

Equality of Opportunity: A progress report

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Insee Séminaire Inégalités 18 Nov 2017

Social Justice and Equality

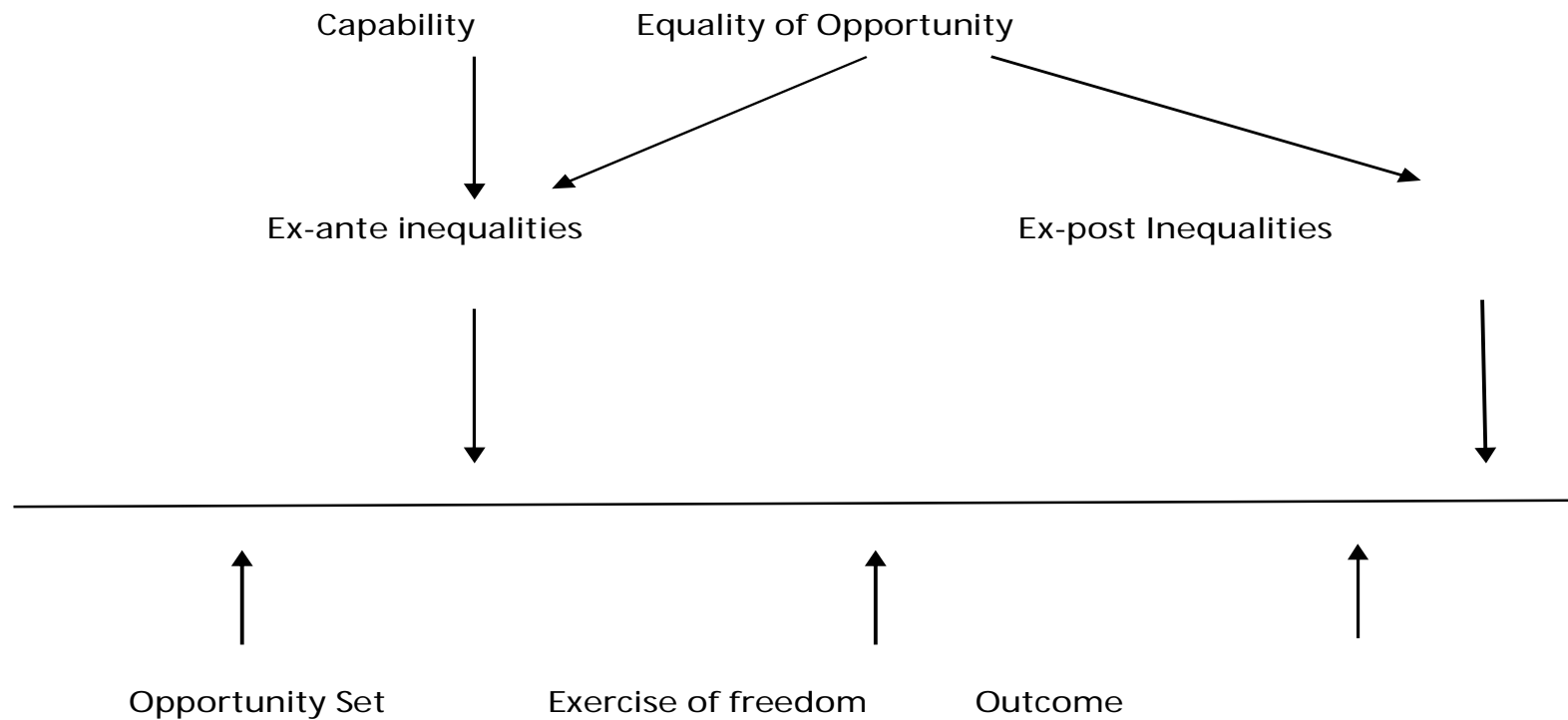
- No society across time and space has achieved full equality of outcomes
 - Maybe because it is too costly from an efficiency view point
 - Maybe because it is not desirable per se. Some inequalities are legitimate.
- Distinction between
 - ex ante and ex post inequalities
- Political philosophers John Rawls 1971, Amartya Sen (1980), Ronald Dworkin (1981), Richard Arneson (1989), Gerard Cohen (1989)
- Criticism of consequentialism and therefore utilitarianism (zero inequality aversion) and ex post inequalities

Capabilities vs Equality-of-Opportunity

- Both capability-set literature and Equality-of-opportunity moral philosophy refer to this ex ante perspective
- However, EOp also refers to an ex-post perspective when freedom has been exercised
- Suppose that opportunity sets have been equalized.
 - The capability approach : it is enough
 - The Eop: it is not enough
- In particular, full equality of outcome is not precluded by capability approach
- Whereas, in general, it is by the EOp approach

Ex-post, Ex-ante inequalities

Figure 1. *Time line and ex-post and ex-ante inequalities*



Outline

- 1. Theoretical issues.
- 2. Measurement issues
 - Issues
 - Results
- 3. Eop policies

Bias toward my own works

- With John Roemer
 - Survey articles Income distribution Handbook chapter, JEL (forthcoming article)
- With Arnaud Lefranc
 - WP + article in JPubE (with Nicolas Pistoiesi)
 - Introducing luck
- With Florence Jusot, Sandy Tubeuf et Gaston Yalonestky
 - about the correlation between effort and circumstances, health and education
- With Olivier Chanel, Stephane Luchini, Miriam Teschl and Ivy Lu
 - Questionnaires and Experiments

