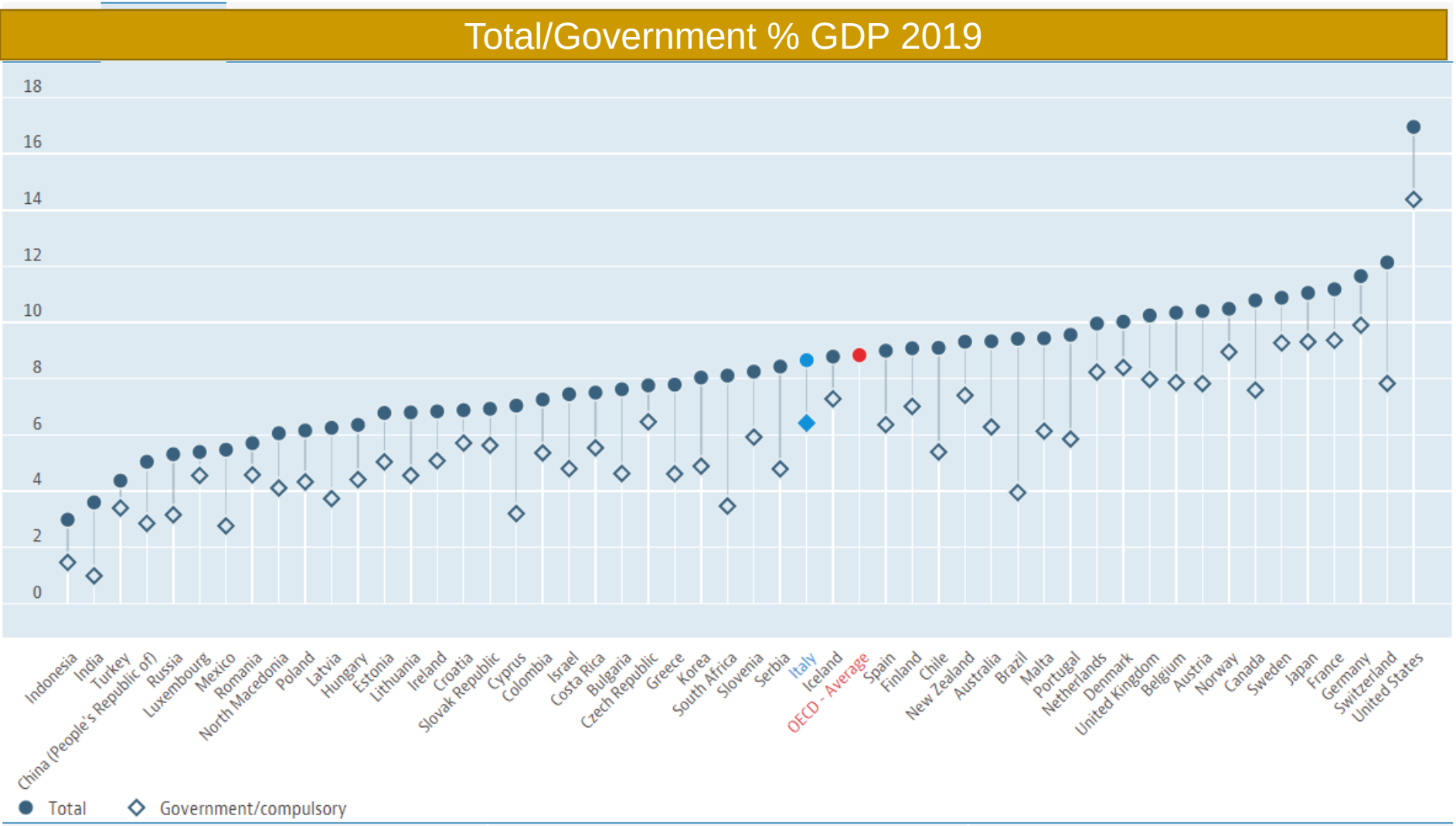
Health policy

- **Public intervention in the health sector**
  - Health system design, Regulation …
- **Why?**
  - Market failures
- **Which criteria?**
  - Efficiency best use of available resources
  - Equity distribution of resources/welfare

