

How Inequality Weakens Our Economy and Divides Our Society:

Insights from Recent Developments in Behavioral
Development Economics

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Festschrift in Honor of Kaushik Basu

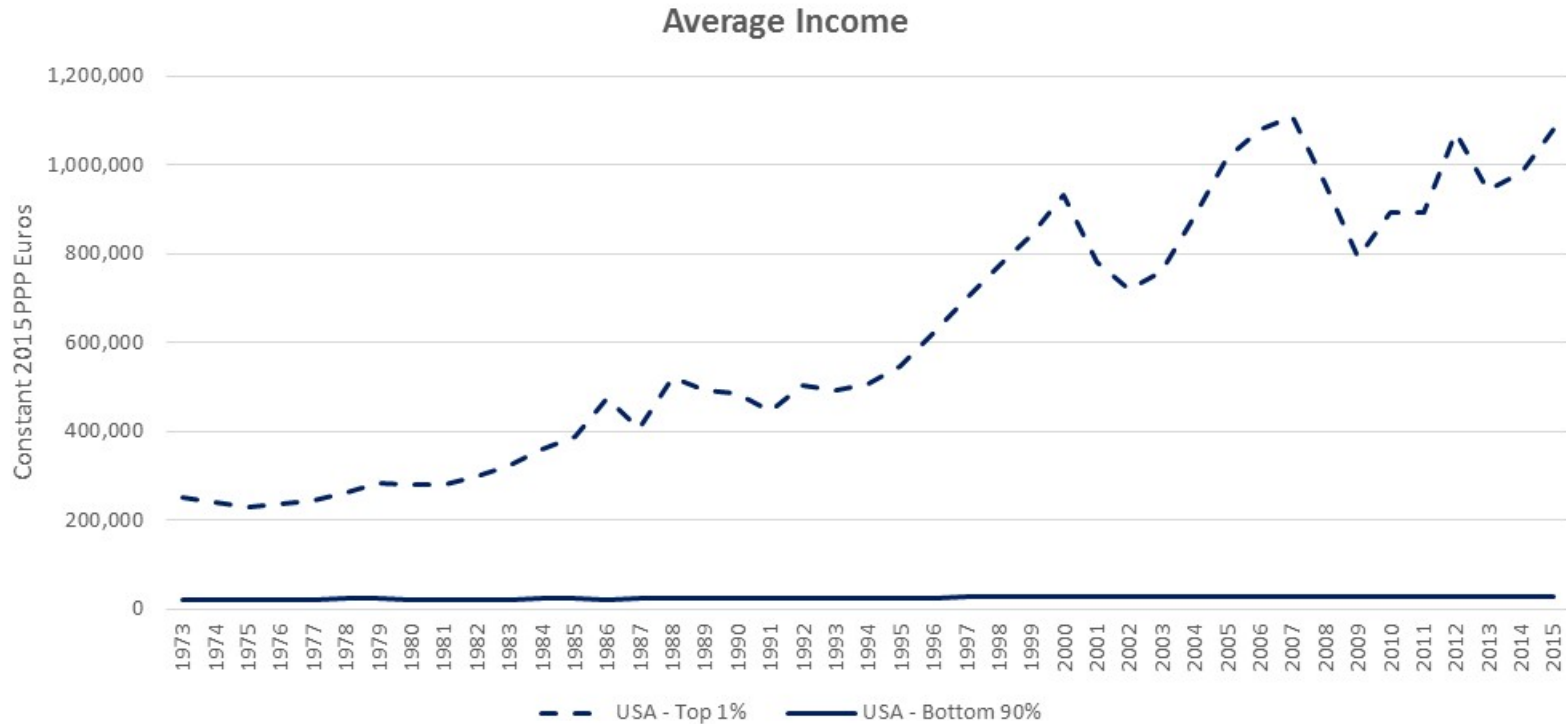
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Growth in inequality

- There has been an enormous increase in inequality over past third of a century
 - Kuznets' Law has been repealed which suggested after a point of time in development, inequality would decrease
 - Kuznet's theory was true when he wrote it
 - "Repeal" began in 70's/80's
 - An increase in poverty, an evisceration of the middle class, increasing share of GDP going to the top
 - Stagnation of most Americans evidence that trickle down economics doesn't work
 - An increase in inequalities in income, wealth, health, access to justice, opportunity
 - Many of these inequalities greater than income inequalities
 - Many related—correlation between income inequalities and inequalities of opportunity

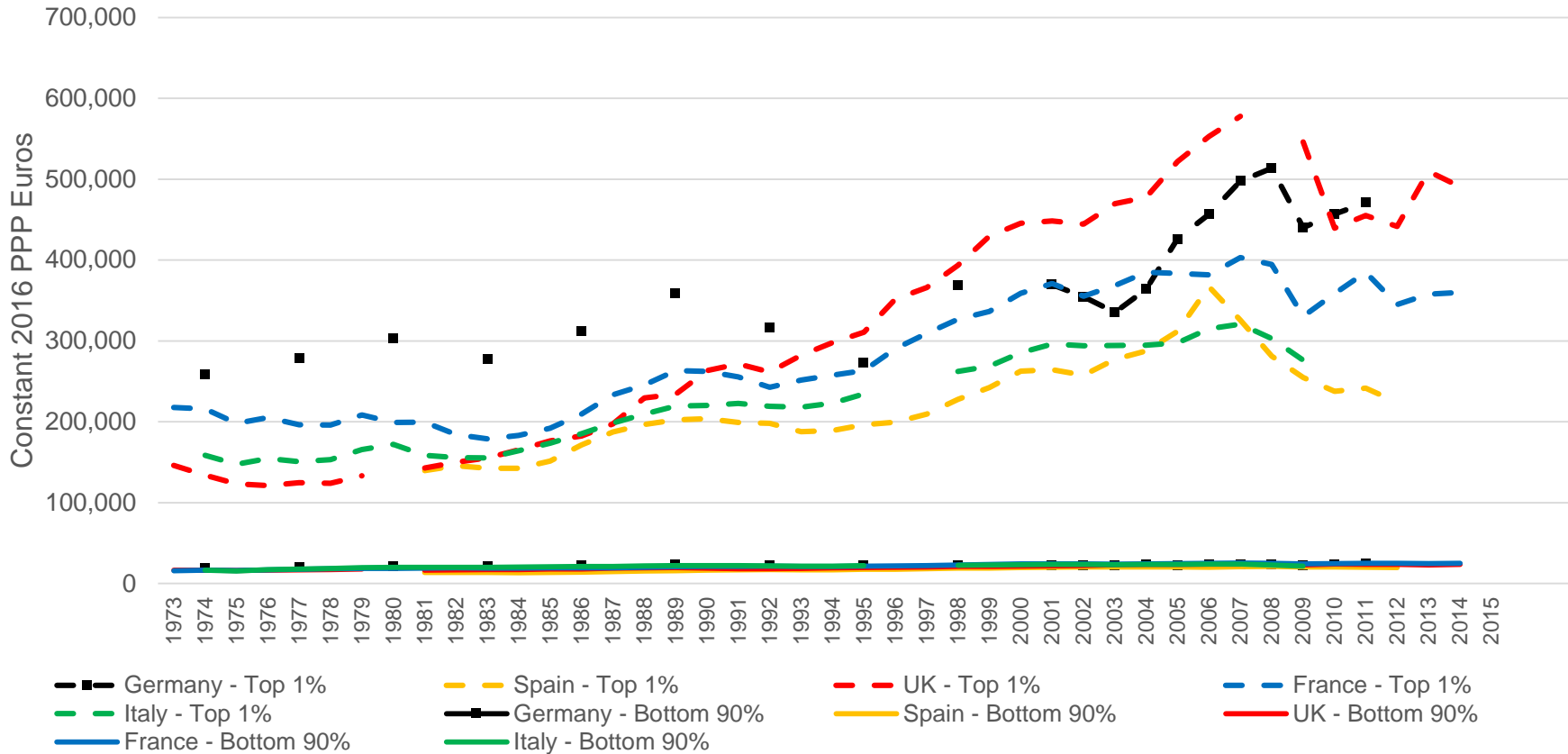
US: bottom 90% have seen little increase in income over last third of a century



