

OUTLINE — October 8, 2018

- Asymmetric Info: Moral Hazard
 - Behavioral Economics, 1 example: Loss Aversion
 - Definitions of Wealth & Income
 - Perfect Competition & Implications for Income
 - Distribution of Income
 - Explaining Income Distribution
-
- Plus slides we won't get to re: [Wealth Distribution](#)

PS 2 due October 15/16 in section

Moral Hazard

- When one party to a contract changes behavior after the contract is signed
 - Part of a transaction that takes time to complete
- **Examples**
 - **Insurance**
 - Will insured be more careful or less careful?
 - Effect on cost of insurance?
 - **Post-2008 Bank Bailouts**
 - Will bankers be more careful or less careful with risk?
 - Effect on likelihood of bank failure?
 - **Post-2008 Mortgage Rescue Plans**
 - Will homeowners be more careful or less careful with finances?
 - Effect on likelihood of mortgage default?

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition Income Distribution Explanations

One Solution: Monitoring

- **Monitoring** is a solution to moral hazard
 - Is there a low-cost way to monitor behavior?
 - Cancel contracts that are low-quality & thus high-cost
 - Maintain contracts that are high-quality & thus low-cost
- Note: With perfect monitoring, there is no asymmetry in information

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition Income Distribution Explanations

Behavioral Economics

- Another instance of market failure
 - . . . Failure to reach $p=MC$ at minimum ATC
- Here, challenge assumptions of
 - Utility maximization
 - Profit maximization
- Interested?
 - *Econ 119 (Psych & Econ)*
 - *Econ 138 (Behavioral Econ)*

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition Income Distribution Explanations

Example: Risk Aversion

- Two payouts, both with same mean (6.50).

Die roll	Payout A	Payout B
1	0	7
2	4	5
3	8	9
4	15	6
5	3	4
6	9	8

- Which would you prefer? A? B? Click C for "either"

Moral Hazard **Loss Aversion** Wealth v. Income Perfect Competition Income Distribution Explanations

Example: Loss Aversion

- Two payouts, both with same mean (6.17) & SD (10).

Die roll	Payout A	Payout B
1	-5	0
2	10	10
3	15	25
4	-8	0
5	10	1
6	15	1

- Which would you prefer? A? B? Click C for "either"

Moral Hazard **Loss Aversion** Wealth v. Income Perfect Competition Income Distribution Explanations

Example: Loss Aversion

- Do people hate losses more than they like wins?
- If so, implications for risk-taking behavior.
 - You own a stock that you bought for \$50 / share and it is now selling for \$30 / share. Will you sell?
 - You bought a house for \$800,000. If you sold it now, you'll only get \$600,000. You've been offered a new job at a good salary that is 1,000 miles away. Will you sell?
 - You declared a major in X and have taken nearly 80% of the classes you need to complete the major. You hate the major. Will you change majors?

Moral Hazard **Loss Aversion** Wealth v. Income Perfect Competition Income Distribution Explanations

Definitions of Wealth & Income

Wealth (or, Net Worth) = Assets – Liabilities

- Assets: what you own
 - Real Assets
 - Financial Assets
- Liabilities: what you owe to others
- Evaluated as of a particular date (e.g., as of today)

Income

- What you receive
- Evaluated over a period of time (e.g., per year)
- Sources of Income
 - Labor income
 - Property income
 - Capital income

Moral Hazard Loss Aversion **Wealth v. Income** Perfect Competition Income Distribution Explanations

Perfect Competition & Income

- In long run competitive equilibrium, profit = 0
 - Accounting profit = opportunity cost of labor & money
- Worker income depends upon “marginal revenue product” (MRP)
 - MRP = increase in total revenue from hiring 1 more worker
 - Depends upon [1] marginal product and [2] price of output
 - Assumes perfect competition [in market for labor](#)
 - Lots of workers, all exactly the same,
 - Lots of employers, none with large share of market
 - No barriers to entry or exit

Moral Hazard Loss Aversion Wealth v. Income **Perfect Competition** Income Distribution Explanations

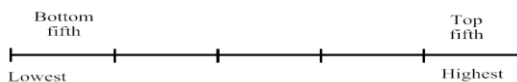
Policy Implications

- If assumptions of perfect competition are satisfied. . .
 - Resulting distribution of income reflects
 - Worker skills & talents
 - Output price
 - Policy implication: no market intervention
- But are the assumptions of perfect competition applicable to markets for labor?
 - Lawyers?
 - CEOs?
 - Professors?

