

Equality of Opportunity for Well-Being

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Two Trends in Normative Economics

- **Trend #1:** A vector of incomes is not sufficient for assessing individuals' well-being
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Research questions:

Does the measure of well-being matter for assessments of...

- ① ...how inequality of opportunity has evolved over time?
- ② ...who the most opportunity deprived are?

Motivation

Why Equality of Opportunity?

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- ① A popular idea among philosophers (Rawls (1971), Sen (1980), Dworking (1981), Arneson (1989), Cohen (1989))
- ② A popular idea among politicians
- ③ A popular idea among citizens (Cappelen et al., AER (2007))
- ④ It may be good for growth (Peragine et al., WBER (2014))

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Why Equality of Opportunity for Well-Being?

- Philosophers advocated for something broader than incomes:
 - Primary goods (Rawls), Capabilities (Sen), Resources (Dworkin), Welfare (Arneson), Advantage (Cohen)

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Why Equality of Opportunity for Well-Being?

- Philosophers advocated for something broader than incomes:
 - Primary goods (Rawls), Capabilities (Sen), Resources (Dworkin), Welfare (Arneson), Advantage (Cohen)
- Looking at incomes could be problematic for 3 reasons:
 - It ignores aspects of life that are important to individuals
 - It ignores the disutility of effort
 - It ignores that individuals have different preferences

Measuring Equality of Opportunity 1/2

- $y = g(c, e)$
 - y = outcome variable, here well-being
 - c = circumstances (non-responsibility variables)
 - e = effort (responsibility variables)

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- Data: GSOEP from 1984-2014 ($n > 150,000$)
 - $c = \{\text{gender, father's educ., mother's educ., father's occ., age, height, place of birth, \#siblings}\}$
 - $e = \{\text{work hours, years of educ., self-employed, works in public sector}\}$

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- A measure of Inequality of Opportunity, IOP, should reflect the inequality in y due to differences in c but not due to differences in e

Measuring Well-Being 1/2

4 measures of welfare:

- Income (equivalized net household income)
- Life satisfaction (on a scale from 0-10)
- Multidimensional index (a weighted index of income, health, unemployment, and leisure)
- Equivalent incomes

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Details on equivalent incomes

We estimate equivalent incomes based on a life satisfaction regression (Decancq et al., 2015):

$$\begin{aligned} \text{lifesat}_{it} &= (\beta^{inc} + \gamma_c^{inc} c_i + \gamma_e^{inc} e_i) \text{inc}_{it} + (\beta^{dim} + \gamma_c^{dim} c_i + \gamma_e^{dim} e_i) \text{dim}_{it} + \alpha_i + \varepsilon_{it} \\ \text{dim}_{it} &= (\text{health}_{it}, \text{unemployment}_{it}, \text{leisure}_{it}) \end{aligned}$$

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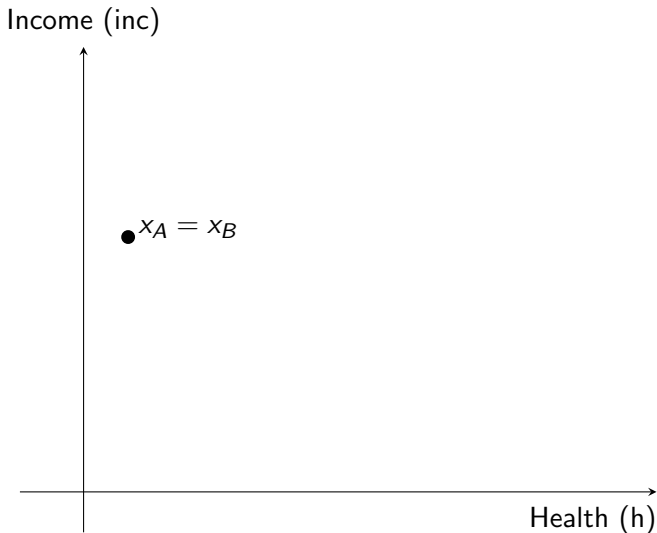
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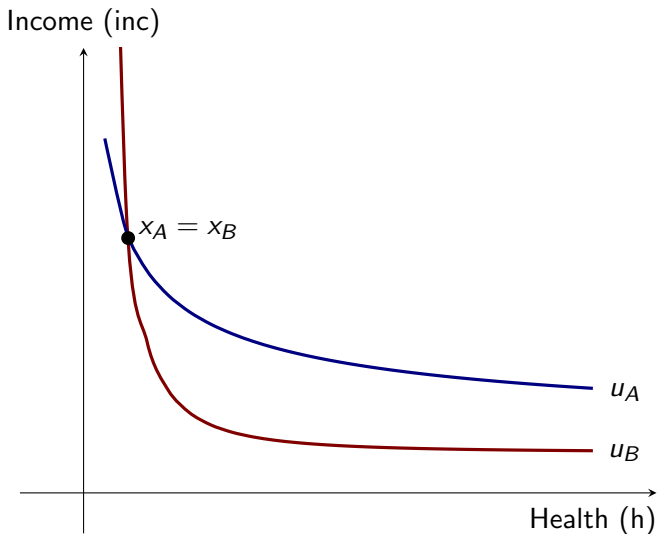
Equivalent incomes are found by solving for inc_{it}^{eq} in:

