % of Total Pop.	Log of Col. 8	Income in Col. 4 Cumulated by Rank in Col. 6 ($000)	Col. 10 as % of Individuals' Total Income Receipts	Log of Col. 11
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1 $10,000 & over	374,032	937,223	10,609,313	11,320	1	937,223	0.769	−0.11407	10,609,313	13.223	1.12133
2 9,000-10,000	64,393	176,753	660,748	3,738	2	1,113,976	0.914	−0.03905	11,270,061	14.047	1.14758
3 8,000- 9,000	81,454	225,015	753,378	3,348	3	1,338,991	1.099	0.04100	12,023,439	14.986	1.17569
4 7,000- 8,000	112,812	312,952	925,896	2,959	4	1,651,943	1.356	0.13226	12,949,335	16.140	1.20790
5 6,000- 7,000	157,784	440,268	1,126,113	2,558	5	2,092,211	1.717	0.23477	14,075,448	17.543	1.24410
6 5,000- 6,000	241,596	695,946	1,473,718	2,118	6	2,788,157	2.289	0.35965	15,549,166	19.380	1.28735
7 4,000- 5,000	485,822	1,462,686	2,470,933	1,689	7	4,250,843	3.489	0.54270	18,020,099	22.460	1.35141
8 3,000- 4,000	686,833	1,879,166	2,830,406	1,506	9	5,727,942	4.702	0.67228	20,347,963	25.361	1.40417
9 2,000- 3,000	810,347	1,477,099	2,327,864	1,576	8	7,607,108	6.244	0.79546	23,178,369	28.889	1.46073
10 1,000- 2,000	903,082	1,372,611	1,871,461	1,363	10	8,979,719	7.371	0.86753	25,049,830	31.222	1.49446
11 Under 1,000	126,172	286,256	342,082	1,195	11	9,265,975	7.606	0.88116	25,391,912	31.648	1.50035

Interpolation at Top 1 Percent of Total Population

Log 1 is zero, falling between lines 2 and 3 of column 9

a) Log 1 minus line 2, column 9 = 0.03905

b) Line 3, column 9, minus log 1 = 0.04100

c) a + b = 0.08005

d) a ÷ c = .4878

e) Difference between lines 2 and 3 of column 12 = 0.02811

f) d × e = 0.01371

g) Log of percentage of income corresponding to log of top 1 percent of total population = line 2 of column 12 + f = 1.16129

h) Antilog of g = 14.497%

Column

1-3 Table 111, columns 1, 2, and 8 respectively.

4 Table 112, last column.

5 Column 4 divided by column 3.

8 For total population see Table 69, column 5.

11 For total income receipts see Table 114, column 12.

Section B: Calculation of Hypothetical Proportion of Farm Population
in Tax Return Population, 1929

I DISTRIBUTION OF POPULATION AND INCOME OF UPPER PERCENTAGE BANDS OF
TOTAL POPULATION BETWEEN FARM AND NONFARM

	TOTAL POPULATION Income Share (%) of Given Percentage Band		NONFARM POPULATION INCL. IN COL. 1		FARM POPULATION INCL. IN COL. 1	
				Income Share (% of total income receipts)		Income Share (% of total income receipts)
Percentage Band	Total	Per Percentile of Pop.	As % of Total Pop.	per Percentile of Pop. in Col. 4	As % of Total Pop.	per Percentile of Pop. in Col. 6
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Top 1	14.497	14.497	0.752	17.137	0.248	6.496
2 2nd & 3rd	6.807	3.404	1.504	4.023	0.496	1.525
3 4th & 5th	4.783	2.392	1.504	2.827	*	*
4 6th & 7th	4.389	2.194	1.504	2.594	*	*
5 Next 0.606	1.172	1.934	0.456	2.286	*	*
6 Next 1, extrap.	1.774	1.774	0.752	2.097	*	*
7 Next 1, extrap.	1.574	1.574	0.752	1.861	*	*

II CUMULATION OF POPULATION AND INCOME OF UPPER PERCENTAGE BANDS,
DISTINGUISHING BETWEEN FARM AND NONFARM

	% OF INCOME RECEIVED PER PERCENTILE OF POP., COL. 5 & 7, FROM HIGHEST TO LOWEST	POP. RECEIVING PER PERCENTILE INCOME IN COL. 1		TOTAL INCOME SHARE (% of total income receipts) OF POP. IN COL. 3 (col. 1 × col. 3)
		Farm or Nonfarm	As % of Total Pop.	
	(1)	(2)	(3)	(4)
1	17.137	Nonfarm	0.752	12.887
2	6.496	Farm	0.248	1.611
3	4.023	Nonfarm	1.504	6.051
4	2.827	Nonfarm	1.504	4.252
5	2.594	Nonfarm	1.504	3.901
6	2.286	Nonfarm	0.456	1.042
7	2.097	Nonfarm	0.752	1.577
8	1.861	Nonfarm	0.752	1.399
Total, lines 1-8			7.471	32.719
Farm, line 2			0.248	1.611
Farm as % of total			3.319	4.924

For notes see page 304.

