

Fiscal Policy and Inequality

25. Transfer Programs

10th December, 2018

Intro: Redistribution Programs

- ▶ Traditionally, income redistribution worked through direct cash payments or in-kind benefits
- ▶ In recent decades, some governments in advanced economies have incorporated them into the tax system
 - ▶ Earned Income Tax Credit (EITC) in the US
 - ▶ Working Tax Credit (WTC) in the UK
- ▶ Meanwhile, developing countries have experimented with conditional cash transfers (CCT)
 - ▶ Progresa/Oportunidades in Mexico
 - ▶ Bolsa Familia in Brazil
 - ▶ PKH in Indonesia
- ▶ There is also ample debate about the introduction of *universal basic income* schemes

Intro: Redistribution Programs

- ▶ Questions:
 - ▶ What is the impact of these programs on labor supply?
 - ▶ Do they help reduce poverty? For what groups in society?
 - ▶ What is the incidence of these programs?

	Eligibility	Size of Benefit
Tax Credits	Working formally Low income	Depends on Income and family size
CCTs	Below poverty line Educ & health investments	Depends on family size and decisions
UBI	Everyone is eligible	Fixed amount

Earned Income Tax Credit (EITC)

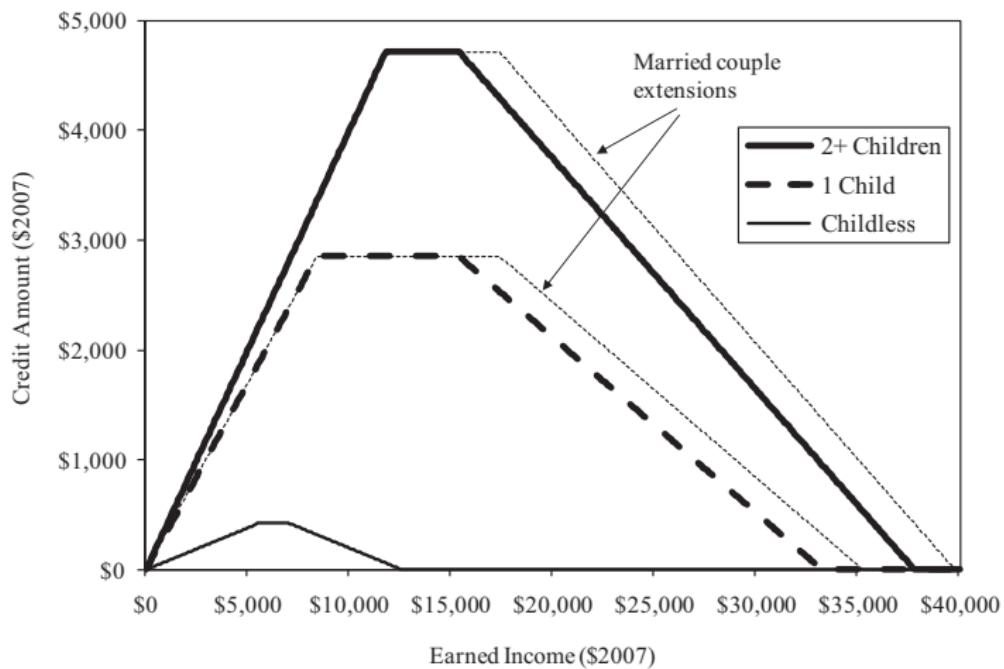
- ▶ Earned Income Tax Credit (EITC) is a government program in the US that subsidizes low-income earners
 - ▶ Subsidy is *conditional* on working
 - ▶ “Refundable” tax credit
- ▶ Implies a negative marginal tax rate for some workers
 - ▶ Suboptimal under optimal income taxation model of Mirrlees (1971)
- ▶ EITC features two large convex kink points, and one concave kink point
 - ▶ Incentives differ

Earned Income Tax Credit (EITC)

- ▶ Eligibility requirements:
 - ▶ Positive earned income: beneficiaries must be working
 - ▶ Income must be within a certain range
 - ▶ Benefit more generous for individuals with children under age 19 (under 24 if full-time student)
- ▶ Structure:
 - ▶ Phase-in: negative marginal tax rate
 - ▶ Plateau: constant refund amount
 - ▶ Phase-out: positive marginal tax rate

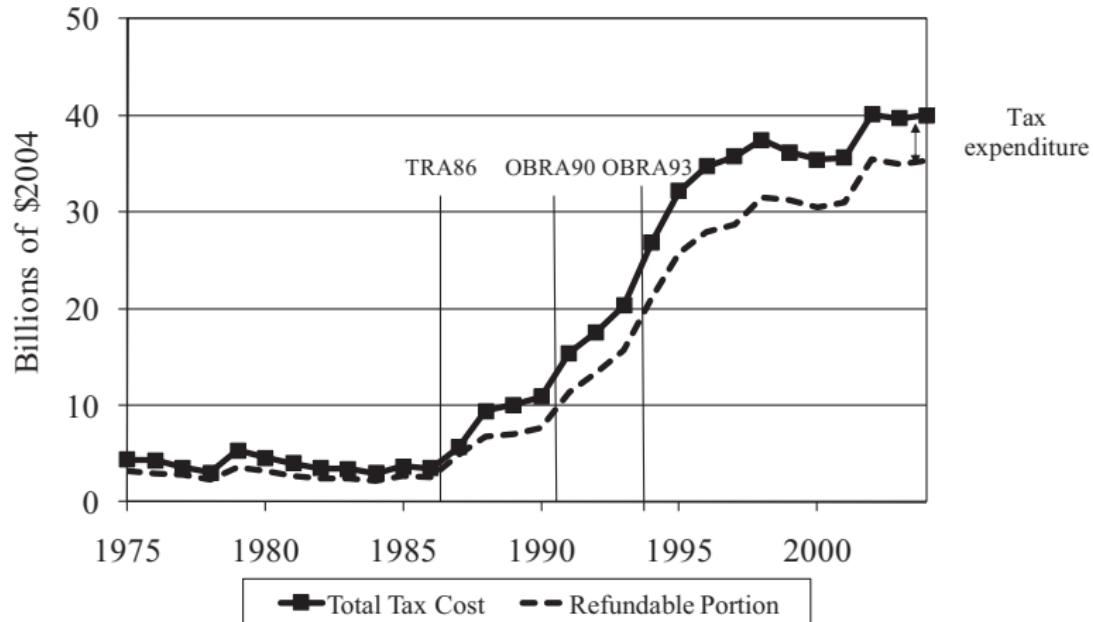
Earned Income Tax Credit (EITC) in the US

2007 EITC Schedule by Earnings, Number of Qualifying Children and Filing Status



Earned Income Tax Credit (EITC): Cost over time

EITC Pure Tax Expenditure, Outlay, and Total Tax Cost 1975–2004



Earned Income Tax Credit (EITC): Theory

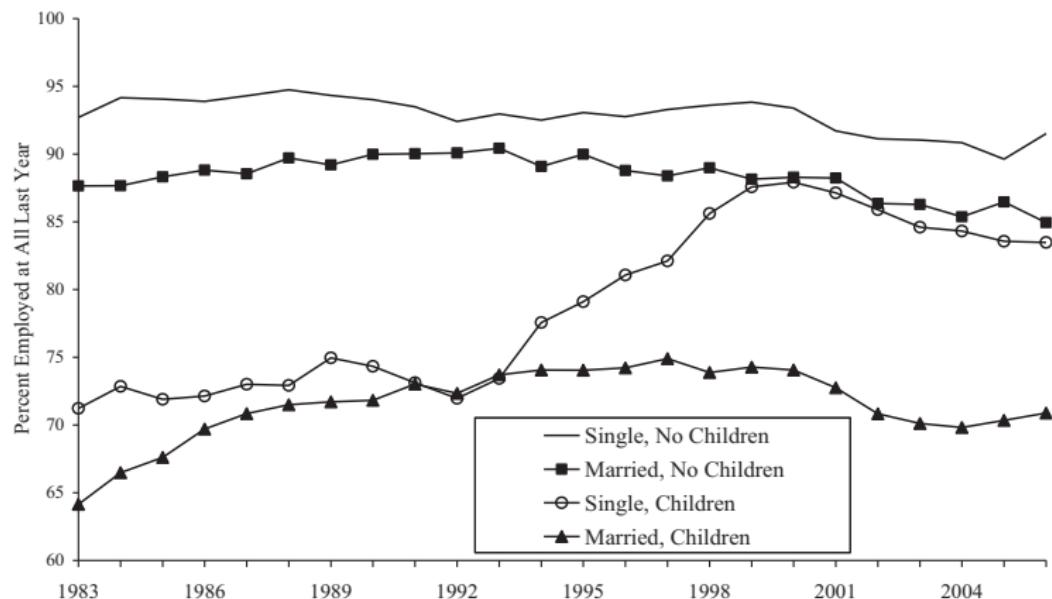
- ▶ What incentives does this program create on labor supply?
 - ▶ Higher net-of-tax wage (budget line pivots) \Rightarrow Substitution Effect (+)
 - ▶ Budget line shifts out \Rightarrow Income Effect (-)
- ▶ Consider three types of individual, before the EITC is introduced:
 - ▶ Unemployed
 - ▶ Part-time workers
 - ▶ Full-time workers
 - ▶ [draw on board]

Eissa & Hoynes (2011): Impact on Labor Supply

- ▶ Most empirical studies find an increase in labor force participation
 - ▶ Especially of single mothers (14 percentage points increase in participation!)
- ▶ Little evidence of a decrease in labor supply of those already in the labor market
 - ▶ Consistent with earlier findings of small labor supply elasticity

Eissa & Hoynes (2011): Female Labor Supply

Annual Employment Rate for Women by Marital Status and Presence of Children,
1983–2006



Notes: The sample includes all women age 19–44 who are not in school or disabled. We also drop the

Eissa & Hoynes (2011): Impact on Poverty

- ▶ Why redistribute through the tax system instead of traditional welfare programs?
 - ▶ Administratively easier: everyone has to file tax returns, and EITC promotes reporting of incomes
 - ▶ Lower stigma than welfare programs
- ▶ The EITC brought 2.6 million of children out of poverty in 2005, according to one study
 - ▶ Consequence of the expansion of the program in 1993

Rothstein (2010): EITC vs NIT

- ▶ Tax incidence question:
 - ▶ how much of the EITC turns into lower pre-tax wages?
 - ▶ In other words, how much of the benefit is captured by employers?
- ▶ Rothstein provides a theoretical + empirical analysis, comparing the EITC with a negative income tax (NIT)

Rothstein (2010): Model

- ▶ Labor market has three types of agents:
 - ▶ Employers
 - ▶ EITC-eligible workers
 - ▶ EITC-ineligible workers
- ▶ Different labor supply and tax rates across groups
 - ▶ Complicates the analysis but allows empirical identification
- ▶ Identification/simulation strategy:
 - ▶ Compare wage changes across groups affected differently by expansion of EITC in 1992-94

Rothstein (2010): Results

- ▶ Some EITC benefits captured by employers through reduced wages
 - ▶ Demand for low-skilled workers is elastic, but not flat
 - ▶ Supply of low-skilled workers is also elastic
 - ▶ Relative elasticity uncertain
- ▶ Benefit to employers is highest when labor supply is highly elastic and labor demand is highly inelastic.
 - ▶ For particular, if eligible workers are substitutable with ineligible workers, then employers receive the subsidy.
 - ▶ In addition, EITC-ineligible workers experience wage declines due to this substitution effect.