$$\text{lifesat}(inc_{it}, dim_{it}) = \text{lifesat}(inc_{it}^{eq}, \tilde{dim})$$

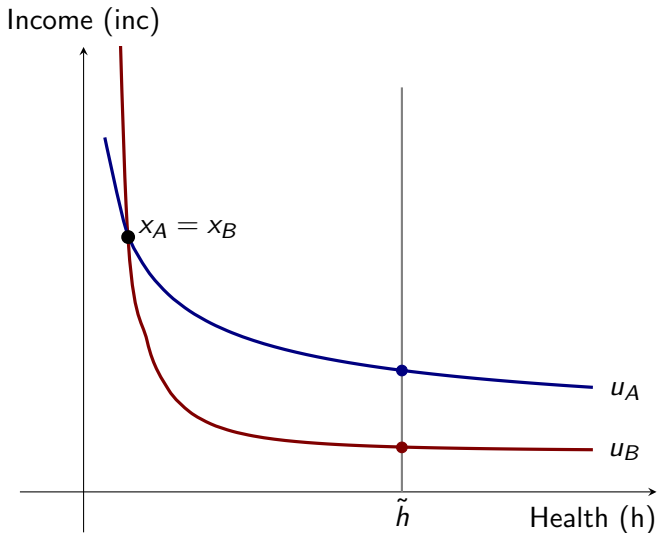
Measuring Well-Being 2/2



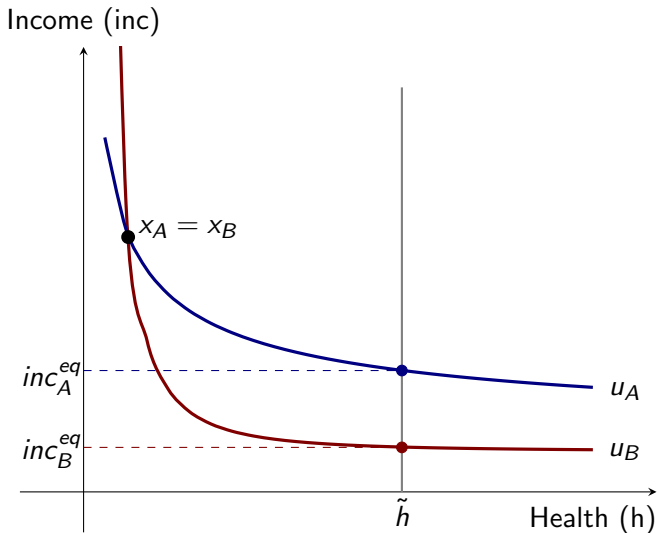
Measuring Well-Being 2/2



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Measuring Equality of Opportunity 2/2

RQ1: Measuring inequality of opportunity over time

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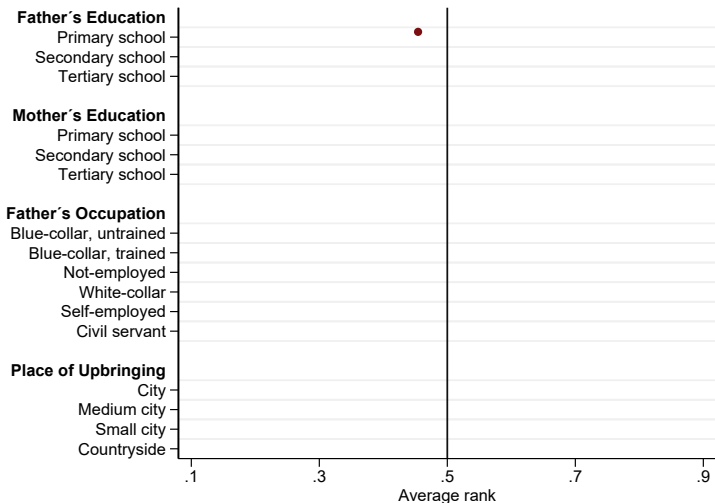
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RQ2: Characterizing the most opportunity deprived

