
Intermediate Microeconomics

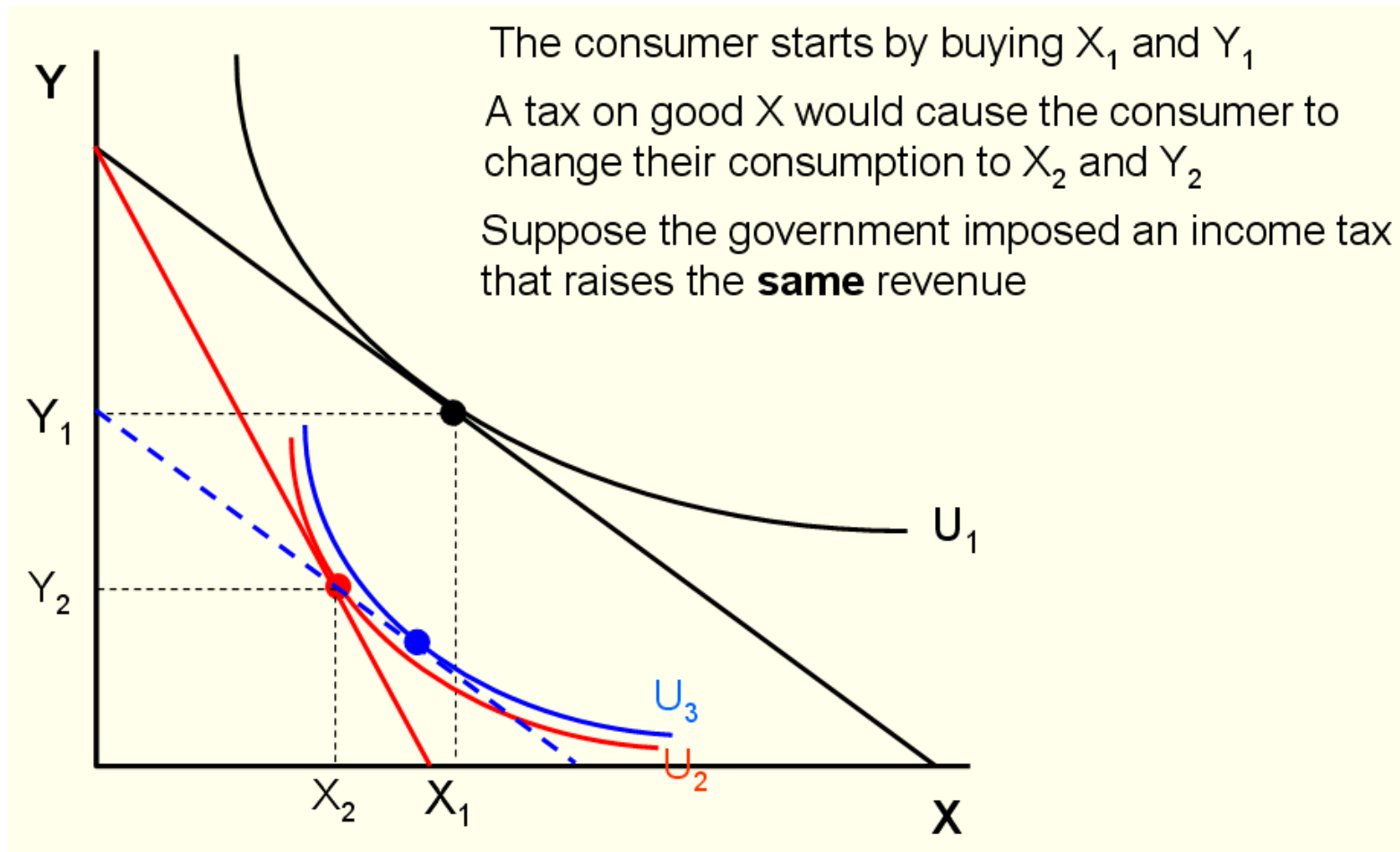
Lecture 4: Consumption, Trade, and Equilibrium

Agribusiness Teaching Center
Easter Term 2015

Taxes and Consumption

Do people prefer proportional or lump-sum taxes?