Moral Hazard Loss Aversion Wealth v. Income **Perfect Competition** Income Distribution Explanations

Distribution of Income

- Divide population into fifths:



- Gini Coefficient: A measure of evenness of distribution
 - $Gini = 0$ means perfectly equal distribution
 - $Gini = 1$ means perfectly unequal distribution

Moral Hazard Loss Aversion Wealth v. Income **Perfect Competition** **Income Distribution** Explanations

Choose a Country to Live In : You don't know what income group you'll be in. You have a 20% chance of being in the richest 20%, a 20% chance of being in the poorest 20%, an 0.1% chance of being in the top 0.1%, and so on.

	A	B	C	D	E
Income per person per year					
In top 0.1%	\$1,122,000	\$404,000	\$424,000	\$459,000	\$379,000
In top 20%	\$47,300	\$27,900	\$28,600	\$31,100	\$13,400
Mean	\$20,400	\$16,200	\$16,000	\$15,800	\$4,200
In bottom 20%	\$5,300	\$7,800	\$8,500	\$5,900	\$500
Life expectancy from birth	77 yrs	75.5 yrs	80.5 yrs	79 yrs	67 yrs
Deaths before age 5 (per 1,000 newborns)	8	6	5	7	40
Gini coefficient of income inequality	0.408	0.247	0.249	0.315	0.600

Moral Hazard Loss Aversion Wealth v. Income **Perfect Competition** **Income Distribution** Explanations

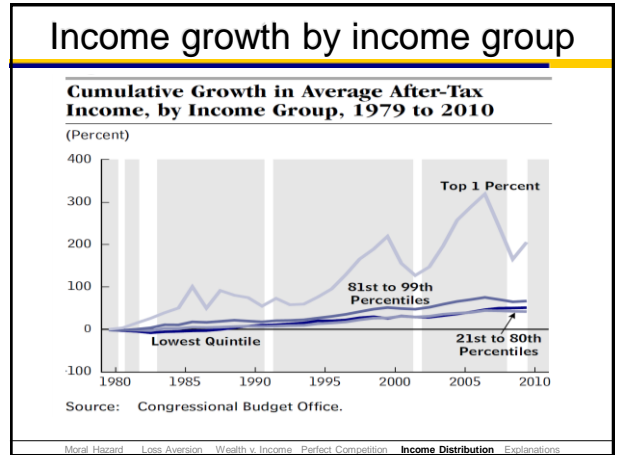
U.S. Household Income, 2017

	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Top 20%
If even distribution	20%	20%	20%	20%	20%
Actual share in 2017					
Dollar cut-offs (rounded)					

Source: <https://www.census.gov/library/publications/2018/demo/p60-263.html> , Tables A-2 & 2

"income" is money income before taxes & transfers

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition **Income Distribution** Explanations