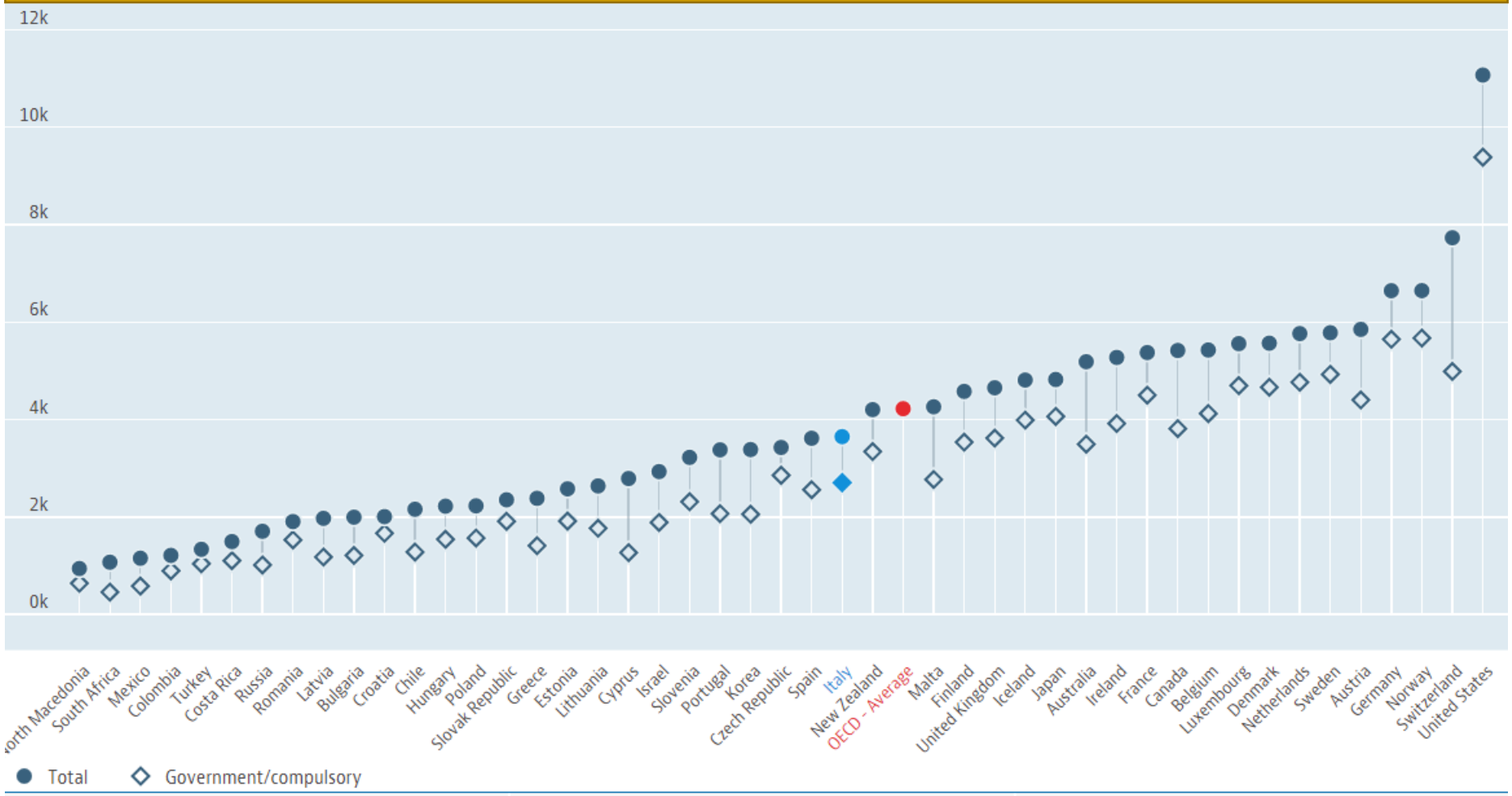
Health spending

Total / Government/compulsory, % of GDP, 2019 or latest available

Source: Health expenditure and financing: Health expenditure indicators



Total/Government per capita



Welfare Economics

- Benevolent «social planner» (policy-maker)
  - Maximises social welfare
- Individualism
  - each individual is the best judge of himself
  - collective well-being derives from the aggregation of individual preferences
- Choice of the aggregation rule
  - Voting
  - SWF
  - Pareto Criterion

