Part 2: Consumption

What a household does.

- Household
- Consumes bundels of goods (x_1, x_2, z)
  - Private (consumption) goods (x_1, x_2)
  - Public goods (z)
- Goal: maximization of utility
- Constraint: household budget/income
- Income = wage income => labor supply

Types of goods I

- Private consumption goods

- Durable/non-durable goods

Types of goods II

- ## Public goods (classical)

Types of goods III

- Non-excludability
- Non-rivalness

Types of goods III

- Impure public goods

Types of goods III

- Impure public goods:

- Violated: non-excludabilty, non-rivalness

http://lustich.de/bilder/menschen/schwimmbad/

Types of goods III

Impure public goods: infrastructure

Source: http://www.vohwinkel.net/ortsteile/dasnoeckel.htm, http://signalarchiv.de/Meldungen/pics/200904_s-bahn-chaos_9.jpg

Types of goods

- Services

Types of goods

- Other services:
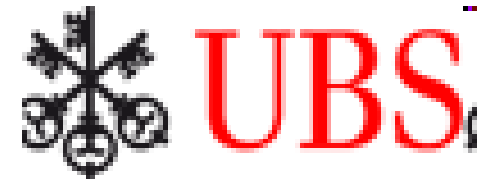
in tendency: non-tangible, non-durable

Which goods can be traded?

- Classical view:
  - transportable => tangible goods
  - durable and non-durable goods
    - shoes, but also apples
  - technology => transportability
  - (e.g. frozen food, green bananas)
  - services assumed to be non-tradable (incl. building s.th. in a foreign country)
  - infrastructure non-tradable

Which goods can be traded?

- Modern view:
  - includes services
  - service sector includes knowledge transfer
    examples for tradable services:
    * consultancy, teaching in foreign countries
    * IT-related services
    * constructing services abroad (e.g. Dubai)
    * mining services abroad
    * services by cooks, hairdressers, physicians

Utility

- Utility
  - Well-being, welfare, happiness
  - Greek philosophy: roots
  - what human beings strive for in life
  - Aristotle: eudaimonia
  - J. Bentham: Utilitarism
  - Economics: household's goal
  - Mathematics: target function

Consumer preferences I

- Consumers asseses (consumption) goods according to their ‚value‘ to her and ranks them

- Example:

vs.

- Abstract: good x   vs. good y

Consumer preferences II

- Complete
  - x, z ε X: x $\succcurlyeq$ y or y $\succcurlyeq$ x or both

- Reflexive:
  - x ε X: x $\succcurlyeq$ x

- Transitive
  - x, z, y ε X: if x $\succcurlyeq$ y, and y $\succcurlyeq$ z, then x $\succcurlyeq$ z

Consumer preferences III

- Eating the apple preferred over eating chocolate:

apple $>$ chocolate

$\Rightarrow$ utility(apple) > utility(chocolate)

or:

$\Rightarrow$ Domestic apple $\geqslant$ foreign apple

$\Rightarrow$ utility (dom. apple) ≥ utility (foreign apple)

Consumer preferences and utility

- Complete
  - $x \succsim y$ or $y \succsim x$ or both

    => $U(x) \geq U(y)$ or $U(y) \geq U(x)$ or both

- Transitive
  - $x, z, y \in X$: if $x \succsim y$, and $y \succsim z$, then $x \succsim z$