Estimated Impacts

- ▶ Under perfectly elastic labor demand, a dollar of EITC subsidies increases wages by \$1.34.
 - ▶ Under more realistic parameters, a dollar increased wages by only \$1.07.
- ▶ 36-55 percent of EITC subsidies are captured by employers.

Rothstein (2010): EITC vs NIT

- ▶ Negative Income Tax (NIT): benefit received **not** conditional on working, only on low (or zero) income
 - ▶ Discourages work among low-income people
 - ▶ In terms of incidence, redistributes resources from employers to low-income group
 - ▶ If we put a high value on leisure of low-skilled group, welfare gains from NIT are higher
- ▶ Overall, the advantages of EITC may have been overstated

Saez (QJE 2002)

- ▶ Recall formula for optimal tax rate from Saez (RES 2001):

$$\boxed{\tau^{*top} = \frac{1 - \bar{g}}{1 - \bar{g} + \varepsilon a}}$$

- ▶ In this model, only “intensive margin” choices.
 - ▶ No decision to work/not work (“extensive margin”)

Saez (QJE 2002)

- ▶ The optimal income transfer program:
 - ▶ resembles an EITC if labor supply decisions are made primarily on the extensive margin.
 - ▶ resembles a negative income tax if labor supply decisions are made primarily on the intensive margin.
- ▶ In light of evidence that participation (exensive) is much more elastic than hours (intensive), an EITC is recommended.

Saez 2002: Redistributive Preferences

- ▶ “The simulations suggest that combining a sizable Negative Income Tax program with a tax exemption for the first \$5000 of annual earnings might be a desirable way to redistribute toward the disadvantaged. The guaranteed income provides income support for the really needy, and the earnings exemption does not too severely discourage work participation by people with low earnings potential.”
- ▶ Real-world U.S. tax and benefit system:
 - ▶ TANF and food stamps provide basic support valued at about \$10,000.
 - ▶ EITC imposes -40% tax rate on initial dollars earned.

Conditional Cash Transfers (CCTs)

- ▶ The trend towards giving cash directly to tackle poverty is present in developing countries
 - ▶ A popular policy has been Conditional Cash Transfers (CCTs)
- ▶ Condition: Investments in human capital:
 - ▶ Sending children to school
 - ▶ Attending regular check-ups at the hospital (esp. during pregnancy and early childhood)
- ▶ Important:
 - ▶ *Not* conditional on working
 - ▶ Often disbursed to women only (intra-household redistribution)

CCTs: Rationale behind Conditionality

- ▶ Justified if households are underinvesting in the human capital of their children
 - ▶ Imprecise beliefs about return to investments in education or health
 - ▶ Failing to account for the positive externalities
- ▶ Political economy considerations:
 - ▶ Higher support from taxpayers if conditions attached to the transfers
 - ▶ Evidence of the effects on health/education outcomes is mixed

CCTs: History

- ▶ The first CCT program started in 1997: *Progresa*, in Mexico
 - ▶ Later called *Oportunidades*, then *Prospera*
 - ▶ new governments gave the same program different names in order to take credit for it.
 - ▶ Roll out featured a randomized design, allowing the implementation of many impact studies
 - ▶ Cost: up to 0.5% of GDP

CCTs: Expansion

Figure 1 CCTs in the World, 1997 and 2008

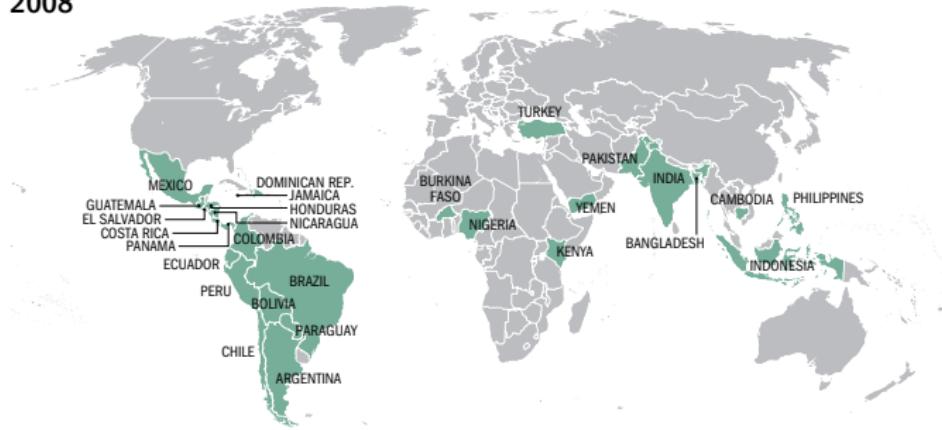
1997



Source: Fiszbein and Schady (2009)

CCTs: Expansion

2008



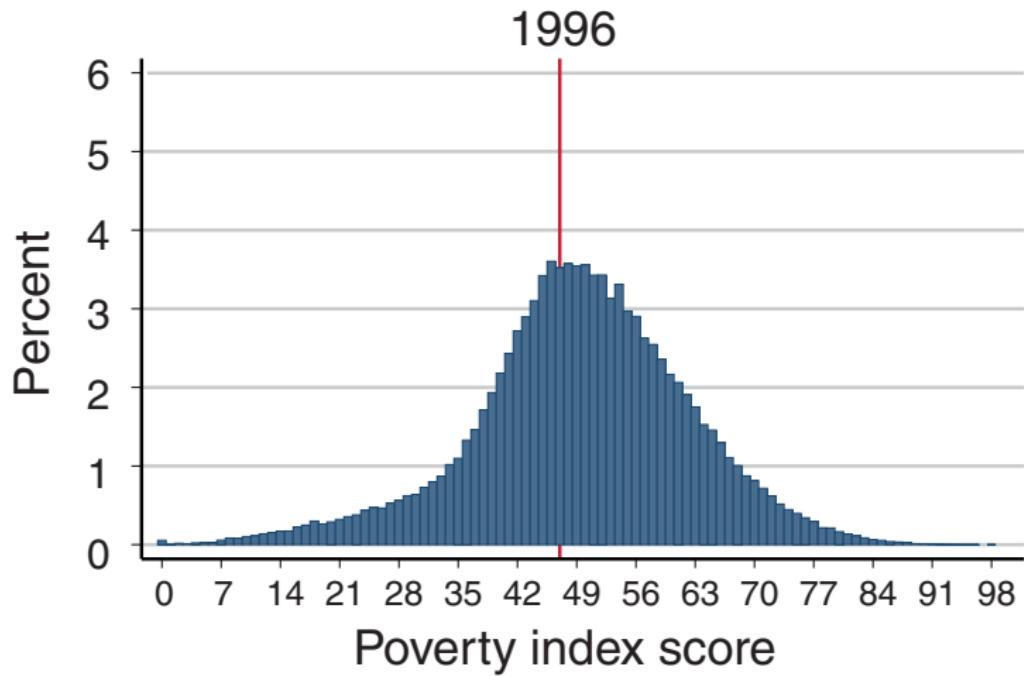
Source: World Bank.

Source: Fiszbein and Schady (2009)

CCTs: Targeting

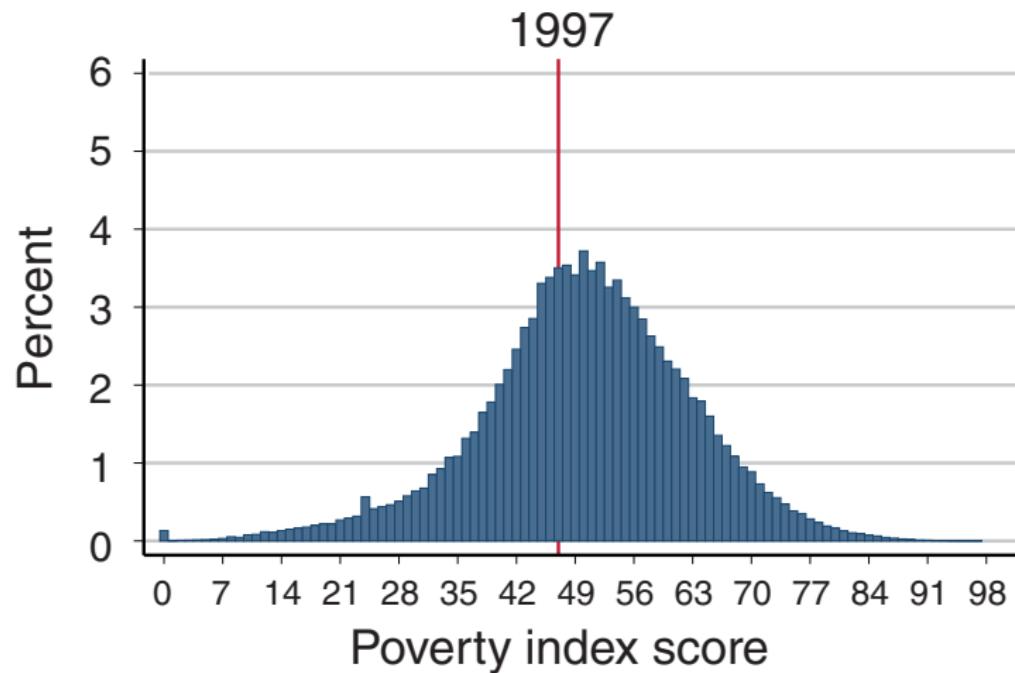
- ▶ A key aspect of the design of CCTs is targeting the poor
- ▶ Harder to do than in developed countries, because a low fraction of the poor file taxes
- ▶ Targeting often consists of a short survey of **assets** (not income)
 - ▶ Eg., conditions of the home, owning a refrigerator, owning a vehicle
 - ▶ Usually effective, but always imperfect
 - ▶ Trade-off between coverage and leakage

