Inequality in America: Before and after the Great Recession

Fabrizio Perri
Federal Reserve Bank of Minneapolis

Conversations with the Fed

May 2019

Outline

- Macroeconomics and inequality
- Examples of inequality in society and in our lives
- A case study: inequality and non participation among US men

Income per capita

- Each year/quarter residents of a country creates value (e.g. cars, books, haircuts) which translate into income
- For example, *on average*, in 2010 each person in the US received around $60k of Gross Domestic Product (GDP)
- Many macroeconomists study the evolution of this income over time

US Real GDP per Capita: 1947-2018
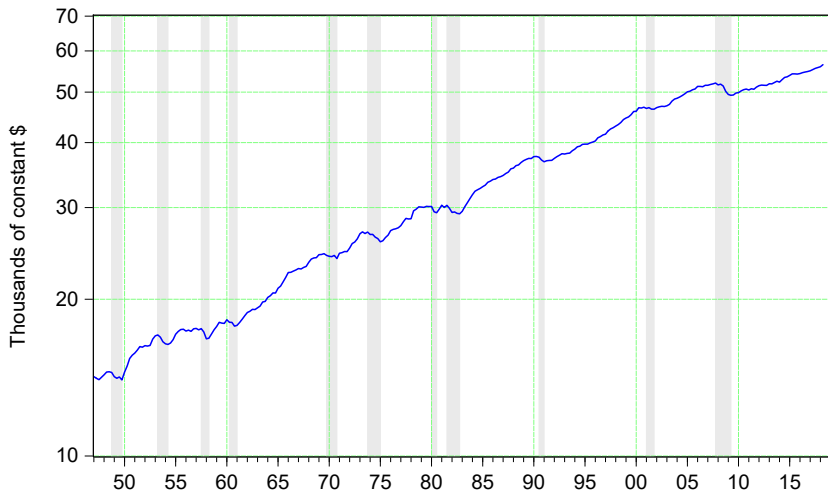
US Real GDP per Capita: 1947-2018
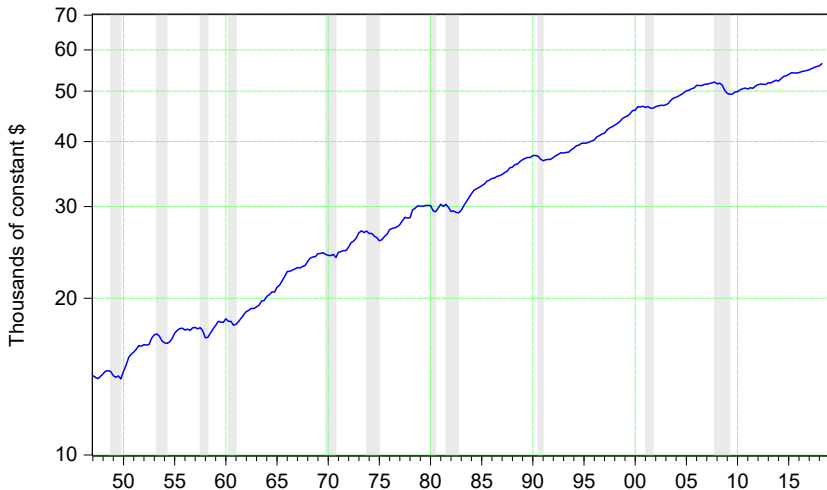
- Differences in pc income across time: Large(factor of 3 in 50 years)

Income and Inequality

- Income inequality measures focuses on how income is distributed across households/persons
- For example in 2017 10% of US households made less than 14,000$ of income, and 10% of US households made more than $140000 of income
- Differences in income across hholds: HUGE (factor of 10 in the same year)

How do we measure inequality?