    => if $U(x) \geq U(y)$, and $U(y) \geq U(z)$, then $U(x) \geq U(z)$

=> Utility function as way of ordering people's preferences

Some more on preferences I

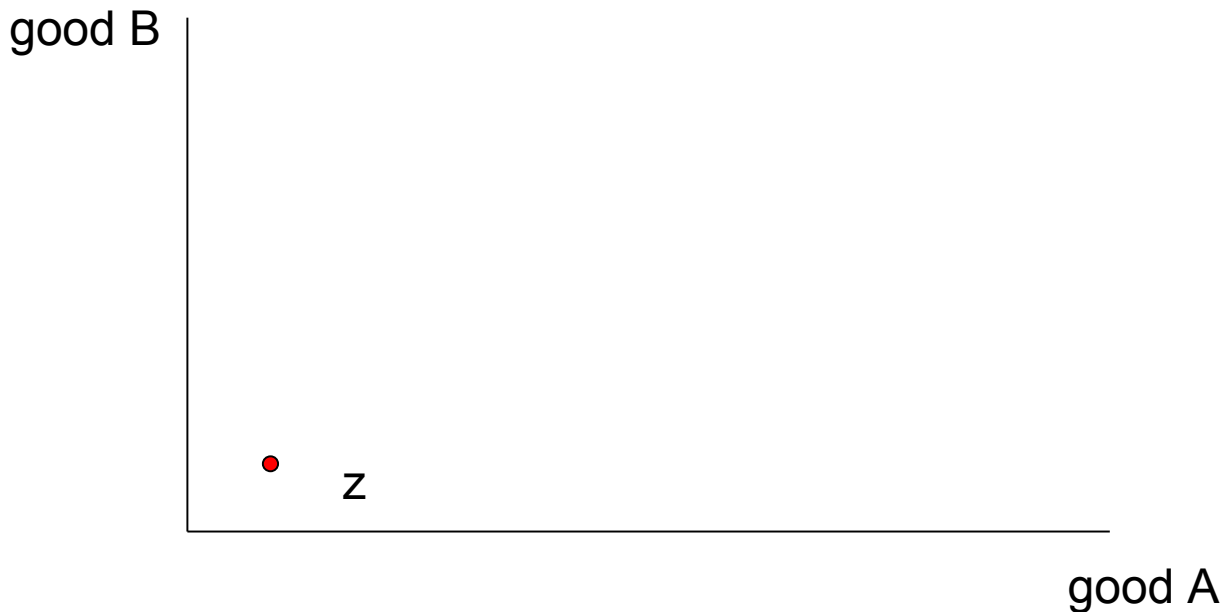- Strong monotonicity:

  if $x \geq y$ and $x \neq y$, then $x \succ y$

- Continuity:

  if $x^i \succsim y$, and if $\lim x^i = x^*$, then $x^* \succsim y$

=> utility function is continuous

Some more on preferences II

- Strict convexity: x, y, z e X, x ≠ y, 1 > t > 0

  x ⩾ z, and y ⩾ z: tx + (1-t)y ≻ z

good B

z

good A

Some more on preferences II

- Strict convexity: x, y, z ε X, x ≠ y, 0 < t < 1

  x $\succcurlyeq$ z, and y $\succcurlyeq$ z: tx + (1-t)y $\succ$ z

x' $\succ$ z (strong monotonicity)