CCTs: Targeting



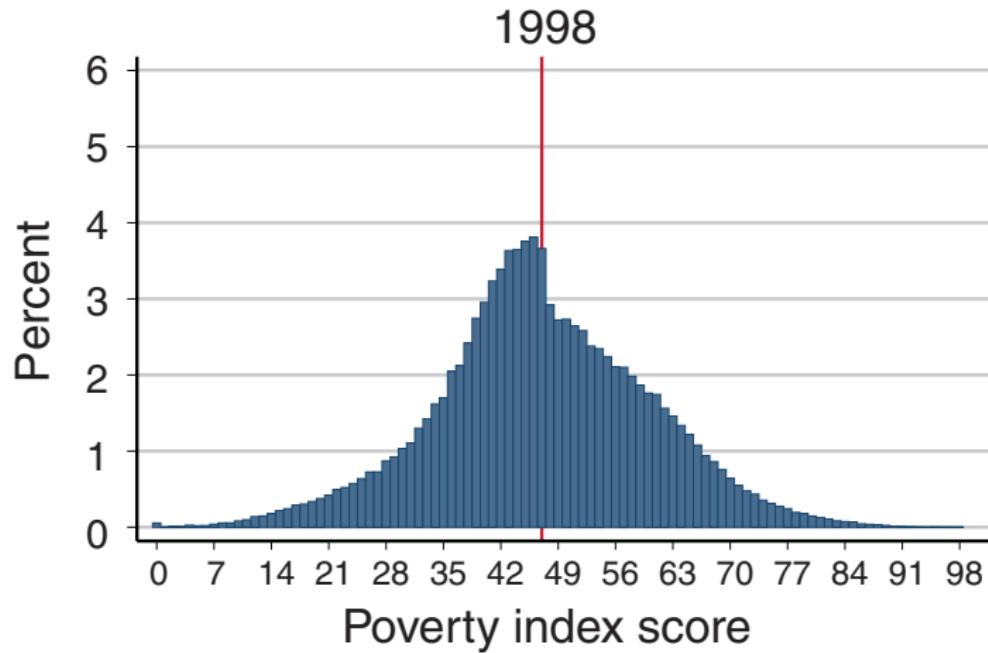
Source: Camacho and Conover (2011)

CCTs: Targeting



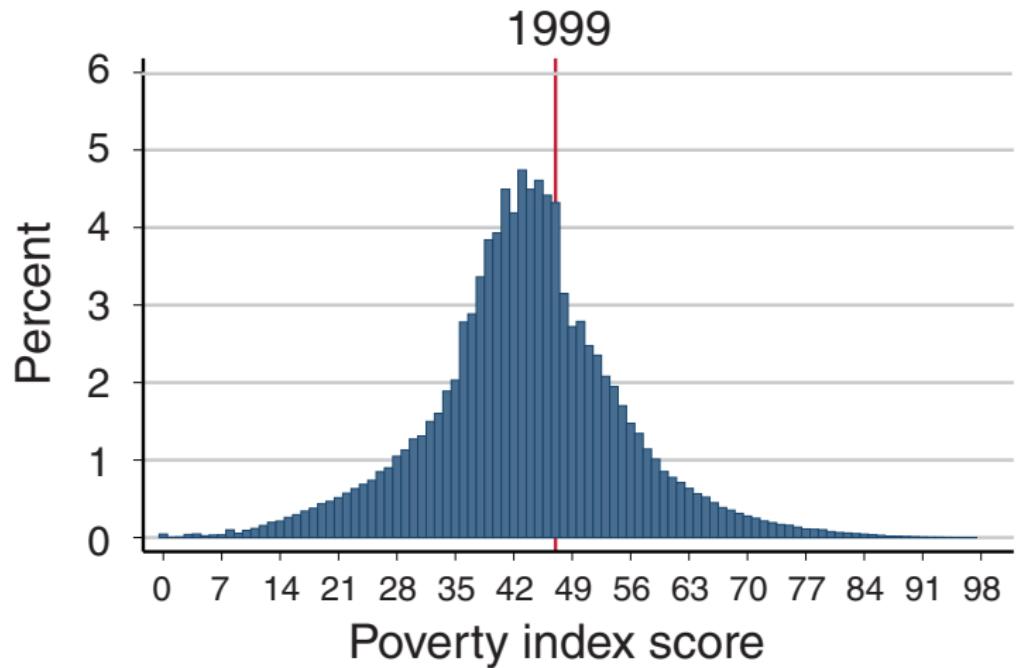
Source: Camacho and Conover (2011)

CCTs: Targeting



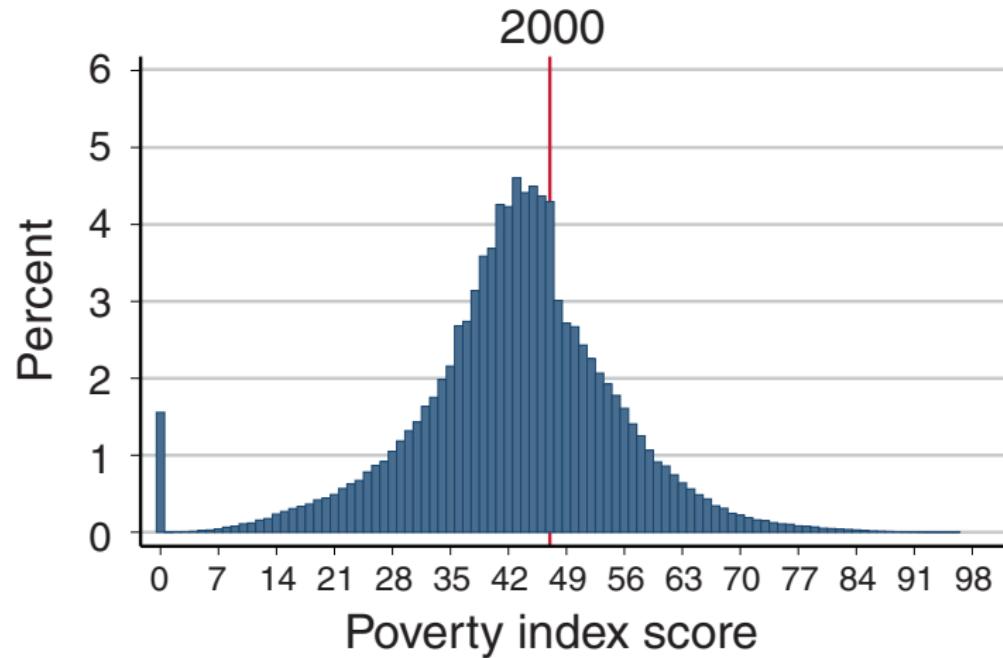
Source: Camacho and Conover (2011)

CCTs: Targeting



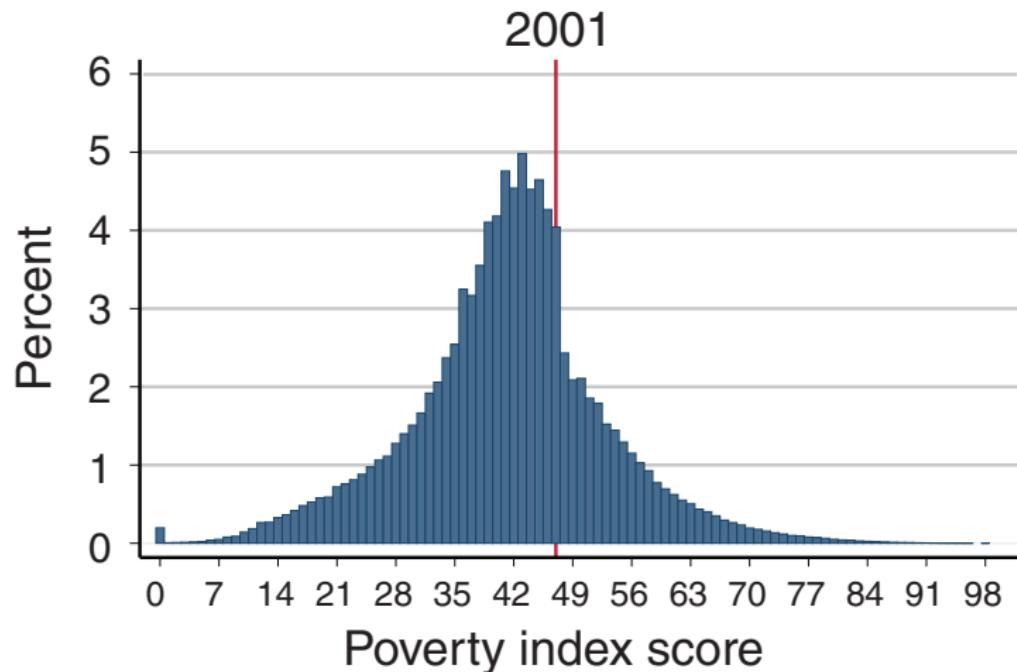
Source: Camacho and Conover (2011)