Let's vote →

	U1	U2
A	3	3
B	2	9
C	4	5
D	7	2

Paradox of Voting Marquis de Condorcet 18° century

Tizio	A	B	C
Caio	B	C	A
Sempronio	C	A	B

- A vs B →A
- A vs C →C
- C vs B → B

Majority voting

- **If preferences are single-peaked** then the solution to majority voting is the outcome preferred by th median voter

Ada	Bice	Carla	Dora	Elena
500	800	1000	1200	2500

- The median voter is Carla, the electoral outcome is **1000.**
- Note, the average is 1200

Individual preferences and Social Ordering

- Paradox of vote is an example of Arrow's impossibility Theorem
- Is it possible to aggregate individual preferences in order to obtain a complete social ordering? Can we find a Rule that allows us to choose a point on the Pareto frontier (set of efficient outcomes)?
- **Arrow's impossibility Theorem**: *in a democracy there is no general rule to consistently aggregate individual's preferences into a policy choice that satisfies reasonable two axioms (desirable properties)*: **Monotonicity**, Unrestricted domain, Independence of irrelevant alternatives, Non dictatorship

Monotonicity and the Pareto Criterion

- Pareto Criterion: A situation A is preferable to B if in A someone is better off and no one is worse off.
- Pareto Efficiency is a situation where no individual can be made better off without making at least one individual worse off

Pareto Efficiency →

	U1	U2
A	3	3
B	2	9
C	4	5
D	7	2

Limits of Pareto criterion

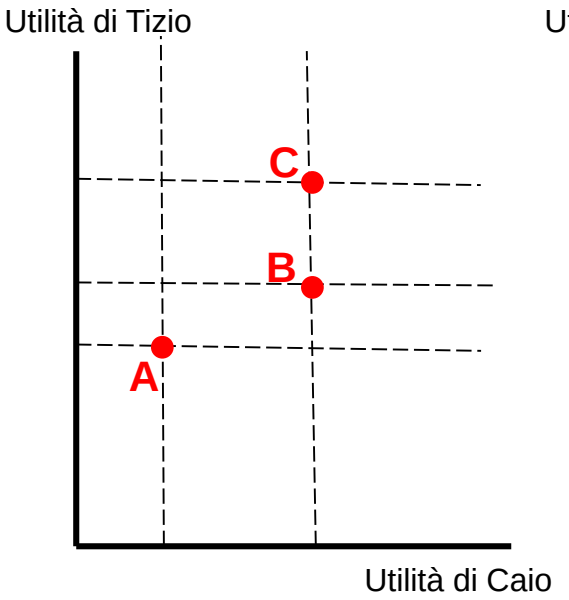
- It is an efficiency criterion and **does not take equity into account.**
  - *"A society can be Pareto optimal and still perfectly disgusting."* (Sen)
- It is static.
- **Does not allow a complete ordering**
- It is biased towards the *status quo*

Limits: equity

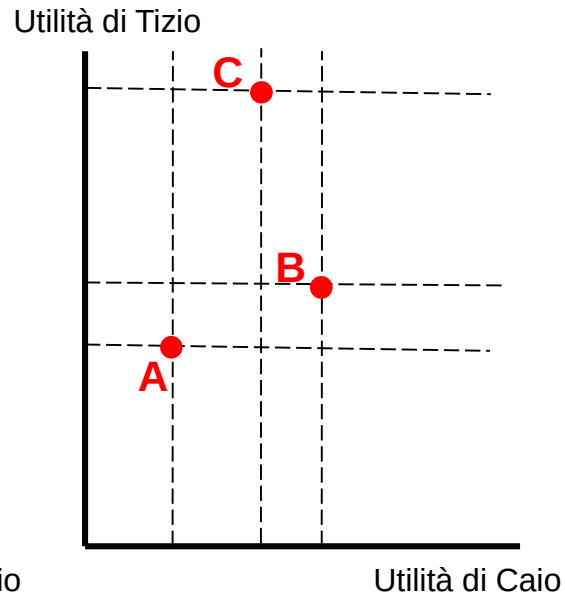
	U1	U2
A	**100**	**1000**
B	**101**	**2000**