x

y' $\succ$ z

y

z

z $\succcurlyeq$ y'' or y'' $\succcurlyeq$ z or both

x $\succ$ z, y $\succ$ z

violet line: bundles preferred over z
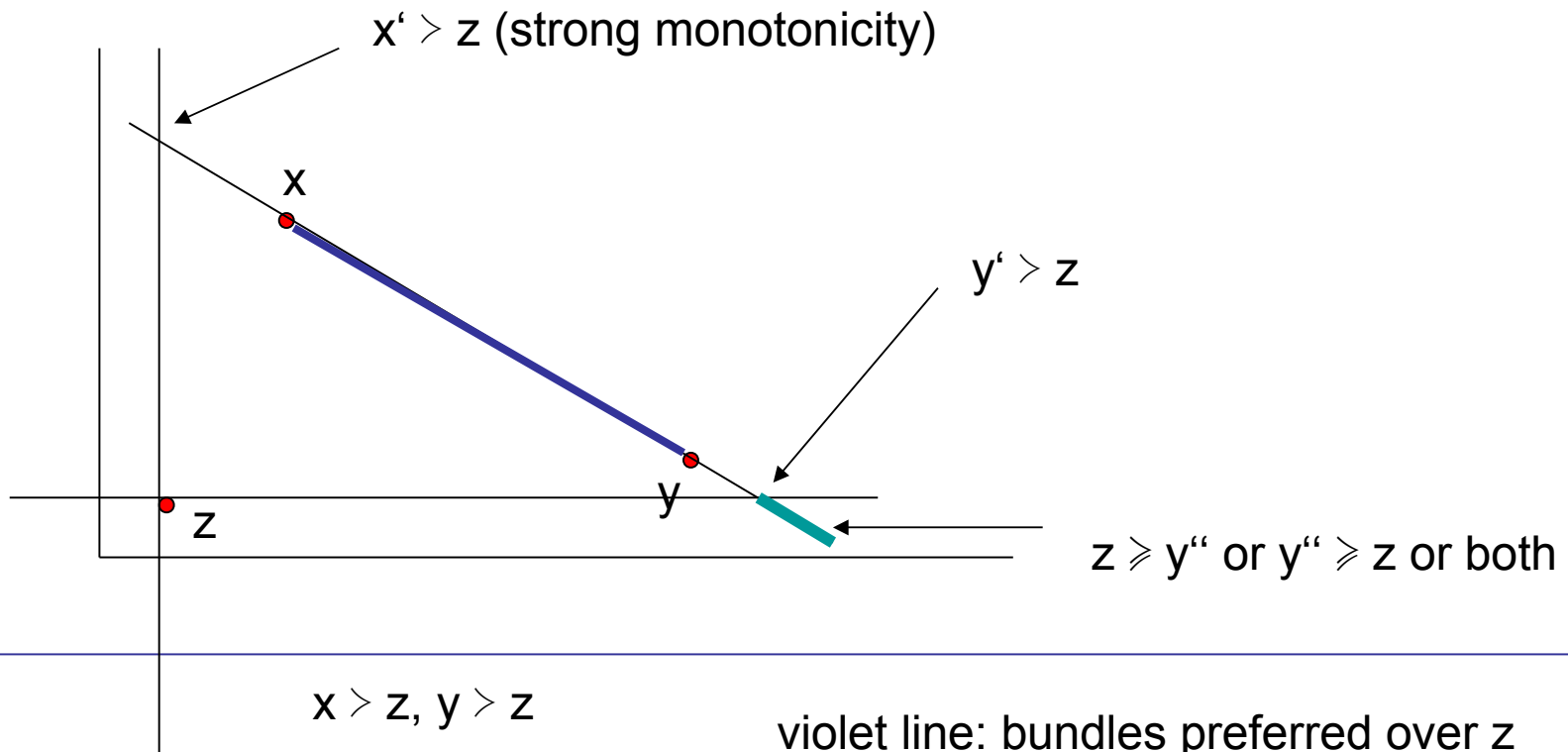
Strict convexity: $x \succcurlyeq z$, and $y \succcurlyeq z$: $tx + (1-t)y \succ z$

strong monotonicity if $g \geq x$ and $g \neq x$, then $g \succ x$
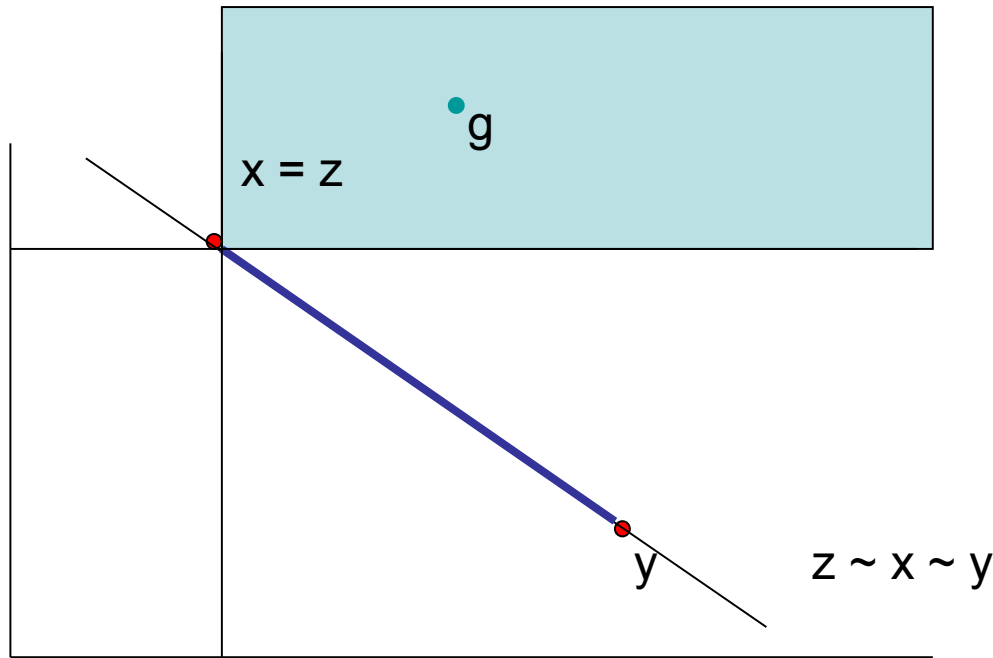
1. $x = z \Rightarrow x \sim z$

