

# Income Distribution & the Founding of the NBER

James Poterba  
MIT and NBER  
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# The “Founders”

- Malcolm Rory: Chief Statistician at AT&T
- Nahum Stone: Columbia PhD who translated some of Marx’ writings for his dissertation
- 1915 testimony to NY State Factory Investigating Committee re: minimum wage legislation
- Stone’s review of Scott Nearing’s Income (1916, concluded labor’s share about 50% of national income) in the Intercollegiate Socialist

# Scott Nearing's Empirical Monograph

## INCOME

AN EXAMINATION OF THE RETURNS FOR  
SERVICES RENDERED AND FROM  
PROPERTY OWNED IN THE  
UNITED STATES

BY

SCOTT NEARING, PH.D.

WHARTON SCHOOL, UNIVERSITY OF PENNSYLVANIA  
AUTHOR OF "WAGES IN THE UNITED STATES," "FINANCING  
THE WAGE EARNER'S FAMILY," "REDUCING  
THE COST OF LIVING," ETC.

UNIVERSITY OF  
CALIFORNIA

New York

THE MACMILLAN COMPANY

1915

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# The Landlord's Game (Lizzie Magie, 1903)

No. 748,626.

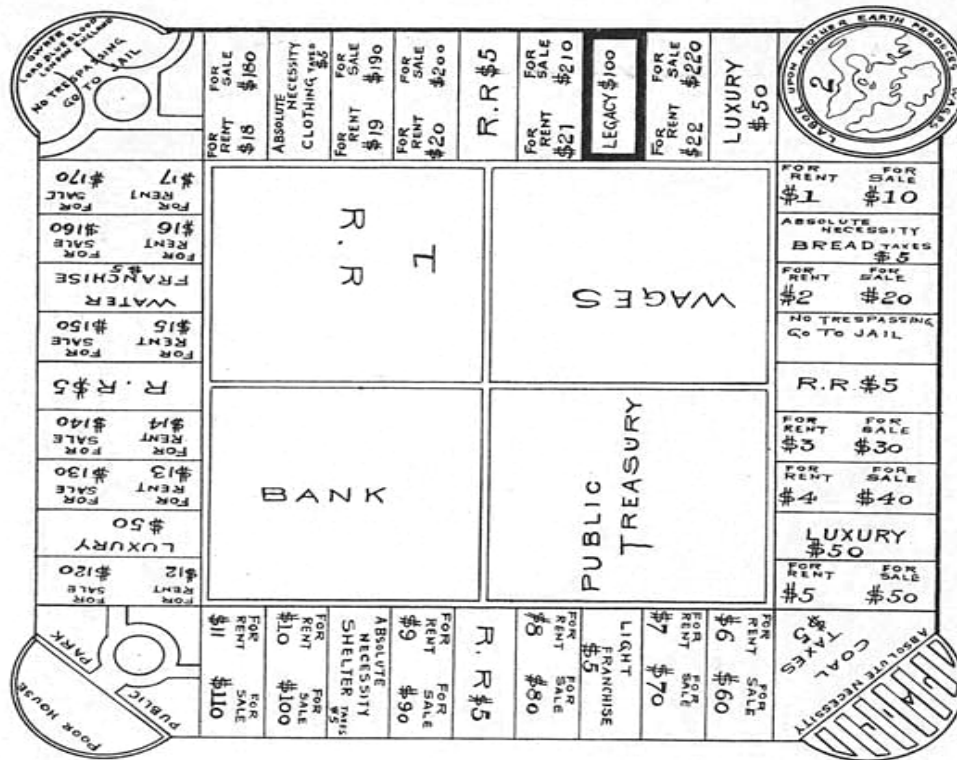
PATENTED JAN. 5, 1904.

L. J. MAGIE.  
GAME BOARD.

APPLICATION FILED MAR. 23, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses  
F. L. O'Connell  
M. H. O'Connell

Fig. 1.