	U1	U2
A	**100**	**1000**
B	**900**	**999**

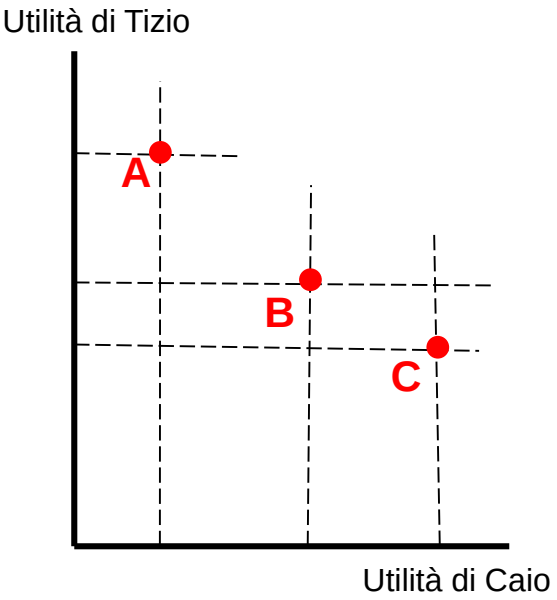
Limits: incomplete ordering



B is preferred to A.
C is better than B and A.
C is optimal



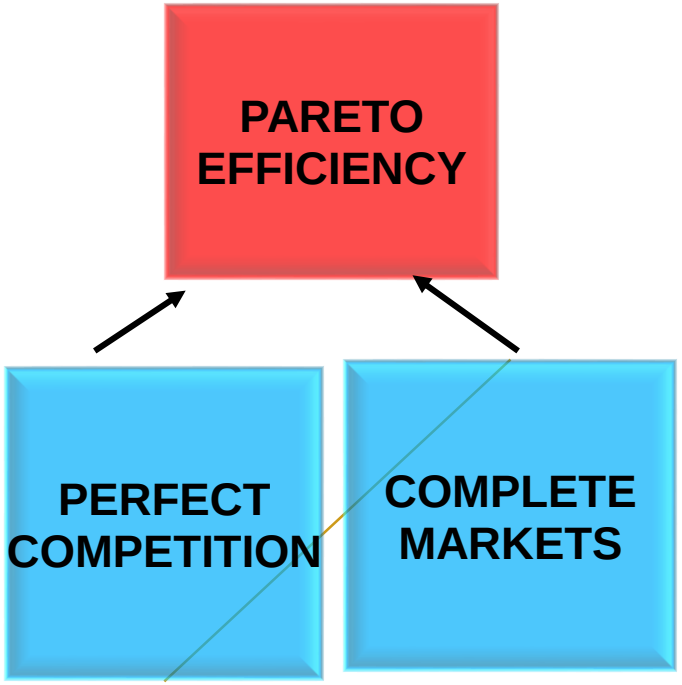
B and C better than A
B and C are not comparable
B and C are optimal



A, B and C are not comparable
They are all optimal

Theorems of Welfare economics

- **I**: *Under complete markets, any competitive equilibrium leads to a Pareto efficient allocation of resources.*
- ***II****: any efficient allocation can be obtained as a competitive equilibrium*.