Lump Sum Principle



Income and Substitution Effects

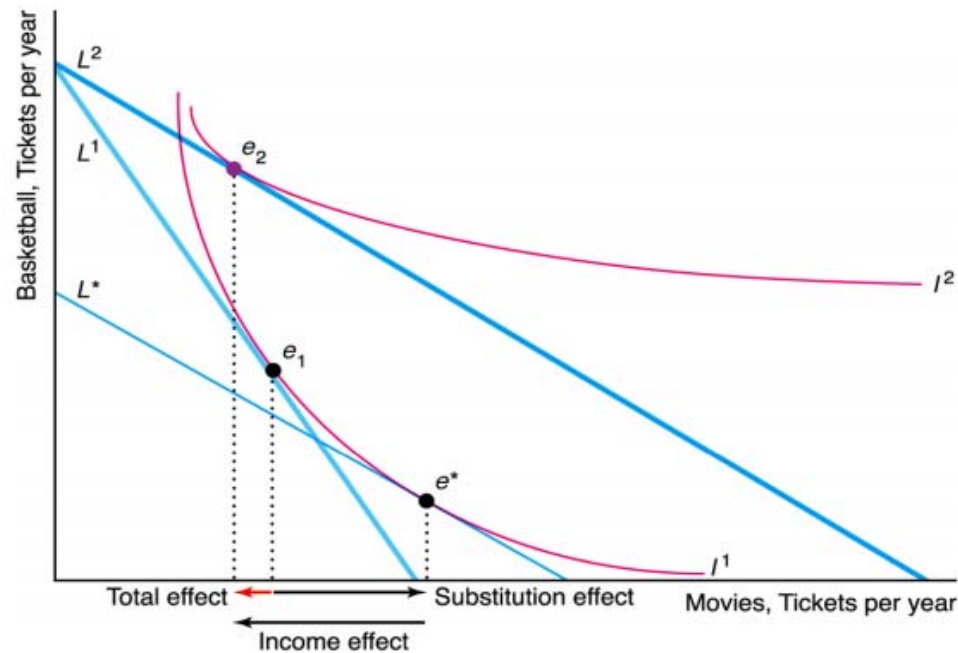
Definition

The change in demand due to the change in the rate of exchange between the two goods is called **substitution effect**. (changed own price, other prices and utility constant).

Definition

The change in demand due to the change in purchasing power is called **income effect**. (prices are hold constant)

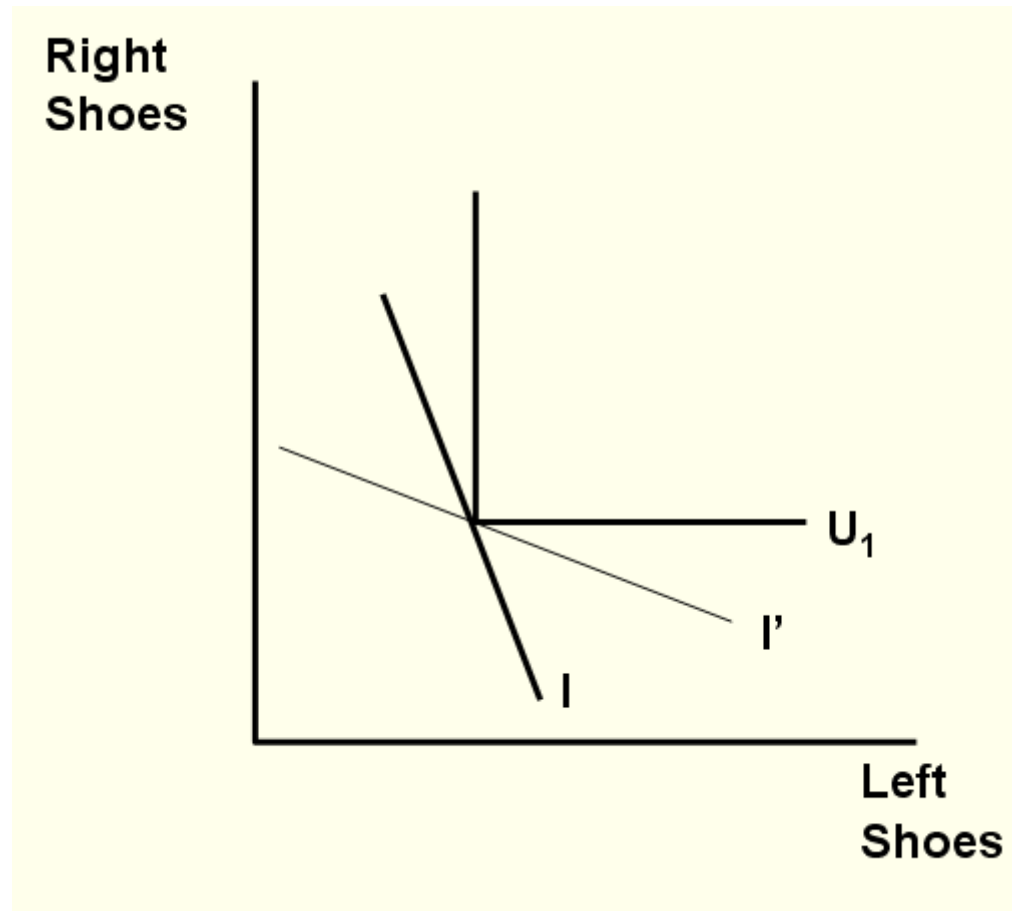
Income, Substitution Effects and Giffen Goods