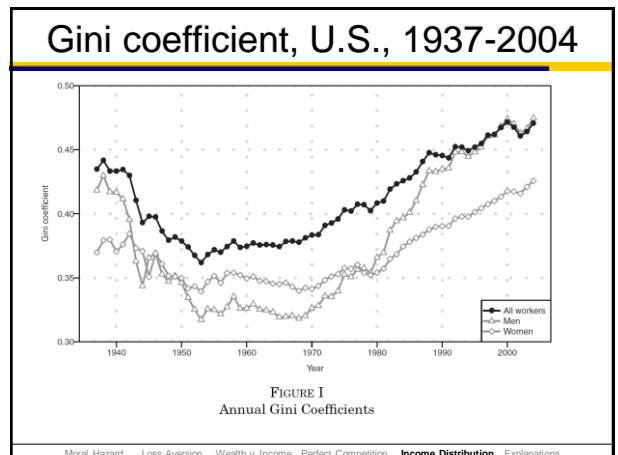


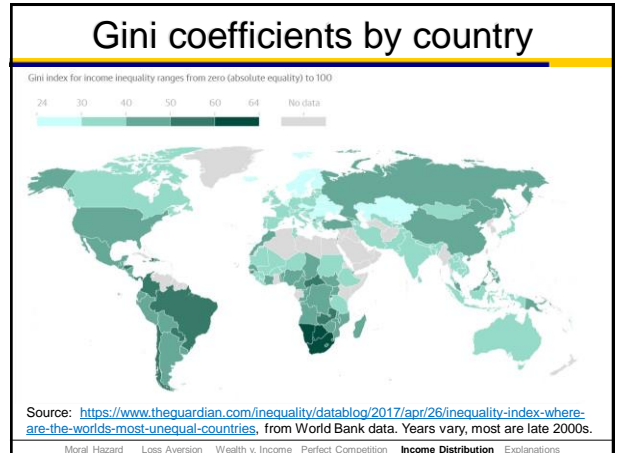
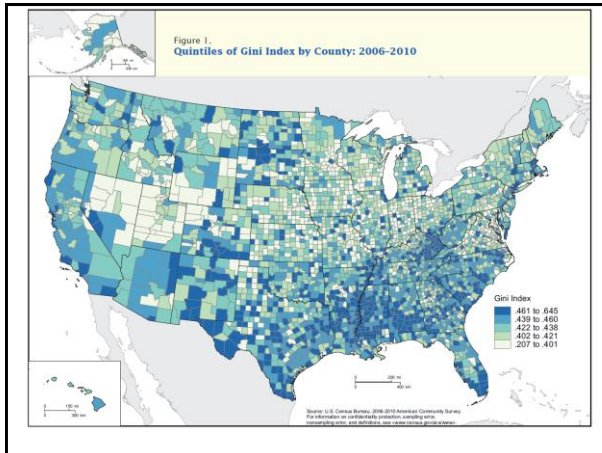
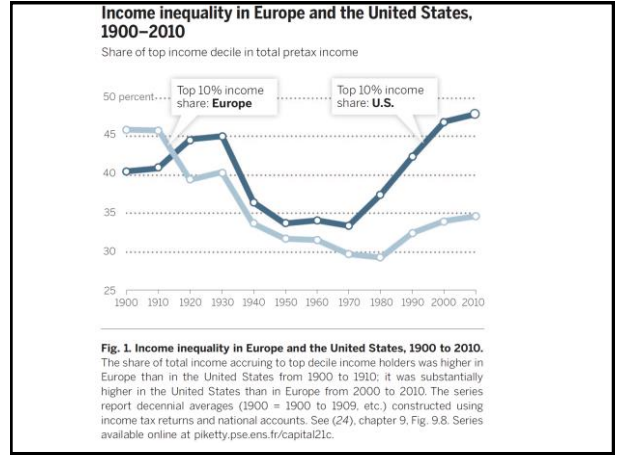
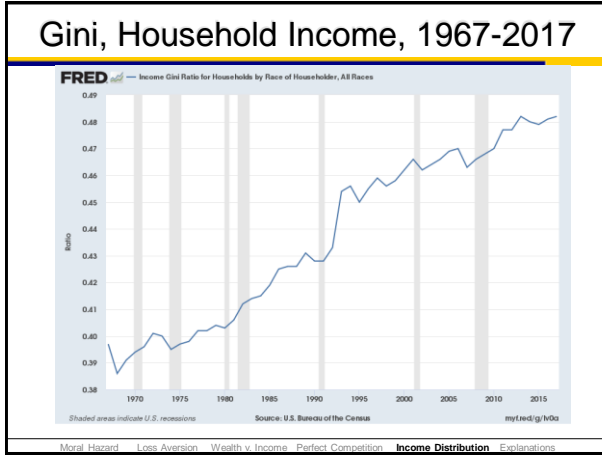
Gini for U.S. Income Increasing