Theoretical Issues

Conflict between two principles

Correlation between effort and circumstances

Luck

Responsibility

- Equality of outcome cannot be maintained as a reasonable social objective in all configurations.
- Because, once the playing field has been leveled up, you should be deemed responsible for your misery say political philosophers such as Dworkin, Arneson, Cohen, etc.
 - Illegitimate inequalities due to non-responsibility characteristics
 - Legitimate inequalities due to responsibility characteristics
- How to define variables that you should be held responsible for?
 - Reasoning of political philosophers
 - Society will say, John Roemer argues

Two competing views about responsibility in economics

- The preference view (Dworkin, Fleurbaey)
 - You are responsible for your preferences
- The control view (Cohen, Roemer)
 - You are responsible for what you control, your actions
 - One should take into account what set of actions a person can *access*,
 - Access is not a question simply of material constraints but of psychological ones, which may be determined by one's background

Two boxes of variables

- For John Roemer (1993-1998)
 - **Circumstances** : factors beyond people's control
 - **Effort** : the remaining factors, a kind of residual
- For Marc Fleurbaey (& François Maniquet) (1995)
 - Preferences
 - Non-responsibility factors : the remaining factors

Common ground

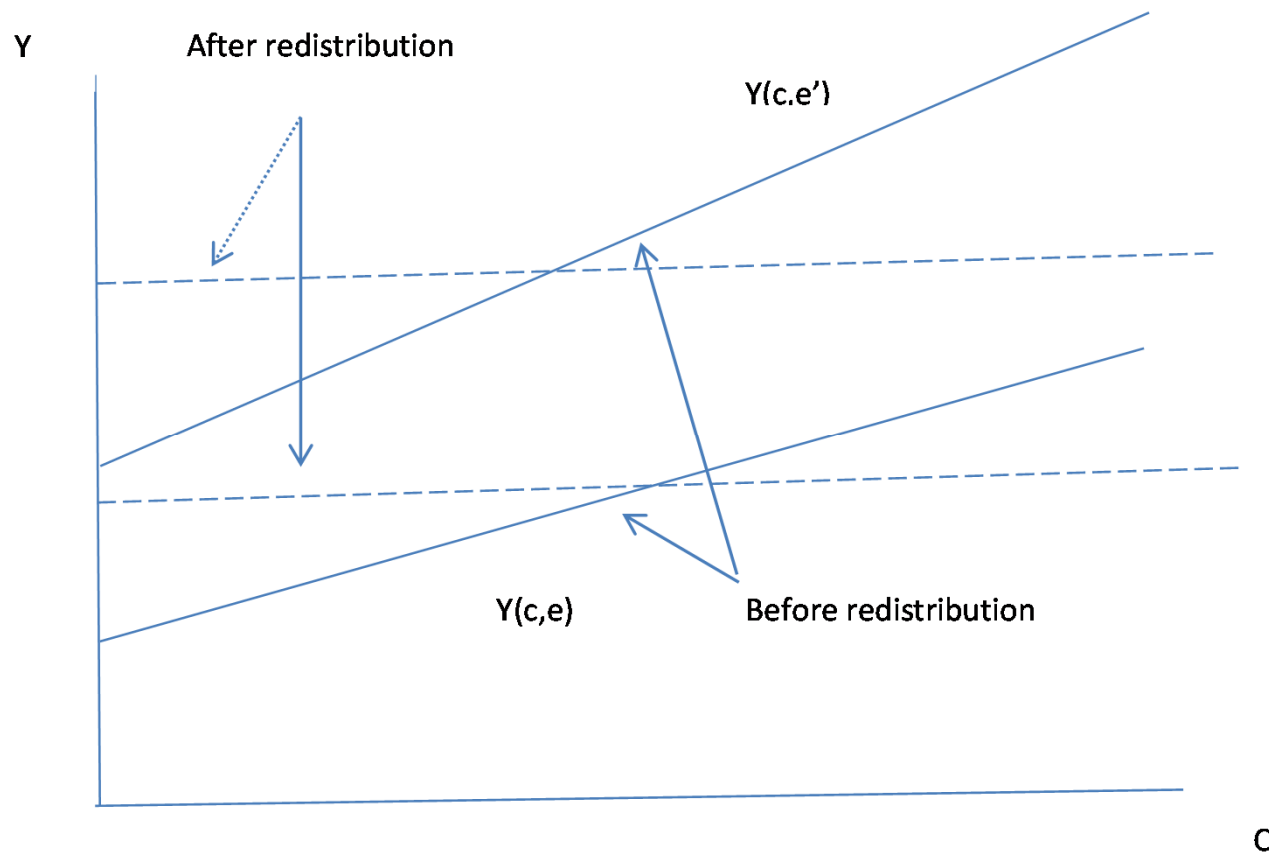
- **Principle of compensation**
 - The impact of factors that you are not deemed to be responsible on outcomes should be neutralized.

For a given level of effort, the impact of circumstances on outcomes could not be detected.