Inventor  
Lizzie J. Magie  
by John A. Saul  
Attorney

# Wage Surveys (Pre-Income Tax)

## APPENDIX XVII

WAGE RATES OF MALES IN WISCONSIN, IN ALL INDUSTRIES AND IN INDUSTRIES REPORTING THE EMPLOYMENT OF MORE THAN 5,000 MALES, 1909 <sup>1</sup>

<i>Industry</i>	<i>Total Employed</i>	<i>Per Cent. of Wage Rates Per Year of Less Than</i>				
		<i>\$250</i>	<i>\$500</i>	<i>\$750</i>	<i>\$1,000</i>	<i>\$1,500</i>
All industries.....	141,218	2	32	77	94	99
Iron.....	7,445	1	34	71	92	99
Leather.....	7,188	1	13	85	98	99
Light, Water and Power. . .	5,730	1	16	90	97	99
Lumber.....	15,103		6	87	96	98
Machinery.....	13,806	1	6	58	87	99
Paper and Pulp.....	6,051	1	7	88	96	99

<sup>1</sup> "Biennial Report of the Bureau of Labor Statistics of Wisconsin." Madison, 1911.

# Example of Nearing's Labor Share Calculations

## APPENDIX XXIV

PRODUCT AND WAGES PAID FOR THOSE MASSACHUSETTS INDUSTRIES REPORTING A  
PRODUCT VALUED AT \$10,000,000 OR OVER IN 1910<sup>1</sup>

<i>Industry</i>	<i>Capital Invested</i>	<i>Value of Product</i>	<i>Value Added by Manufacture</i>	<i>Per Cent. of Wages to Value of Product</i>
The State.....	1,194,442,498	1,465,749,310	60,367,444	20
Boot and shoe cut stock.....	10,954,526	28,840,119	4,823,965	6
Boot and shoe findings.....	6,151,864	16,322,052	4,695,681	12
Boots and shoes.....	75,622,688	190,856,515	75,232,029	23
Boots and shoes, rubber.....	17,020,521	25,478,361	10,730,327	16
Bread and other bakery prod- ucts.....	7,365,272	23,716,640	9,960,465	13
Carpets and rugs, other than rag.....	11,523,799	13,031,615	4,495,633	20
Clothing, men's.....	7,266,575	15,627,158	6,408,433	16
Clothing, women's.....	4,055,709	11,714,278	5,061,713	22
Confectionery.....	7,481,279	16,018,877	6,228,368	13
Cotton goods.....	229,616,129	191,118,340	70,210,491	23
Dyeing and finishing textiles..	30,961,756	20,239,712	8,876,823	21
Electrical machinery, apparat- us, and supplies.....	23,391,661	32,036,393	15,683,862	32
Foundry and machine shop products.....	84,830,525	77,665,761	49,383,381	34
Furniture.....	18,205,891	13,060,508	7,255,368	31
Hosiery and knit goods.....	11,450,799	14,237,717	6,339,930	26
Iron and steel, steel works and rolling mills.....	12,194,109	12,670,839	3,542,983	17
Jewelry.....	14,426,918	15,898,425	9,891,010	29
Leather, tanned, curried, and finished.....	38,623,608	41,544,425	11,197,666	13
Liquors, malt.....	21,112,945	13,968,270	9,539,497	11
Paper and wood pulp.....	43,213,739	43,020,325	17,150,556	15
Printing and publishing, book and job.....	7,374,601	10,070,888	6,461,073	31
Rubber goods, not elsewhere specified.....	12,560,594	21,643,136	5,573,530	10
Slaughtering and meat pack- ing, wholesale.....	14,167,146	34,564,127	2,708,823	3
Woolen goods.....	27,186,489	31,264,304	12,262,745	22
Worsted goods.....	96,433,967	89,395,948	33,453,320	16

<sup>1</sup> "25th Annual Report on the Statistics of Manufactures for the Year 1910,"  
Bureau of Statistics. Boston, Wright & Potter Co., 1912, pp. 2-12.