CCTs: Targeting



Source: Camacho and Conover (2011)

CCTs: Targeting



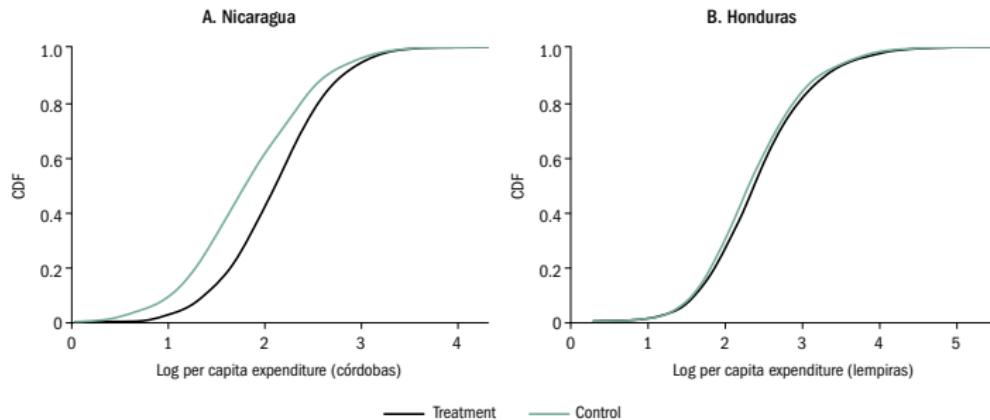
Source: Camacho and Conover (2011)

CCTs: Impact on Poverty

- ▶ The best studied program is Progresa/Oportunidades, but evaluations done for many others
- ▶ Increase of 7%-10% in consumption of the median recipient household in several countries
- ▶ Reduction in poverty rates of 2-3 percentage points

CCTs: Impact on Poverty

Figure 3 Impact of CCTs on the Distribution of Consumption, Nicaragua and Honduras, 2002



Source: Authors' calculations.

Note: CDF = cumulative distribution function.

CCTs: Impact on Education and Health

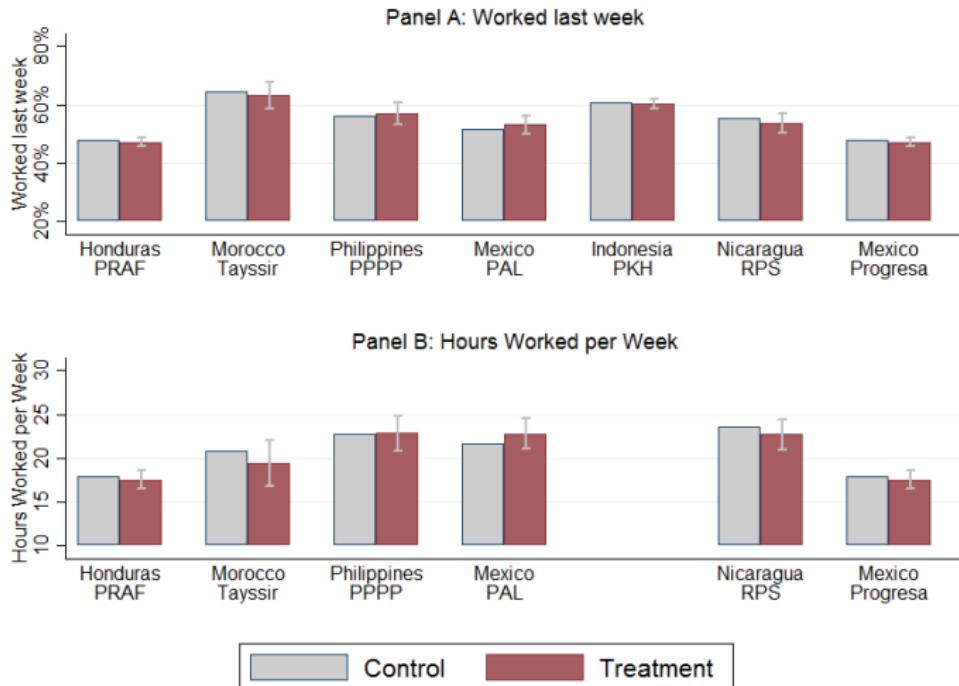
- ▶ In most countries, enrollment in primary school increased by several percentage points
 - ▶ Higher increases when the baseline enrollment was low
- ▶ Studies have also found increases in visits to health facilities by children
 - ▶ Effect varies in size across countries
- ▶ However, impacts on **final** outcomes are harder to find
 - ▶ One example is Gertler (2004), who estimates a significant improvement in the health of children in response to Progresa:
 - ▶ Lower illness rates in early childhood
 - ▶ Increased height and lower anemia rates

CCTs: Impact on Labor Supply

- ▶ An obvious concern with CCTs is the disincentive to work
 - ▶ Or disincentive to earn beyond the “poverty” threshold, where the benefit stops
- ▶ Multiple studies have failed to find any substantial negative effects on labor supply
- ▶ Recent review paper by Banerjee et al (2015) analyzes 7 different randomized studies
 - ▶ They find little evidence of negative labor supply response
 - ▶ Zero effect both for work in and outside the household
 - ▶ Important caveat: formal vs informal work? We'd like to see *taxable income*...

CCTs: Impact on Labor Supply

Figure 2: Experimental Estimates of Cash Transfers on Work outcomes



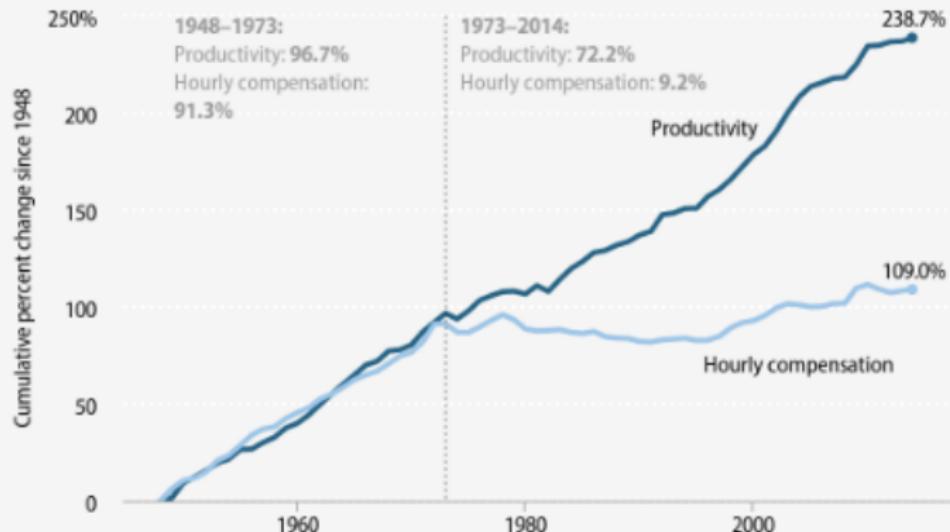
Source: Banerjee et al. (2015)

Why not give away money?

- ▶ An idea that has been receiving more attention lately is the idea of replacing targeted welfare programs with a universal basic income guarantee.
- ▶ Remember from the beginning of the course:
 - ▶ lump sum taxes/subsidies are less distortionary than wage taxes/subsidies because they don't have a substitution effect (only an income effect).

Compensation has not kept up with productivity

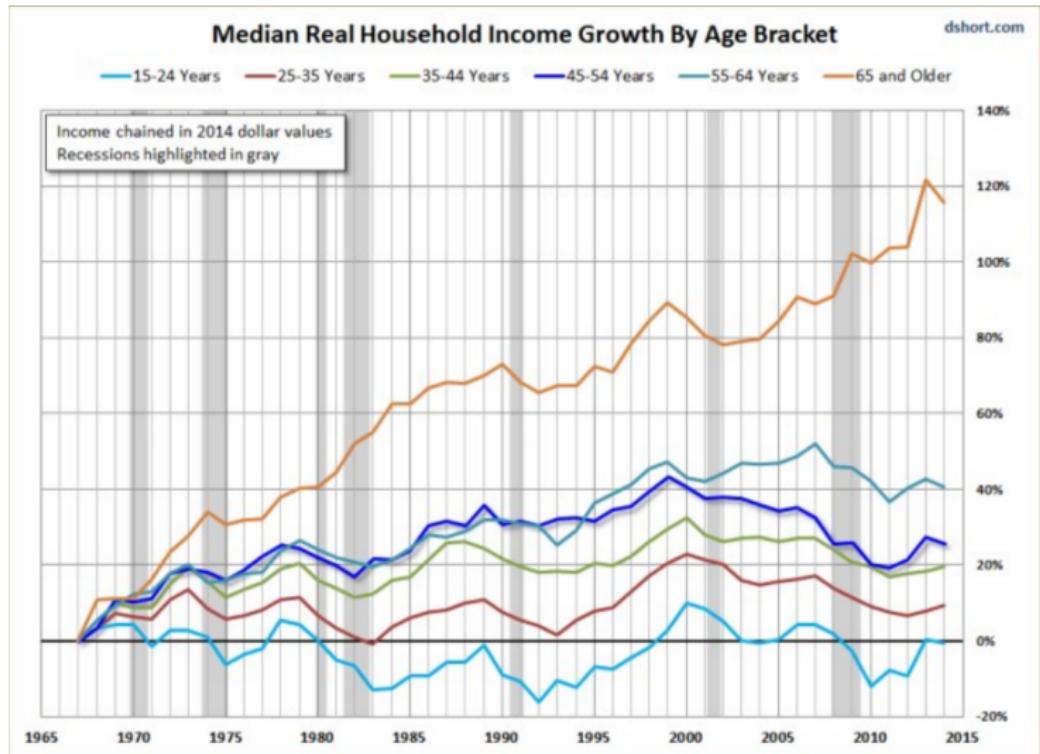
Disconnect between productivity and a typical worker's compensation, 1948-2014



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 for more detailed information)