Simple measures of inequality: 90-10 , 50-10, 90-50 ratios, Gini Index, Shares

- 90/10 ratio $= \frac{\text{Characteristic (Income, Wealth, Happiness) of household at the top 10\%}}{\text{Same Char. of household at the bottom 10\%}}$

- Gini index: measure of concentration
  - ▸ 1 if only one household receives has it all (income, wealth..)
  - ▸ 0 if the variable is equally distributed across households
- Shares: share of var going to the top x%

How do we measure inequality?

Simple measures of inequality: 90-10 , 50-10, 90-50 ratios, Gini Index, Shares

- 90/10 ratio $= \dfrac{\text{Characteristic (Income, Wealth, Happiness) of household at the top 10\%}}{\text{Same Char. of household at the bottom 10\%}}$

- Gini index: measure of concentration
    - 1 if only one household receives has it all (income, wealth..)
    - 0 if the variable is equally distributed across households
- Shares: share of var going to the top x%
- Measures Matter!

Income Inequality at the top: top 1% share, 1914-2017

Top 1% US Pre-Tax Income Share, 1913-2017
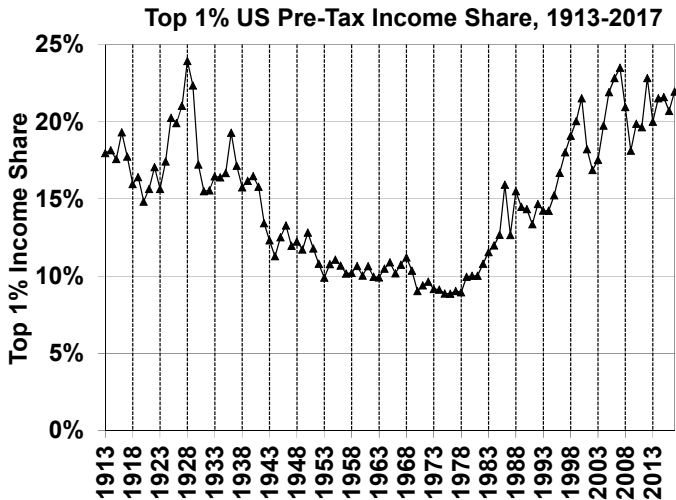
Source: Piketty and Saez, 2003 updated to 2016. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.
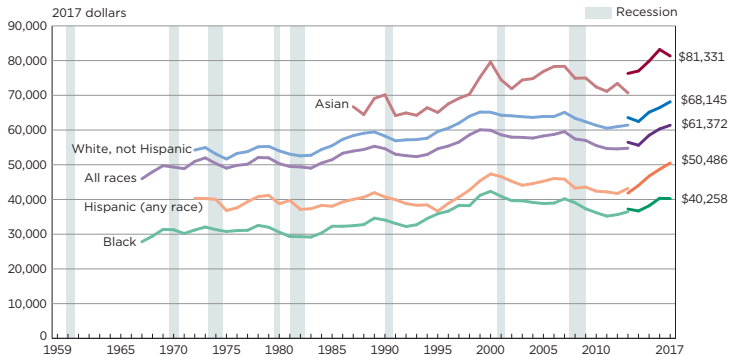
Inequality at the bottom: poverty, 1959-2017
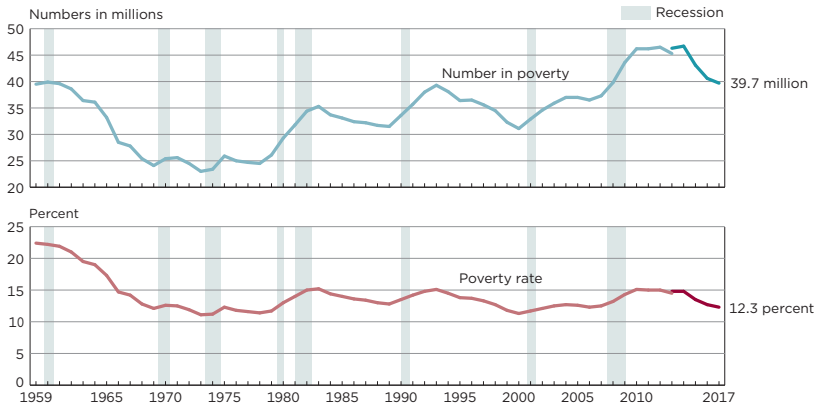
- Poverty threshold for a family of 4 in 2017 is 25k