# NBER: Early Plans (1917)

- Committee on the Distribution of Income
- Mission: “meet a growing demand for a scientific determination of the distribution of national income among individuals and families ... a knowledge of this distribution is of vital consequence in the consideration of almost every important political and social problem.”
- Initial academic proponents: John R. Commons (Wisconsin), Edwin Gay (Harvard), Wesley Clair Mitchell (Columbia)

# Launch of the NBER (1920)

- Support from corporate contributors, soon from Carnegie Corporation and Laura Spellman Rockefeller Fund
- Diverse board of directors
- Focus on creating data and answering important economic questions
- No policy recommendations
- Mitchell agreed to serve as first director of research (1920-1946, also thesis adviser for Simon Kuznets and Arthur Burns)



# NBER Project #1: Measuring Income Distribution

## **INCOME IN THE UNITED STATES**

**Its Amount and Distribution**

**1909-1919**

**BY**

**THE STAFF OF THE NATIONAL BUREAU OF  
ECONOMIC RESEARCH, INCORPORATED**

**WESLEY C. MITCHELL**

**WILLFORD I. KING**

**FREDERICK R. MACAULAY**

**OSWALD W. KNAUTH**

**VOLUME I**

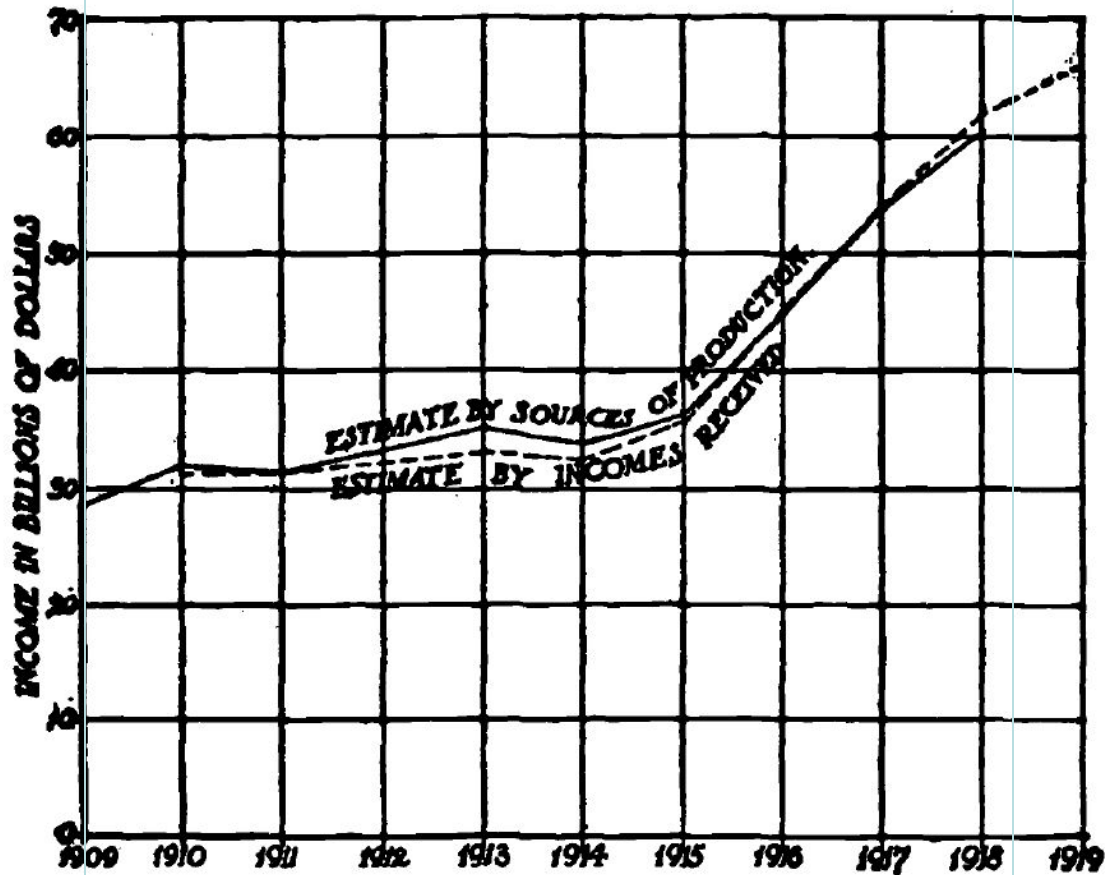
**SUMMARY**

# Measuring National Income

CHART 1.  
THE TWO ESTIMATES OF THE NATIONAL INCOME.  
1909-1919.