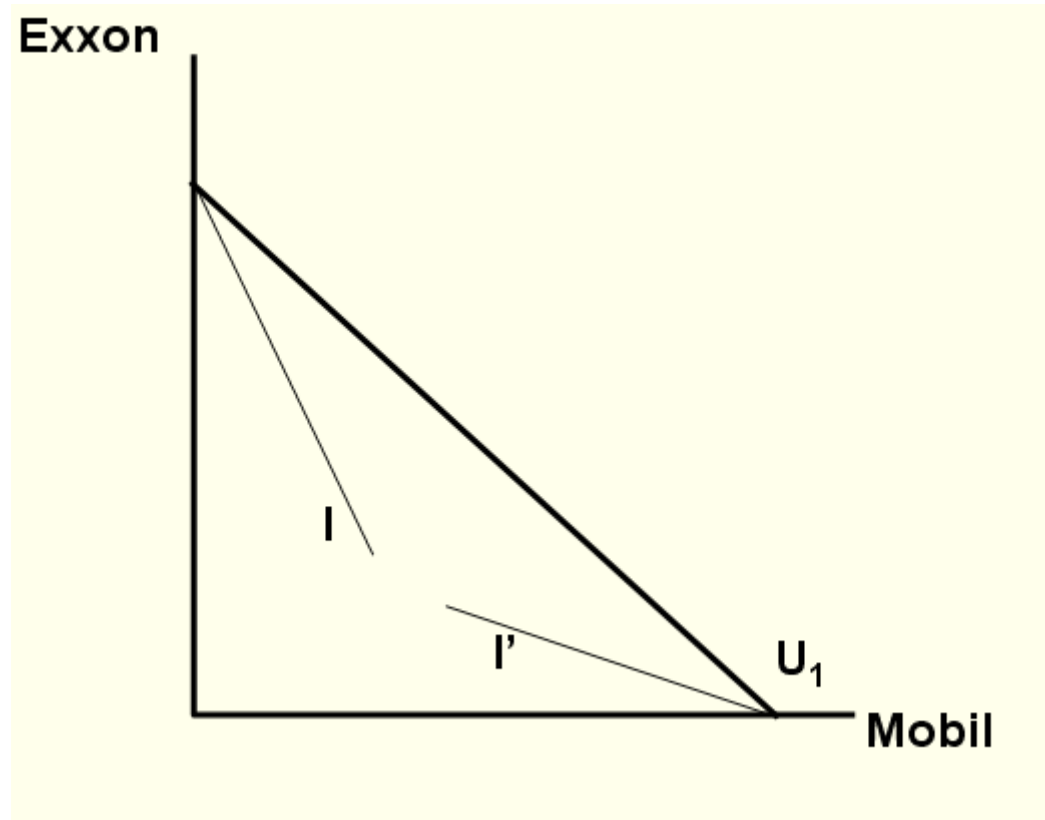
Giffen goods (Inferior)

- What about perfect compliments?

Perfect Complements and Income Effect



Perfect Substitutes and Income Effect



Price and cross-price changes

- Own price change

- Ordinary goods:

$$\frac{\partial x_1}{\partial p_1} < 0$$

- Giffen goods:

$$\frac{\partial x_1}{\partial p_1} > 0$$

- Cross price change

- substitute (not perfect)

$$\frac{\partial x_1}{\partial p_2} > 0$$

- complement (not perfect)

$$\frac{\partial x_1}{\partial p_2} < 0$$

Question

Does an increase in the price of
Giffen good
make the consumers better off?

Equilibrium (Oxford Dictionary)

- A state in which opposing forces or influences are balanced
 - A calm state of mind
 - (*Economics*) A situation in which supply and demand are matched and prices stable
 - (*Game Theory*) No player has anything to gain by changing only their own strategy.
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Equilibrium and Trade

Definition

Endowment is the initial allocation of goods (ω_1, ω_2) .