Differentes routes

- Several Principle of reward
- How far should we respect the impact of responsibility variables?
- Principle of natural reward (Fleurbaey)
 - Take two individuals with the same circumstances. (A TYPE)
 - Before state intervention, the only source of variation in income is effort.
 - Then the transfer should be the same.
- Flavor of libertarianism
- Principle of utilitarian reward (Roemer)
 - The transfer should maximize the sum of the utilities of both individuals
 - Zero inequality aversion among people for which the playing field has been leveled up.
 - You can introduce some inequality aversion

The clash between the principle of compensation and the principle of natural reward



A more general perspective on this conflict

- Fleurbaey et Peragine (2013): A conflict between ex ante et ex post approaches.
- Matrix of outcomes with circumstances in rows (i), effort in columns (j)

$$\text{Types} \begin{pmatrix} \text{Tranches} \\ y_{ij} \end{pmatrix}$$

- Ex ante approach = conditioning to circumstances/Type
- Ex post approach = conditioning to efforts/Tranches

Compensation principle is a corner stone

- Compensation principle is ex post
 - Each column should be a constant column
- Incompatibility in full generality (for a universal domain of de matrices)
- With all natural rewards principle defined ex ante
- We should weaken the natural reward principle.
 - Fleurbaey proposes to gives priority to the principle of compensation and the natural reward principle is only respected for a reference type

Correlation between effort and circumstances

- Responsibility variables may be influenced by non responsibility variables
- Fleurbaey-Maniquet (up to now) maintain that individuals should be held responsible for their preferences
- Roemer argues that we should clean effort from the impact of circumstances

John Roemer against Brian Barry

“.Asian children generally work hard in school and thereby do well because parents press them to do so. The familial pressure is clearly an aspect of their environment outside their control. »

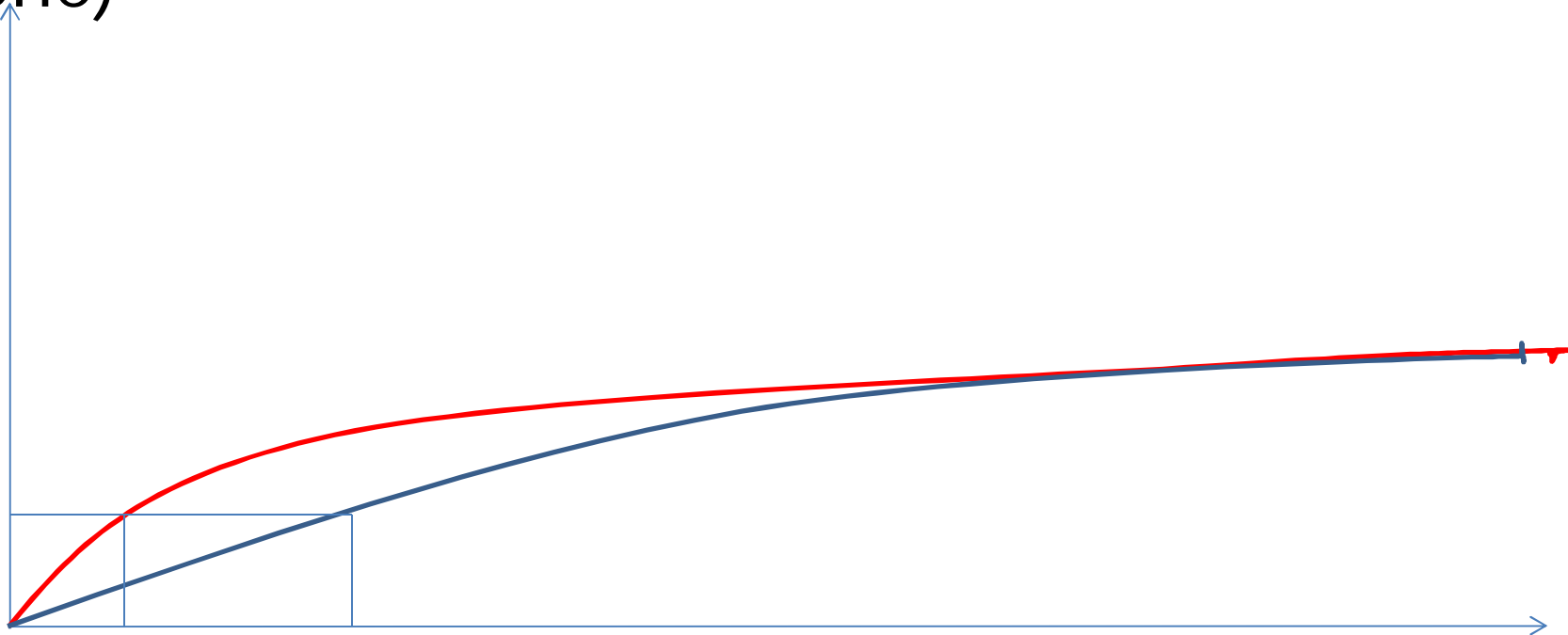
- Roemer said that we should respect the individual effort *“if we could somehow disembody individuals from their circumstances”*.
- Effort should be purged of any contamination coming from circumstances
- Barry argues *“that the fact that their generally high levels of effort were due to familial pressure does not make their having expended high levels of effort less admirable and less deserving of reward than it would have been absent such pressure. »*
- True effort should be respected (effort in the incentives literature)
- Do we hold sons of smokers less responsible to smoke than sons of non-smokers?