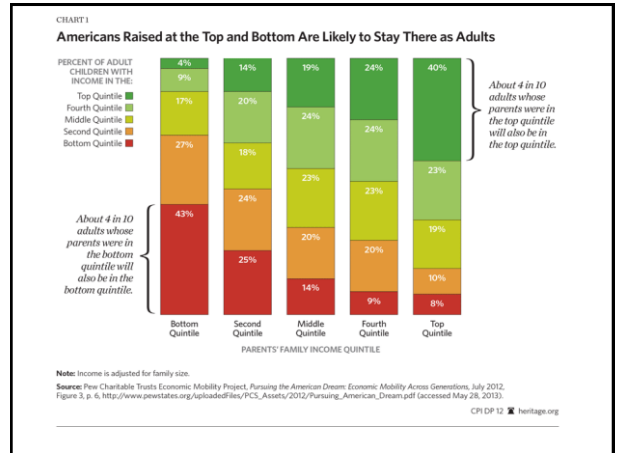
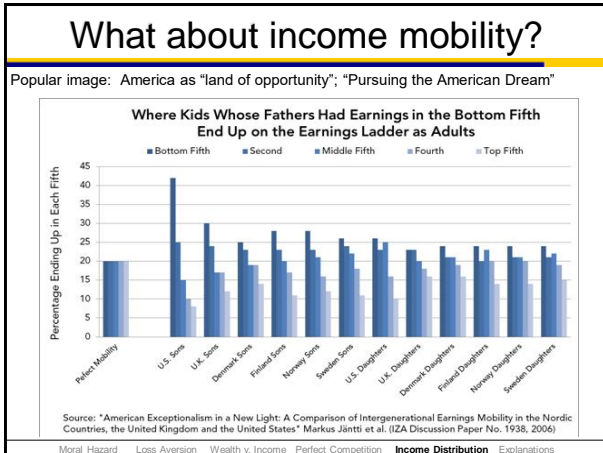
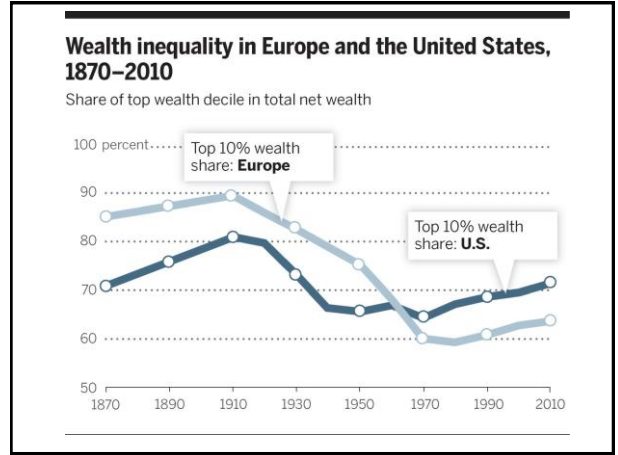
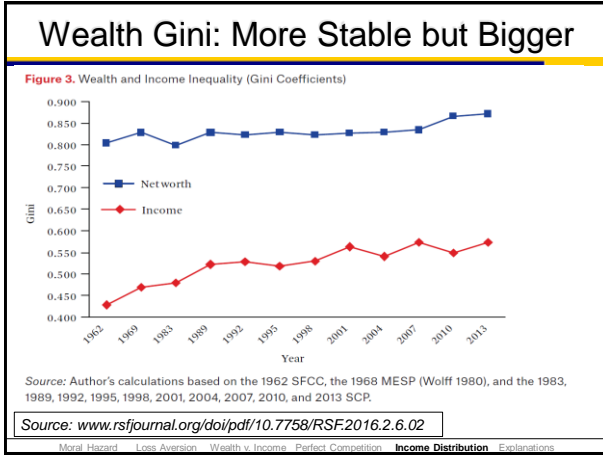
Gini coefficient, household income	
1970	
1990	
2000	
2017	