2. violet line $\succ z$ if $y \succcurlyeq z$

3. strong monotonicity: $y \; ! \succ z$

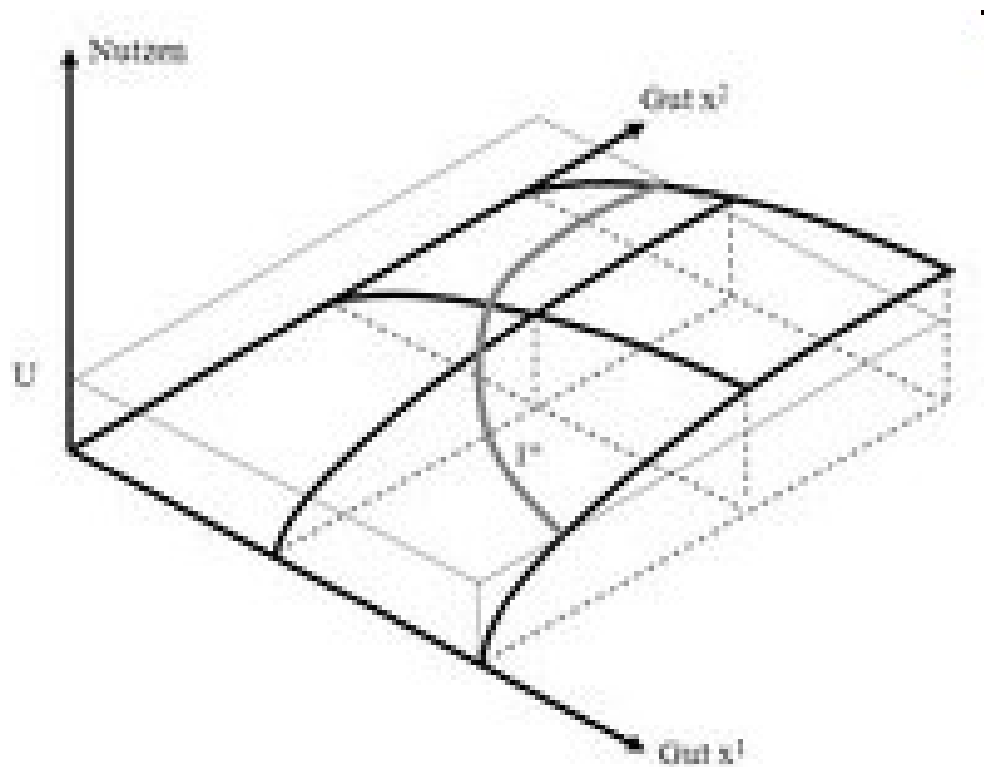4. Strict convexity $\Rightarrow x \sim y$