The Roemerian effort

- Suppose that effort is observed
- Then there is a distribution of effort by type. $G(e | c)$
- If the distribution of effort depends on type, it is a type characteristic and then a circumstance.
- Then, the cleaned effort, the effort that we should respect is the rank of effort in each type.
- Two persons at the same rank of their distribution of effort have exerted the same Roemerian effort

Illustration

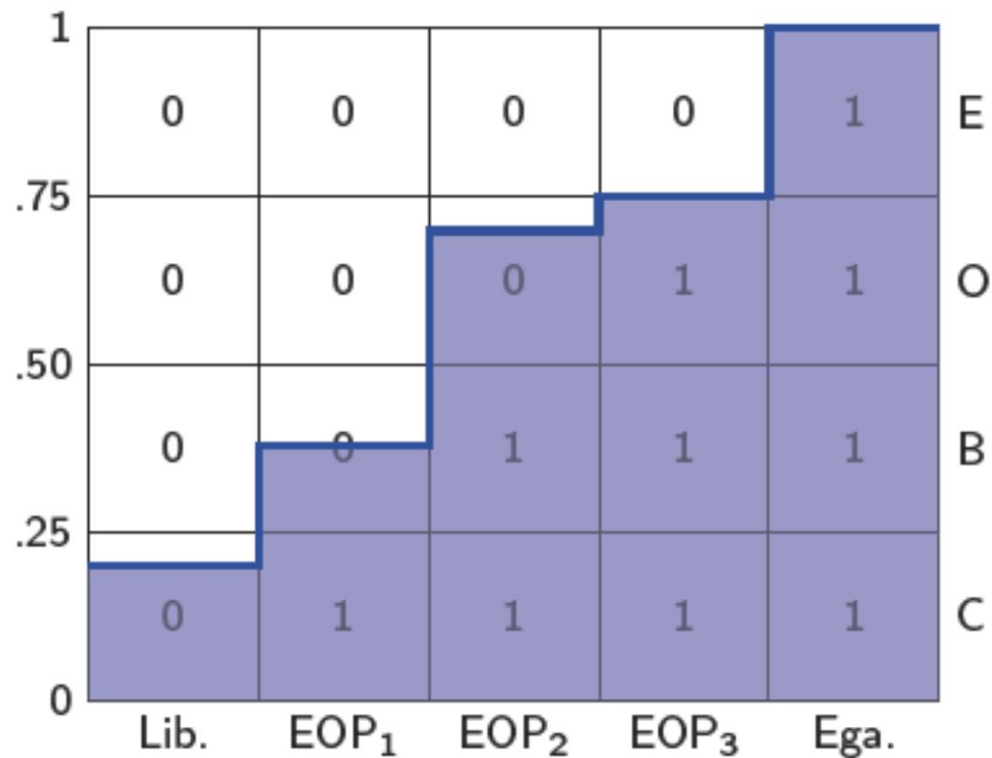
CDF of effort of two types (red one and blue one)



Introducing luck: the Dworkin Cut

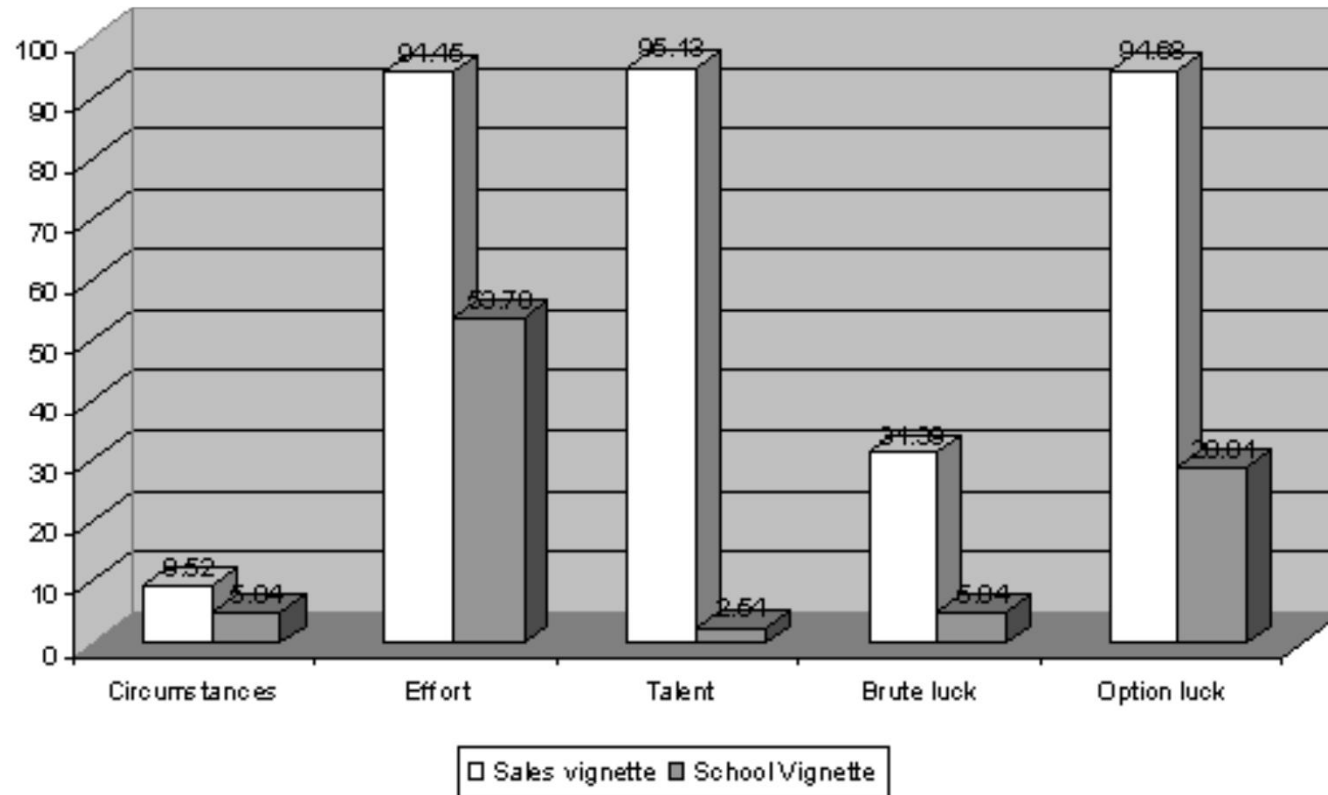
- Luck is pervasive in everyday life. Luck = Nature move at a chance node
- How to cope with luck in defining EOP?
- Can luck be absorbed in the dual world without any change of concepts?
- Dworkin introduces the distinction between
 - brute luck
 - option luck
- Fleurbaey splits option luck into two parts:
 - an action, a responsibility variable
 - a random draw, a non-responsibility variable

