

Graphs and Their Meaning

Introduction

- Economists express their ideas using: words, equations, schedules, and graphs.
- A graph is a visual representation of the relationship between variables.
- The horizontal axis and the vertical axis.
- The dependent variable and the independent variable.

Types of the Relationships

- Positive (Direct) relationship: the two variables move in the same direction.
- Negative (inverse) relationship: the two variables move in the opposite directions.

Linear Relationships

- The slope of the function is constant.
- Positive slope versus negative slope.
- Downward sloping to the right.
- Upward sloping to the right.

slope = $\frac{\Delta dependent variable}{\Delta independent variable}$ = first derivative

Non-Linear Relationship

- The slope of the function is not constant. It changes as we move along the curve.
- Upward slopping curve: increasing
- It might be increasing at an increasing rate
- It might be increasing at a decreasing rate
- Downward slopping curve: decreasing
- It might be decreasing at a decreasing rate
- It might be decreasing at an increasing rate

An Example of Linear Positively sloped Function

- Consumption function: macro
- Consumption is related to income
- Consumption is the dependent variable
- Income is the independent variable
- The vertical intercept: consumption intercept
- The slope is positive

C = 50 + 0.5Y

Point	Income (JD)	Consumption (JD)
а	0	50
b	100	100
С	200	150
d	300	200
е	400	250

An Example of Linear Negatively sloped Function

- Demand equation for suits by Mr. F: micro
- Quantity of suits demanded is related to its price
- Quantity is the dependent variable
- price is the independent variable
- The vertical intercept: price intercept
- The slope is negative

Q = 20 - 0.4P

Point	Price	Quantity
	(JD)	(Suits)
А	50	0
В	40	4
С	30	8
D	20	12
Е	10	16
f	0	20



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