Graphical representation

utility increases

x ~ z ~ y
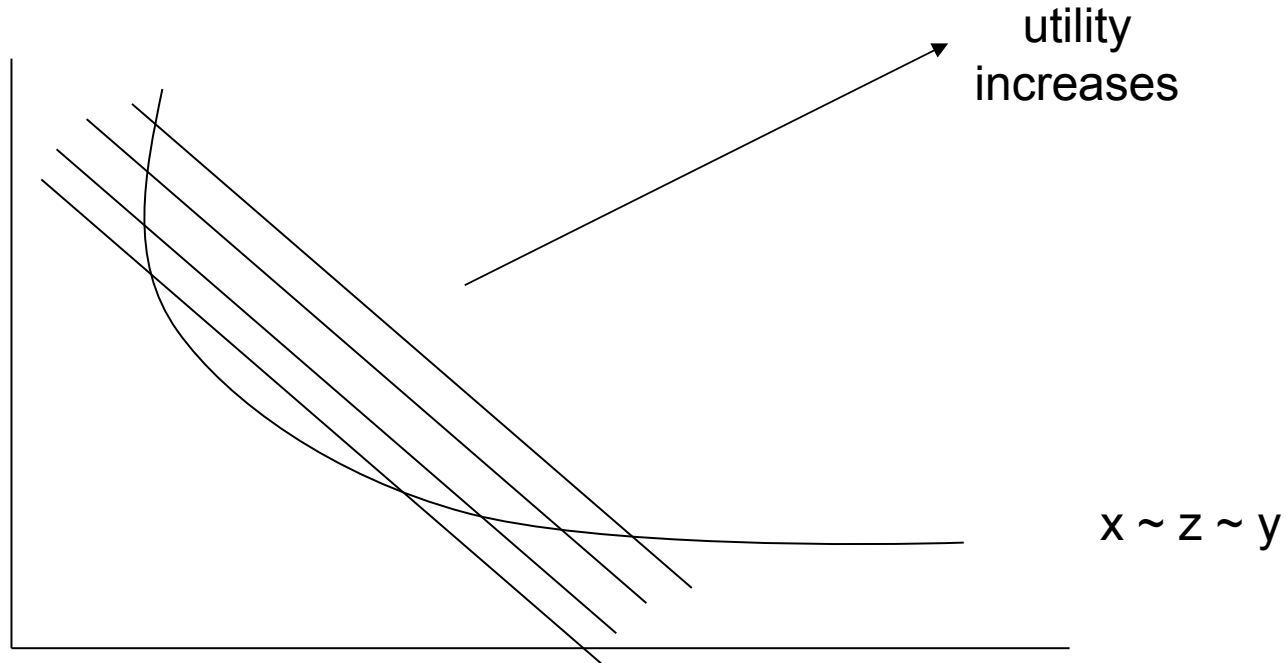
Indifference curve $\Rightarrow U(x) = U(z) = U(y)$