# Income inequality across races

Real Median Household Income by Race and Hispanic Origin: 1967 to 2017

2017 dollars

Recession

Asian — $81,331

White, not Hispanic — $68,145

All races — $61,372

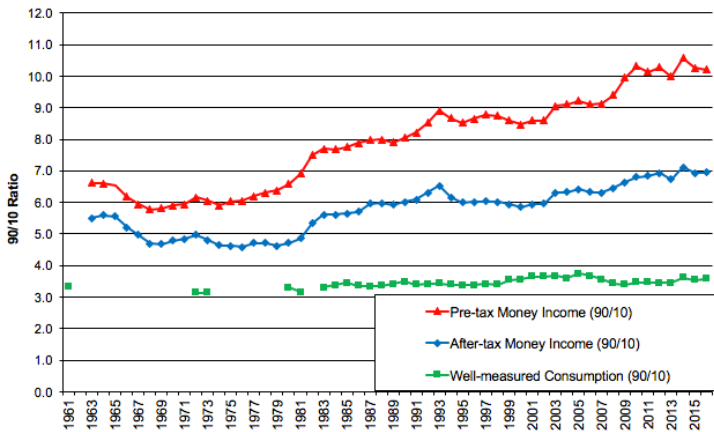Hispanic (any race) — $50,486

Black — $40,258

Income inequality across sexes

Female-to-Male Earnings Ratio and Median Earnings of Full-Time, Year-Round Workers 15 Years and Older by Sex: 1960 to 2017
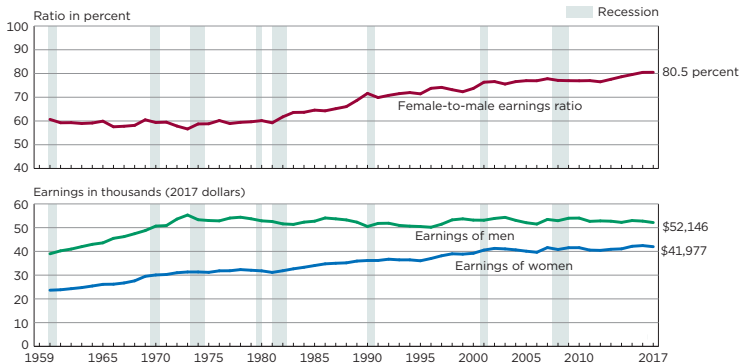
# Inequality in consumption expenditures

11

Inequality in wealth

	Income					Wealth				
	1950	1971	1989	2007	2016	1950	1971	1989	2007	2016
bottom 50%	21.6	21.6	16.2	15.4	14.5	3.0	3.0	2.9	2.5	1.2
0%- 25%	6.1	6.2	5.0	4.5	4.5	-0.1	-0.2	-0.1	-0.1	-0.4
25%-50%	15.5	15.4	11.3	11.0	10.1	3.1	3.2	3.0	2.6	1.6
50%-90%	43.9	47.7	43.8	40.3	37.9	24.7	26.3	29.5	26.0	21.5
50%-75%	23.5	24.9	22.5	20.3	18.4	9.8	10.5	11.7	10.2	7.2
75%-90%	20.4	22.8	21.4	20.0	19.5	14.8	15.8	17.8	15.8	14.3
top 10%	34.5	30.7	39.9	44.3	47.6	72.3	70.7	67.6	71.5	77.4
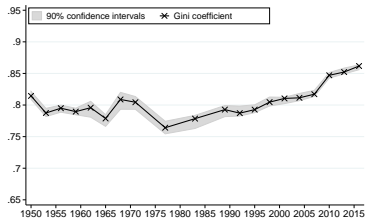
(b) Wealth