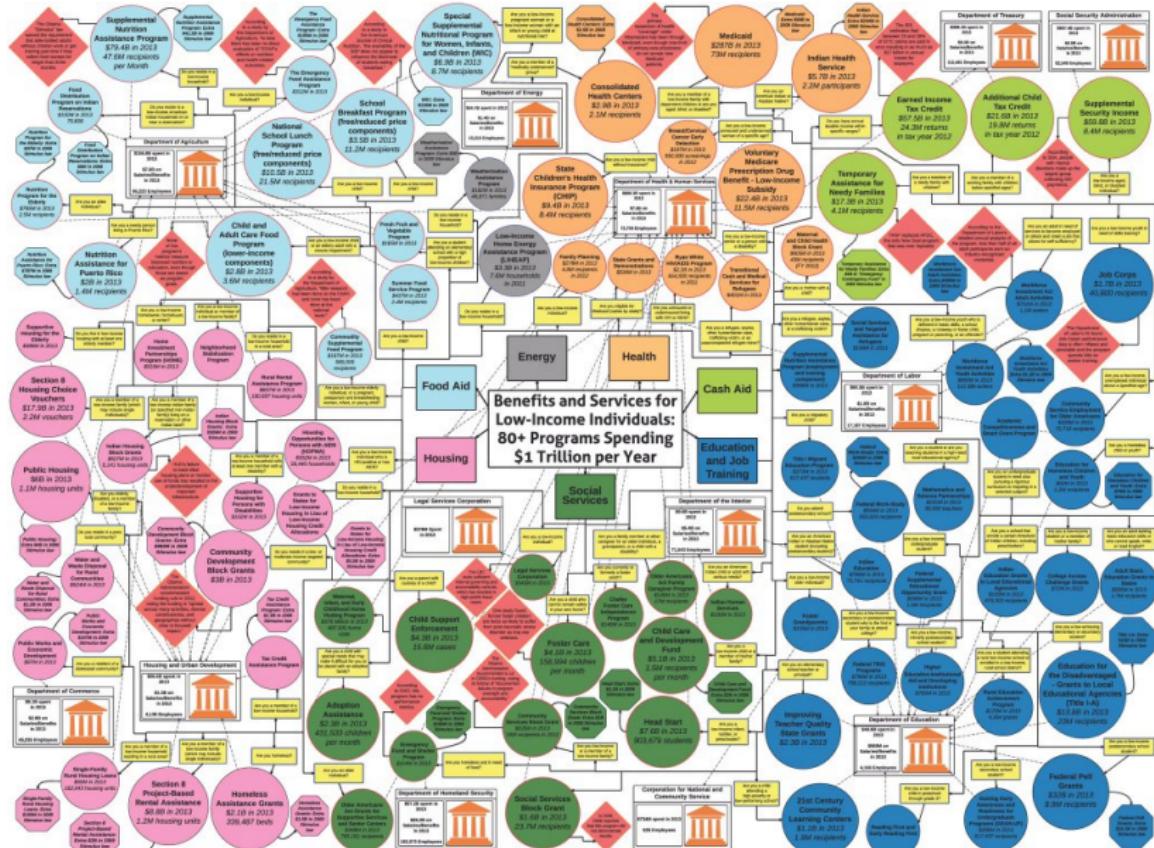
Generational Changes: Baby boomers vs Millenials



Costs of Poverty

- ▶ 47% of Americans could not handle an unforeseen expense of \$400 (2014 Federal Reserve Survey)
 - ▶ would have to cash in assets beneath their market value
 - ▶ would have to ask friends and family for money
 - ▶ negative externalities
- ▶ On IQ tests, poverty means 13-14 IQ point loss – a loss of a night's sleep

Welfare Program Complexity (United States)



Source: House Wins and Losses Committee staff, using Congressional Research Service reports and other data.

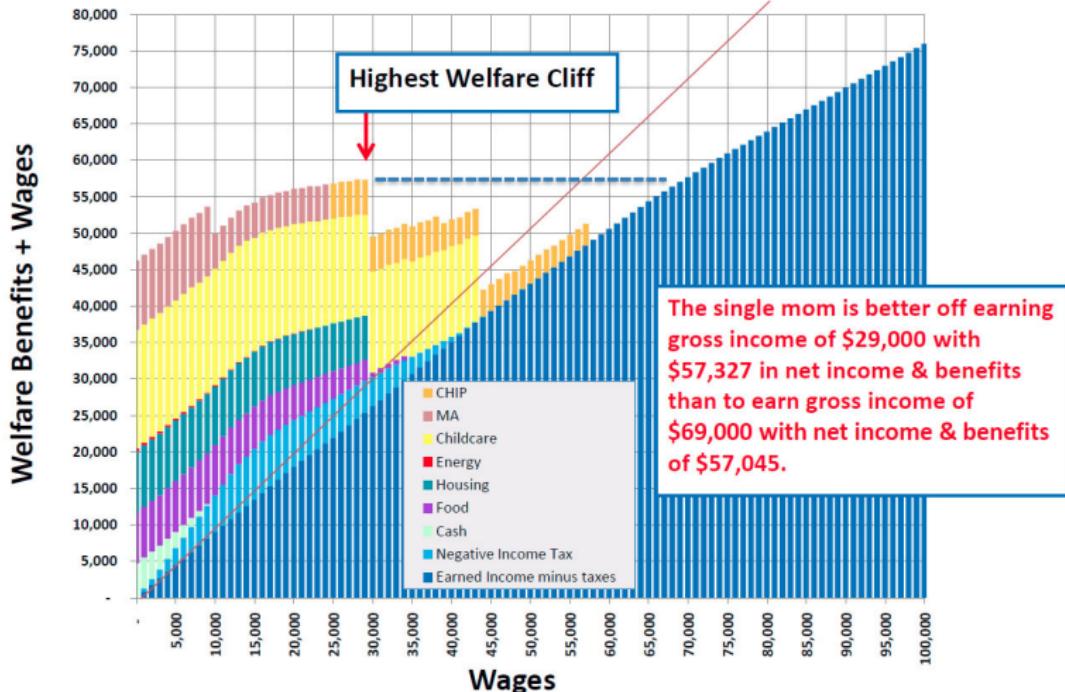
Household Income and Benefits Chart



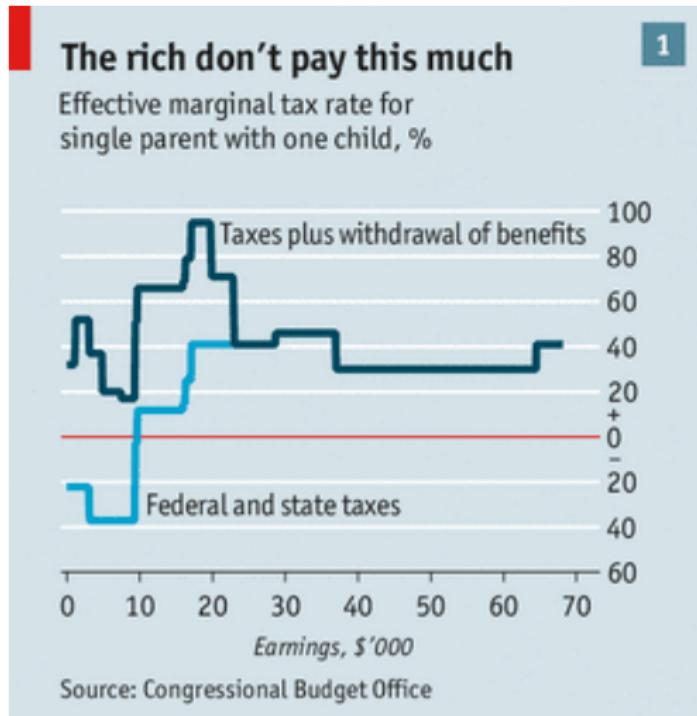
pennsylvania
DEPARTMENT OF PUBLIC WELFARE

Gary D. Alexander, Secretary of Public Welfare | www.dpw.state.pa.us

If we stack on welfare benefits, you can quickly see what happens. Welfare cliffs crop up in several spots.



Phasing out of benefits → High Marginal Taxes on poor



Our economy does not value unpaid work

- ▶ One third of the U.S. population are informal caregivers
 - ▶ 1.2 billion hours of unpaid work per week
 - ▶ equivalent to 30.5 million full-time caregivers – worth \$700 billion per year on the market (about 5% of U.S. GDP).
- ▶ Collaborative platforms (Wikipedia)
- ▶ Open source software (Linux)
- ▶ Buskers

Unions and Inequality



Table 5: Inequality and Union Density 1936-2011

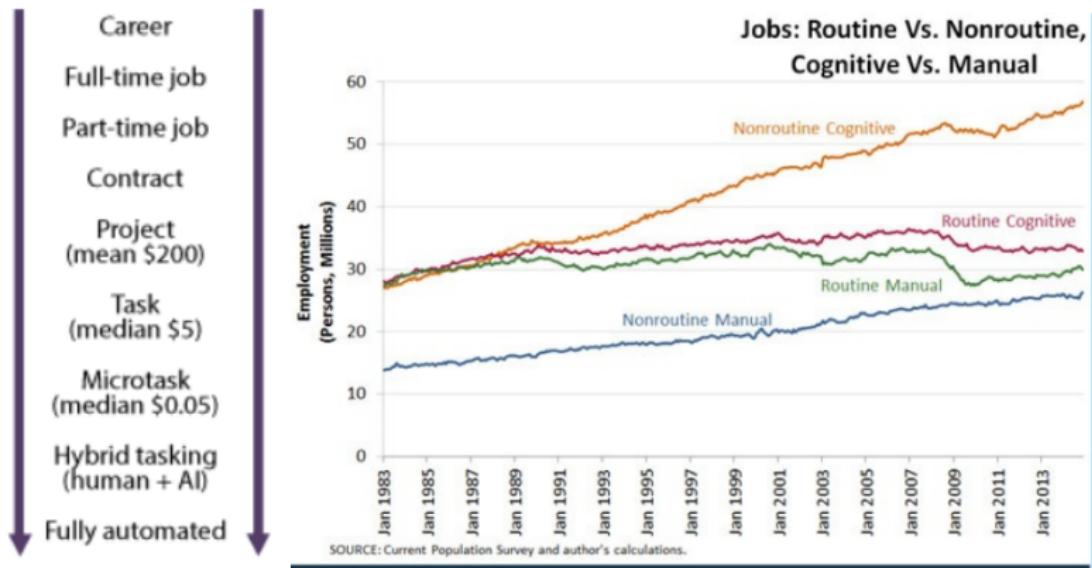
	(1)	(2)	(3)	(4)	(5)	(6)
HH Union	-5.145*					
Density-CPS+Gallup (u/w)	[2.586]					
HH Union		-7.072	-10.34**	-9.665***	-5.681**	-6.110***
Density-CPS+Gallup (u/w) (IV 0)		[4.331]	[4.239]	[3.612]	[2.870]	[1.949]
Share Emp. Mfg.				717.7***	508.0**	16.46
				[248.0]	[243.1]	[26.89]