Graphical representation

Good B

U5

U4

U3

U2

U1

Good A

U1 < U2 < U3 < U4 < U5
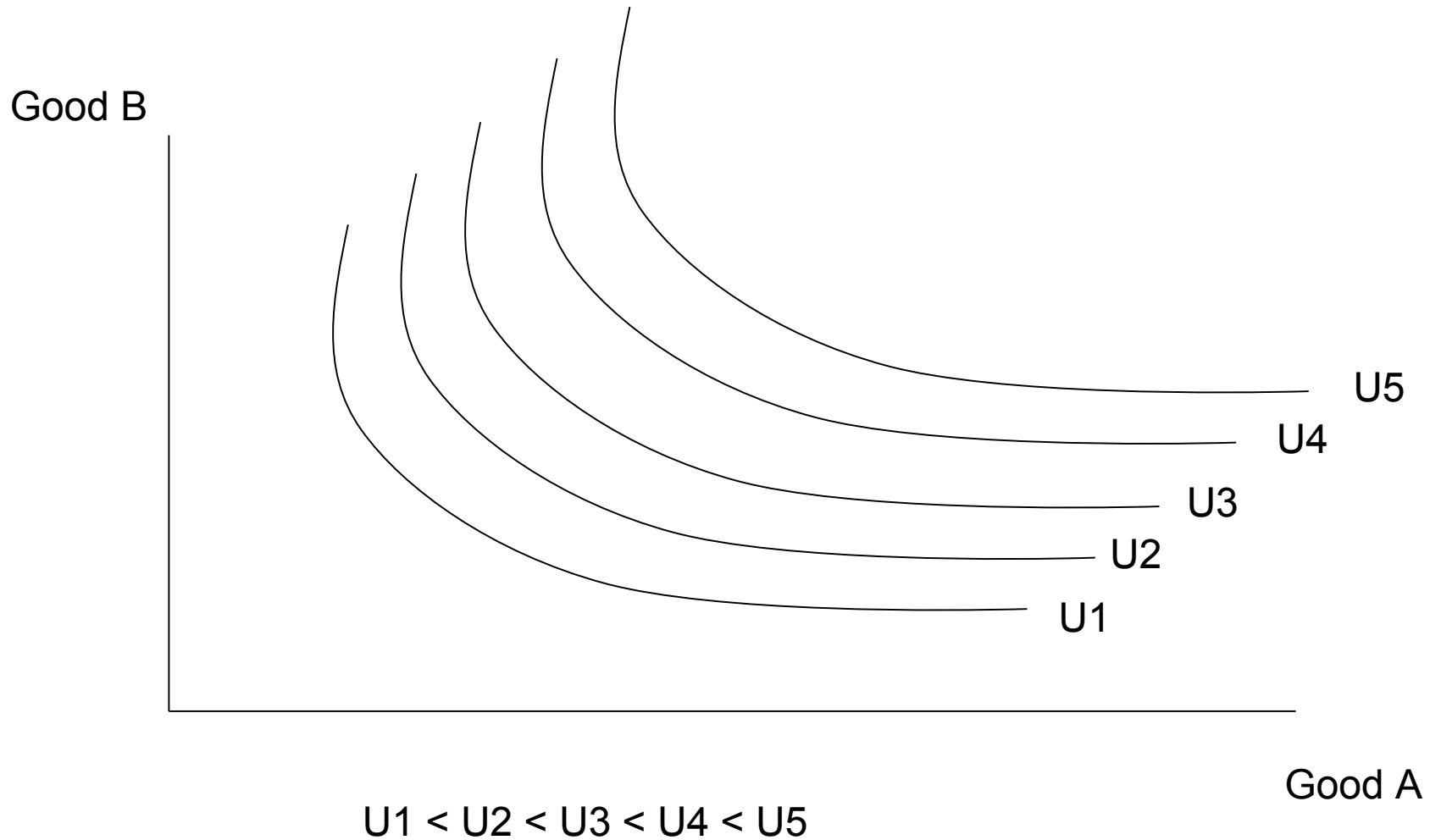
Utility mountain

- consumption of two goods

U = x * y

U = sqrt(x*y)
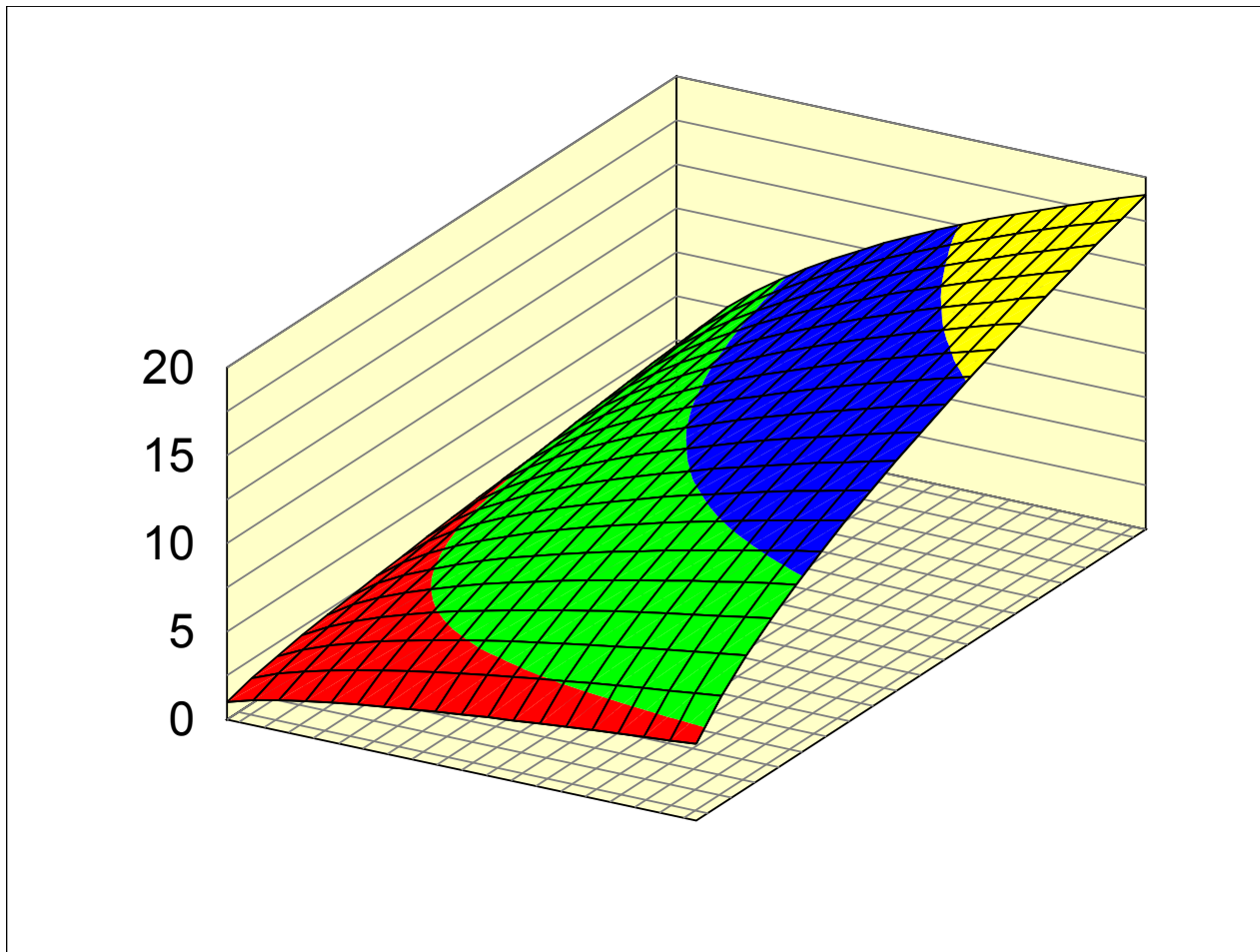
- Three types of cuts possible:
  - Vertical cut parallel to the x-axis => U(x) with y fixed
  - As y grows bigger, distance to x-axis increases
  - Parallel to the y-axis => U(y) with x fixed
  - Horizontal cut parallel to x-y-plane: U fixed (with x and y varying)