The persistence of Income Inequality

Figure 8.1. **Estimates of the intergenerational earnings elasticity for selected OECD countries**
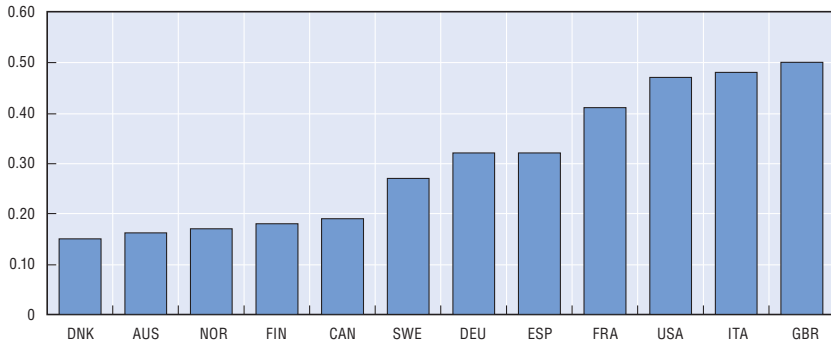
Note: The height of each bar represents the best point estimate of the intergenerational earnings elasticity resulting from the meta-analysis carried out by Corak (2006), integrated with estimates from national studies for a few countries. Higher parameters indicate a higher persistence of earnings across generations (i.e. lower intergenerational mobility).

Health Inequality

- In 1980 Life expectancy at age 25 for male was about 72 yrs

Health Inequality

- In 1980 Life expectancy at age 25 for male was about 72 yrs
- A study in 1990 analyzed mortality of 1.3 Americans and linked it to their income (Million deaths study)

Health Inequality

- In 1980 Life expectancy at age 25 for male was about 72 yrs
- A study in 1990 analyzed mortality of 1.3 Americans and linked it to their income (Million deaths study)
- Poor males (less than $5000): life expectancy 68 yrs
- Non-Poor males (more than $5000): life expectancy 78 yrs
- Confirmed in recent studies on *deaths of despair*

Grade Inequality

- The average GPA in economics at Georgia Tech in Spring 2007 was 2.97
- About 10% of the student got a grade of D or below

Inequality is a double edge sword

- Why is inequality bad?
- Concavity, i.e. bad things hurt us more than good things help us. The loss of having a child going from well fed to starvation, is much larger than the gain of driving a fancy car v/s regular car
- Too much concentration of resources in few hands might lead to monopoly power and inefficient outcomes
- Mis-allocation of resources: suppose smart children are born poor and cannot go to school. Waste of talent

Inequality is a double edge sword

- Why is inequality bad?
- Concavity, i.e. bad things hurt us more than good things help us. The loss of having a child going from well fed to starvation, is much larger than the gain of driving a fancy car v/s regular car
- Too much concentration of resources in few hands might lead to monopoly power and inefficient outcomes
- Mis-allocation of resources: suppose smart children are born poor and cannot go to school. Waste of talent
- Why is inequality good?
- Incentives. Grade inequality. How the pie is divided affects the size of the pie.

Inequality is a double edge sword

- Why is inequality bad?
- Concavity, i.e. bad things hurt us more than good things help us. The loss of having a child going from well fed to starvation, is much larger than the gain of driving a fancy car v/s regular car
- Too much concentration of resources in few hands might lead to monopoly power and inefficient outcomes
- Mis-allocation of resources: suppose smart children are born poor and cannot go to school. Waste of talent
- Why is inequality good?
- Incentives. Grade inequality. How the pie is divided affects the size of the pie.
- Does the US have too much inequality?

