

MITx: 14.310x Data Analysis for Social Scientists

<u>Help</u>



- Module 1: The Basics of R and Introduction to the Course
- Entrance Survey
- Module 2:

   Fundamentals of
   Probability, Random
   Variables,
   Distributions, and Joint
   Distributions
- Module 3: Gathering and Collecting Data, Ethics, and Kernel Density Estimates

Gathering and Collecting Data

Finger Exercises due Oct 17, 2016 05:00 IST

Module 3: Gathering and Collecting Data, Ethics, and Kernel Density Estimates > Summarizing and Describing Data > An Example: Top One Percent - Quiz

## An Example: Top One Percent - Quiz

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### **Question 1**

1 point possible (graded)

From the Piketty-Saez graph shown below, it can be seen that between 1978 and 2013, the share of total income earned by the bottom 99% of the population \_\_\_\_\_\_, and that of the bottom 95%

# Summarizing and Describing Data

Finger Exercises due Oct 17, 2016 05:00 IST

(d)

Module 3: Homework

Homework due Oct 10, 2016 05:00 IST

- Module 4: Joint,
   Marginal, and
   Conditional
   Distributions &
   Functions of Random
   Variable
- Module 5: Moments of a Random Variable,
   Applications to
   Auctions, & Intro to
   Regression
- Module 6: Special
   Distributions, the
   Sample Mean, the
   Central Limit Theorem,
   and Estimation

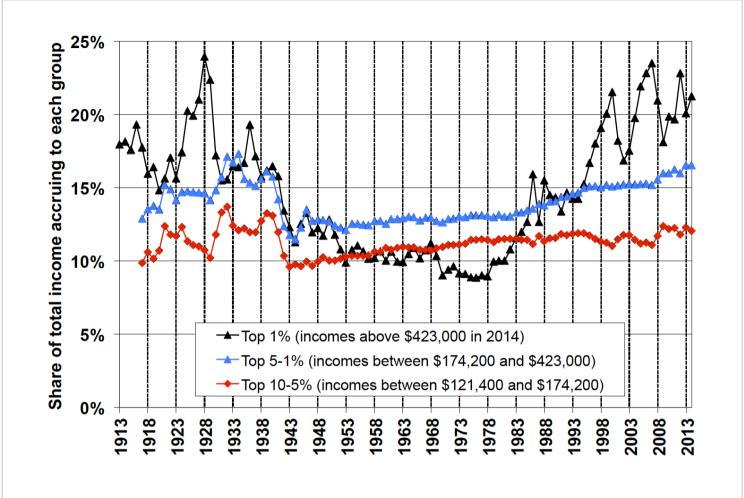


FIGURE 2
Decomposing the Top Decile US Income Share into 3 Groups, 1913-2014

a. decreased from roughly 82% to roughly 78%, decreased from roughly 69% to 61%

- Module 7: Assessing and Deriving Estimators -Confidence Intervals. and Hypothesis Testing
- Module 8: Causality, **Analyzing Randomized** Experiments, & Nonparametric Regression
- Module 9: Single and Multivariate Linear Models
- Module 10: Practical **Issues in Running** Regressions, and **Omitted Variable Bias**
- Module 11: Intro to Machine Learning and **Data Visualization**
- Module 12: Endogeneity,

- b. decreased from roughly 92% to roughly 78%, decreased from roughly 79% to 61%
- c. decreased from roughly 92% to roughly 78%, decreased from roughly 87% to 83%
- d. decreased from roughly 82% to roughly 78%, decreased from roughly 87% to 83%

#### **Explanation**

The top 1% income share increased from roughly 8% to 22%, and the income share going to between the top 5 and 1% increased from roughly 13% to 17%. Therefore the overall share of the top 5% increased from roughly 8+13=21% to 22+17=39%. Hence the bottom 99% share decreased from 100-8=92% to 100-22=78%. And the bottom 95% share decreased from 100-21=79% to 100-39=61%.

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You have used 0 of 2 attempts

#### **Question 2**

1 point possible (graded)

True or False: The reason why Piketty and Saez cannot directly use the IRS tax data to compute top income shares is that these data are only publicly available in the form of tabulations.

True

## Instrumental Variables. and Experimental Design

False

Exit Survey

▶ Final Exam

#### **Explanation**

True. For example, Piketty-Saez have information like "People paying between 30 and 35% in taxes have an average income of \$200,000 and those paying between 35 and 45% have an average income of \$500,000." But the problem is that the cutoffs of the tax brackets do not coincide with the percentiles of the income distribution we are interested in (e.g. top 1%, top 5% etc). Therefore, they need to somehow interpolate the income distribution and instead use an interpolation technique exploiting properties of the Pareto distribution (which will be discussed in the next segment).

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Discussion

**Topic:** Module 3 / An Example: Top One Percent - Quiz

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