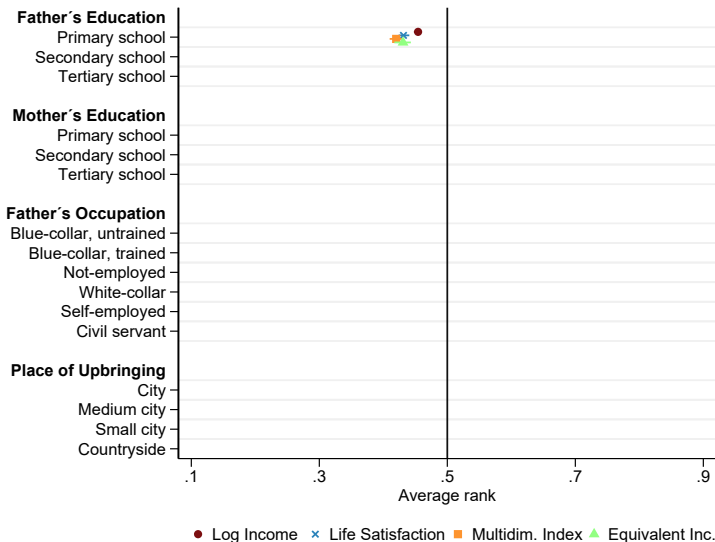
- 1 Compare the average opportunity rank for individuals with a given circumstance

Who are the Most Opportunity Deprived? 1/2

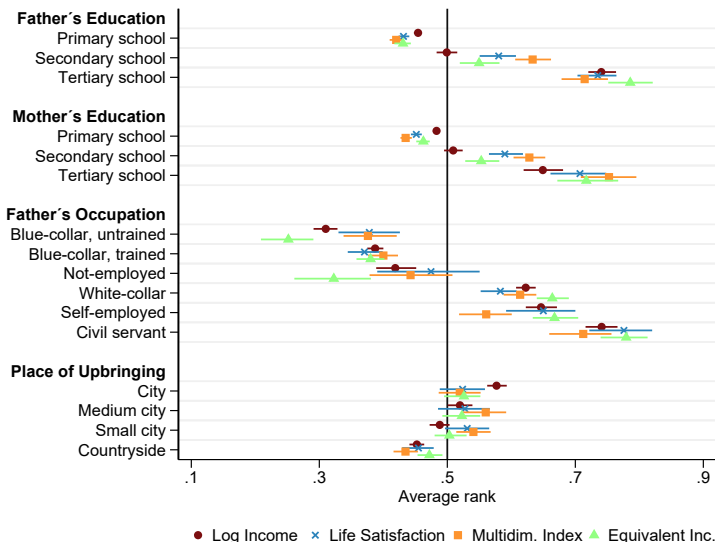


● Log Income × Life Satisfaction ■ Multidim. Index ▲ Equivalent Inc.