SouthxYr FE?	No	No	Yes	Yes	No	Yes
RegxYr FE?	No	No	No	No	Yes	No
Inc. Controls	No	No	Yes	Yes	Yes	Yes
State-Sp. Quadratics	No	No	No	No	No	Yes
Winc. RHS?	Yes	Yes	Yes	Yes	Yes	Yes
Ind. Controls	No	No	No	Yes	Yes	Yes
First-Stage F	324.6	300.6	279.83	194.12	170.87	
Observations	3,501	3,498	3,498	3,498	3,498	3,498

Notes: Union Density measure is winsorized at 99% thresholds. All reg's have state and year fixed effects, SEs clustered by state. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

What about automation?

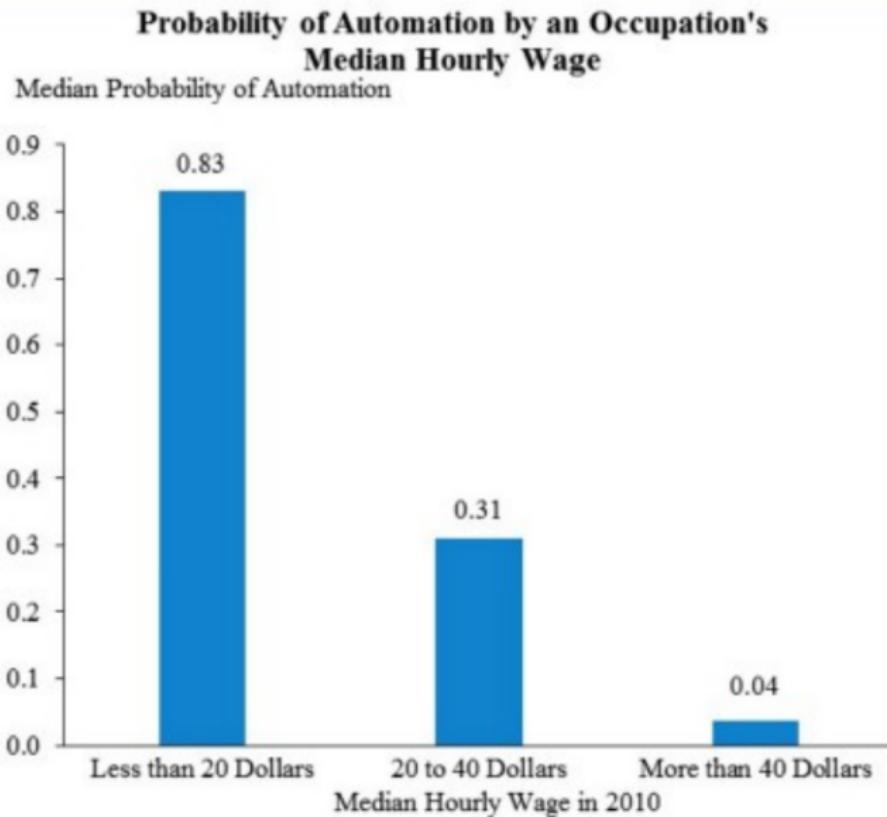
Figure 1: The Unbundling Ecosystem - Future Progression of Work



The Threat of Automation

- ▶ Algorithms can now
 - ▶ defeat humans at a range of board games and computer games
 - ▶ caption photographs and write the news
 - ▶ out-perform doctors and lawyers on some tasks
 - ▶ e.g. examining X-rays for tumors, examining documents for irregularities
- ▶ Self-driving vehicles:
 - ▶ will put 3.5 million truck drivers into unemployment
 - ▶ plus 5.2 million related jobs

Automation will impact the poor



Source: Bureau of Labor Statistics; Frey and Osborne (2013); CEA calculations.



Automation of local government

- ▶ “Robot Amelia – a glimpse of the future for local government” from *The Guardian*, 4 July 2016.

The north London borough of Enfield is to introduce a new employee called Amelia, it was announced earlier this month. Amelia will work on frontline council services, taking resident queries, handling requests for permits and authenticating licenses.

But that wasn't what gave cause for a public announcement. Amelia has a more unusual characteristic: she's a robot.

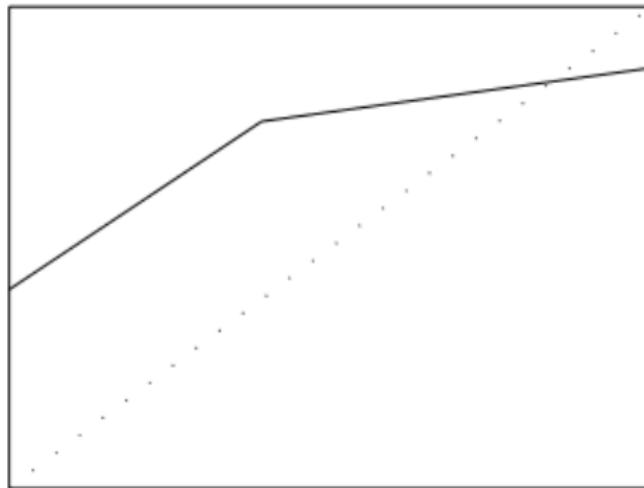
- ▶ Some estimates are that “Amelia” and similar artificial intelligences could replace at least 250 million jobs worldwide in the next few years.

Basic Income

- ▶ Every resident in the country receives an unconditional cash transfer sufficient to get above the poverty line.
 - ▶ In the United States, around \$1000 per month.
 - ▶ In the United Kingdom, the government's definition of poverty is around £1200 per month (around \$1700 USD).

Basic Income

Consumption



Earnings

- ▶ Minimum consumption level, no taxes on first dollars of income, then progressively higher taxes.

What happens when everyone gets \$1000 a month?

- ▶ Need-based welfare programs, including need-based transfers and food assistance, can be abolished.
- ▶ Work disincentives due to welfare cliffs and EITC phase-outs are eliminated.
- ▶ All forms of unpaid informal work (parenting, caring for the elderly) are paid and recognized as valuable to society.
- ▶ Other worker protections (minimum wage, labor unions, employment regulations) may no longer be needed, since workers have a valuable outside option for any low-quality work (not working at all)

UBI has support on left and right

- ▶ Advocated by Martin Luther King, Jr. and Frederich Hayek
- ▶ Appeals to left wing:
 - ▶ eliminate poverty
 - ▶ reduce inequality
- ▶ Appeals to right wing:
 - ▶ eliminate welfare programs and minimum wage
 - ▶ simplify tax code
 - ▶ reduce bureaucracy

Employment Regulation/Flexibility

- ▶ With a UBI, almost all of the major employment regulations are not nearly as important, since individuals can quite their job at a much lower cost/risk.
 - ▶ On-demand/contract work is more attractive as ways to increase income when convenient
 - ▶ More flexibility about timing of work
 - ▶ e.g., on-demand economy

Reduced crime

- ▶ UBI would reduce incentives for crime, including property crime and drug dealing among the poor.
 - ▶ More generally, decrease in black market work at low end of income distribution.

Consumption Multiplier Effect

- ▶ Poor people spend a greater share of their income on consumption.
 - ▶ Consumption would go up
 - ▶ Investment will go down
- ▶ This may increase GDP, at least in the short run

Issues: Children and Immigration

- ▶ What to do about children?
 - ▶ Children might receive some pro rata share, given to parents. As children approach 18, some share could start going to the children.
 - ▶ This might replace existing child tax credit and child benefit schemes
- ▶ What about immigration?
 - ▶ If I am a U.S. citizen and I move abroad, do I still receive UBI?
 - ▶ older Americans receive social security even when living abroad.
 - ▶ If I am an immigrant to the USA, at what point do I qualify to receive UBI?

Issues: Higher taxes

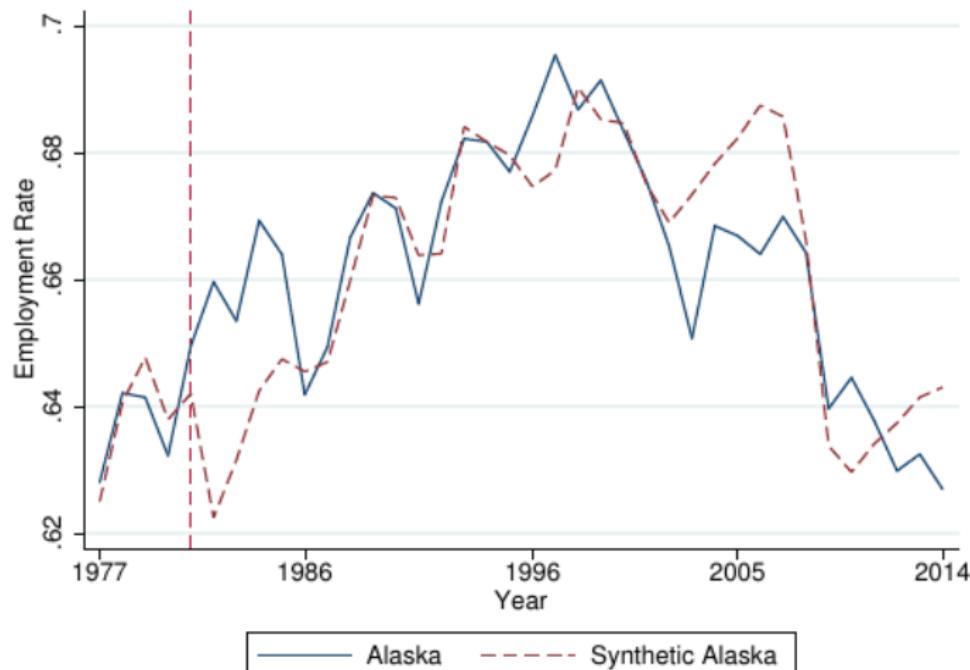
- ▶ The cost is ~\$12,000 per person per year.
 - ▶ Would have to be funded from large taxes on the middle and upper classes.
 - ▶ Balanced against cost reductions:
 - ▶ replacing welfare programs: not just the benefit but the expensive means-testing bureaucracy
 - ▶ replacing a lot of social security / pensions as well.
 - ▶ reduced cost of crime
 - ▶ etc.