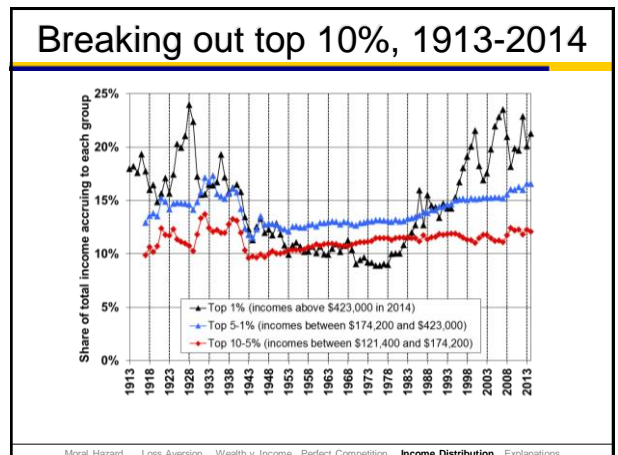
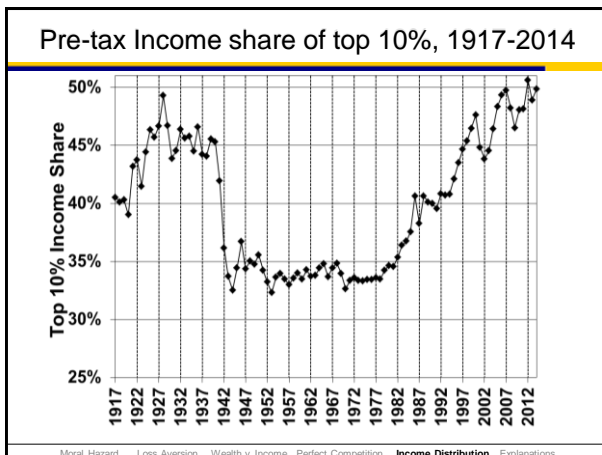
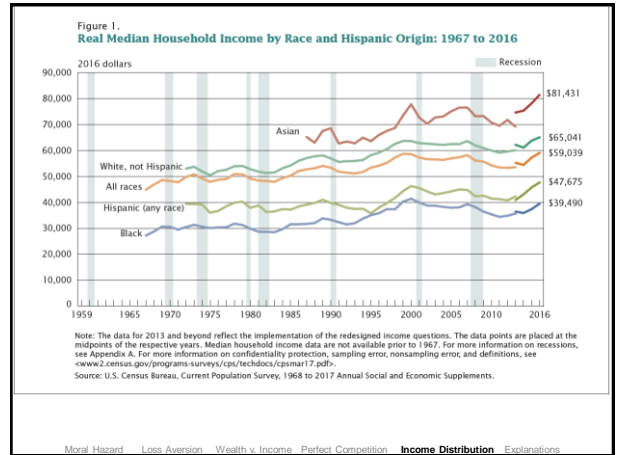
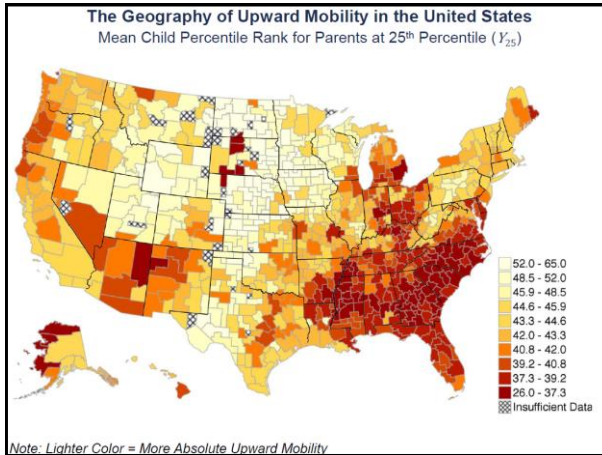
Source: <https://www.census.gov/library/publications/2018/demo/p60-263.html> , Table A-2

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition **Income Distribution** Explanations









Who are the top 1%

- Study based on 1979-2005 tax returns
 - Non-financial execs, managers, supervisors
 - Medical professionals
 - Financial professionals
 - Lawyers

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition **Income Distribution Explanations**

Why the rise in income for top 1%

- Increased labor income
 - “Superstars” reach wider audiences due to technological changes in mass media
 - Recent paper (see tweet from me): IT explains a lot
 - Very large pay increases for CEOs
 - In finance, deregulation and compensation for IPO risk

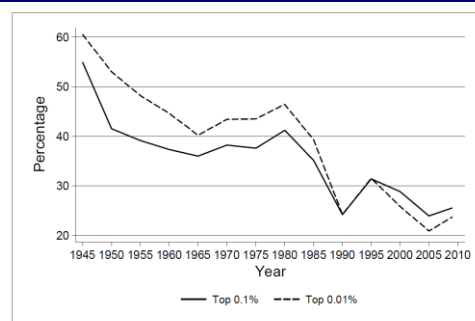
Moral Hazard Loss Aversion Wealth v. Income Perfect Competition **Income Distribution Explanations**

Why the rise in income for top 1%

- Increased labor income
- Changes in government taxes and transfers
 - Overall, taxes and transfers lower Gini coefficient
 - But today, less equalizing than 30 years ago
 - Transfers through Medicare (health care, age 65+) benefit all
 - Less generous transfers to low-income households
 - Taxes have become less progressive
 - Shift from income to payroll taxes