Source: World Wealth and Income Database

Europe: less increase in inequality in some countries than in others

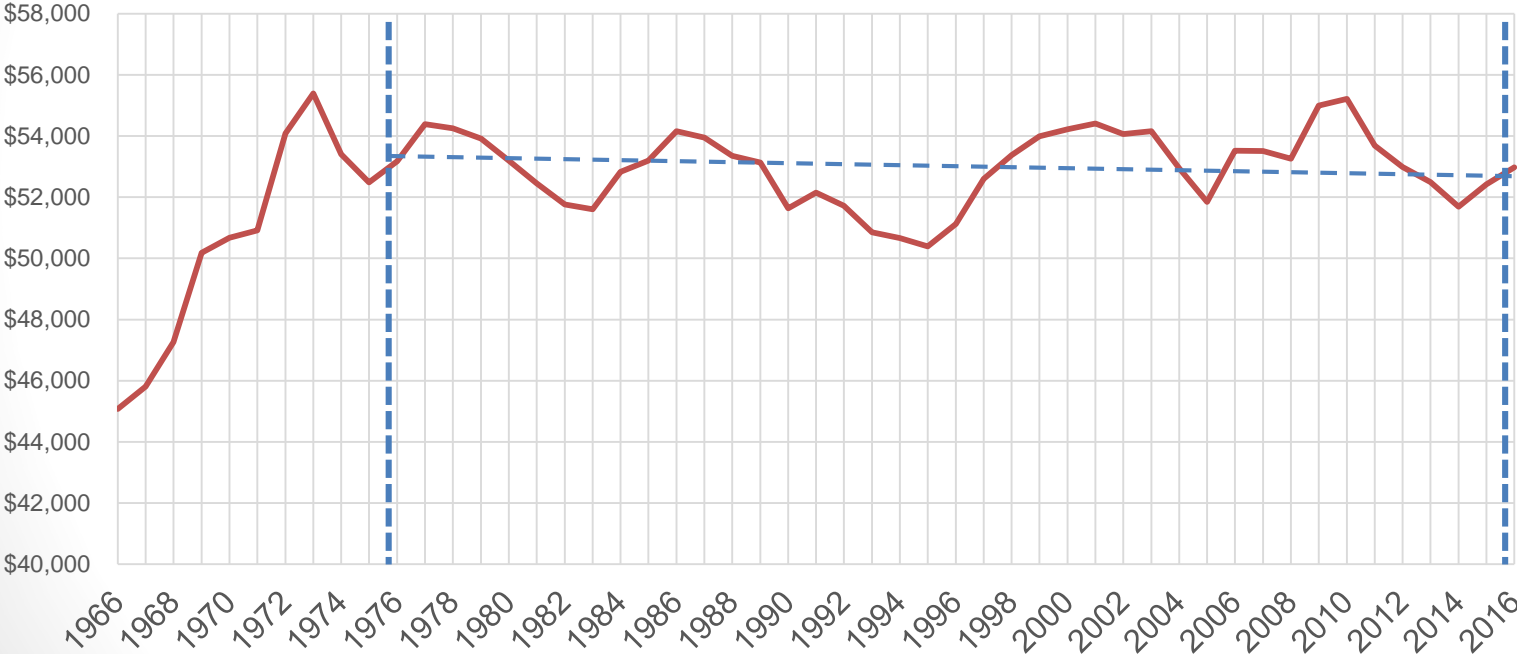
Average Income



Source: World Wealth and Income Database

US: Median income of a full time male worker is at the level that it was more than 4 decades ago

(constant 2016 \$)



Note: Data is adjusted for the methodological change of 2013.
Source: U.S. Census Bureau.

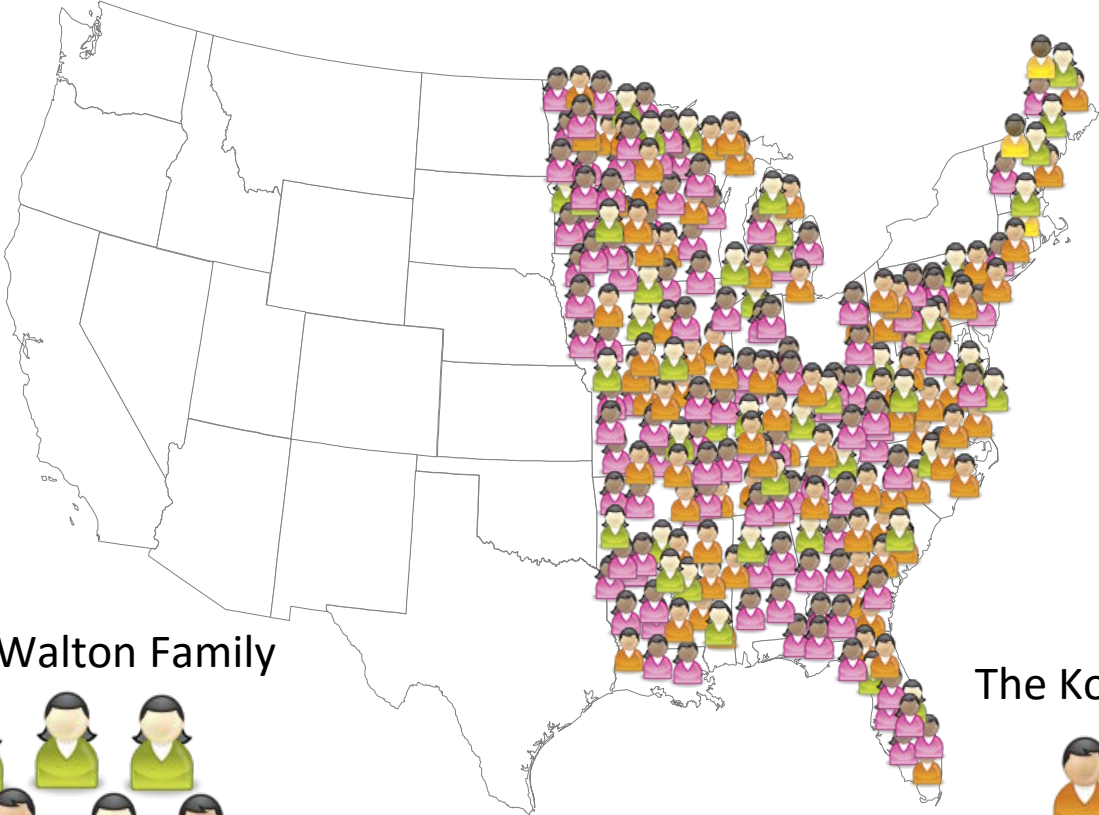
US: Real wages at the bottom are at the level that they were roughly sixty years ago



Source: Federal Reserve

The Walton Family and The Koch Brothers have a net worth of \$212 billion in 2016

That's the net worth of 115 million Americans or 35% of the country.



The Walton Family



The Koch Brothers

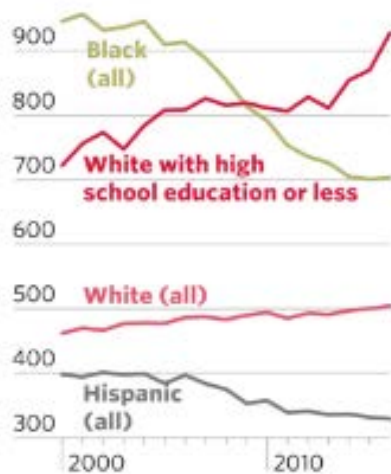


Decline in life expectancies and an increase in deaths of despair

New research shows the increasing mortality rate among white Americans spans age groups and is most acute among the less-educated.

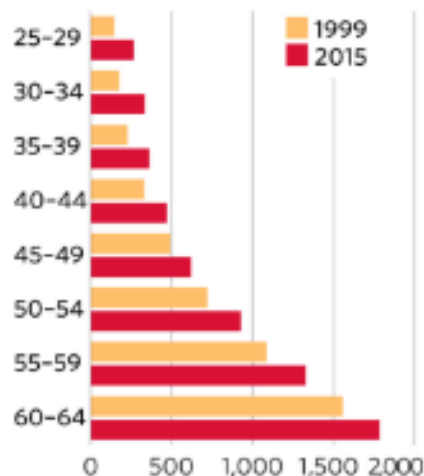
White deaths are rising...

Mortality rate by race, ages 50-54



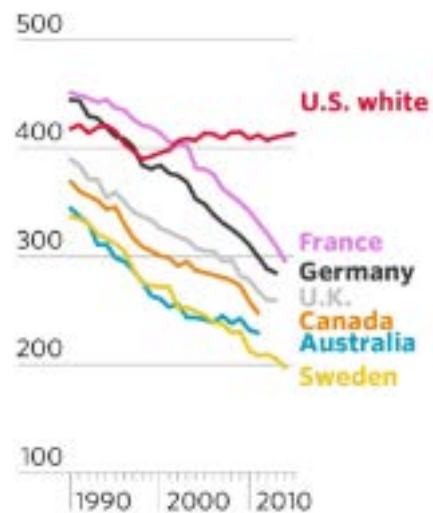
...among all age groups of less-educated whites...