Results of an experiment about the Dworkin cut (% of respondents for non compensating the factor)



Results of vignettes about the responsibility cut

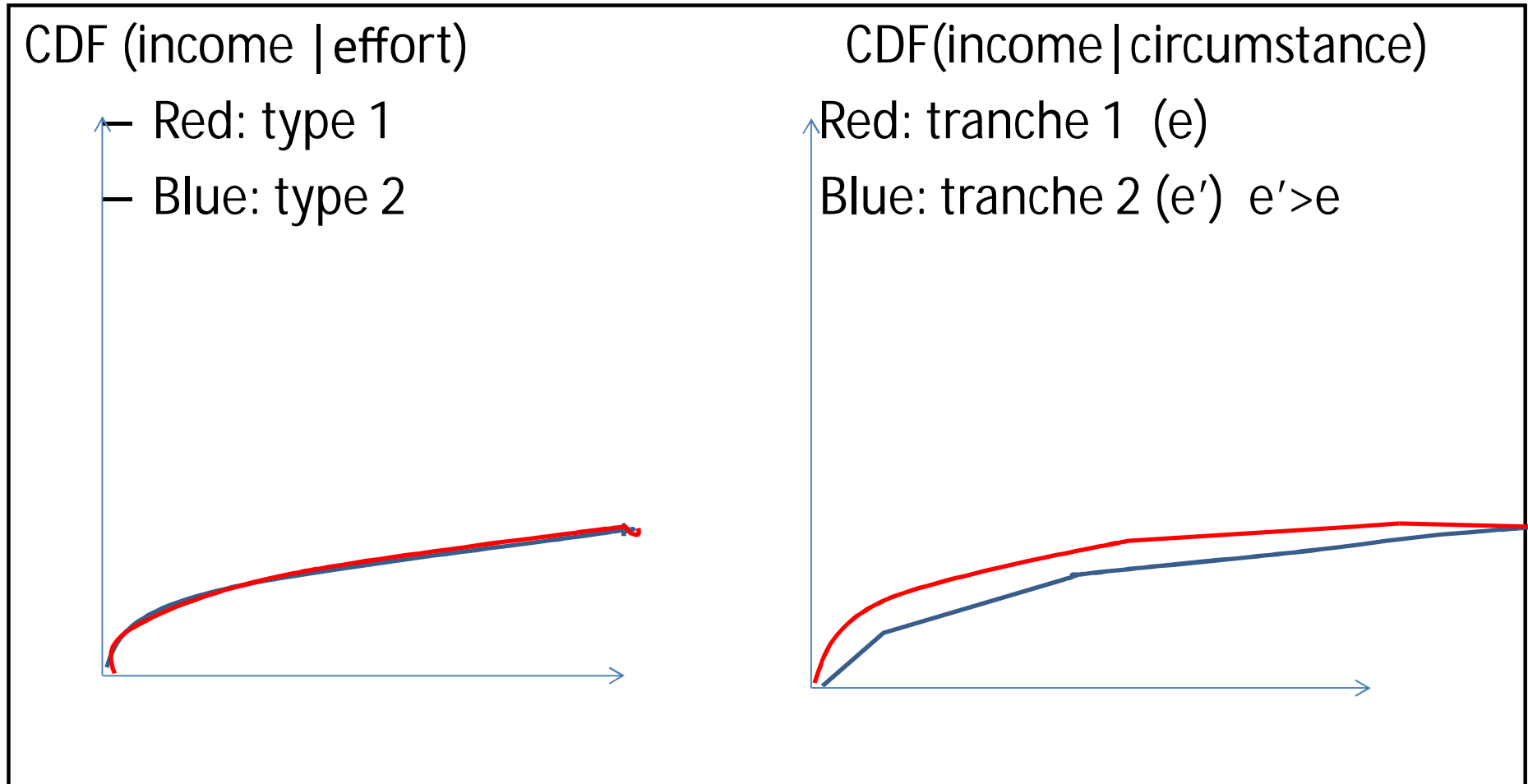
(% of respondents for non compensating the factor)