Notes to Section B

* Entry omitted since the income share per percentile for this line is smaller than that in line 2 and would therefore be excluded from the calculations in Part II.

Column

PART I

1   Percentage of population covered by federal income tax returns (see Table 69, col. 6) extrapolated to permit analysis of the additional percentage bands indicated.

2   Lines 1-4: Table 118, column 1.
Line 5: column 3 of Table 72 minus the sum of lines 1-4.
Lines 6 & 7: see column 3.

3   Lines 1-5: column 2 divided by percentage of population covered in column 1.
Lines 6 & 7: line 5 extrapolated on the basis of the change from line 4 to line 5 per percentile of population.

4   Percentage of population covered in column 1 multiplied by 75.195, the percentage nonfarm population constitutes of total population (col. 1 of Table 115 divided by col. 5 of Table 69).

5   Column 3 multiplied by 1.1821, the ratio of per capita income of nonfarm population to per capita income of total population (Table 78, col. 1). The basic assumption is that the relative inequality in the distribution of income by size, as measured by column 3, is the same for the farm and the nonfarm population.

6   The percentage of the population covered in column 1 minus column 4.

7   Column 3 multiplied by 0.4481, the ratio of the per capita income of farm population to the per capita income of total population (col. 2 of Table 77 divided by col. 5 of Table 74). See note to column 5 regarding the basic assumption.

PART II

Only entries for the top 7.471 percent of the population (see col. 3) are used, this being the coverage most closely approximating that in Part I, column 1, lines 1-5.

Section C: Sample Calculation of Income Share of Top 1 Percent, Basic Variant, Nonfarm Population, 1929

Net Income Class, Tax Definition	Tax Return Population			Col. 4 as % of Nonfarm Population	Log of Col. 5	Ec. Inc. of Tax Return Population Cumulated by Rank of Per Capitas ($000)	Col. 7 as % of Income of Nonfarm Population	Log of Col. 8
	Number	Economic Income ($000)	Cumulated by Rank of Per Capitas					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 $11,000 & over	810,525	10,080,468	810,525	0.885	-0.05306	10,080,468	14.135	1.15030
2 10,000-11,000	126,698	528,845	937,223	1.023	0.00988	10,609,313	14.877	1.17252
3 9,000-10,000	176,753	660,748	1,113,976	1.216	0.08493	11,270,061	15.803	1.19874
4 8,000- 9,000	225,015	753,378	1,338,991	1.462	0.16495	12,023,439	16.860	1.22686
5 7,000- 8,000	312,952	925,896	1,651,943	1.803	0.25600	12,949,335	18.158	1.25907
6 6,000- 7,000	440,268	1,126,113	2,092,211	2.284	0.35870	14,075,448	19.737	1.29528
7 5,000- 6,000	695,946	1,473,718	2,788,157	3.043	0.48330	15,549,166	21.803	1.33852
8 4,000- 5,000	1,462,686	2,470,933	4,250,843	4.640	0.66652	18,020,099	25.268	1.40257
9 3,000- 4,000	1,879,166	2,830,406	5,727,942	6.252	0.79602	20,347,963	28.533	1.45535
10 2,000- 3,000	1,477,099	2,327,864	7,607,108	8.304	0.91929	23,178,369	32.501	1.51190
11 1,000- 2,000	1,372,611	1,871,461	8,979,719	9.802	0.99131	25,049,830	35.126	1.54563
12 Under 1,000	286,256	342,082	9,265,975	10.114	1.00492	25,391,912	35.605	1.55151

Interpolation at Top 1 Percent of Nonfarm Population

Log 1 is zero, falling between lines 1 and 2 of column 6

a) Log 1 minus line 1, column 6 = 0.05306
b) Line 2, column 6, minus log 1 = 0.00988
c) a + b = 0.06294
d) a ÷ c = .8430

e) Difference between lines 1 and 2 of column 9 = 0.02222
f) d × e = 0.01873
g) Log of percentage of income corresponding to log of top 1 per-
    cent of nonfarm population ≐ line 1 of column 9 + f = 1.16903
h) Antilog of g = 14.758%

For notes see pages 306-7.

Notes to Section C

Column

2, 3   Appendix 3, Section A, columns 3 and 4 extended to show the $10,000-11,000 net income class separately.

4, 7   See Appendix 3, Section A, columns 7 and 10. The separate coverage of the $10,000-11,000 net income class does not alter the rank of the per capitas, those for lines 1 and 2 being $12,437 and $4,174 respectively.