Example

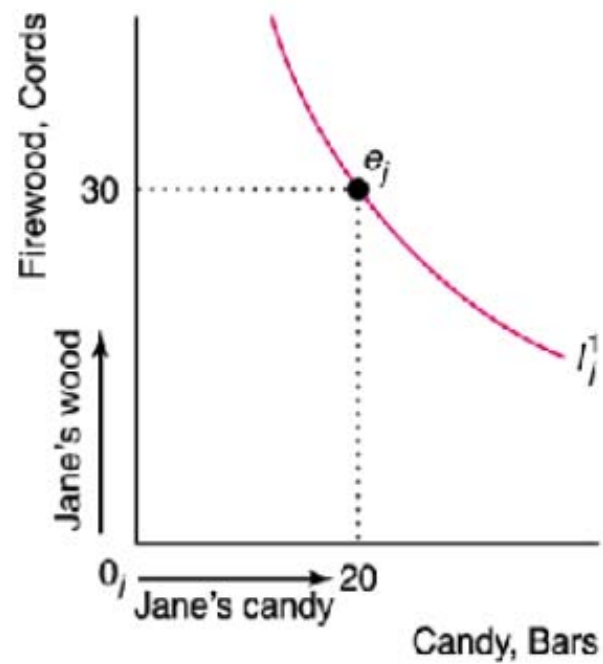
Jane and Denise are only two people, firewood and candy are the only two goods. The initial allocation is:

Endowments			
	Jane	Denise	<i>total</i>
Firewood	30	20	50
Candy	20	60	80

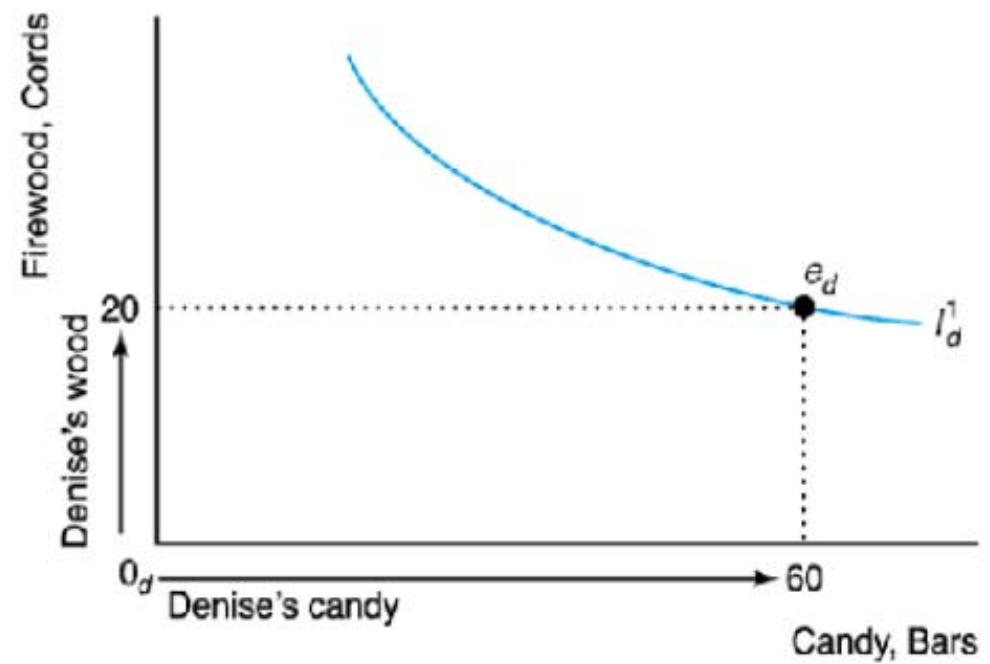
Trade Equilibrium

Endowments

(a) Jane's Endowment



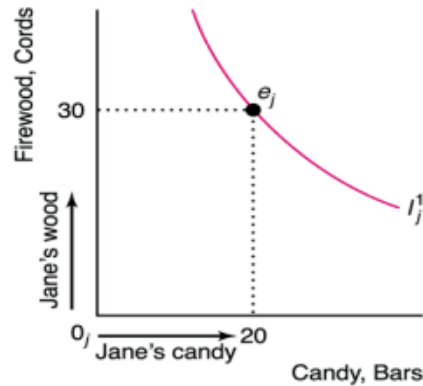
(b) Denise's Endowment



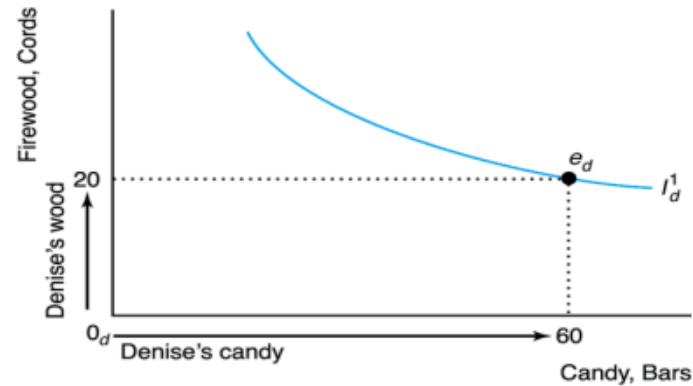
Trade Equilibrium

Endowments

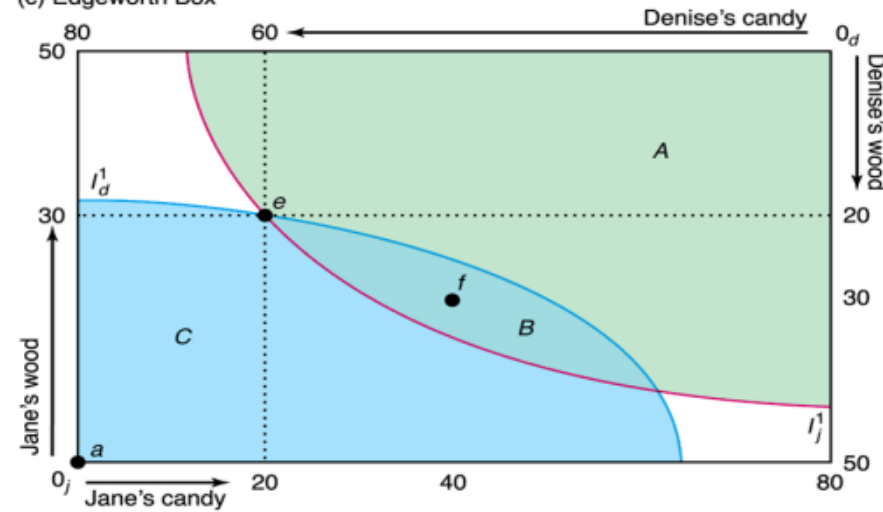
(a) Jane's Endowment