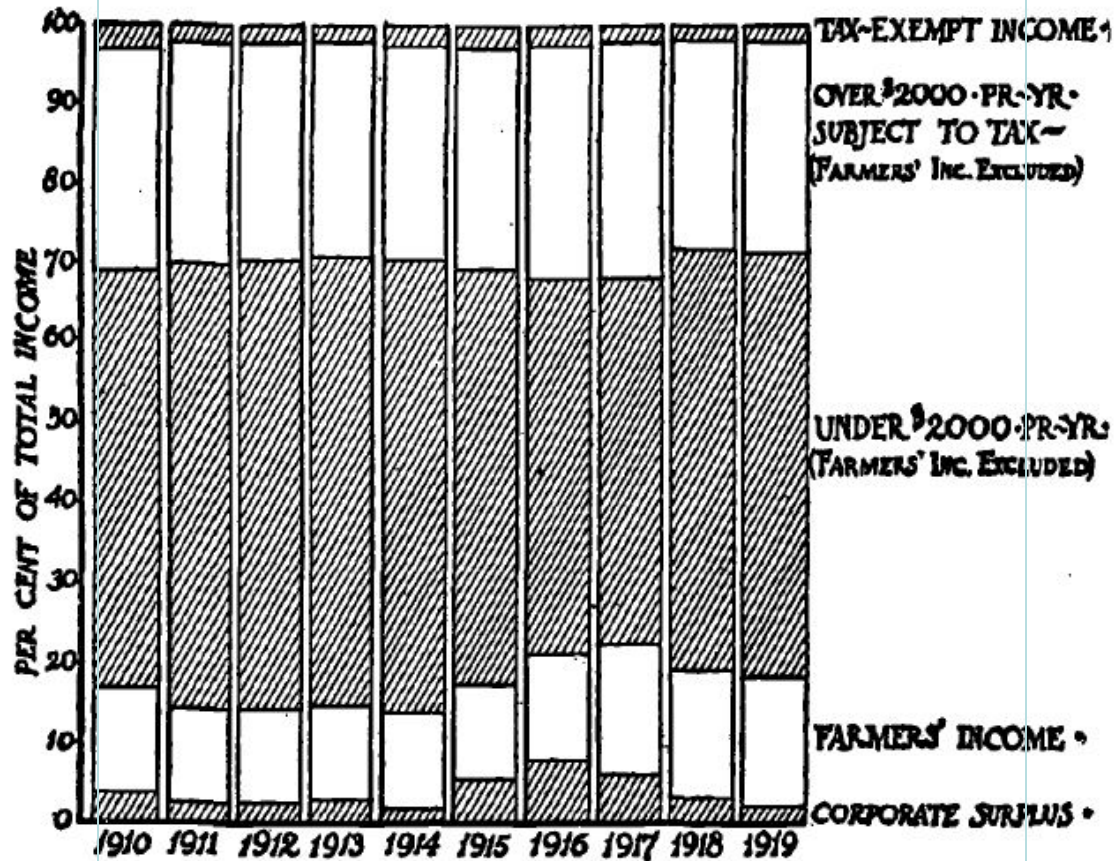
Based upon Table 1.

For elimination of the increase due to the rise of prices, see  
Chart 14.



# Distributional National Accounts (c. 1920!)

CHART 9.  
PERCENTAGE DIVISION OF THE NATIONAL INCOME  
ACCORDING TO THE ESTIMATE BY INCOMES  
RECEIVED.  
1910-1919.  
Based upon Table 5.