5   For nonfarm population see Table 115, column 1.

8   For income of nonfarm population see Table 115, column 2, estimated as the difference between total income receipts of individuals (Table 114, col. 12) and income received by the farm population. The latter is estimated by the following steps:

1913-1938:

1) From net income from agriculture, including government payments (*Farm Income Situation*, June-July 1947, p. 20), we subtract net rent to nonfarmers (*National Income and Its Composition, 1919-1938*, p. 543, Table A1, col. 4, and unpublished extension back to 1913).

2) Net income from agriculture to persons on farms (*Farm Income Situation*, June-July 1947, p. 21) is expressed as a percentage of the total derived in step 1.

3) Farm income of persons on farms is the product of net income from agriculture (*National Product in Wartime*, p. 139, and unpublished extension for 1913, and *National Income and Its Composition*, p. 544) and the percentages derived in step 2.

4) From net income to persons not on farms, including government payments and the nonfarm income of farmers, 1934-46 (*Farm Income Situation*, June-July 1947, p. 21), we subtract undistributed corporate profits after taxes and the corporate inventory valuation adjustment (*Survey of Current Business*, July 1947, Supplement, p. 19, Table 1).

5) Nonfarm income of farmers, 1934-46 (*Farm Income Situation*, June-July 1947, p. 22, Table 2 for 1940-46, and special tabulation from the Bureau of Agricultural Economics for 1934-39) is expressed as a percentage of the total derived in step 4.

6) The percentage change from year to year is computed for the total derived in step 4.

7) The absolute change from year to year is computed for the percentages derived in step 5.

8) On the basis of steps 6 and 7 it is assumed that:

a) When the percentage change in the total derived in step 4 is −20.0 or close to it, the absolute change in the percentage derived in step 5 is +0.20.

b) When the percentage change in the total derived in step 4 is −10.0 or close to it, the absolute change in the percentage derived in step 5 is +0.10.

c) When the percentage change in the total derived in step 4 is zero or +10.0 or close to either, the absolute change in the percentage derived in step 5 is zero.

d) When the percentage change in the total derived in step 4 is +20.0 or close to it, the absolute change in the percentage derived in step 5 is −0.20.

9) From total income receipts of individuals (Table 114, col. 12) we subtract the total derived in step 3.

10) The percentage change from year to year is computed for the total derived in step 9.

11) The percentages derived for 1934-46 in step 5 are extrapolated back to 1919 by applying step 8 to the percentage changes derived in step 10. For the 1913-19 series it is assumed that the figure for 1919 is the same as that estimated for the 1919-38 series. Extrapolation back to 1913 is by the procedure indicated for 1919-33.

12) Nonfarm income of farmers is the product of the total derived in step 9 and the percentage derived in step 11.

Notes to Section C, column 8, concluded:

13) Farm income of farmers (step 3) is added to nonfarm income of farmers (step 12).

1929-1948:

1) From total income receipts of individuals (Table 114, col. 12) we subtract agricultural income received by the farm population (special tabulation from the Department of Commerce, National Income Division).

2) The percentage change from year to year is computed for the total derived in step 1.

3) The percentages derived for 1934-46 in step 5 above are extrapolated back to 1929 by applying step 8 above to the percentage changes derived in step 2. They are calculated for 1947 and 1948 from extensions of the series indicated in steps 4 and 5 above, as given in *Farm Income Situation,* August 1950, p. 27, and *Survey of Current Business,* July 1950, Table 1, p. 9.

4) Nonfarm income of farmers is the product of the total derived in step 1 and the percentage derived in step 3.

5) Farm income of farmers (see step 1) is added to nonfarm income of farmers derived in step 4.

Section D: Sample Calculation of Ratios for Table 78, Columns 2-5, 1929

	TOTALS (1)	Top 1 (2)	2nd & 3rd (3)	4th & 5th (4)	Top 5 (5)
		PERCENTAGE		BAND	
1 Nonfarm population (000)	91,612				
2 Income of nonfarm population (000,000)	$71,315				
3 Total population (000)	121,832				
4 Individuals' total income receipts (000,000)	$80,232				
5 % of population in given percentage band		1	2	2	5
6 % of total income received by given percentage band of total population per percentile of population		14.497	3.404	2.392	5.217
7 Nonfarm population in given percentage band (line 1 × line 5) (000)		916	1,832	1,832	4,581
8 Nonfarm population, line 7 as % of total population, line 3		0.752	1.504	1.504	3.760
9 % of income of nonfarm population received by given percentage band of nonfarm population		14.758	6.938	4.354	26.050
10 % of income of nonfarm population, line 9, as % of total income receipts		13.118	6.167	3.870	23.155
11 % of total income, line 10, per percentile of population, line 8		17.445	4.101	2.573	6.159
12 Ratios (line 11 ÷ line 6)		1.203	1.205	1.076	1.180

Line

1, 2 Table 115: columns 1 and 2 respectively.

3   Table 69, column 5.

4   Table 114, column 12.

6   Column 1 of Table 116 divided by line 5.

9   Table 116, column 4.

10   Line 9 multiplied by ratio of line 2 to line 4.