Inequality in the OECD

Figure 1.1. **Gini coefficients of income inequality in OECD countries, mid-2000s**

StatLink ⇍ http://dx.doi.org/10.1787/420515624534
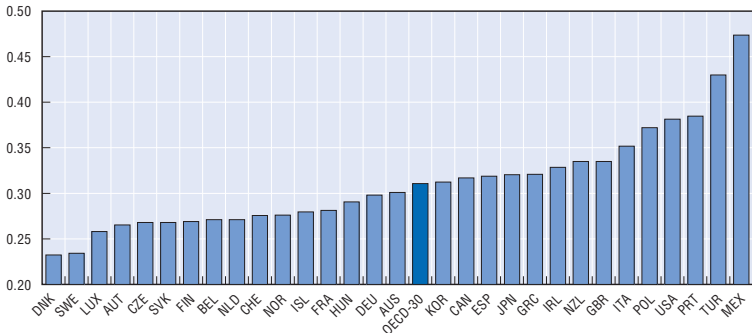
Note: Countries are ranked, from left to right, in increasing order in the Gini coefficient. The income concept used is that of disposable household income in cash, adjusted for household size with an elasticity of 0.5.

Source: OECD income distribution questionnaire.

US Earnings Distribution: 1967-2017

Change relative to 1967

Sample: March CPS, All Males, Aged 25-55
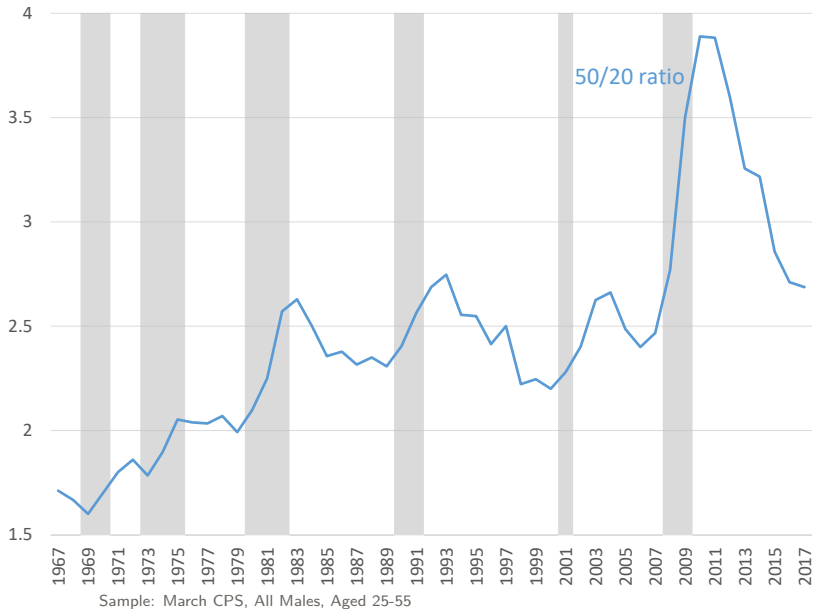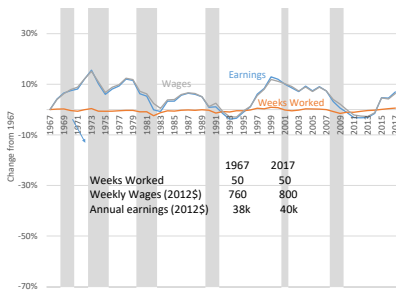
18
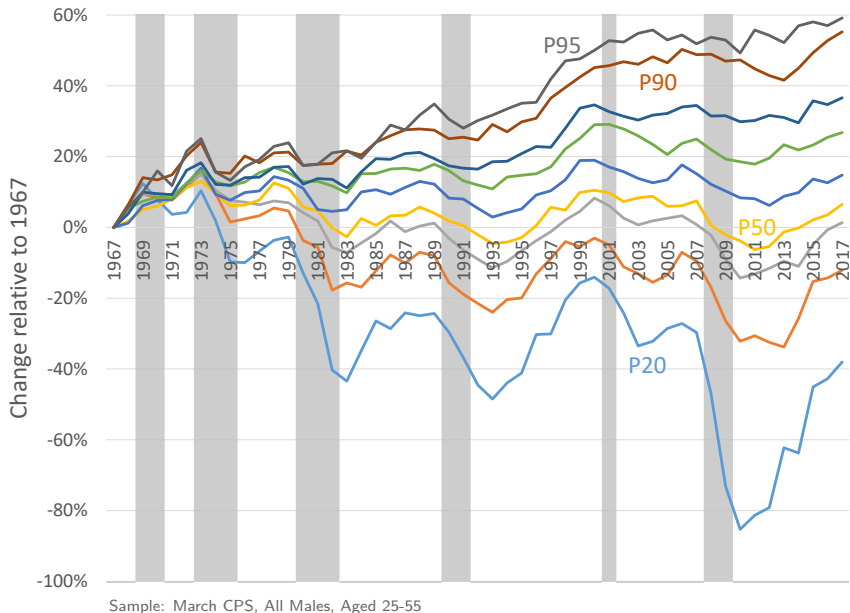
Main Features