Vertical cut
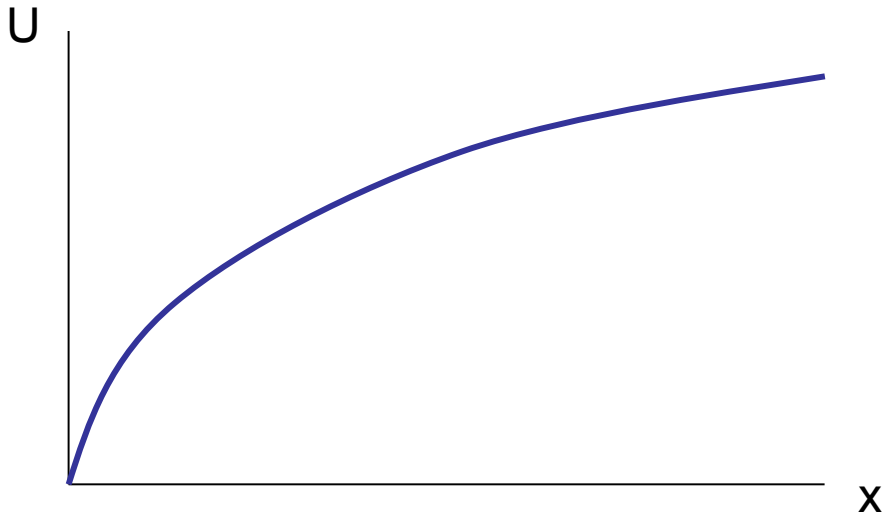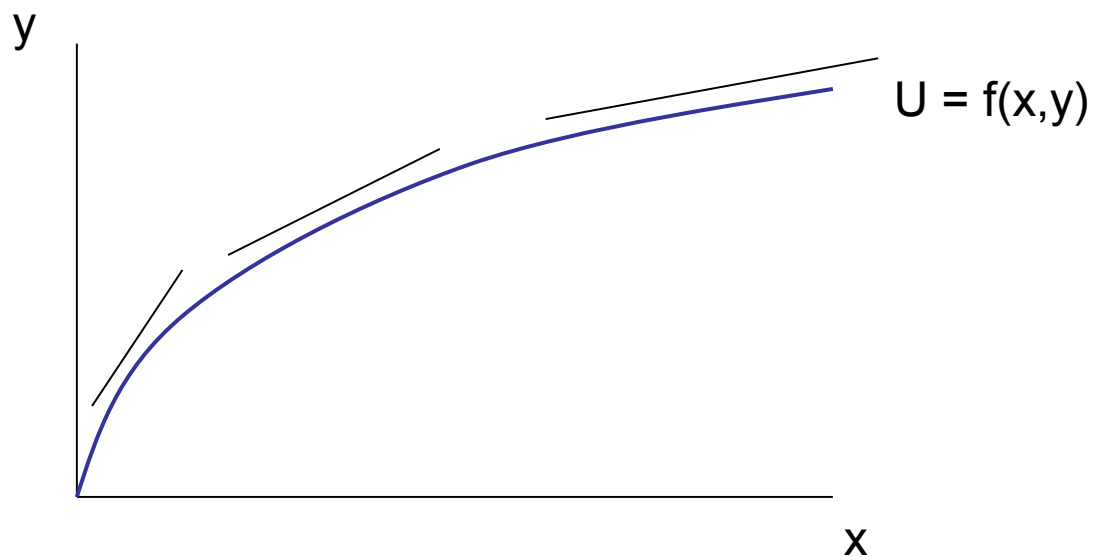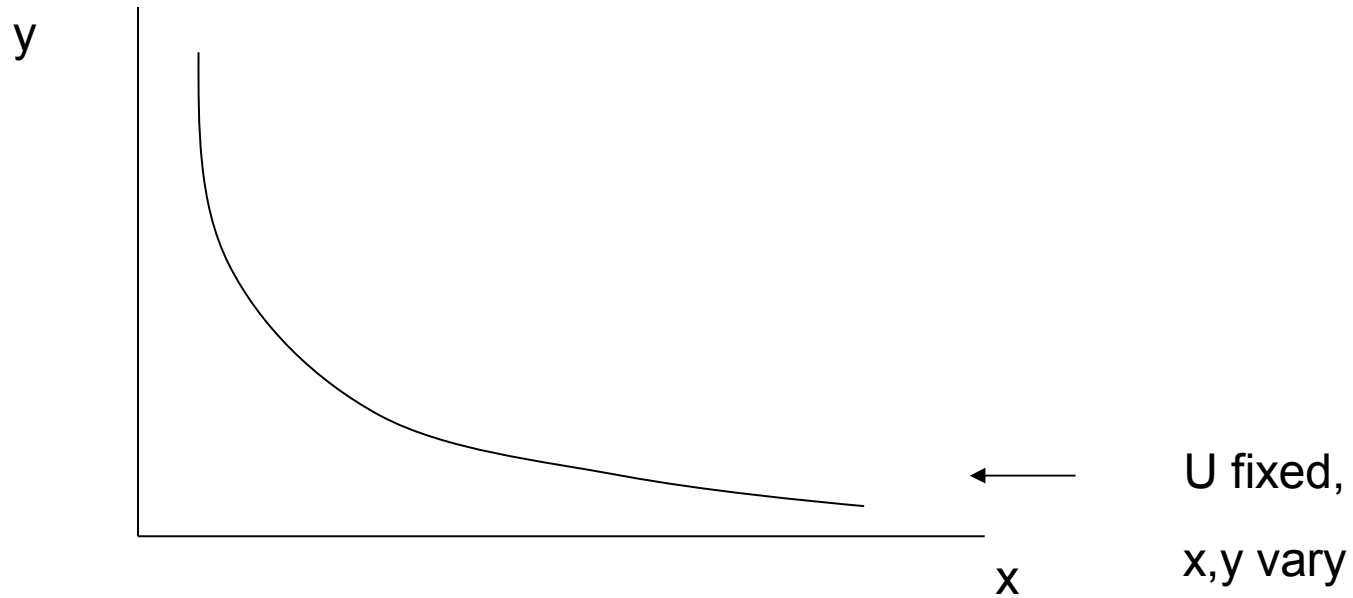

$$U = (x, y \text{ fixed})$$

$dU/dx > 0$; $d^2U/dx^2 < 0$

marginal utility is positive, but declines

y

U = f(x,y)

x

marginal utility is positive, but declines

Horizontal cut

y

U fixed,

x,y vary

x

Indifference curve

Critique

- Utility not empirically observable
- Observable: choice (revealed preferences)

- Joan Robinson: "Utility is the quality in commodities that makes individuals want to buy them, and the fact that individuals want to buy commodities shows that they have utility" (Robinson 1962)