Alaska Permanent Fund

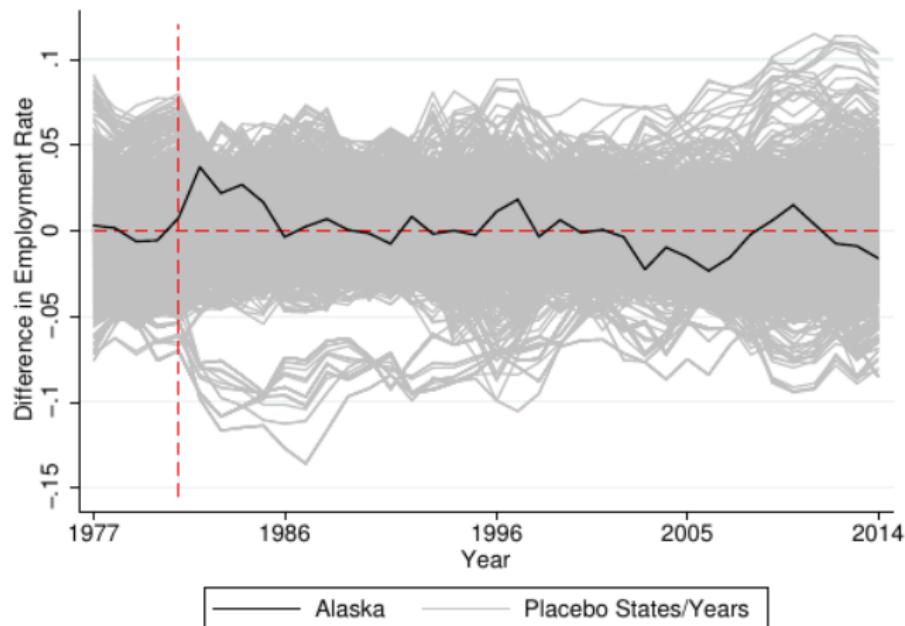
- ▶ Since 1982, Alaskan residents receive an annual payout, funded out of taxes on natural resources extraction.
- ▶ \$331 in first year, \$1000 in 1996, \$2000 in 2015.
- ▶ As discussed last lecture, basic income might reduce labor supply, especially at the extensive margin.
- ▶ Jones and Marinescu (2018) look at the impact of introducing this policy on Alaska using synthetic control method.
 - ▶ similar to cigarette tax paper

No Effect on Employment Rate

Figure 1: Employment Rate, 1977-2014



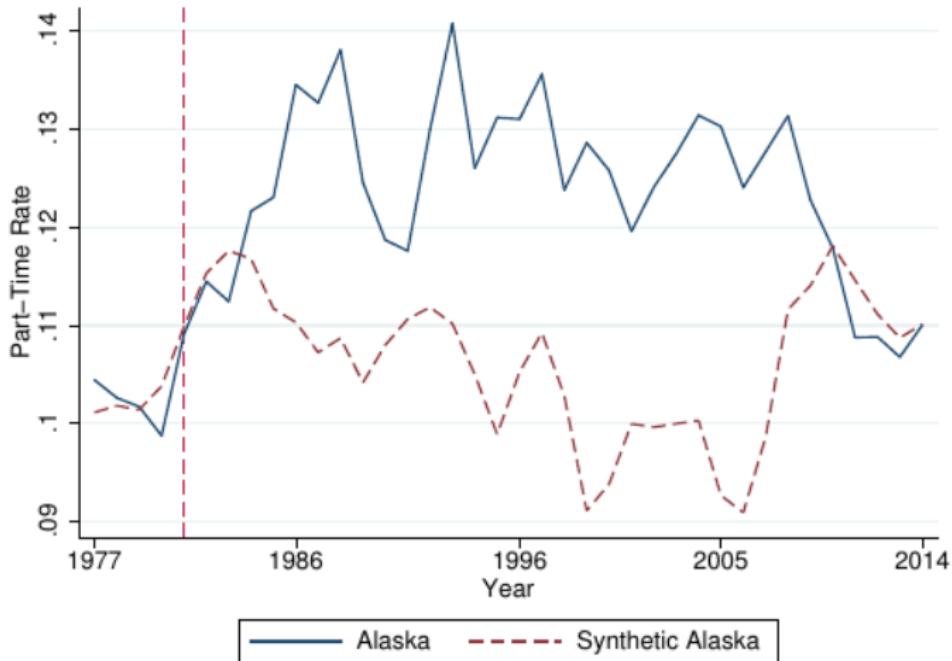
Placebo Test (Employment Rate)



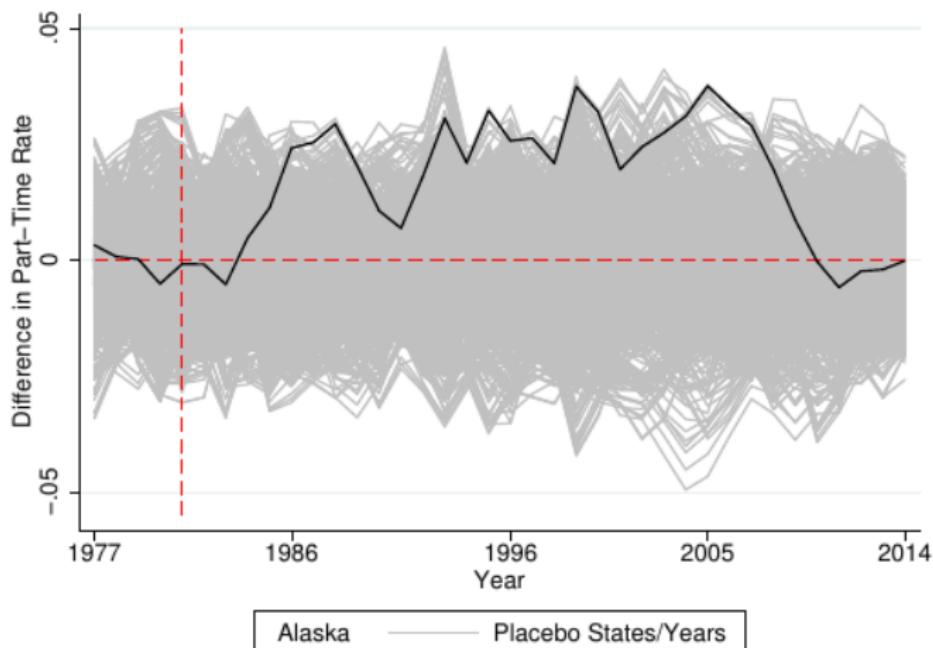
(b) Synthetic Difference in Employment Rate, Alaska vs. Placebo States

Effect on Part-Time Work

Figure 2: Part-Time Rate, 1977-2014



Placebo Test (Part-Time Rate)



(b) Synthetic Difference in Part-Time Rate, Alaska vs. Placebo States

Summary (Jones and Marinescu 2018)

- ▶ Alaska Permanent Fund (a small basic income for Alaska residents) did not affect employment on the extensive margin (employment rate).
 - ▶ However, it did reduce hours worked (intensive margin).
- ▶ Other results:
 - ▶ Some evidence of increased labor force participation, but they couldn't get parallel trends in synthetic control method.
- ▶ Problems:
 - ▶ Need more pre-treatment (pre-1982) data – they used a different data set with a longer pre-trend and the results were different.

Negative Income Tax Experiments (Marinescu 2017)

- ▶ Negative Income Tax:
 - ▶ Not a basic income because starts to phase out immediately.
- ▶ Implementation
 - ▶ randomized control trials, 1968-1982
 - ▶ N=10,000 households
 - ▶ >\$17,000 per year, distributed monthly
- ▶ Short-term effects:
 - ▶ in largest experiment, 4 percent decrease in employment rate
 - ▶ decrease in hours worked
- ▶ Long-term effects (Price and Song 2016):
 - ▶ long-term decrease in earnings due to relatively early retirement.