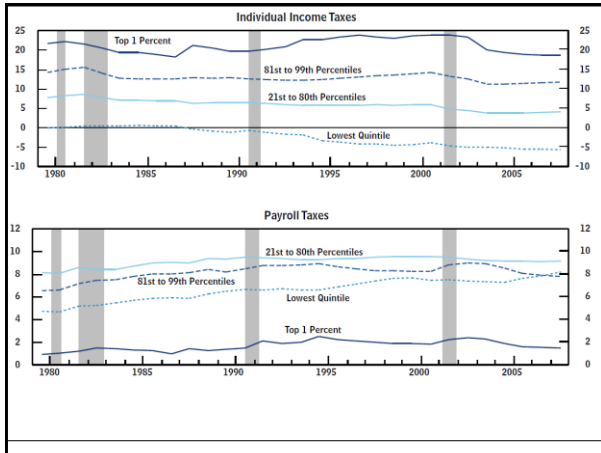
Moral Hazard Loss Aversion Wealth v. Income Perfect Competition **Income Distribution Explanations**

Average Tax Rates for Top 0.1%



Source: CRS calculations using Internal Revenue Service (IRS) Statistics of Income (SOI) information.
Note: The vertical axis is the average tax rate.

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition **Income Distribution Explanations**



Does cutting top-tier taxes spur growth?

- Apparently not
- Reduction in top tier tax rates
 - Little effect on saving, investment, or productivity growth
 - Does increase income inequality
 - Source: Congressional Research Service, report 9/14/12
- Cutting taxes
 - Lower 90% will increase spending → creates jobs
 - Top 10% *shift* spending, don't *increase* spending → no net job creation
 - Source: Owen Zidar (UC Berkeley Ph.D., Chicago Business School faculty)

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition Income Distribution Explanations

Does distribution matter?

- Are there effects of an uneven distribution of income?
- Perhaps . . . But it's a new area of research
 - Income mobility easier when more even income distribution
 - Distribution of fiscal stimulus may matter
 - How much of a tax cut do people spend?
 - Political implications (beyond Econ 1 scope)
 - How well democracy functions
 - Ease of implementing change desired by (lower income) majority?
 - Sociological implications (also beyond our scope)
 - How well do groups interact when there are big disparities?

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition Income Distribution Explanations

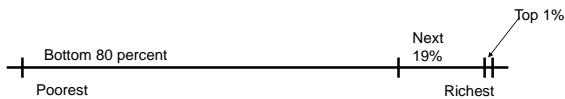
Redistribution Debate

- How evaluate arguments?
- Depends on
 - your goals
 - assumptions about source of differences

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition Income Distribution Explanations

Distribution of Wealth in the U.S.

- Divide population into three groups:



Moral Hazard Loss Aversion Wealth v. Income Perfect Competition Income Distribution Explanations

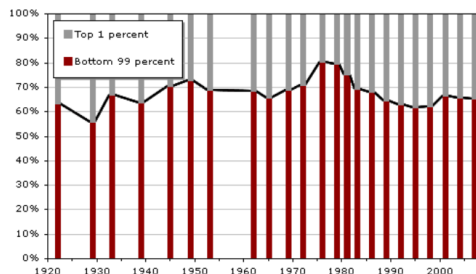
Distribution of Wealth in the U.S.

- What share of total wealth was owned by each of the three groups in 2013?
 - Top 1% own **37%** of total wealth
 - Next 19% own **52%** of total wealth
 - Bottom 80% own **11%** of total wealth
- How much wealth did they have?
 - Mean \$ amount
 - Families in top 1% have **\$18.6 million** of total wealth
 - Families in next 4% have **\$3.6 million** of total wealth
 - Families in bottom 40% have negative net worth (- **\$11,000**)

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition Income Distribution Explanations

Extent of inequality is similar to 1920s

Figure 5: Share of wealth held by the Bottom 99% and Top 1% in the United States, 1922-2010.



Moral Hazard Loss Aversion Wealth v. Income Perfect Competition Income Distribution Explanations

Explaining Distribution of Wealth

- Area of ongoing research
- Distribution reflects
 - Additions to wealth (saving out of income)
 - The higher a family's income, the more likely they are to save
 - Rate of return on wealth
 - The higher a family's wealth, the higher their average rate of return

Moral Hazard Loss Aversion Wealth v. Income Perfect Competition Income Distribution Explanations