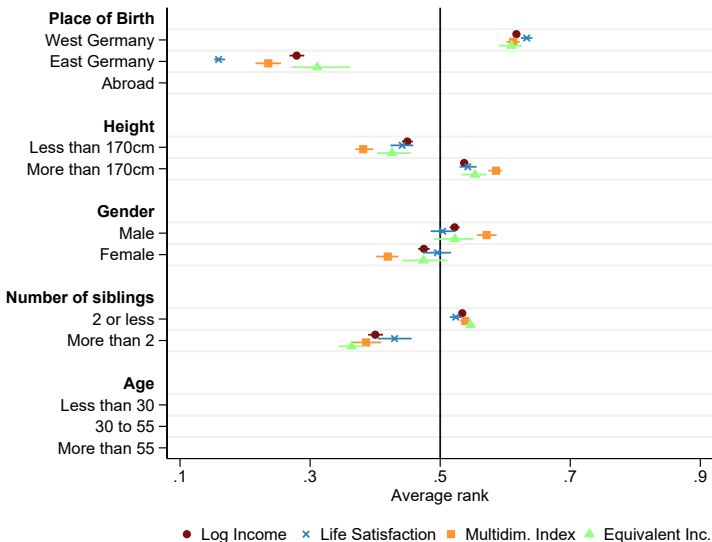
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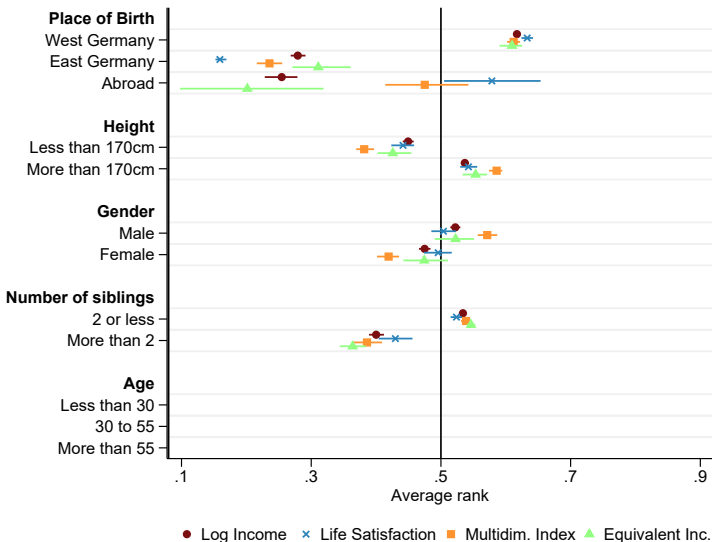
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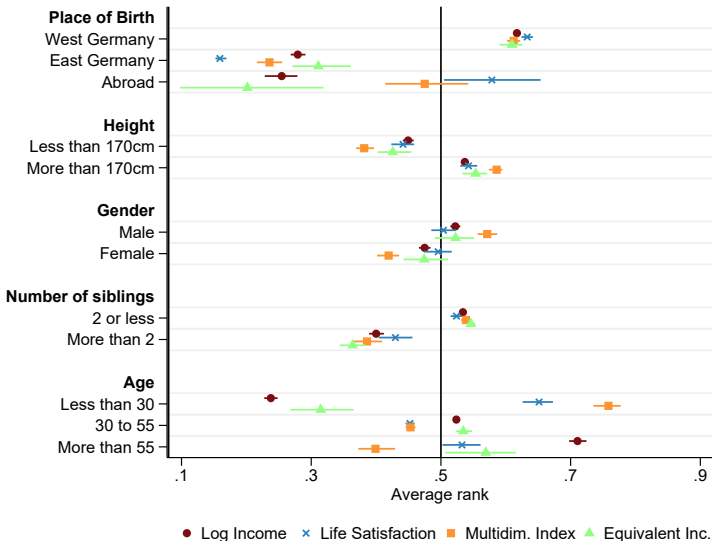
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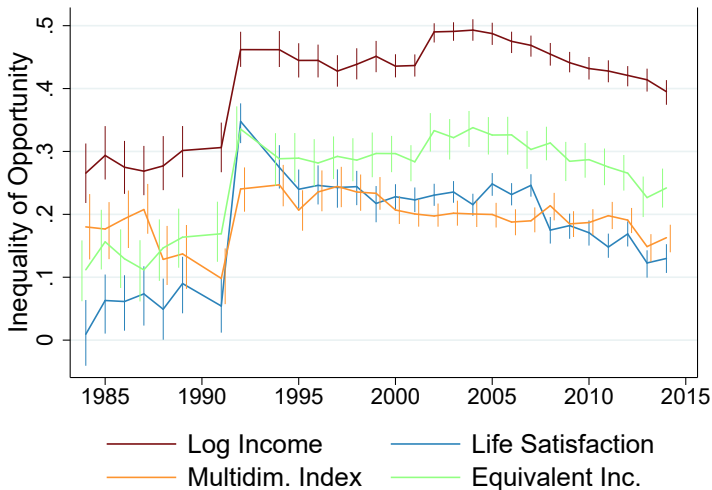
Who are the Most Opportunity Deprived? 2/2