Cherokee Indian Casino Dividend (Marinescu 2017)

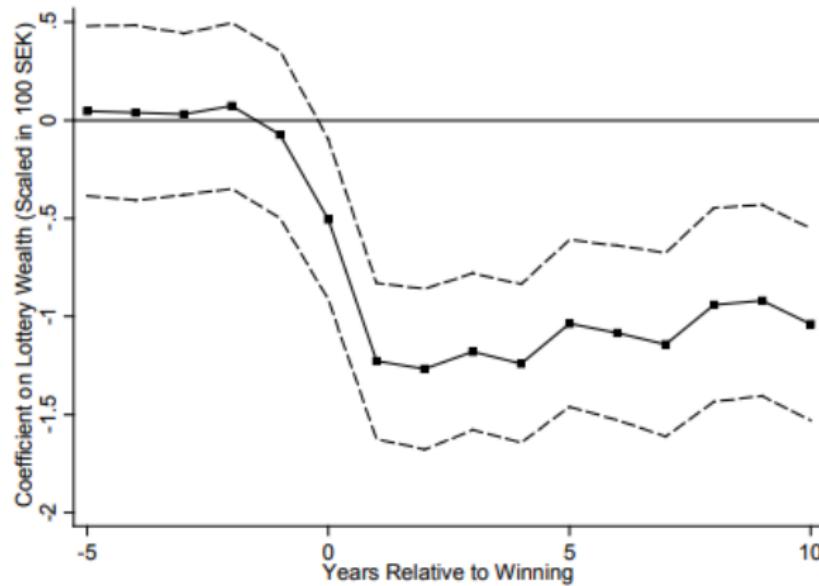
- ▶ Cherokee Community in North Carolina opened a casino and distributed profits to residents.
 - ▶ 16,000 recipients, >\$4000 per year, disbursed twice per year
 - ▶ 1997-present
- ▶ Akee et al (2010)
 - ▶ differences-in-differences of native american vs other individuals
 - ▶ why not synthetic control?
 - ▶ No effect on labor supply (although Casino created jobs)
 - ▶ Increase in educational attainment (one full year of school)
 - ▶ Decrease in crime and drug dependence

Lottery Winners (Cesarini et al 2015, 2016)

- ▶ Lottery wins are generally paid in installments, approximating a basic income.
 - ▶ Cesarini et al (2015, 2016) use administrative data on Swedish lottery players (2 million individuals)
 - ▶ Individual microdata on labor supply, earnings, and health/education consequences for children

Effect of Wealth on ETI

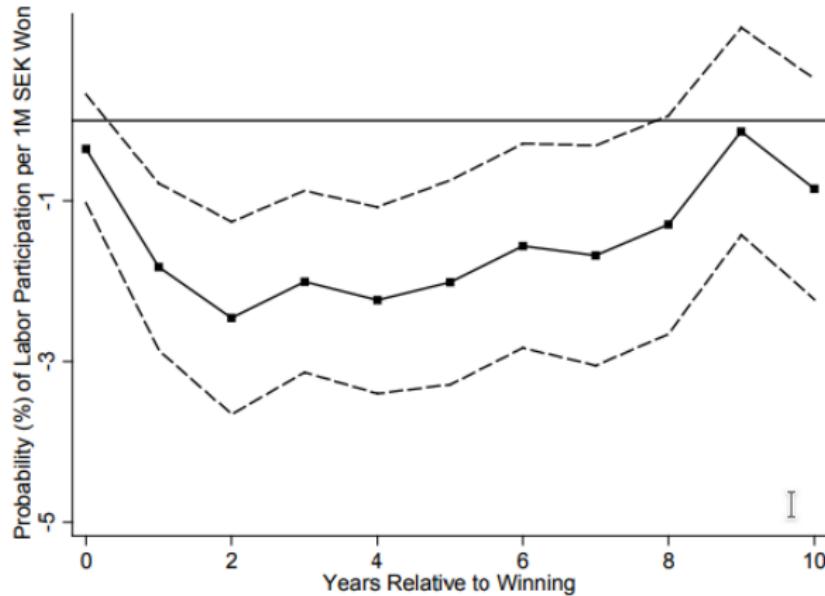
Figure 1: Effect of Wealth on Individual Gross Labor Earnings



- ▶ A \$100,000 lottery win reduces annual earnings by \$1,000, long-term impact.

Effect of Wealth on Labor Force Participation

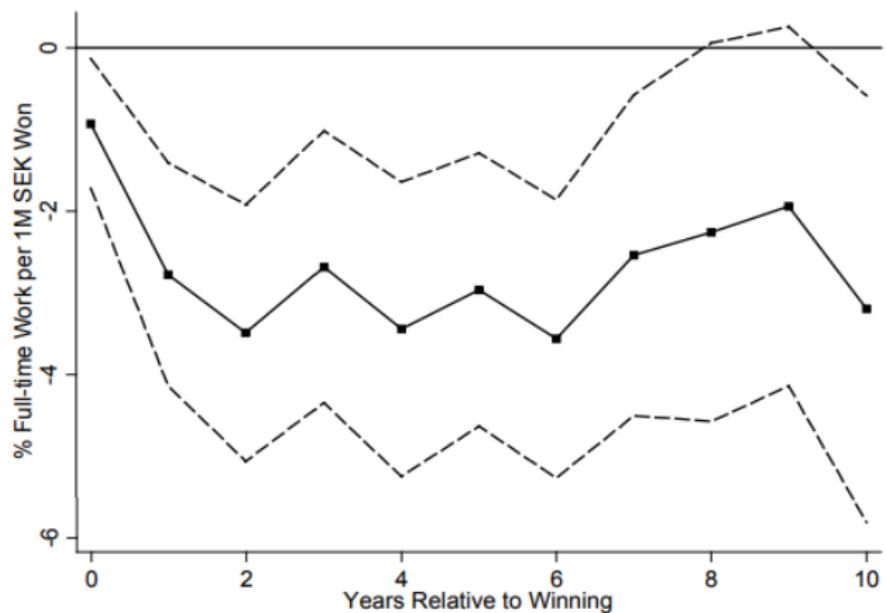
Panel A: Effect on Extensive Margin



- ▶ A \$120,000 lottery win causes 2% of people to become unemployed (temporarily).

Effect on Part-Time Work

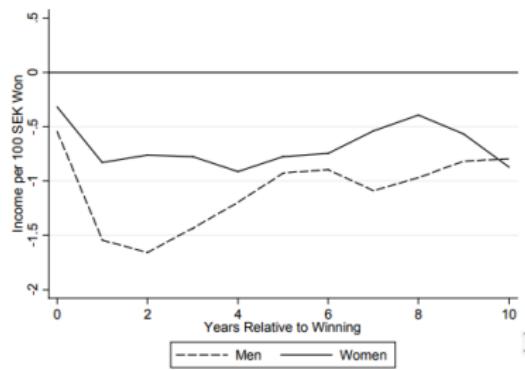
Panel D: Effect on Hours (Share of Full-Time)



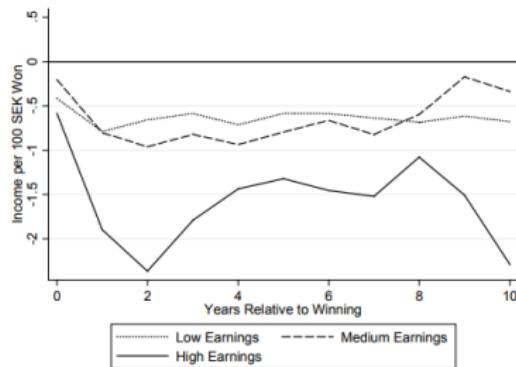
- ▶ A \$120,000 lottery win causes 2% of full-time workers to change to part-time work.

Heterogeneous Effects

Panel C: Heterogeneity by Gender



Panel E: Heterogeneity by Income Tercile (Pre-tax)



- Effect is stronger for men, and stronger for high-income individuals

Null Effects on Health/Education

- ▶ In companion paper (Cesarini et al 2016, QJE):
 - ▶ No effect of lottery win on adult mortality risk
 - ▶ No effect on adult health care utilization
 - ▶ Increase in child health care utilization, but no effect on observable child health outcomes
- ▶ Swedish are already healthy and well-educated.

GiveDirectly

GiveDirectly

introducing a radical new way to give: directly

- ① You donate through our webpage
- ② We locate poor households in Kenya
- ③ We transfer your donation electronically to a recipient's cell phone
- ④ The recipient uses the transfer to pursue his or her own goals

latest news

GiveDirectly worked with Innovations for Poverty Action to complete a randomized control trial of direct cash transfers. The results are in, and they're exciting.

GiveWell's first full update on GiveDirectly is an in-depth report on GiveDirectly's work in Kenya, our expansion into a second country, and our long-term outlook.



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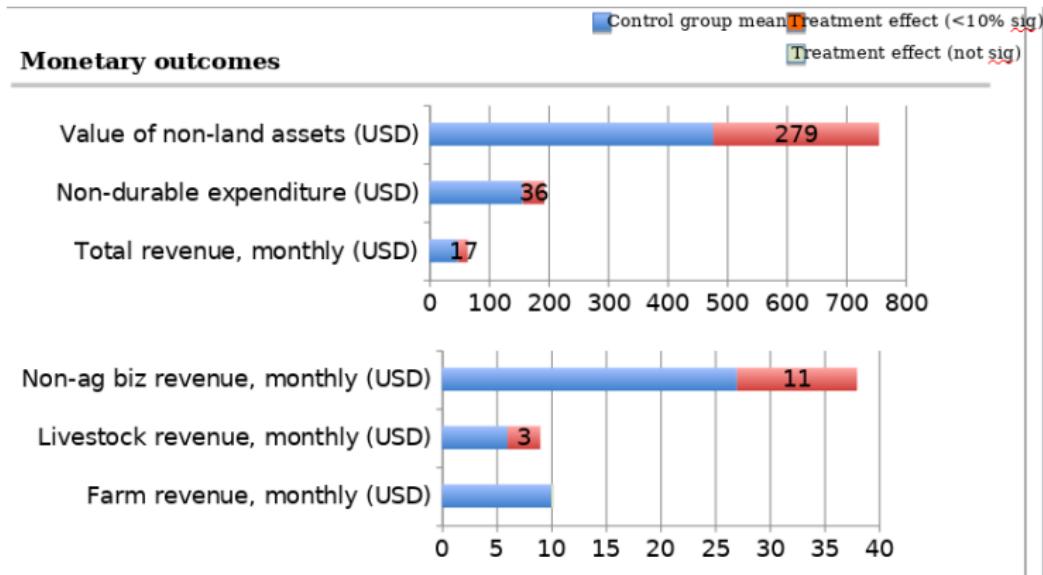
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Give Directly

- ▶ Eligibility
 - ▶ determined by general poverty (residence in mud hut)
 - ▶ Verified by multiple field audits and satellite imagery
- ▶ Implementation
 - ▶ Transfer by M Pesa (cell phone money transfer service)
 - ▶ Recipients receive ~\$1,000 with 90% efficiency

Give Directly – Effect



- ▶ Unconditional cash transfers increase small-business activity among those in poverty