Market failures

- If markets are not perfectly competitive

  MR=MC→ P>MC

- Externalities: private benefits or costs are different from social benefits of costs
  - Over-production of negative externalities
  - Under-production of positive externalities

- Asymmetric information → market incompleteness
- Public goods
- Merit goods

Going beyond Pareto

- Assuming uni-modal preferences, it is possible to obtain a complete order through **majority voting**
- Assuming cardinal measurability and comparability of individual utilities, it is possible to construct a **Social Welfare Function**

Social Welfare Function

- Aggregate individual preferences to "social preferences"
- **Welfarist approach**: construct a SWF aggregating individual utility functions:

$$W(u_1, u_2 \ldots u_N)$$

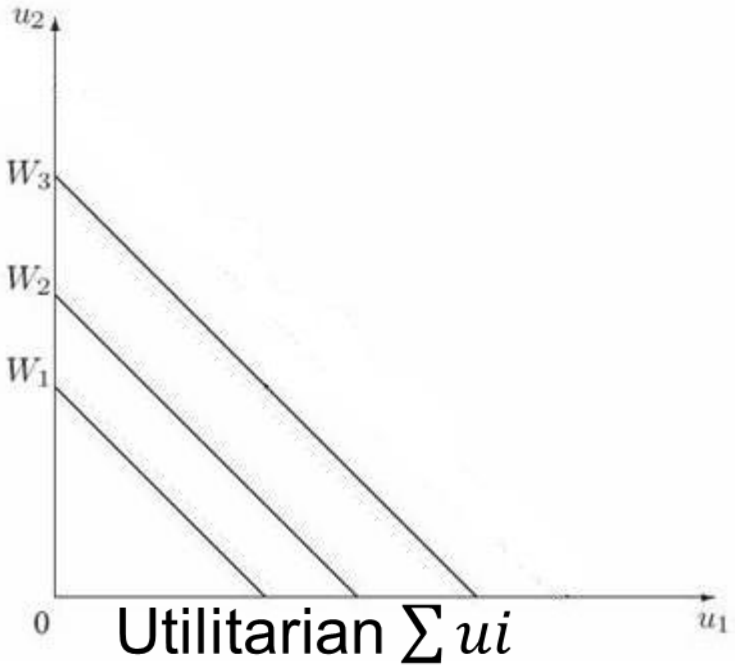
  - Utilitarian: $W = \sum u_i$
  - Rawls: $W = \min u_i$
- Max W under possibility set –> tangency condition

Social Welfare Function

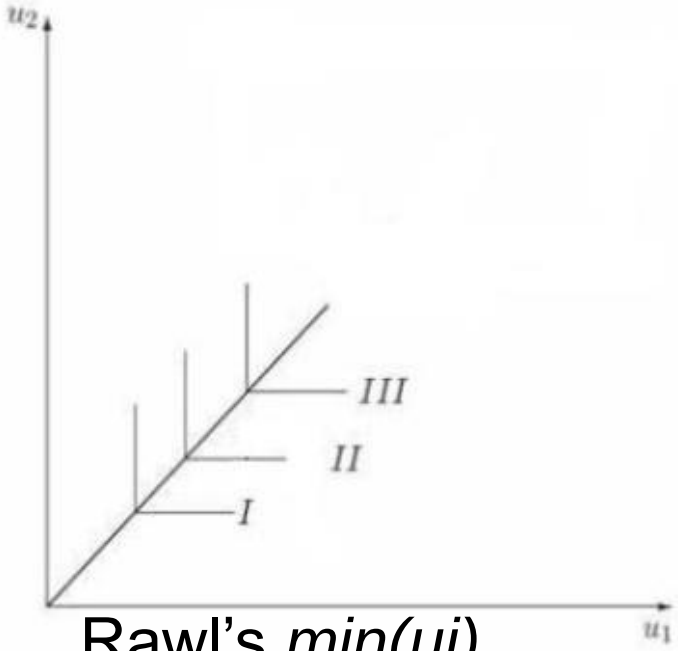
- If it is possible to measure and thus compare individual utilities (e.g. income or life expecstncy or QALY)