Mortality rate for whites with high school education or less, by age



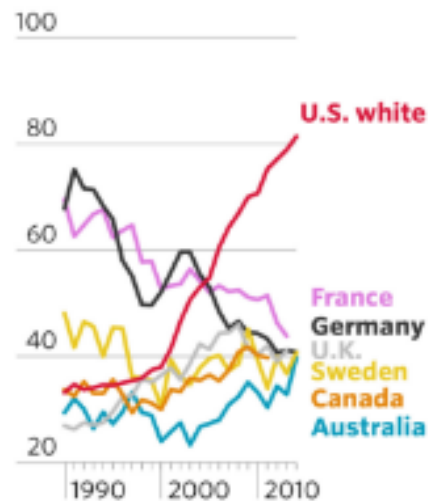
...in contrast to elsewhere...

Mortality rate for all causes, ages 45-54



...due in part to increases in 'deaths of despair'.

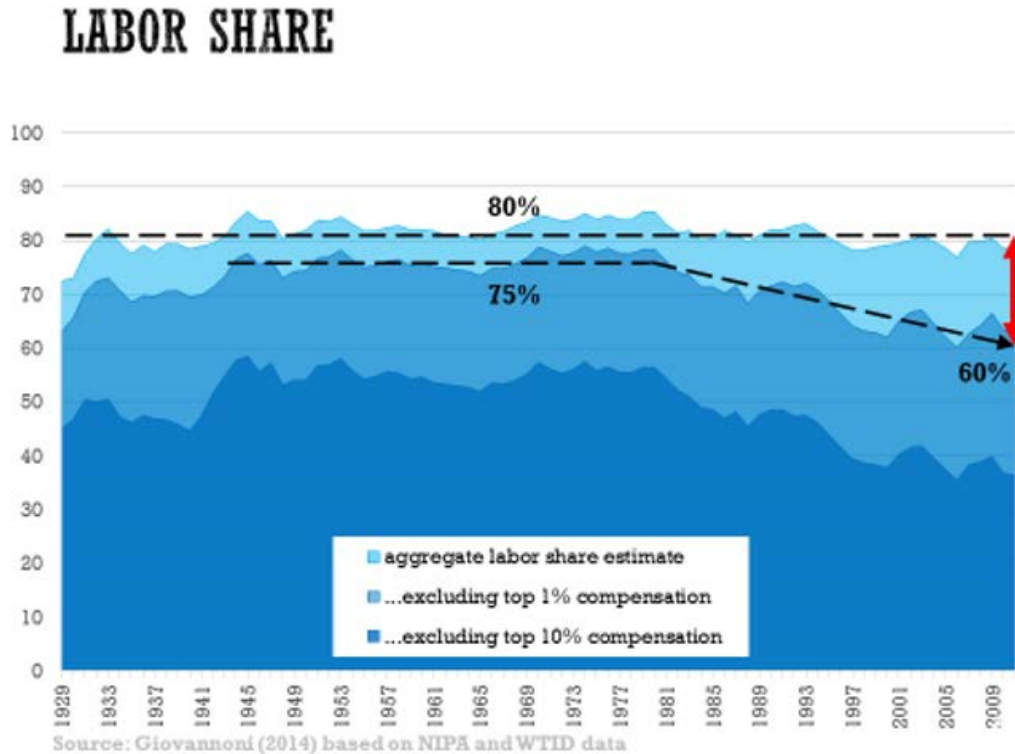
Mortality rate due to alcohol, drugs and suicide, ages 50-54



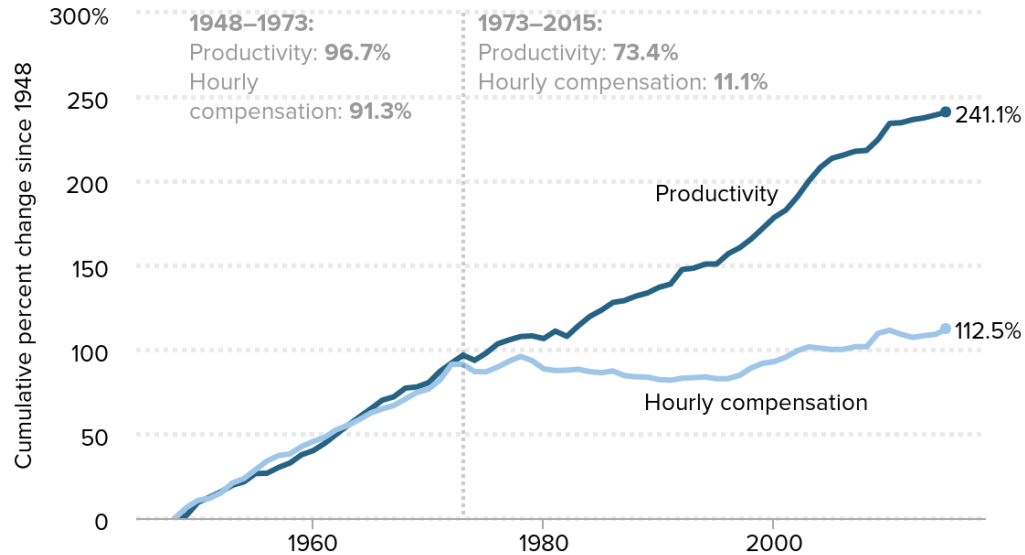
Other aspects of changing economy that have to be explained

- Decrease in share of labor
 - In contrast to earlier period when shares were relatively constant
 - Especially when one excludes top 1%
- Increasing gap between compensation and productivity
 - No sudden change in technology that can explain sudden change
 - Can't be explained by "skilled bias technological change": this is about average pay, and with any production function where aggregate output is a function of aggregate capital, an increase in aggregate capital relative to labor must increase real wages, and decrease share of capital if elasticity of substitution is less than one

Decreased share of labor—especially if one focuses on bottom 99% of labor



US: Disconnect Between Productivity and a Typical Worker's Compensation, 1948-2015



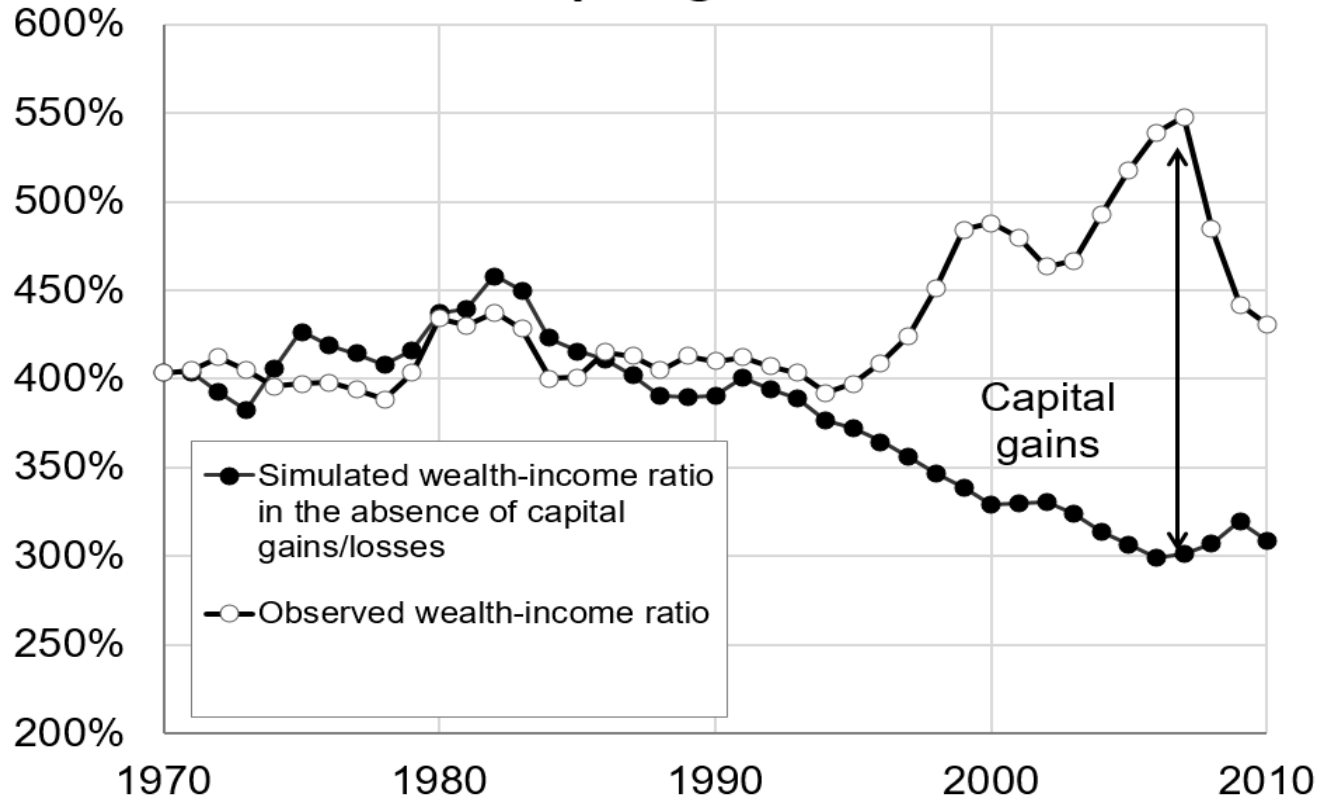
Note: Data are for average hourly compensation of production/nonsupervisory workers in the private sector and net productivity of the total economy. "Net productivity" is the growth of output of goods and services minus depreciation per hour worked.