Definitions of EOP with luck

- In terms of CDF of post-tax outcome
 - For a given circumstance and effort, it gives the distribution of luck
- Principle of compensation
 - The distribution of post-tax outcome conditional on effort should not depend on circumstances
 - The distribution of luck is even-handed wrt circumstances
 - Neutralization of the correlation of luck with circumstances
- Principle of reward
 - For a given circumstance, if effort increases, the distribution of post-tax outcome conditional on effort and circumstances should improve in terms of FSD.
 - The correlation of effort with luck should be preserved (Moral hazard)

Figure 5: Principles of compensation and reward with luck



2. Measurement issues and Empirical Results

Observability

Testing the two principles in incomplete information

Share of Eop in total inequality

Importance of the correlation between effort and circumstances

Non Observability

- Much more difficult to implement than equality of outcomes
- Effort is private knowledge
- Difficult to describe all circumstances
- Checking EOp is plagued with problems of identification
- Roemer (1993, 1998): a first attempt to taking account for non-observability of some factors
- Issue: How can we test EOP when some circumstances and effort are not observable?

Lack of relevant effort information

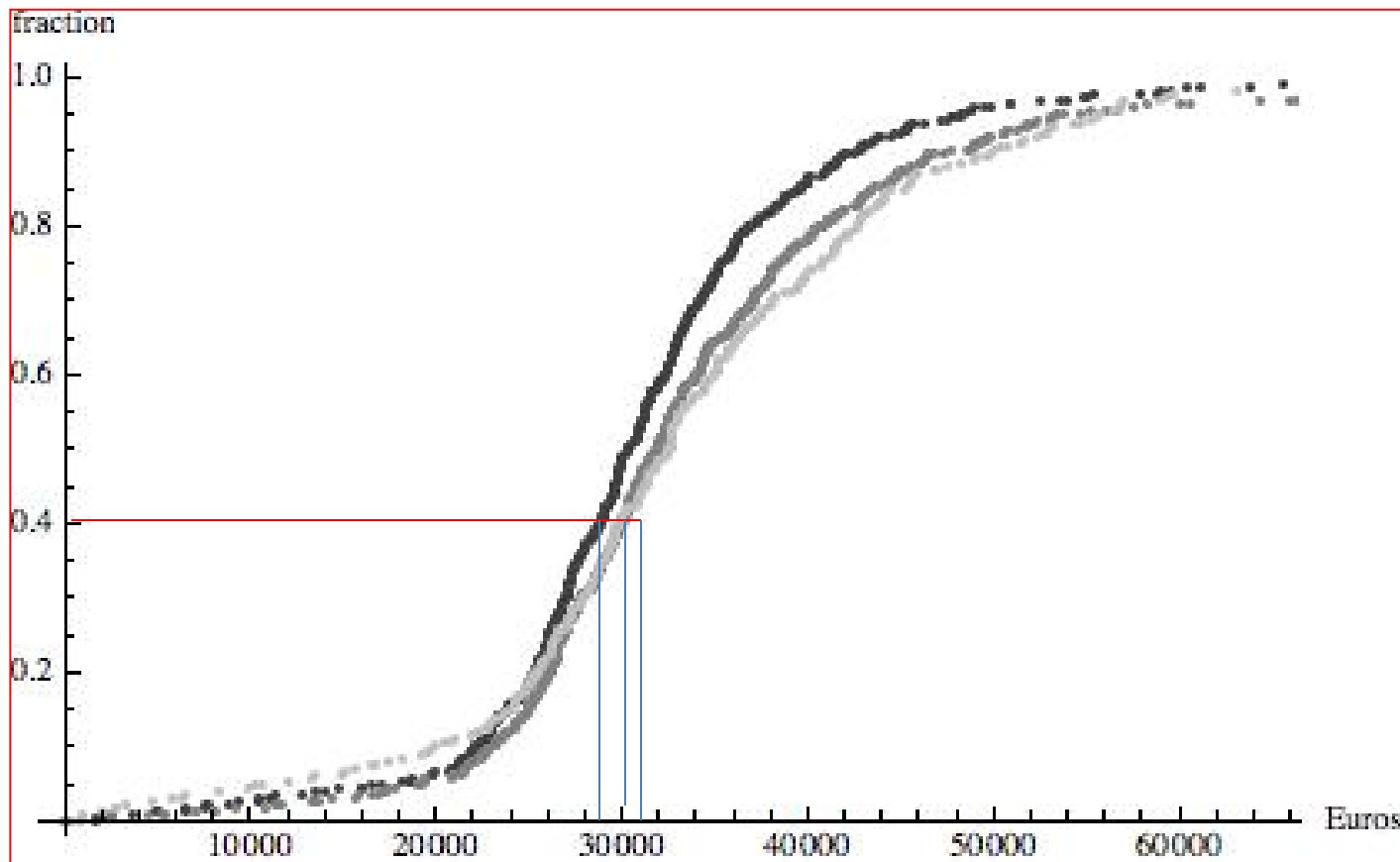
- Illustration for two popular effort variables
 - **Number of hours of work**
 - For self-employed, good effort variable for the control view
 - For wage-earners?
 - Unvoluntary part-time jobs, overtime, unemployment in a snapshot distribution
 - In the lifespan, better
 - **Years of education**
 - Primary and even secondary take place before the « *age of consent* ».
 - Only tertiary education and lifelong education
 - But tertiary education is path-dependent

Relative effort (proposed by Roemer but different from Roemerian effort)