- Widening dispersion, at both the top and the bottom

- Increase at the top: steady

- Increase at the bottom: cyclical

- Inequality at the bottom increases sharply in recession, only partially recovers in expansions
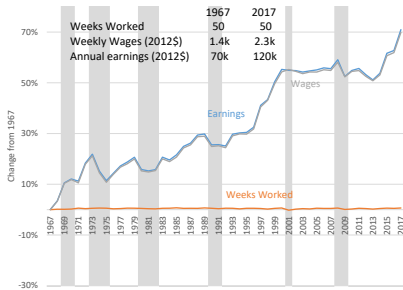
Inequality at the Bottom: 1967-2017

50/20 ratio

Sample: March CPS, All Males, Aged 25-55

20

The Tale of the Tails

Mid 45-55%

	1967	2017
Weeks Worked	50	50
Weekly Wages (2012$)	760	800
Annual earnings (2012$)	38k	40k

Top 85-95%

	1967	2017
Weeks Worked	50	50
Weekly Wages (2012$)	1.4k	2.3k
Annual earnings (2012$)	70k	120k

Bottom 0-20%

	1967	2017
Weeks Worked	38	15
Weekly Wages (2012$)	310	250
Annual earnings (2012$)	11.7k	3.7k

21
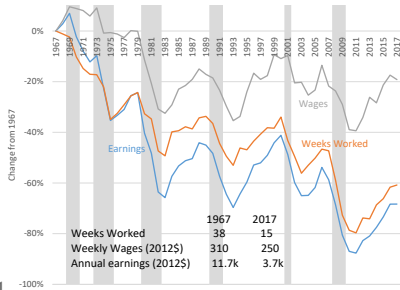
Intensive and Extensive Margins at the Bottom