Source: EPI analysis of data from the BEA and BLS (see technical appendix of *Understanding the Historic Divergence Between Productivity and a Typical Worker's Pay* for more detailed information)

Theories have to be consonant with other “stylized facts”

- Pareto tail to wealth distribution
- And consistent with other on-going changes in the economy—explaining conundrums
 - Increasing wealth income ratios, declining capital income ratios
 - By most metrics (though there remain some controversies in the measurement of capital)
 - Large gap between wealth and capital

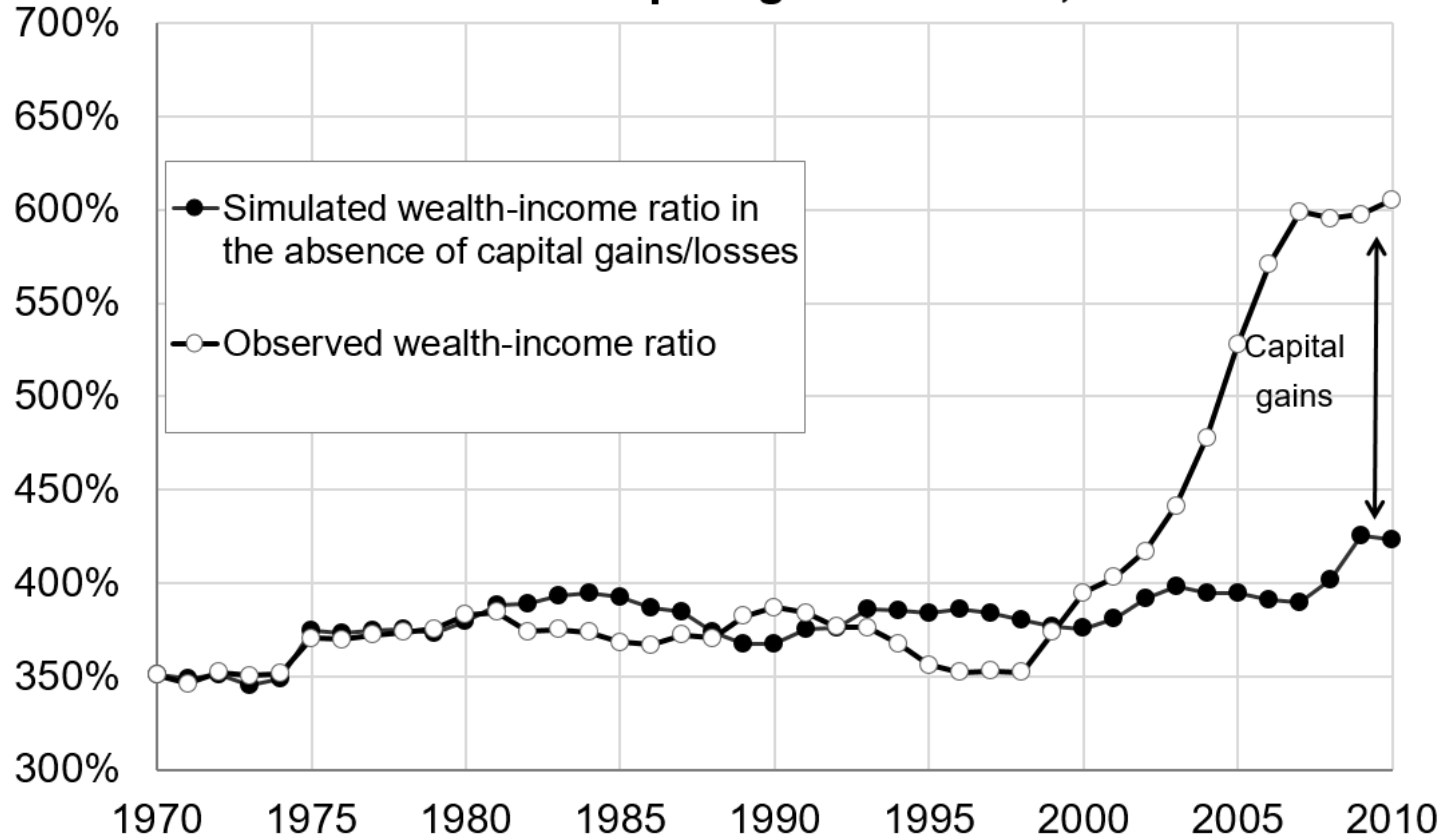
Simulated national wealth-income ratios in the absence of capital gains: U.S. 1970-2010



Authors' computations based on 1970 wealth-income ratios, 1970-2010 national saving flows (including other volume changes) and real income growth rates.

Source: *Capital in the Twenty-First Century*, Thomas Piketty.

Simulated national wealth / national income ratios in the absence of capital gains: France, 1970-2010

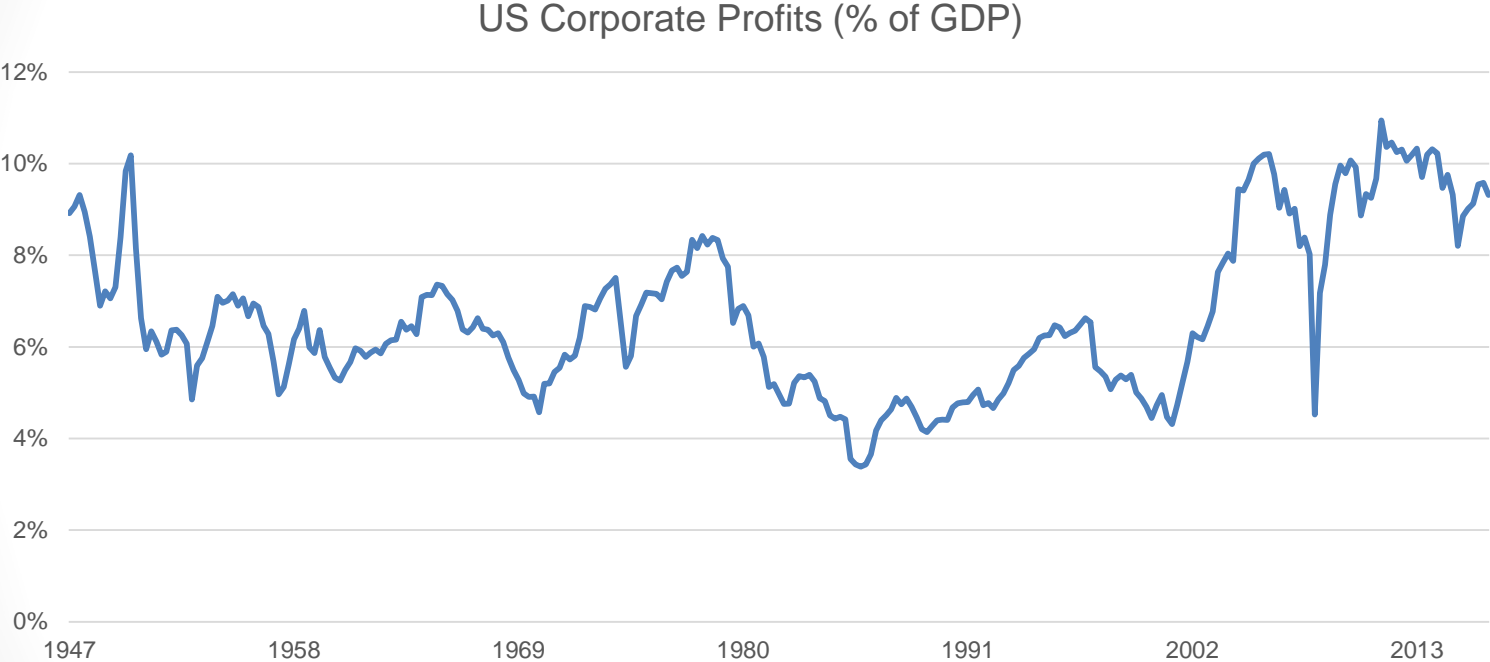


Authors' computations based on 1970 wealth-income ratios, 1970-2010 private saving flows (including other volume changes) and real income growth rates. Source: *Capital in the Twenty-First Century*, Thomas Piketty.