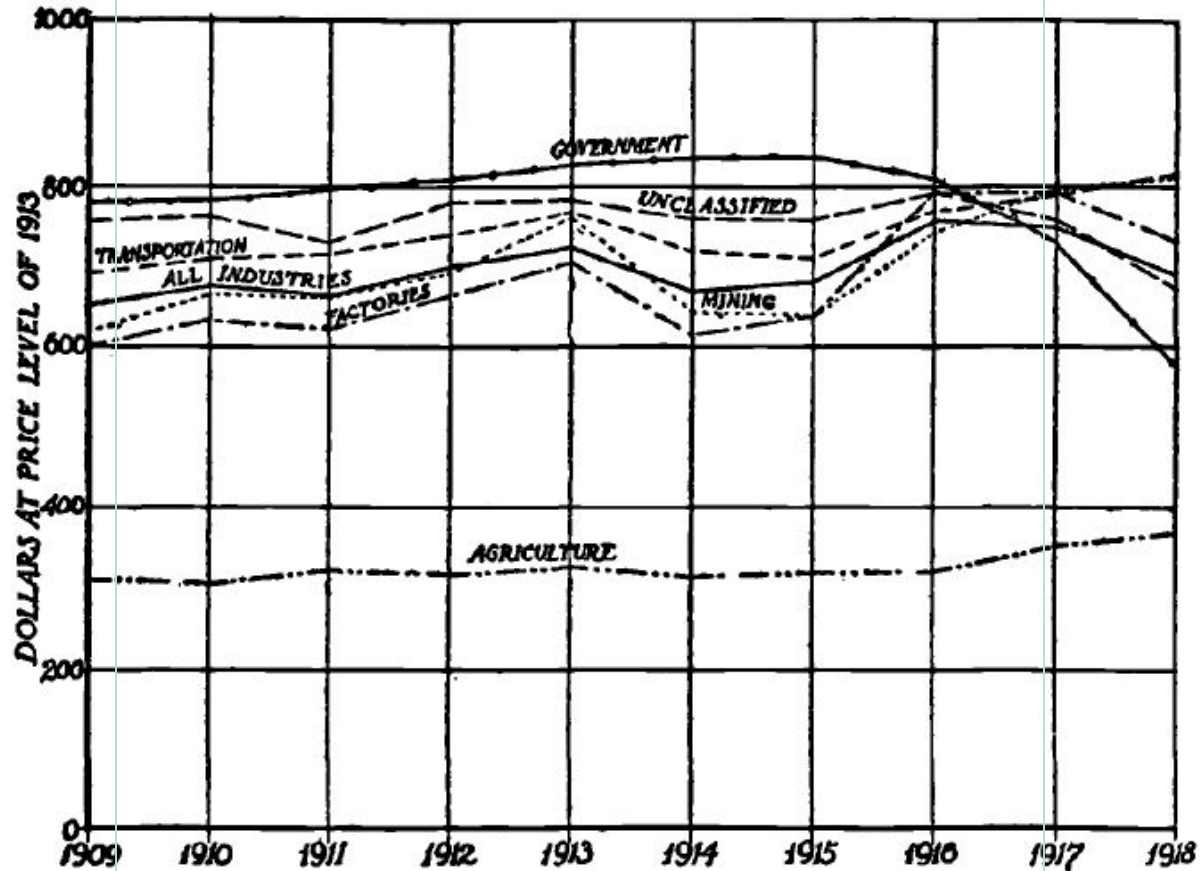
# Evolution of Real Wages, 1909-1918

CHART 22.