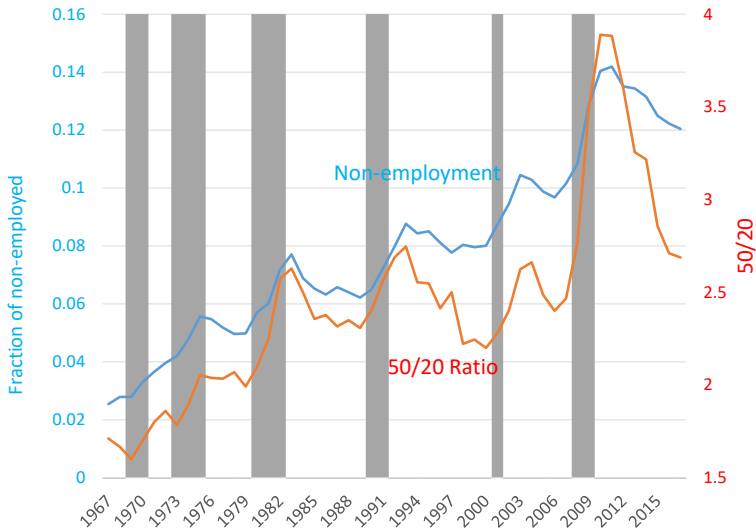|	1967	2017
Weeks Worked	38	15
Weeks (cond. on working)	43	37
Fraction working	88%	40%
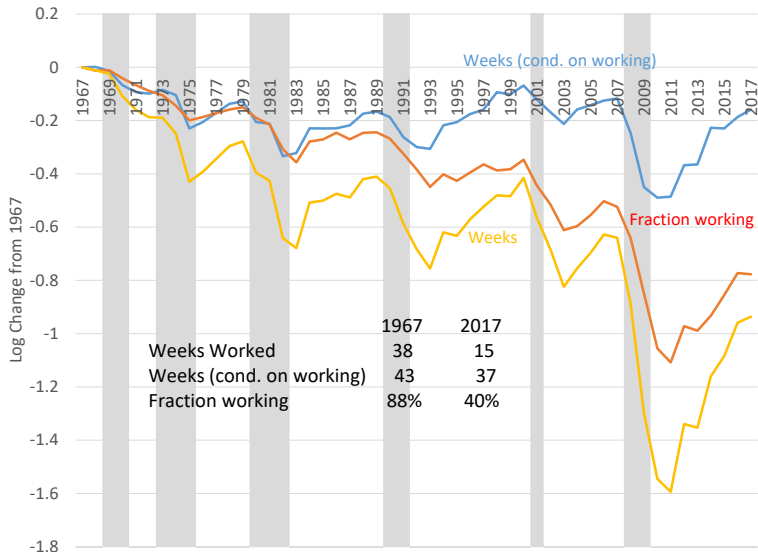
Sample: March CPS, Males, Aged 25-55

Summary

- **At the top**: growth in earnings all driven by wages (weeks flat)

- **In the middle**: weeks and wages both flat

- **At the bottom**: large decline in weeks (mostly extensive margin), small decline in wages (conditional on working)

Inequality and Non-Employment

Dynamics of Bottom Earnings Inequality

	Trend	Recessions
Non-employment	Goes up	Goes up
	⇓	⇓
Earnings of bottom 20%	Goes down	Goes down
	⇓	⇓
Inequality at the bottom (50/20)	Goes up	Goes up

- Two interpretations:
  1. Recessions increases inequality, and long run increase is cumulative effect of series of recessions
  2. Inequality on a secular upward trend, and business cycles just generate fluctuations around this trend

- Data alone cannot differentiate between these interpretations: need a model!

A Theory of a "Double Whammy"

- Recessions are times when lots of workers lose their jobs

- With their jobs, they lose skills (scarring)

- Job/skill loss disproportionately impacts low-skilled workers, who may already be marginal labor market participants

- In recoveries most jobs/skills slowly return, unless...

- Recession happens against backdrop of trend decline in low skill wages relative to "value of leisure"

- In which case, lost low skill jobs might never come back

26

Answers

- Recessions (through scarring) have had an important effect on the increase in inequality at the bottom of the income distribution and on the increase in non-employment of men

- But recessions alone would have had much smaller impact on inequality and non employment

- Combination of recessions and increase in secular inequality have acted as "double whammy" on the bottom half of the distribution and jointly account for the increase in inequality and non employment

Policy Takeaways

- Recessions have very persistent impacts on non-employment and inequality

- These costs of recessions have likely increased over time because of background upward trend in wage inequality

- Big gains from prolonged economic expansions – skill gains during employment reduce risk of long-run non-employment

Conclusions

- Inequality is a controversial topic
- Inequality research is fascinating as it ultimately leads to the design of better societies for us and our children!
- The Minneapolis Fed is at the forefront of this research