Investment puzzle

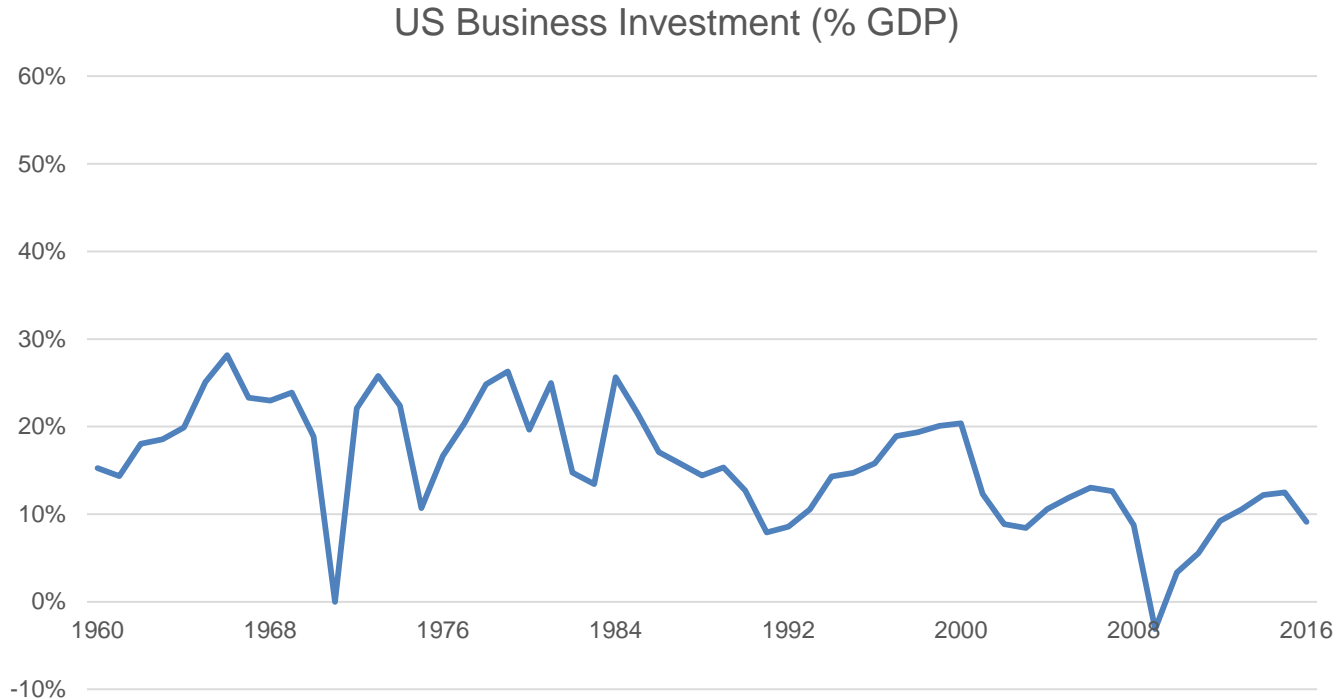
- Low investment rates even with low (nominal and real) interest rates and high value of “q” (and in spite of seemingly high *average* returns)
 - Finance not constraint
 - Large firms sitting on trillions in cash
 - Real interest rates have been negative for many periods, small in others

Growing profits and low business investment



Source: Federal Reserve Bank of St. Louis

Growing profits and low business investment

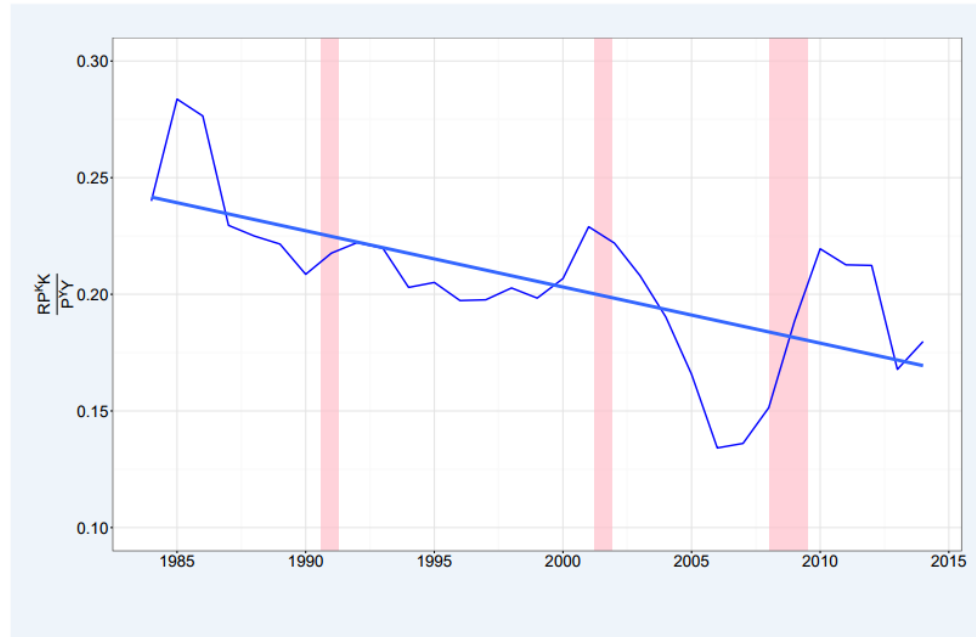


Source: Federal Reserve Bank of St. Louis

Even share of capital down

- By any reasonable accounting framework
- Flip side of the gap between “capital” and “wealth”
- What is up is the share of rents

The capital share of gross value added is declining



The figure shows the capital share of gross value added for the U.S. non-financial corporate sector over the period 1984–2014. Capital payments are the product of the required rate of return on capital and the value of the capital stock. The capital share is the ratio of capital payments to gross value added. The required rate of return on capital is calculated as $R = (i - \mathbb{E}[\pi] + \delta)$. Capital includes both physical capital and intangible capital. The cost of borrowing is set to Moody's Aaa and expected inflation is calculated as a three-year moving average.

Source: Simcha Barkai, University of Chicago

Explaining the growth in inequality

Two key strands within standard economics

Disparity of savings between rich and rest (Piketty, Kaldor)

- with ever increasing inequality
- Unable to explain key aspects of inequality in income and wealth
 - Declining share of labor
 - Growing gap between compensation and average productivity

Piketty model

- Piketty and others have provided important data through which we can see an increase in inequality, especially at the top
- The question is: how do we explain it? Piketty has offered a particular model
- Capitalists save all (most) of their income
 - So wealth grows at the rate r
 - If $r > g$, their wealth grows faster than the economy,
 - If r does not decline, their income does too

Key assumptions fail

- $s < 1$
- r is endogenous, and *in long run equilibrium* $sr < g$

Other key flaw in analysis

- Confusing wealth with capital
- From national income data, K/Y is actually decreasing in US and other advanced countries (though there are important measurement problems)

Alternative equilibrium approach

An equilibrium wealth and income distribution, based on balancing of centrifugal and centripetal forces (Stiglitz, 1966, 1969, 2015)

- What we are seeing is a movement from one equilibrium to another
- Centrifugal forces have increased, centripetal forces weakened

Explaining distribution of wealth

Changes in intergenerational transmission of advantage

- Lower capital and especially inheritance taxes
 - In US regressive taxation
- Weaker, less equal public education
 - More economic segregation
 - More reliance on private education
- Increased role of connections
 - Internships
- More assortive mating