(b) Denise's Endowment

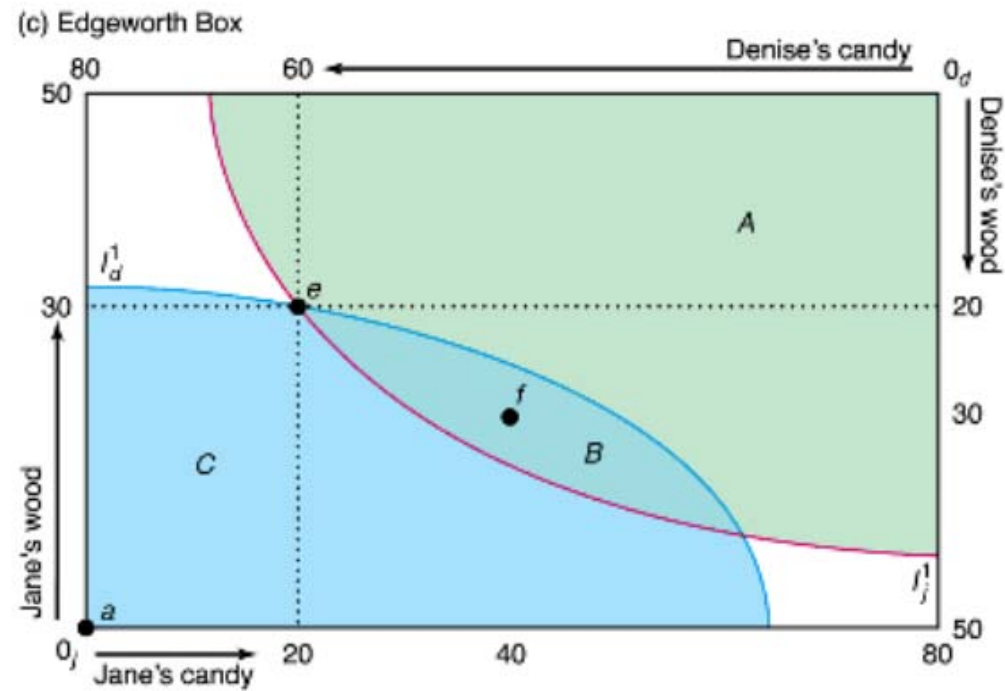


(c) Edgeworth Box



Trade Equilibrium

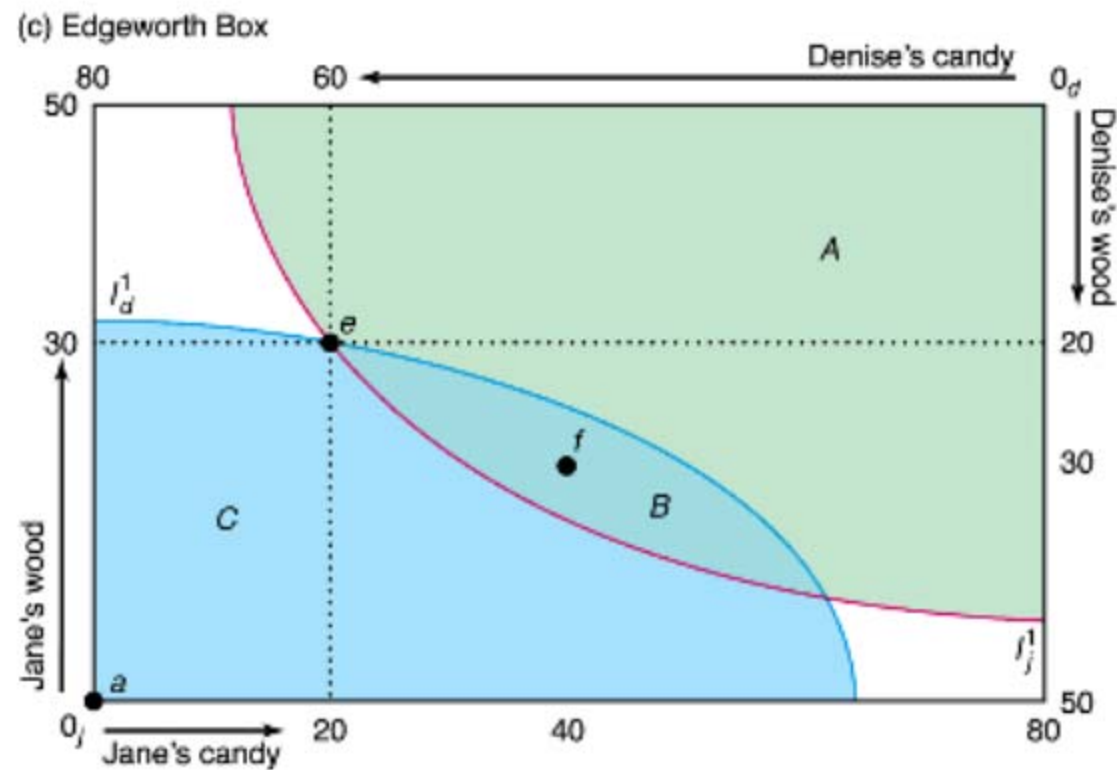
Edgeworth Box



- e is the endowment for both

Trade Equilibrium

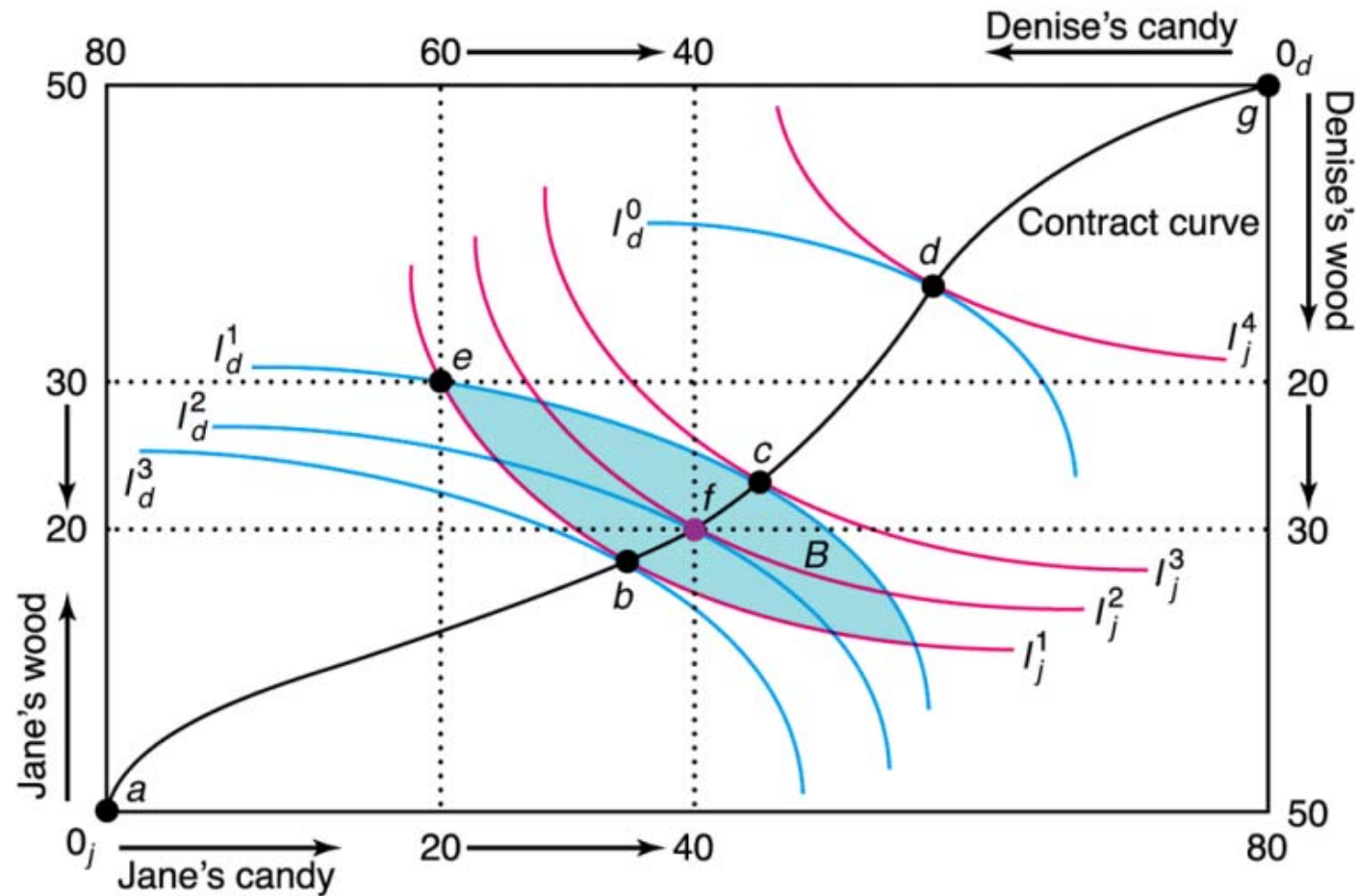
Edgeworth Box



- e is the endowment for both
- f is better for both

Trade Equilibrium