- Effort is a residual in Roemer
- Then, let us look at the type distribution of outcome
- Then the rank gives you a measure of the rank of effort in your type
- Two persons at the same rank of their type outcome distribution have exerted the **same relative effort**
- The principle of compensation should be respected wrt to this relative effort

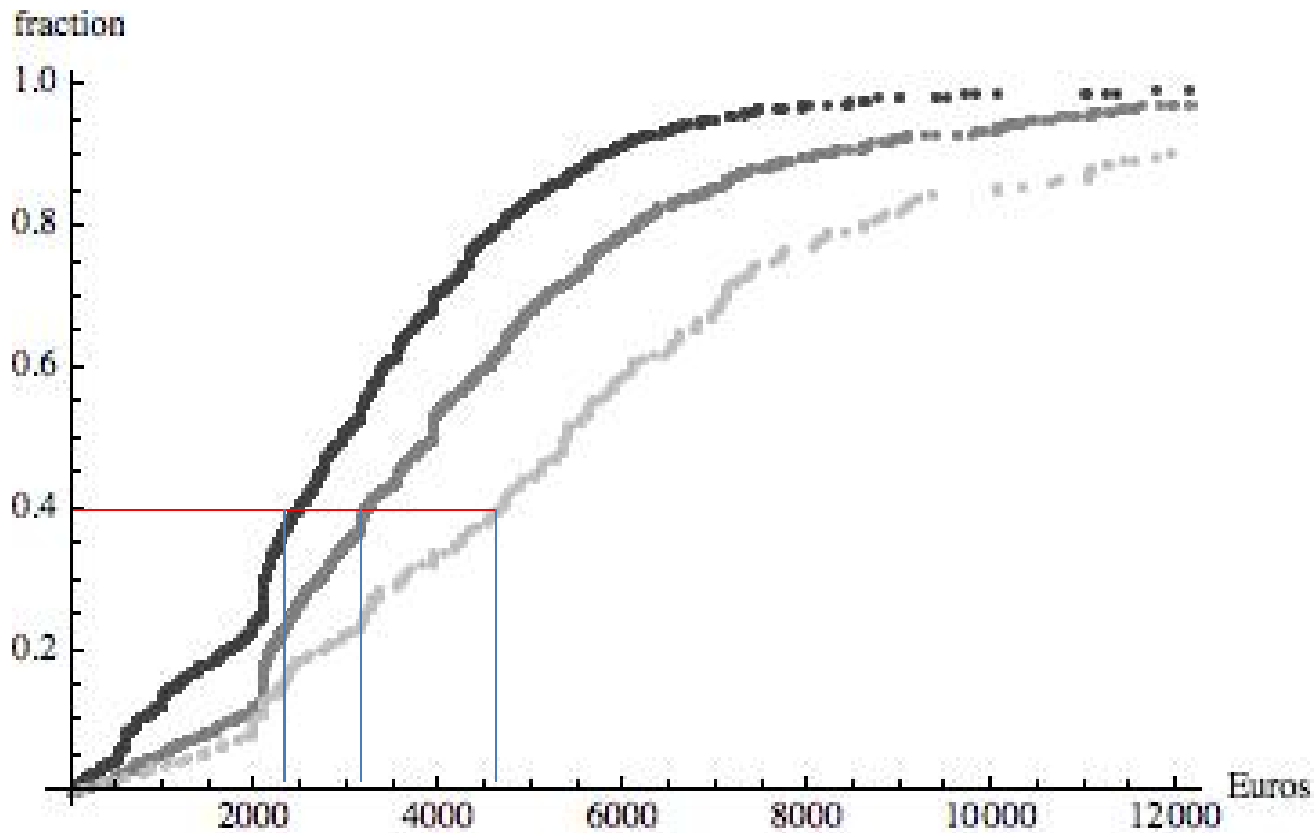
Example 1: Danish distribution

Danish male workers, according to the circumstance of parental education



Example 2: Hungarian distribution

Danish male workers, according to the circumstance of parental education



Not immune to omitted circumstances

- Omitted circumstances induce wrong identification of the Relative effort **unless the unobserved circumstances**, after conditioning on observed circumstances, **no longer affect outcome** (Ramos and Van de gaer (2012))
- If luck interact with effort in the residual, it is no longer possible to identify the residual with some pure notion of effort
- In addition, it is not clear how multi-dimensional effort can be aggregated into one indicator, (see Fleurbaey (1998))

Checking the principle of compensation with luck without observing effort

- Can compensation be assessed in this case?
- It depends on the properties of the conditional distribution of effort wrt circumstances
 $G(e \mid c)$
- In general: **No**
- If e is distributed independently of c or if we retain the Roemerian effort in the principle of compensation, that is, $e_r = G(e \mid c)$: **Yes**

Necessary condition to check the principle of compensation

Definition : The "type approach" means looking at the conditional distribution of outcome and requiring full equality of these distributions $F(y | c) = F(y | c')$ for all c, c'

Proposition: If either for any c, c' $G(e | c) = G(e | c')$ or if we substitute e_r for e in the definition of principle of compensation, then this principle implies the Type approach

Partial observability of circumstances

- $c = \{c_1, c_2\}$ and we can only observe c_1 . c_2 the invisible circumstance
- Can we still assess compensation?
- Yes, the proposition remains valid
- It does not require that c_1 and c_2 be independently distributed

Illustration on Hungarian and Danish examples

- Hungarian : we can conclude that there is inequality of opportunity
- Denmark : we can conclude that below the median, a necessary condition of EOP is satisfied.
 - For high achievers, it is less clear.
- The type set has only 3 elements.