$$W(y_1, y_2 \ldots y)$$

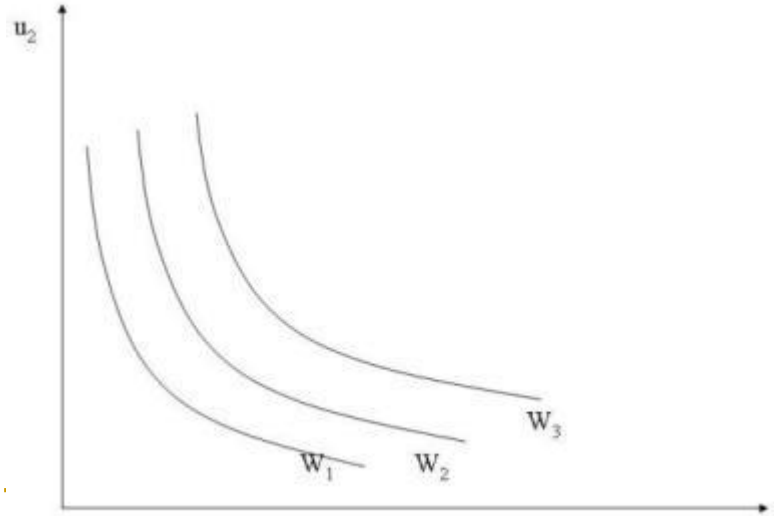
  - Utilitarian: $W = \sum y_i$
  - Rawls: $W = \min y_i$



Utilitarian $\sum ui$



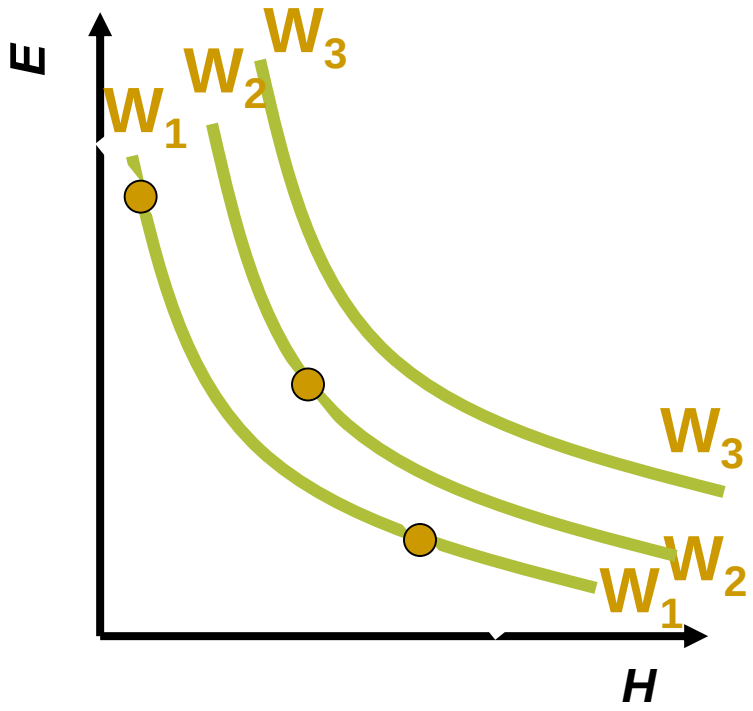
Rawl's *min(ui)*



Bergson-Samuelson

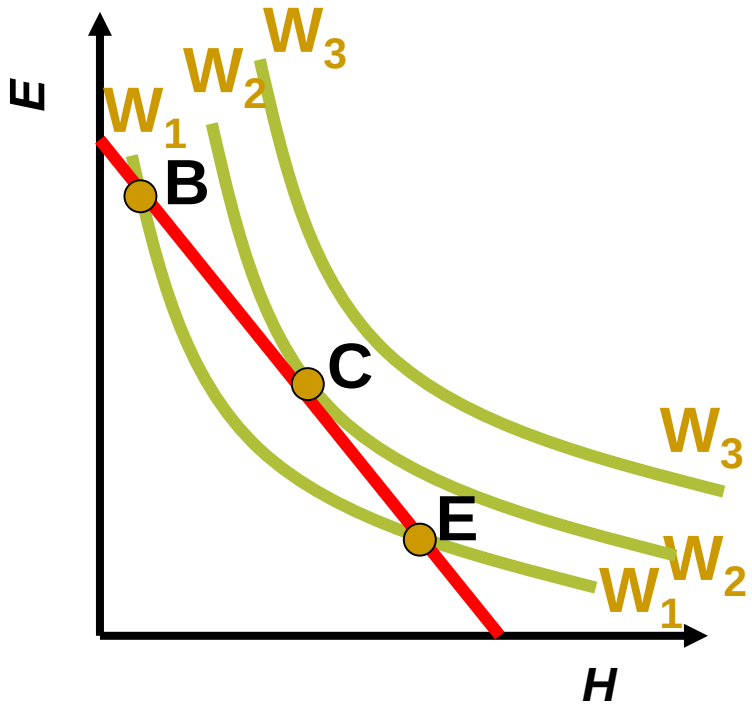
They differ in the relative weight of *equity and efficiency.*