Edgeworth Box: The Contact Curve and the Core



Trade Equilibrium

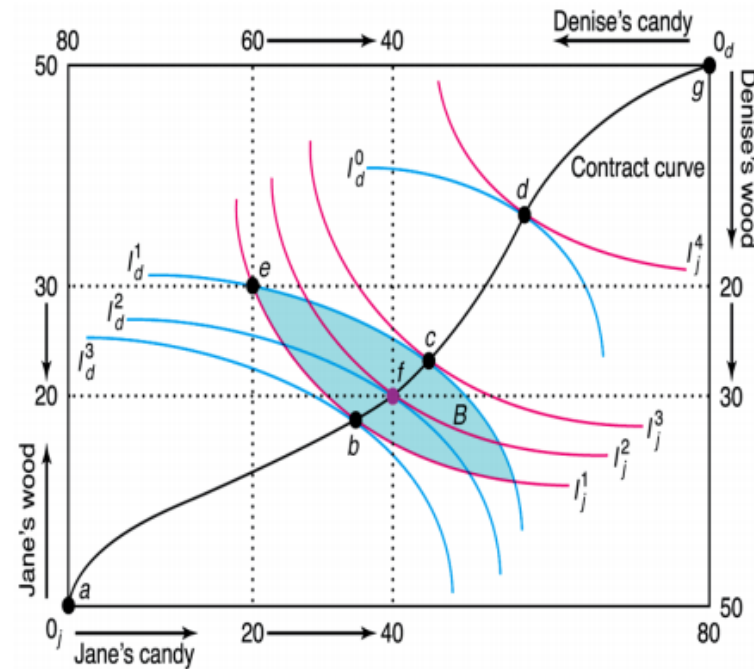
Edgeworth Box: The Contact Curve and the Core

THE CONTRACT CURVE

- Tangent indifference curves
- Equal MRSs
- No mutually beneficial trade
- Pareto Efficient

Definition

The allocation is Pareto efficient if no party can get better off without harming the other(s).