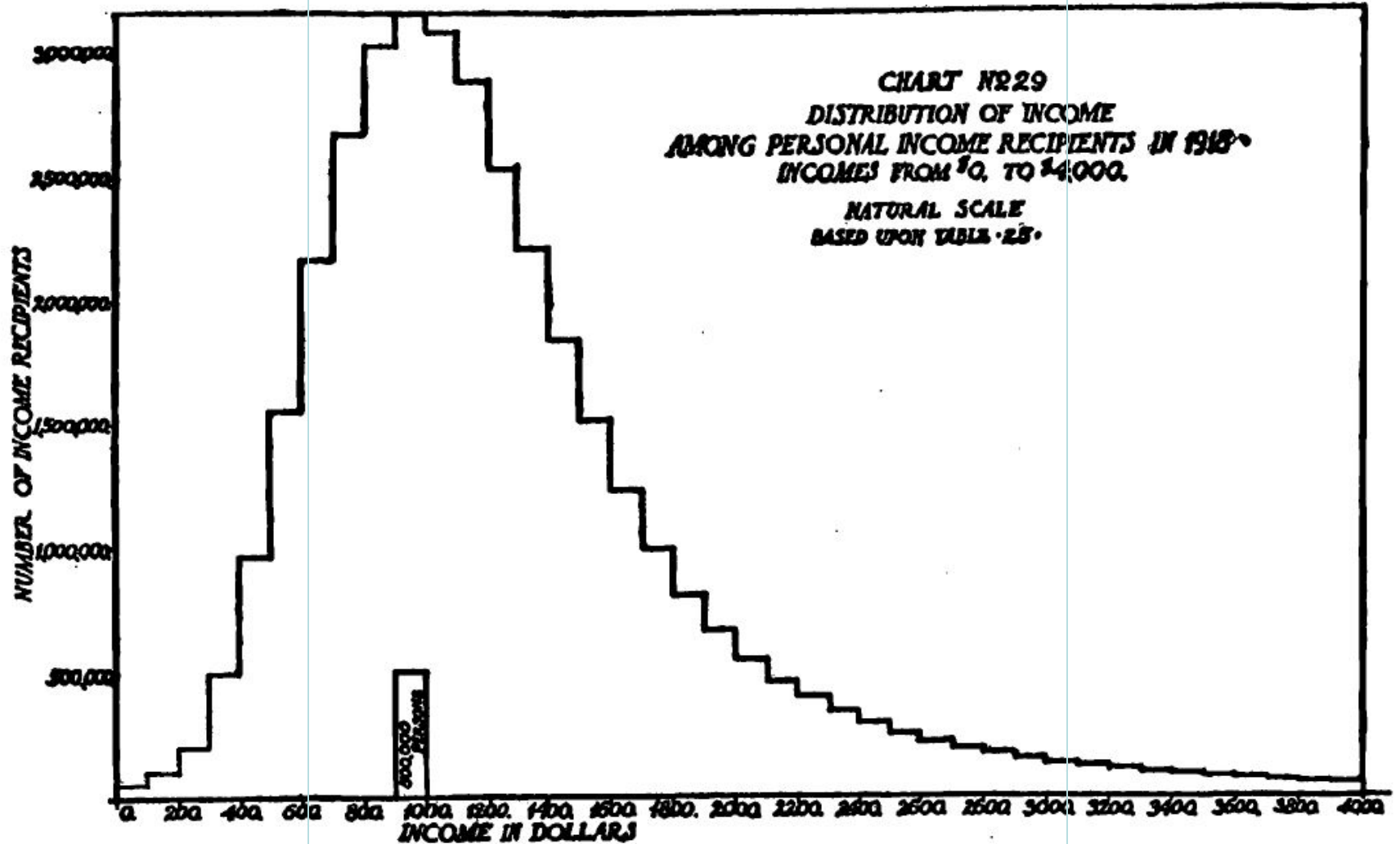
THE PURCHASING POWER AT THE PRICE LEVEL OF 1913 OF THE AVERAGE ANNUAL EARNINGS OF EMPLOYEES IN VARIOUS INDUSTRIES.

1909-1918.

Based upon Table 20.