Many changes in markets

- Globalization
- Skill biased technological change
- Shift towards service sector (where there is less wage compression)

Most important change in markets: growth in rents

- Hard to reconcile earlier observations with standard neoclassical model with competition
- Easy to reconcile in model with rents
 - Third factor (land, knowledge)
 - Monopoly power
 - Intellectual property rents
 - Rent-seeking from public sector
 - Can explain new “stylized facts” and many of “puzzles”

Rents and the Growth in Inequality

- Disparity between growth in wealth (W) and capital (K) reflects an increase in capitalized value of rents, R
 - $W = K + R$
 - Disparity has grown
 - In many models, an increase in R leads to a decrease in real capital accumulation: **R crowds out K.**
 - Decrease in K (relative to what it otherwise would be, or in the rate of increase of K) leads to lower economic growth, at least in the short to medium run
 - Since the wealthy own the assets whose value has increased, the increase in R helps “explain” growth in wealth and income inequality
 - Key message: at least part of the explanation of the increase in R is policy—changes in policy could reduce R, increase K, increasing growth, reducing inequality

Key observations

- Much of the income of those at the top is capital gains, an increase in the value of existing assets.
- Much of the increase in wealth has been an increase in particular of land values.
- There has been an increase in market concentration in many industries throughout the economy.
- Increases in inter-firm disparities in wages (of individuals of seemingly similar qualifications) account for more of the increase in wage inequality than increases in intra-firm disparities.

Changes in the structure of the economy over the past third of a century associated with an increase in market power

Some of these are a result of changes in technology and structure of demand

- a) an increase in the importance of sectors with large network externalities, in which naturally there will be one or a few dominant platforms
- b) an increase in the importance of sectors with high fixed costs and low marginal costs (much of the digital and knowledge economy)
- c) an increase in knowledge about how to create, maintain, and extend market power, including the design of contracts that help preclude entry
- d) one of the implications of the move from manufacturing to the service sector economy is an increase in (the average degree of) market power, since services are provided locally, and competition within each locale for the provision of these services may be limited

Increase in market power: largely a result of policy

- **Many of the changes in our economy are a result of changes in policy—rewriting the rules of the market economy**
 - in ways which led to slower growth and more inequality
 - increases in monopoly and monopsony power
 - weakening of countervailing forces—unions
- Strengthening of intellectual property rights has enhanced the market power of those who do make advances in knowledge
- Weakened enforcement of anti-trust
 - New doctrines
- Globalization weakening bargaining power of workers

Increased rents as explaining the paradoxes of modern growth

- *If* capital and wealth were the same, then the observed increase in the wealth income ratio should have led to a decreased share of capital, given the wealth of studies suggesting an aggregate elasticity of substitution less than unity
- Should also have led to an increase in wages
 - Skilled biased technological change only affects *relative* wages, not appropriate weighted average wage
- Disconnect between productivity and compensation
 - No sudden change in technology that can explain sudden change
 - Can be explained by changes in rules, norms, including globalization
- But paradoxes are resolved if we recognize distinction between *wealth* and *capital*.
 - While wealth/income or wealth/per capita has increased, capital/income and capital/per capita has decreased, at least for many advanced countries

Important new perspective of inequality

- **Not inevitable consequence of market forces**—not simply the result of the “laws of nature” or the “laws of economics”
 - Cannot be explained within competitive model
 - Though changes in technology can have impacts
- Largely the result of *policy*, of how we structure markets
 - The whole gamut of policies: Including corporate governance, monetary policy, intellectual property, and anti-trust
 - Markets don't exist in a vacuum
 - In that sense, inequality has been a choice

- The rules of the economy were rewritten in the Reagan-Thatcher era and afterwards in ways which led to more inequality and poorer economic performance
 - Significant increases in rents (monopoly rents, land rents, intellectual property rights, rent extraction by corporate executives and financial sector)
 - Weakening of workers' bargaining position
- These rents increase inequality, reduce economic efficiency, and slow growth
 - With increases in capitalized value of rents "crowding out" real capital accumulation.
- They now have to be rewritten once again, in ways that can reduce inequality and improve economic performance

Endogenous economic and political equilibrium

- But the choices themselves need to be viewed as endogenous, as part of a political and economic equilibrium
- We have constructed several models where there are multiple equilibria
 - One with low inequality, another with high inequality
- Economic inequality leads to political inequality
 - With high levels of political inequality rules of the game are set to favor the rich
 - Giving rise to and supporting high levels of economic inequality
- Some countries seemed to be trapped in the high inequality equilibrium, others to be in the low inequality equilibrium.

II. Behavioral economics and inequality

- All of this has been framed largely within standard economics
- But advances in behavioral economics have helped us understand better certain aspects of inequality
 - Both its origins and consequences
 - And in some cases provided us with insights about how to address some worse manifestations

Some critical distinctions

- Strand I of behavioral economics based on integrating insights from psychology (Kahneman)
 - Fast thinking
 - Those brought up in poor environments develop “fast thinking” processes that may be inappropriate in other contexts
 - Limited band width
 - Energy spent on survival reduces scope for long term thinking necessary to advance well-being

Social context may affect reliance on fast thinking

- Extreme inequality and neighborhood segregation may entrap the disadvantaged
- Residence in a lawless ghetto may lead to System 1 (more automatic thinking) responses that block mobility
- “Becoming a Man” program
 - No academic training; no job training; no paid jobs; no transfers of money or gifts
 - No perception by participants that their self-control has increased, or that an adult in school is there to help them
 - Succeeded in reducing reliance on automatic thinking
 - Evidence in lab experiment
- With important behavioral consequences
 - Participation reduces arrests over the program year for violent crime by 44%
 - Estimated impact on high school graduation: 7-22%
 - Impact of RCT with 5,000 admissions to program in a juvenile jail: Reduced return rates to jail by 21%
- These and other examples show the possibilities of well-designed interventions

(from Sara B. Heller Anuj K. Shah Jonathan Guryan Jens Ludwig Sendhil Mullainathan Harold A. Pollack, THINKING, FAST AND SLOW? SOME FIELD EXPERIMENTS TO REDUCE CRIME AND DROPOUT IN CHICAGO, NBER Working Paper 21178, May 2015)

A new strand in behavioral economics

- Based on integrating insights from sociology as well as psychology
- Central insight is that preferences are endogenous and affected by our social context
 - Social context can affect inequality
 - Unequal societies have consequences for individual behavior, both at the top and bottom
- Interventions can affect preferences, behavior, and inequality
 - Often very cost effective

K. Hoff and J. E. Stiglitz, “Striving for Balance in Economics: Towards a Theory of the Social Determination of Behavior,” *Journal of Economic Behavior and Organization*, Issue 126 (June), pp. 25–57

World Development Report, 2015 *Mind, Society, and Behavior*

a. Simple model: Equilibrium fictions

- Model of an *equilibrium fiction* that rests on empirical evidence that
 - Self-confidence boosts performance
 - Confirmatory bias in beliefs (individuals selectively remember)
 - Categories influence what information individuals collect

Based on Hoff and Stiglitz (2010): “Equilibrium Fictions: A Cognitive Approach to Societal Rigidity,” *American Economic Review*, 100(2), May.

