7 Book Notes

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Individual Choice

Underlying Assumptions about Preferences

Completeness → all decisions available
more is better
Transitivity → A > B and B > C thus A > C
MRS_{xy} = marginal rate of substitution of good x for good y
↳ This can diminish

Indifference Curves and Preferences

different combinations w/ equal utility
Perfect complements vs perfect substitutes
Imperfect substitutes have marginal returns
Curves cannot cross

Utility functions, marginal utility, and the MRS

Marginal utility = derivative
$MRS_{xy} = MU_x / MU_y$

Budget Constraints

budget line = $mP_xX + P_yY$ → $P_x + P_y$ = cost of X + Y
↳ $Y = \frac{m}{P_y} - \frac{P_x}{P_y}X$
X + Y = Qty. of X + Y
m = budget constraint

Individual choice

Interpretation of the solution of the Individual's choice problem

$MRS_{xy} = \frac{P_x}{P_y}$ → optimality condition
↳ $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$

Price Changes and Income Shifts

Substitution effect = induced by price change
Income effect = change in purchasing power
Giffen Good = substitution ↓ income ↑ = income wins

Individual choice - The Calculus Version

$\max_{x,y} U(x,y)$ subject to $P_xX + P_yY \leq m$

$U(X, \frac{m}{P_y} - \frac{P_x}{P_y}X)$

Lagrange multiplier $L = U(x,y) + \lambda[m - P_xX - P_yY]$

use system of equations to solve ↑