Nordic countries are the benchmark countries for EOp (Sweden)

- Björklund et al. (2012) for Sweden.
- 35% of Swedish men born between 1955 and 1967
- Outcome is an average of pre-fisc income over 7 years (age group: 32-38).
- fine-grained typology (1152 types), which partitions the sample into types based upon
 - parental income quartile group (four groups),
 - parental education group (three groups),
 - family structure/type (two groups),
 - number of siblings (three groups),
 - IQ quartile groups (four groups),
 - body mass index (BMI) quartile group at age 18 (four groups).

Reduced IOp

- 'Social' circumstances account for between 15.3% and 18.7% of the overall Gini
- In the counterfactual situation where the only factors of inequality would be these social circumstances, the Gini coefficient would attain a modest value of 0.043 for the oldest cohort!
- The contribution of IQ represents about 12% of the overall Gini. (16% for cognitive and non cognitive skills)

Does the Roemerian effort make a difference ?

- To evaluate empirically the importance of the correlation between effort and circumstances
- Survey called "*Quality of Secondary School Madrasah Education in Bangladesh*" (QSSMEB) (collection in 2008, by the World Bank)
- In every sampled union (a Bangladeshi sub-district larger than a village but smaller than sub-districts called *upazilas*) all secondary schools were surveyed.
- Sample size: 9,021 pupils (3,373 boys; 5,598 girls)

How important the Roemerian effort

- Based on the 1988 National Education Longitudinal Study (NELS; US Department of Education, 1988), both the mathematics and English teachers filled a subjective assessment of every sample student on seven aspects of students' behaviour in the classroom:
 - (1) how often student performs below ability;
 - (2) how often student submits incomplete homework;
 - (3) how often student is absent;
 - (4) how often student is tardy or lazy;
 - (5) how often student is inattentive in class;
 - (6) how often student is disinterested;
 - (7) how often student makes noise (disruptive).
- For all questions the possible answers are: "Never", "Rarely", "Sometimes", "Somewhat", and "Always".
- For the analysis: binary effort indicators by merging the "never" and "rarely" versus "sometimes", "somewhat", "always".

Decomposition of inequality

	Mathematics		English	
	Barry	Roemer	Barry	Roemer
Efforts (%)	7.01	3.95	18.89	11.84
Circumstances (%)	9.41	10.32	9.53	10.76
School (%)	68.68	70.76	69.94	76.01
Demographics (%)	14.89	14.97	1.63	1.39
Total inequality	3.09	3.09	3.64	3.64

3. EOp policies

Family and EOp

Four channels of transmission

- The issue concerns the impossibility to respect the principles of compensation and natural reward for all generations
- Roemer (2004) considered that parents affect the opportunities of their children through four channels
- 1. Provision of social connections and tangible resources
- 2. Formation of beliefs and skills in children through family culture and investment
- 3. Genetic transmission of ability
- 4. Formation of preferences and aspirations in children = parental effort
- The first three should be deemed circumstances. The status of the fourth category is more debatable. It is both an effort for the parents and a circumstance for the children

Parental effort: EOP against the family?

- If we give priority to the young generation, the whole initial background represents circumstances
- If we give priority to the past generation, parental effort must be respected whatever its consequences to the next generation
- For Adam Swift (2002), the principle of natural reward for the past generation is viewed as more important than the principle of compensation for the young generation

EOp for overlapping generations

- “To the extent that the reproduction of inequality across generations occurs through the transmission of cultural traits, it does so substantially (though not exclusively) through intimate familial interactions that we have reason to value and protect. Preventing those interactions would violate the autonomy of the family in a way that stopping parents doing spending their money on, or bequeathing money to their kids would not.”
- If we follow Swift, then EOp different does not require the neutralization of the intergenerational transmission of advantages from one generation to another
- It may even be just not to fully equalize possibility sets of children !

Human capital policy

- Carneiro-Heckman (2003)
- Heckman (2012), (2013)
 - Cognitive skill before 8 (better to intervene before 3)
 - Non cognitive skill (close readiness for effort) up to adolescence
 - The sooner the better and the cheaper
 - Skills beget skills
 - Efficiency and EOP goes hand to hand
 - Micro-surgery techniques (that is leaving unchanged the social and economic equilibrium that produce poverty)
 - It that sufficient ?

Cognitive skill deficit in children with poor background ?

- Black/white US: almost no differential at birth
- Fryer and Levitt (2013) :
 - 0.06 Standard deviation unit at birth
 - disappear with SES control
- Fryer and Levitt (2004) and (2006)
 - 0.64 SD at age 2
- Call for early collective intervention (early child care) and teaching parents to be good teachers at home

Fostering non-cognitive skills and results at school

- Classical improvement educational programs in primary and secondary education
 - Boosting school governance & pedagogical methods
 - Charter school and No Excuse program (NY and Boston)
 - Successful nationwide ?
 - Class size (efficiency gains but equity?)
 - Peer effect (voucher and busing) Ineffective

Link between EOp and Intergenerational mobility

- Lefranc Pistoletti Trannoy (2007)

$$I_t^f = -\alpha_t + \beta I_t^p.$$

- In France, 1970-2000, IOp has decreased because of the drop in the father-generation income inequality.
- Diminishing income inequality is also a way to reduce IOp.