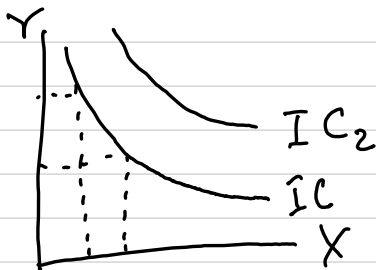


Dylan Black  
ECON 2316

# Lecture 5 Consumer Choice

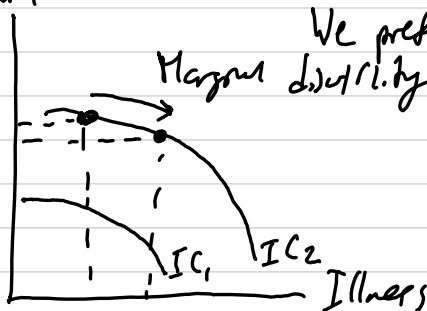
## Indifference Curves



2 goods

2 B&Ds, less is better

Rainfall



We prefer  $IC_1$   
Marginal utility  $\uparrow$  as we consume more

derivative  
wrt  $x$

$MU_x$

Recall: Slope of indifference curve =  $MU_y$  derivative wrt  $y$

- how much  $y$  are we willing to give up to get 1 more  $x$

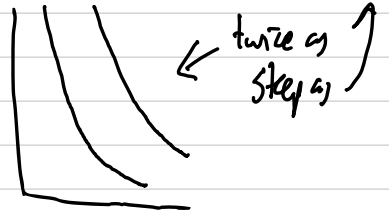
Suppose  $U(x, y) = 2xy$

$$MRS = \frac{\frac{\partial U}{\partial x}}{\frac{\partial U}{\partial y}} = \frac{2y}{2x} = \frac{y}{x}$$

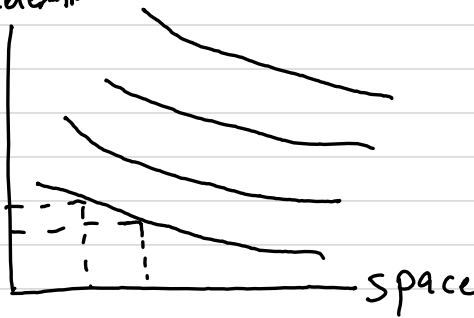


Suppose  $U(x, y) = x^2y$

$$MRS = \frac{2yx}{x^2} = \frac{2y}{x}$$



acceleration

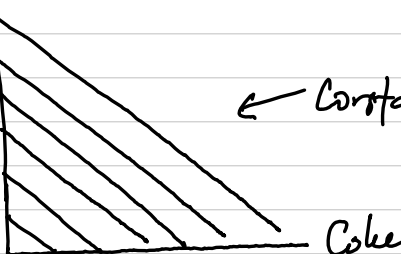


Person here will prefer the Mustang (speed)

