# Budget Constraint

## BASICS

### WHAT?

- **GRAPH**
  - COMBINATION OF x & y PURCHASED
  - ~~XX-XX~~ GIVEN AN INCOME/BUDGET!
  - x, y — Goods — #PPF
  - £ — INCOME — RESOURCE
  - Initial ENDOWMENT of x & y LATER...
  - In kind (voucher)
- **BUDGET CONSTRAINT**
  - MONEY !! — RESOURCES
  - CONSTRAINTS THIS !!!
- **UTILITY CURVE**
  - DEMAND FOR GOODS — WANTS

### NOTATIONS

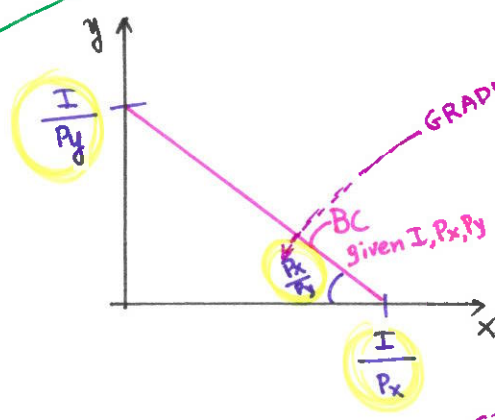
I, $P_x$, $P_y$, x, y

### CHANGES (DYNAMICS)

| INITIAL VALUES | | CHANGED VALUES (↑ or ↓) | | | NO CHANGE (constant values) | |
|---|---|---|---|---|---|---|
| $I_0$ | $x_0$ | $I_1$ | $x_1$ | ⋮ | $I_0$ | $x_0$ |
| $P_{x_0}$ | $y_0$ | $P_{x_1}$ | $y_1$ | | $P_{x_0}$ | $y_0$ |
| $P_{y_0}$ | | $P_{y_1}$ | ⋮ | | $P_{y_0}$ | |

### GRAPH !

- REAL INCOME — PURCHASING POWER IN GOODS — $I/P_y$, $I/P_x$
- PRICE RATIO — $P_x/P_y$




$$M = \frac{dy}{dx} = \frac{\frac{I}{P_y}}{\frac{I}{P_x}} = \frac{P_x}{P_y} \#$$

### MATH (simple)

+ × ÷ −

Price of x & y (in £) · Quantity of goods [NOMINAL] · Income (in £)

$$P_x \cdot x + P_y \cdot y \leq I$$

$$P_x \cdot x + P_y \cdot y = I$$

Total Expenditure of x + Total Exp. of y

TOTAL EXPENDITURE ≤ Income

ASSUME RATIONALITY
1. max UTILITY
2. NO UTILITY from future consumption.

Not for now at least

### EXAMPLE

$I = £50$
$P_x = £10$
$P_y = £5$

$I/P_x$

- If buy only x ⇒ x = 5, y = 0
- If buy only y ⇒ x = 0, y = 10
- But, I want some x and some y

MAP L
YG
(2020)