# Detailed Income Distribution (tax return data)



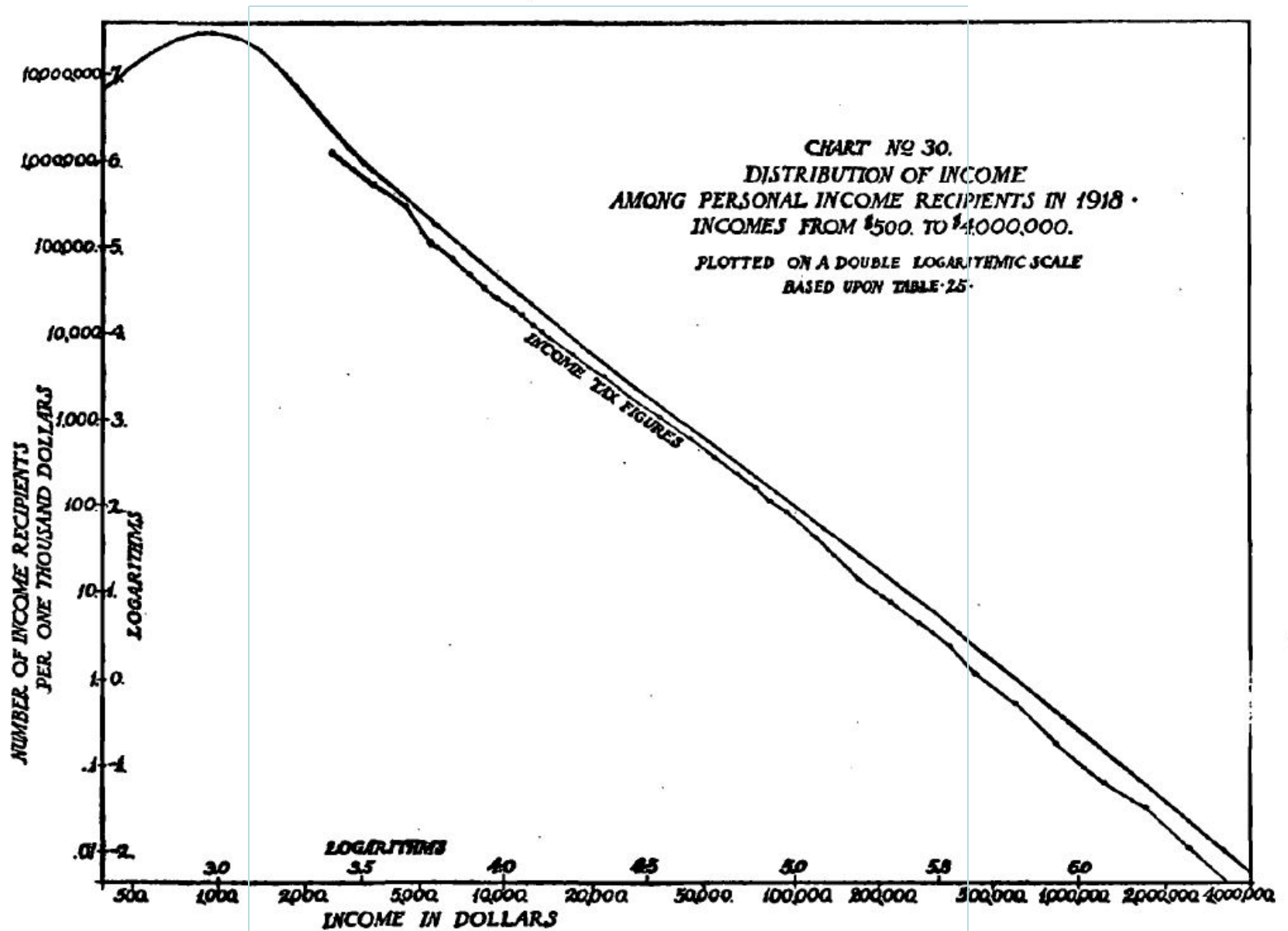
# Careful Data Analysis

- Attention to sources of error and to measures of uncertainty (pre-standard errors!)
- Complaints about data: “the American income tax figures are less satisfactory than the British or the Prussian because of their relatively high exemption limit...”
- Recognize issues: split of proprietor’s income between labor and capital, “gig” income
- Estimate labor share of about  $\frac{2}{3}$  rds, top 5% of households received  $\frac{1}{3}$  of national income

# Complaints about Outliers

- “... it is desirable to use graphic methods ... but ordinary charts drawn on an arithmetic scale to not serve the purpose... if incomes be plotted along a horizontal line with  $1/10^{\text{th}}$  of an inch for each thousand dollars ... 42 feet of paper are required to reach \$5,000,000, and one income larger than that was reported in 1918.”