Social welfare function (on goods)



Society's optimal choice

Given the constraint, the tangency condition gives society's optimal choice (**point C**)



Social Welfare Function

- Single Valued Welfare Function
  - Utilitarianism
    - Cost Benefit Analysis
    - Human Development Index
- Multivalued Function
  - Commission on the Measurement of Economic Performance and Social Progress – Dashboard
  - Millennium Development Goals
  - Sustainable Development Goals

Cost Benefit Analysis as Applied Utilitarianism

- We can measure utility changes in a money metric – money equivalent of proposed change
- Take social welfare change to be sum of money metric utility changes
- If positive we have Potential Pareto Improvement with compensation
- Without compensation we assume social value of money is equal across people – bizarre

Challenges to Social Welfare Approach

- **Interpersonal comparison of utility**
- Rule versus act utilitarianism
- Aggregating preferences – Arrow's impossibility theorem
- Deliberative process rather than social welfare function
- Comparison of Law and economics – *fair process rather than fair outcome*

Social Welfare: other approaches

- Ethics
  - Theory of Justice
    - veil of ignorance – resolves efficiency versus distribution tradeoff
    - Liberty/Freedom
  - Maximin principle
    - capabilities
- Human Rights
  - Natural rights
  - Legal Rights

Sen's freedom and capabilities approach

- Critics of welfare economics
  - A society can be Pareto optimal and still perfectly disgusting
  - The impossibility of a paretian liberal
- Ethics and Economics
  - Why equality?
  - Equality of what? (income, opportunities, rights)
- **Functionings** (being healthy, having a good job ..)
- **Capabilities** are the alternative combinations of functionings that are feasible for a person to achieve

Sen

- Health equity versus equality in health
- Health is key for human capabilities
- Fairness in health is critical
- Distinguish health achievement from health capability (personal responsibility issue?)
- Many factors affect health – genetics, choices, health care

Sen: Development as Freedom and Capabilities

- Choice sets
- Larger choice set better
- Two people equally well off if they have the same choice set
- Does not depend on utility or happiness
- Difficult to measure choice sets
- Capabilities – fundamental goods that affect the choice set – ability to lead a full life
- Life span, health, education, earnings potential

Ethics

- Does health have a special moral significance?
  - Health as fundamental – right
- Difference between *equality and equity* – when are health inequalities unjust?
- Fair process, procedural justice
  - Moral constraints on process outcome
- Meeting health needs fairly with resource constraints → *priority setting*.

Responsibility for Health

- Health depends on individual behaviors
- Redress –"luck" but not "choice"? Economics of insurance
- Social responsibility even for people with well informed bad choices?
- Taste for wine – no claim- taste for risky health behavior – social claim?
- Health promotion – behavioral economics

Trolley problem

- supposed a runaway tram which he can only be switched from one narrow track on to another; five men are working on one track and one man on the other; anyone on the track it enters is bound to be killed.
- It is headed for the track with five workers should you throw the switch to divert it to the track with one worker?

Variants

- It is headed for the track with one worker – would you throw the switch to divert it to the track with five workers?
- You know the one worker but not the five – would you divert the trolley
- You are on a bridge above the track would you push a fat person off a bridge to block the trolley from hitting 5 workers?
- You know the one worker but not the five – would you divert the trolley