Who are the Most Opportunity Deprived? 2/2



Inequality of Opportunity Over Time



Conclusion

- Does the measure of well-being matter for identifying who the most opportunity deprived are?
 - Not much
- Does the measure of well-being matter for assessments of inequality of opportunity over time?
 - Not much
(but this is not robust to certain other ways of measuring IOP)
- In general, this is encouraging news for people that care about going beyond GDP:

For questions of distributive justice, how welfare is measured has relatively little importance

Thank you

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Relevant Literature

- Measurement of Equality of Opportunity
 - Roemer & Trannoy (2015), Ramos & Van da gaer (2015), Ferreira & Peragine (2016), and many more
- Measurement of welfare matters for policy design
 - Blanchflower & Oswald (2004), Stevenson & Wolfers (2008), Benjamin et al. (2014), Decancq and Neumann (2016)
- Fairness and welfare should be combined
 - Marc Fleurbaey, Erik Schokkaert, Francois Maniquet, Koen Decancq,... (many, many papers)
 - Ravallion (2015)

Contribution

We look at whether the measurement of well-being matters in an Equality of Opportunity framework

A Word of Caution from Roemer

On the use of well-being as the outcome variable:

"[I prefer] to apply the theory to problems where outcomes are observable, for I believe that in all policy applications, planners will be concerned to deliver equity (here, equal opportunity) with respect to the achievement of a particular objective, which is the concern of their ministry."

Roemer (2012)

Summary Statistics

	mean	sd	min	max
Circumstance Variables				
Father's Educ.: Primary School	0.67	0.47	0	1
Father's Educ.: Secondary School	0.20	0.40	0	1
Father's Educ.: More Than Secondary School	0.13	0.34	0	1
Mother's Educ.: Primary School	0.71	0.46	0	1
Mother's Educ.: Secondary School	0.23	0.42	0	1
Mother's Educ.: More Than Secondary School	0.07	0.25	0	1
Father's Occupation: Blue-Collar (untrained)	0.14	0.35	0	1
Father's Occupation: Blue-Collar (trained)	0.34	0.47	0	1
Father's Occupation: Not Employed	0.06	0.24	0	1
Father's Occupation: White-Collar	0.26	0.44	0	1
Father's Occupation: Self-Employed	0.12	0.32	0	1
Father's Occupation: Civil Servant	0.08	0.28	0	1
Place of Upbringing: Large City	0.22	0.41	0	1
Place of Upbringing: Medium City	0.18	0.38	0	1
Place of Upbringing: Small City	0.23	0.42	0	1
Place of Upbringing: Countryside	0.37	0.48	0	1
Place of Birth: West Germany	0.66	0.47	0	1
Place of Birth: East Germany	0.27	0.45	0	1
Place of Birth: Abroad	0.07	0.25	0	1
Height	172.87	9.14	80	210
Female	0.47	0.50	0	1
Number of Siblings	1.94	1.67	0	17
Age	42.12	12.06	17	91
Effort Variables				
Years of Education	12.57	2.72	7	18
Weekly Working Time	35.85	15.90	0	80
Self-Employed	0.09	0.29	0	1
Works in Public Sector	0.18	0.39	0	1

Measures of Well-Being

Figure: Histograms over Welfare Measures

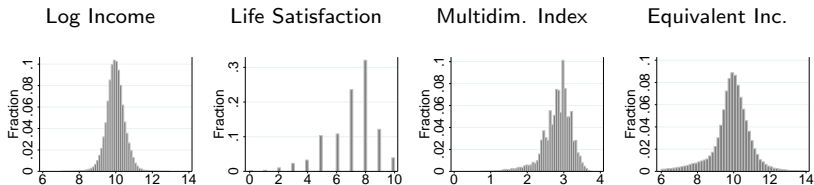


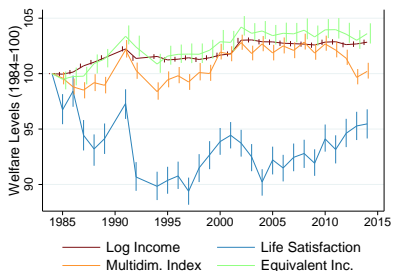
Table: Spearman's Correlations

	Log Income	Life Sat.	Multidim. Index	Equivalent Inc.
Log Income	-	-	-	-
Life Satisfaction	0.21	-	-	-
Multidim. Index	0.19	0.19	-	-
Equivalent Inc.	0.63	0.27	0.64	-

Welfare and Inequality Over Time

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Levels of Well-Being



Inequality in Well-Being