Simple model of a fiction

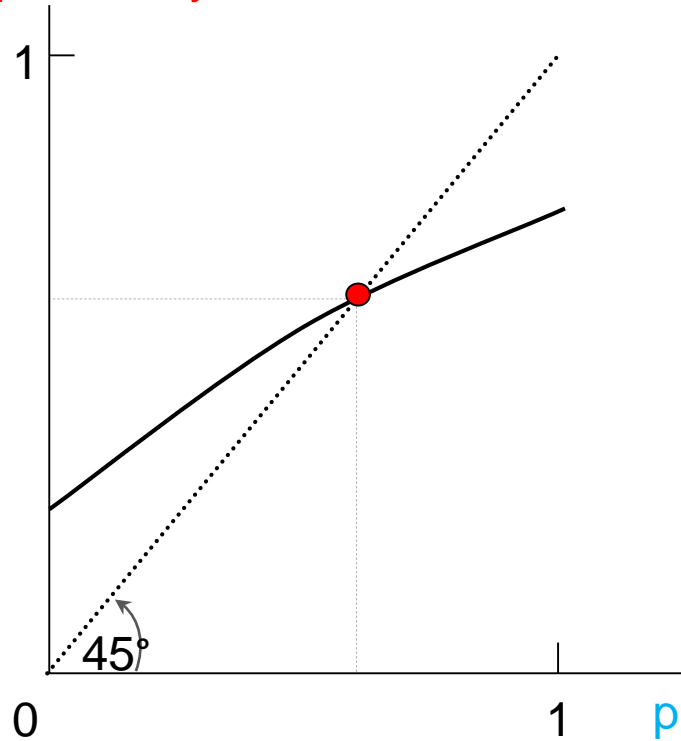
- *Two “races”* - reds and greens, intrinsically no difference in abilities
- *Technology* - Individuals can either fail or succeed at a task, & self-confidence enhances success probability

The technology



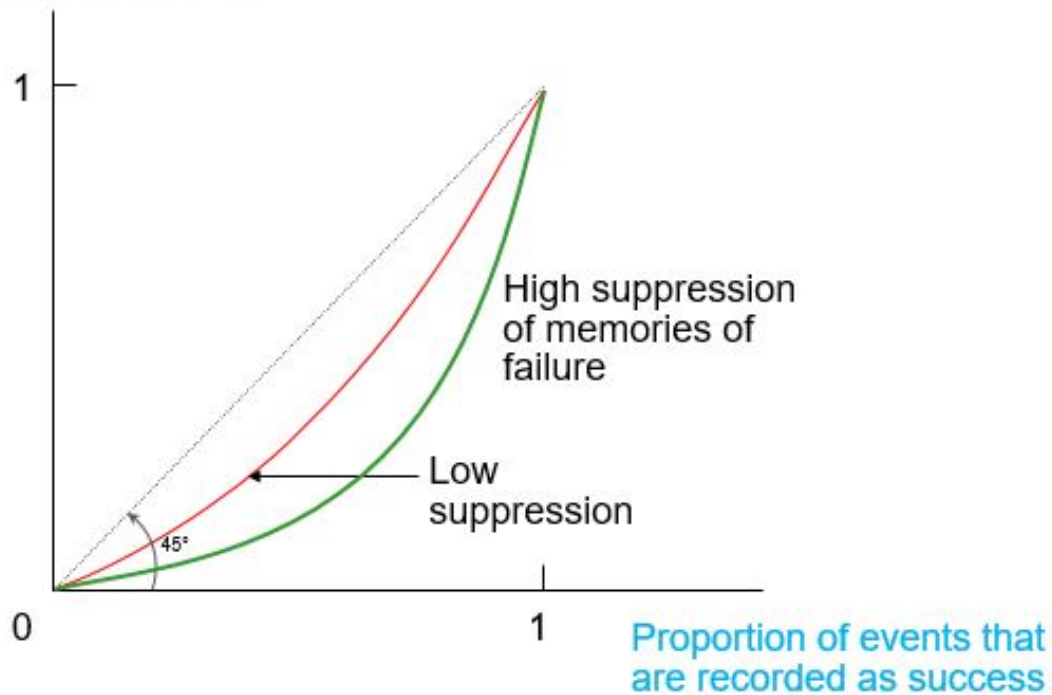
The rational expectations equilibrium

probability of success



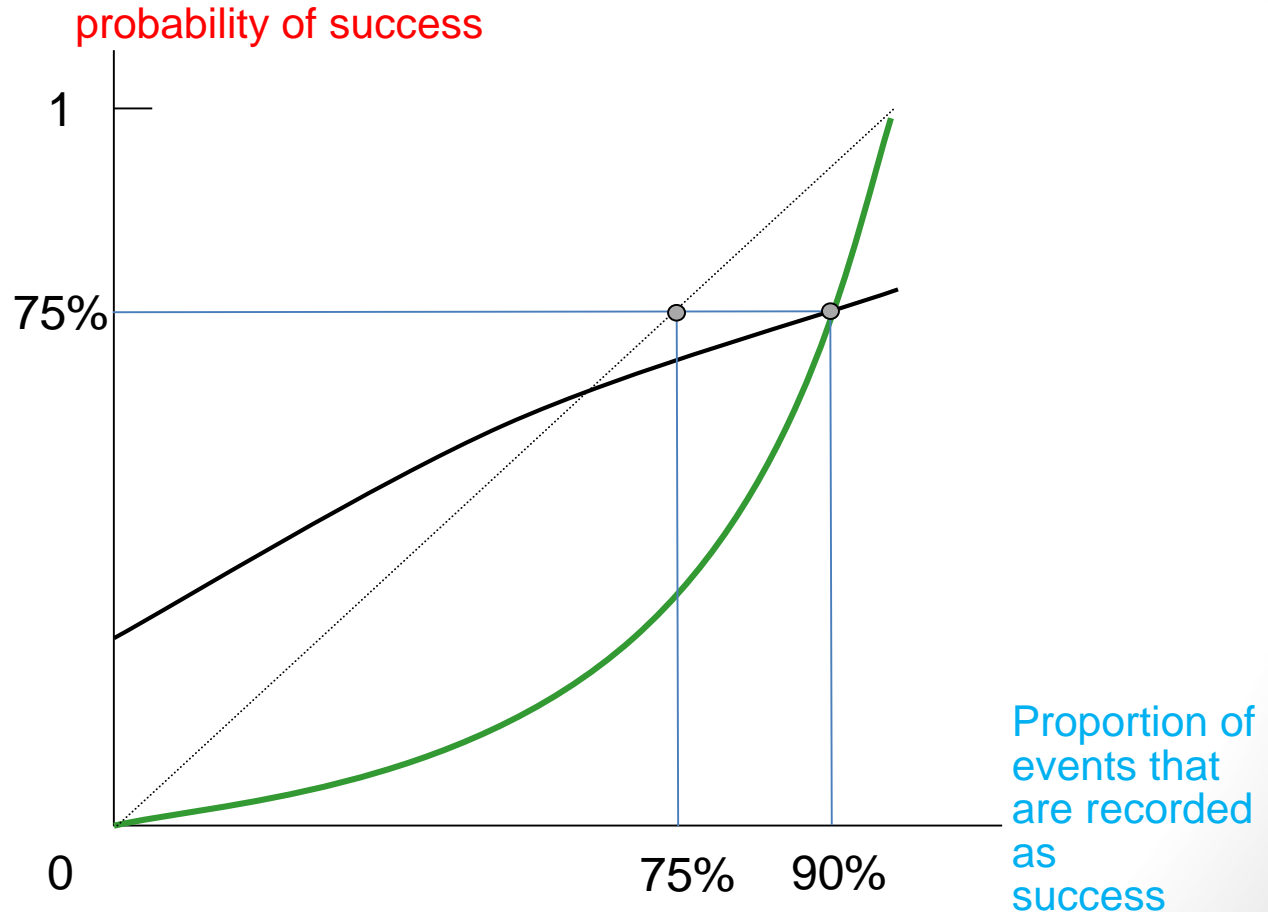
proportion of events that
are recorded as success

probability of success



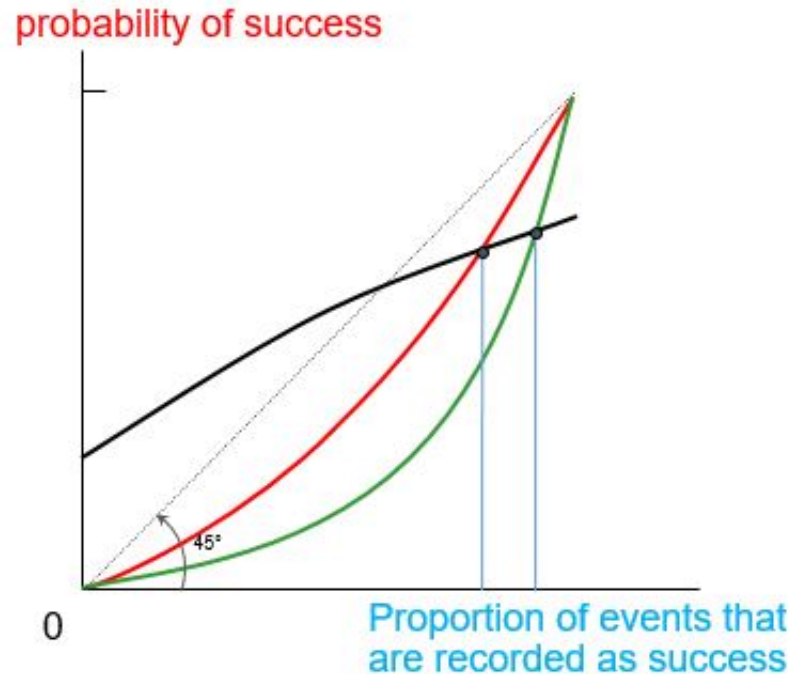
An “equilibrium fiction”