Willing to give up a lot of space for a little more acc or vice-versa

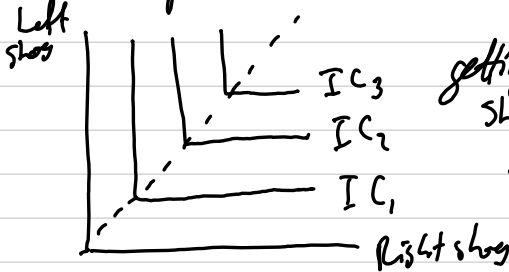
Perfect substitutes

Pepsi



← Constant MRS

## Perfect Complements



getting an extra right shoe is useless until you get the complementary left shoe

MRS is either 0 or  $\infty$

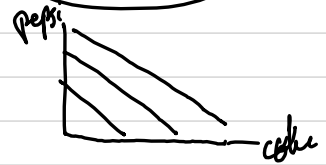
## Utility Function for Substitutes

$$U(x, y) = x + y$$

$$MRS = \frac{1}{1}$$

constant

In general:  $U(x, y) = ax + by$ ,  $MRS = \frac{a}{b} = \text{constant}$

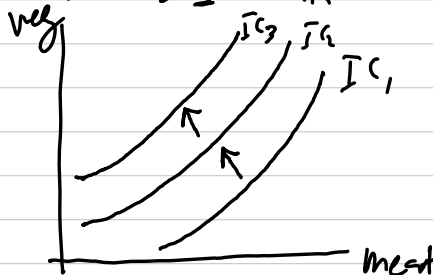


## Utility Function for Complements

$$U(x, y) = \min(x, y)$$

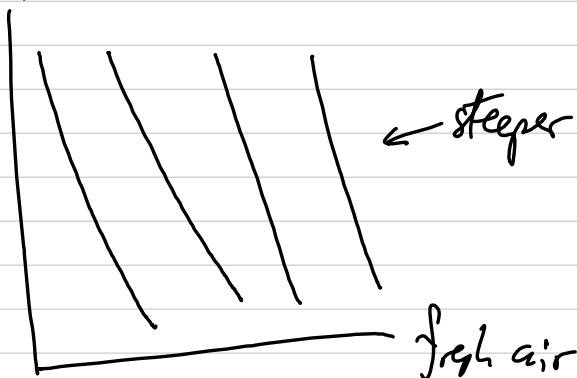


Graph w/  $x = \text{meat}$ ,  $y = \text{veg}$ , strict vegetarian  $\rightarrow$  meat is a bad - indifference curve?



if we're eating meat, we need more veg to compensate and stay indifferent

fireplace



← steeper indifference curves

we really like fresh air

Suppose  $U(x, y) = 2xy$

$$MRS = \frac{2y}{2x} = \frac{y}{x}$$

At what relative value is  $MRS = 2$ ?

$$MRS = 2 \Rightarrow \frac{y}{x} = 2 \Rightarrow y = 2x$$

Budget Constraints

Budget Line:  $I = p_x x + p_y y$

Suppose  $I = \$100$

$p_x = \$4$

$p_y = \$2$

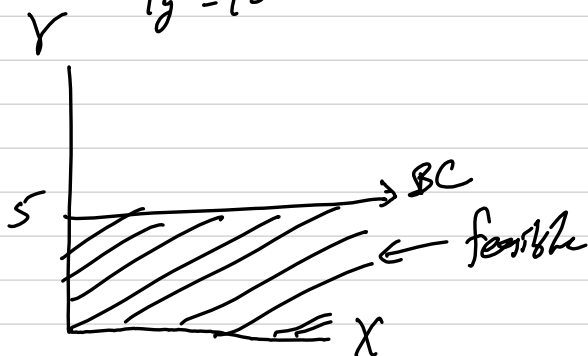
so

$$100 = 4x + 2y$$

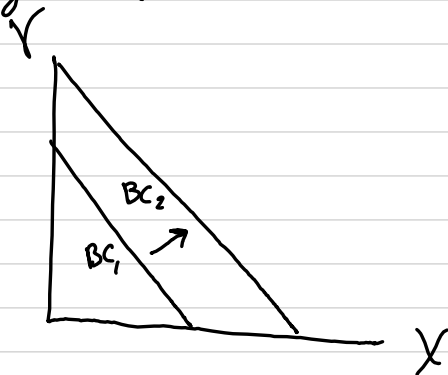


← budget line - Slope =  $-\frac{p_x}{p_y}$

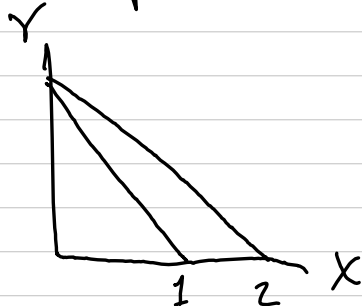
Suppose  $\bar{L} = 50$   
 $P_x = 0$   
 $P_y = 10$



Change in income



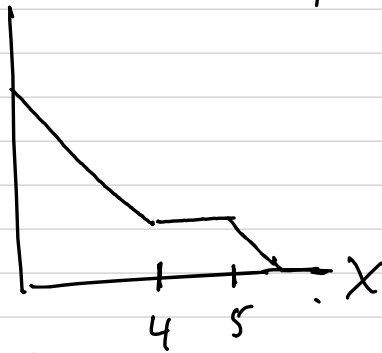
Change in price



$P_x$  falls by half

## BC example

Buy 4 get 1 free (for good X)



## Corner Choice

Optimal market basket must satisfy 2 conditions:

- ↳ Must be on the budget line
  - ↳ Must be the pt. where IC is tangent to BC
- Y - highest possible IC