# Pareto Distribution for Top Incomes





# Nonlinear Budget Sets!

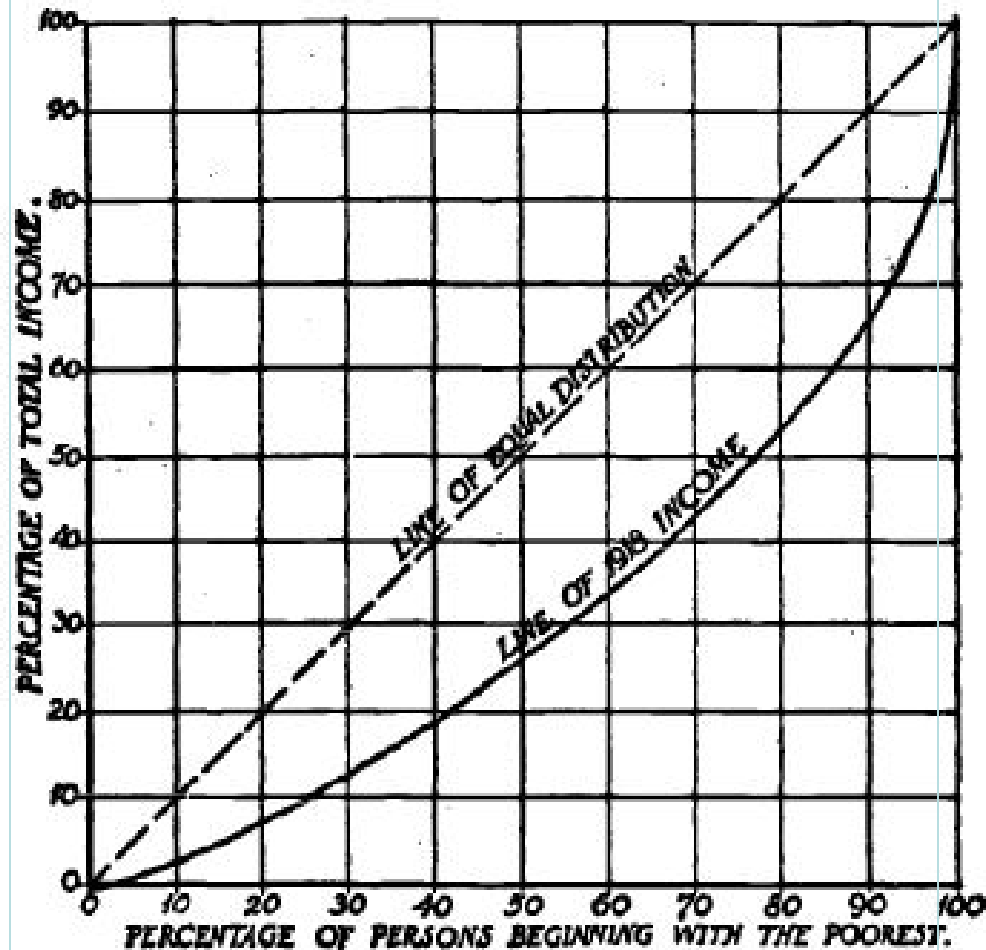
- Regarding the Pareto plots: “The lines are not straight. They show “bumps” and “hollows” – especially in the most reliable [income tax] data, that for 1918.”
- “Pareto’s Law is seen to be a statement concerning the shape of a mere tail of the distribution.... Many distributions of very different types have tails as much like one another as the tails of the income tax data for different years.”

# Income Inequality Measures: Lorenz & Gini

CHART 31.

LORENZ CURVE SHOWING THE DISTRIBUTION OF INCOMES IN 1918.

Based upon the data presented in Table 26.



# Conclusion

- Hats off to the CRIW, carrying forward the founding mission of the NBER
- The research issues that animated the 1921 study remain active and exciting
- Many questions are the same, but the data are better, and the answers are more nuanced
- Exciting future opportunities!