- Beliefs – 90% success
- Actual success rate is 75%
- But beliefs are consistent with perceptions of actual outcomes (90%)



In a stable equilibrium, the belief generates a level of performance that is consistent with the perception of that performance

- The result is that a social construct – race – by influencing perceptions is self-fulfilling



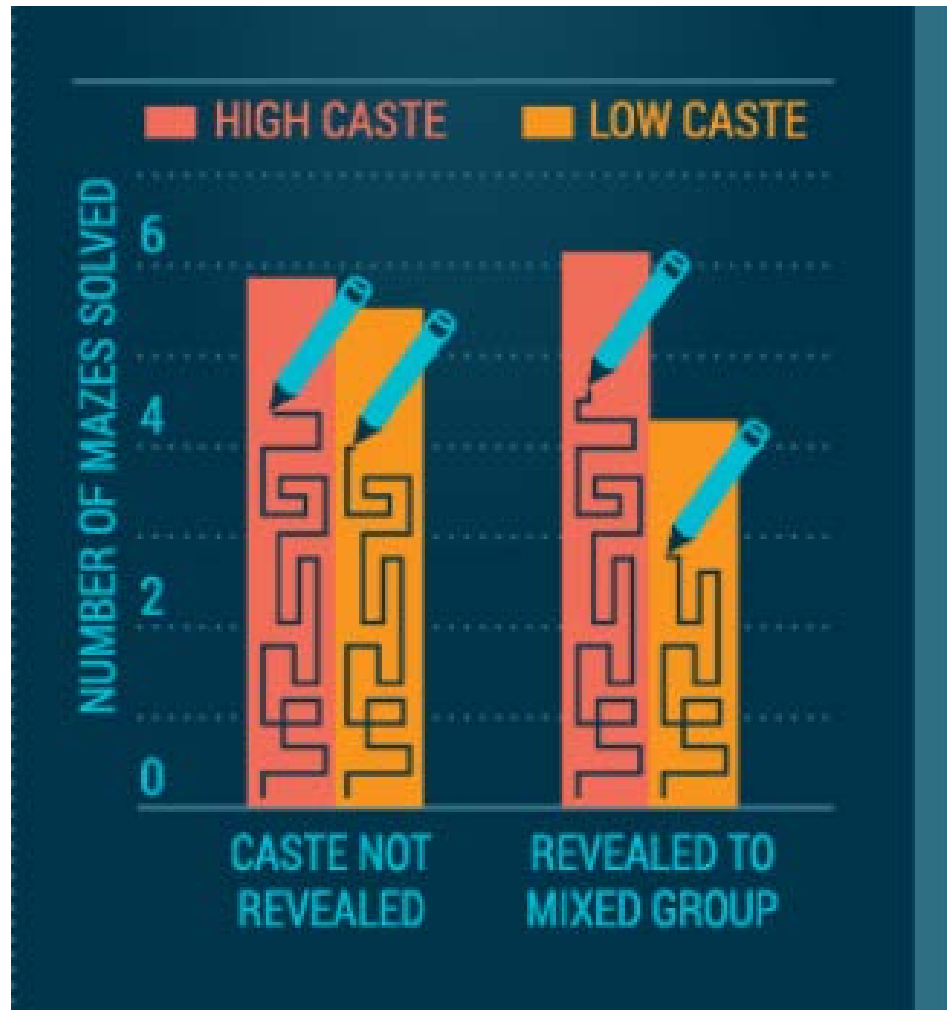
b. Another mechanism by which beliefs affect behavior: the role of identity

Performance affected by *public caste identification* (field experiment)

- High and low caste children perform little differently when caste is not revealed
- But low caste children perform markedly more poorly when caste is publicly identified

Large plastic sheets with mazes are pinned to the wall. An instructor uses the sheets to teach children how to solve a maze. There are 6 boys from 6th and 7th grades in each experimental session





Source: Hoff and Pandey 2006, 2014; Related work: Steele and Aronson, Afridi et al. 2015, Guyon and Huillery 2016

Further evidence: Self-perceived SES affects behavior

- Higher SES individuals exert more effort in experiment in which there is uncertainty about effects (lab experiment)
 - Belief that they have more control over outcomes
 - attribute outcomes in self-serving way
 - Systematically related to perceptions of greater control over the events in one's life
- Pitt et al.—evidence that rich violate traffic laws more than others do
 - Sense of entitlement

c. Other effects of an identity of low SES or race or caste on behavior

- Willingness to punish norm violations that hurt members of one's own group—a key to the ability to cooperate—is much lower for the low caste than the high caste (Hoff *et al.* 2011)
- But higher caste more likely to engage in destructive “honor” punishments in response to observed “affronts” which impedes the ability to develop new institutions and to engage in cooperative behavior (Brooks *et al.* 2016)

d. Social context affects perceptions (identity) and behavior

- Increasing economic segregation in US (Reardan and Bischoff)
 - With education provided locally, with large differentials in quality, result is large differentials in opportunity and outcomes
- Natural experiments confirm potential importance
 - Court ruling in New Delhi required some private schools to take in poor students.
 - Exposure to poor students changed behavior of rich children
 - More generous
 - Less discriminatory
 - More willing to play with poor children
 - Effect not automatic, but driven by regular interactions in small fixed groups to work together to achieve common goals

e. Social context also affects aspirations

- Aspirations affected by perceptions of what is possible
- Social context affects perceptions of what is possible
- Aspirations affect behavior
- Aspirations are also affected by experience
- More generally, increased wealth can lead to higher ambitions, effort, better outcomes
 - Natural experiment in BA—transfer of ownership of squatter property led to changes in beliefs
 - Underlying philosophy of Grameen Micro-credit, some evidence that it worked

Further evidence of importance of aspirations

An RCT to help the ultra-poor changes ‘who the people are’

- An RCT in 6 countries
- It gives beneficiaries a choice of an asset (in India, most choose a cow)
- For about 18 months, it gives training, a weekly allowance, coaching, incentives to save, and psychological support

RESULTS

- Long-run increases in incomes in excess of program costs in 5 of the 6 countries
- In one country, a 7-year impact has been assessed (Banerjee et al. 2015)
 - Consumption is 26% higher than in the control group
 - Individuals work longer hours, save more, & are happier & healthier
 - The effects almost always GROW over time

Major insights

- Our society is structured in ways which lead to inequality traps
 - Those at the bottom grow up with “fast thinking” modes that enhance survival in the contexts in which they develop but which impede advancement; with limited aspirations and low self-esteem, which impede performance and choices which would lead to upward mobility
 - Problems reinforced by economic and racial segregation

III. Societal changes may exacerbate problems of inequality going forward

- Increasing demand for jobs that have been “gendered” as female and decreasing demand for those in, say, manufacturing
 - As economy moves to service sector economy and knowledge based economy
 - With higher value placed on a college education
 - Problems will be exacerbated by robotization/ai
 - Will help correct wage bias against women
 - But 40 year trend of decrease in median wages of male workers will continue
 - Even more stark declines for those without college education
 - With political and social consequences
 - Including increase in female headed households
 - An environment which is particularly adverse for males
 - Creating a new poverty trap

Concluding comments

There can exist not only poverty traps by inequality traps

- Where society gets trapped in an equilibrium with high levels of inequality
- Large adverse consequences for persistent inequality
- Changes in technology/structure of demand can lead the economy to move from an equilibrium with a high level of inequality to one in which there is an even higher level of inequality
- Appropriate policy interventions can reduce the level of inequality

While economic models can help us understand causes and consequences of inequality, a full explanation of what has been happening in advanced countries requires going beyond the standard competitive market framework

- To realize the importance of the rules of the game
- How they've been changed in ways that increase inequality and lower economic performance
- Leading to more rents and lower share of labor
- There are changes that would make the economy both more efficiency and yield a better distribution of income

Beyond the standard economic model

- But to understand fully inequality, its growth and consequences, and what we can do about it, we have to go further
 - Recognizing the endogeneity of preferences and how they are shaped by our culture
 - Inequalities can reinforce and be reinforced by
 - social identities, aspirations, themselves affected by
 - segregation by income group—by marriage, neighborhood, & schooling
- This broader understanding of some of the sources of inequality gives us a new range of tools with which to address inequality, especially in some of its most adverse aspects.