Trade Equilibrium

Endowment and Budget Constraint

Assume prices (p_1, p_2)

The budget constraint is:

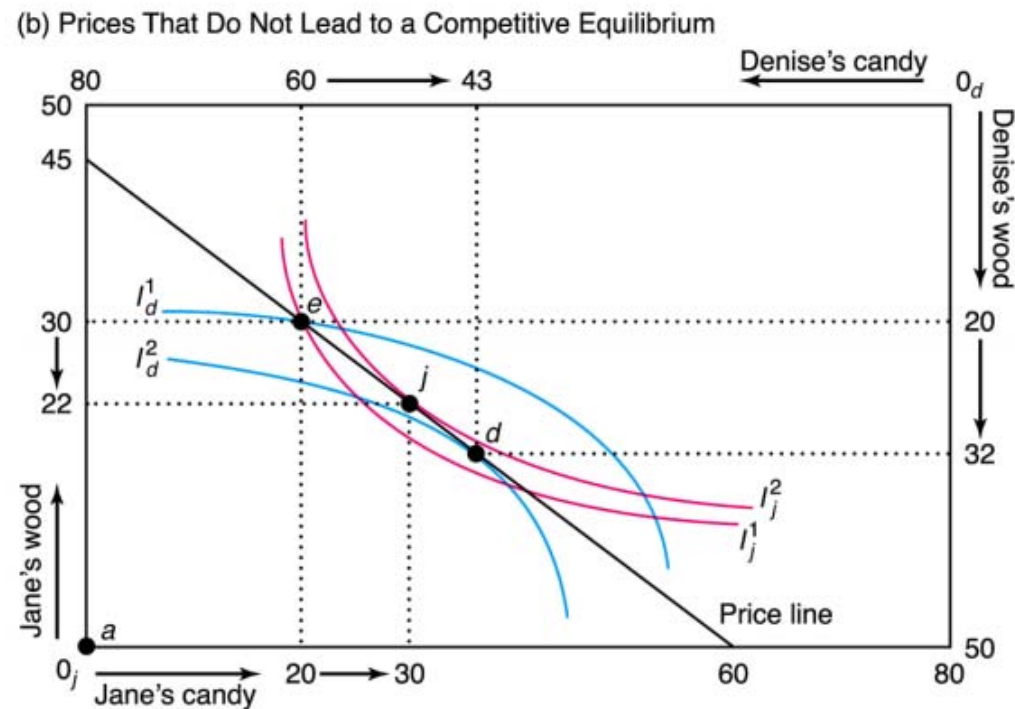
$$p_1x_1 + p_2x_2 \leq p_1\omega_1 + p_2\omega_2$$

Fact

The budget constraint always passes through the initial endowment point (ω_1, ω_2)

Trade Equilibrium

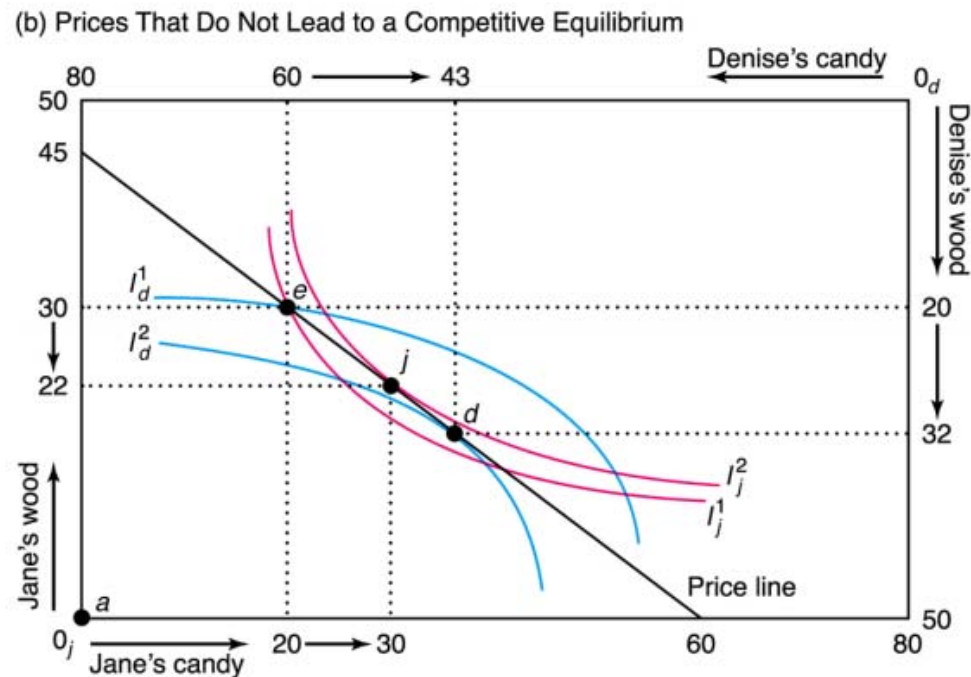
Edgeworth Box and Prices



- The relative prices are represented by a straight line and pass through the initial endowment (same as the budget constraint).

Trade Equilibrium

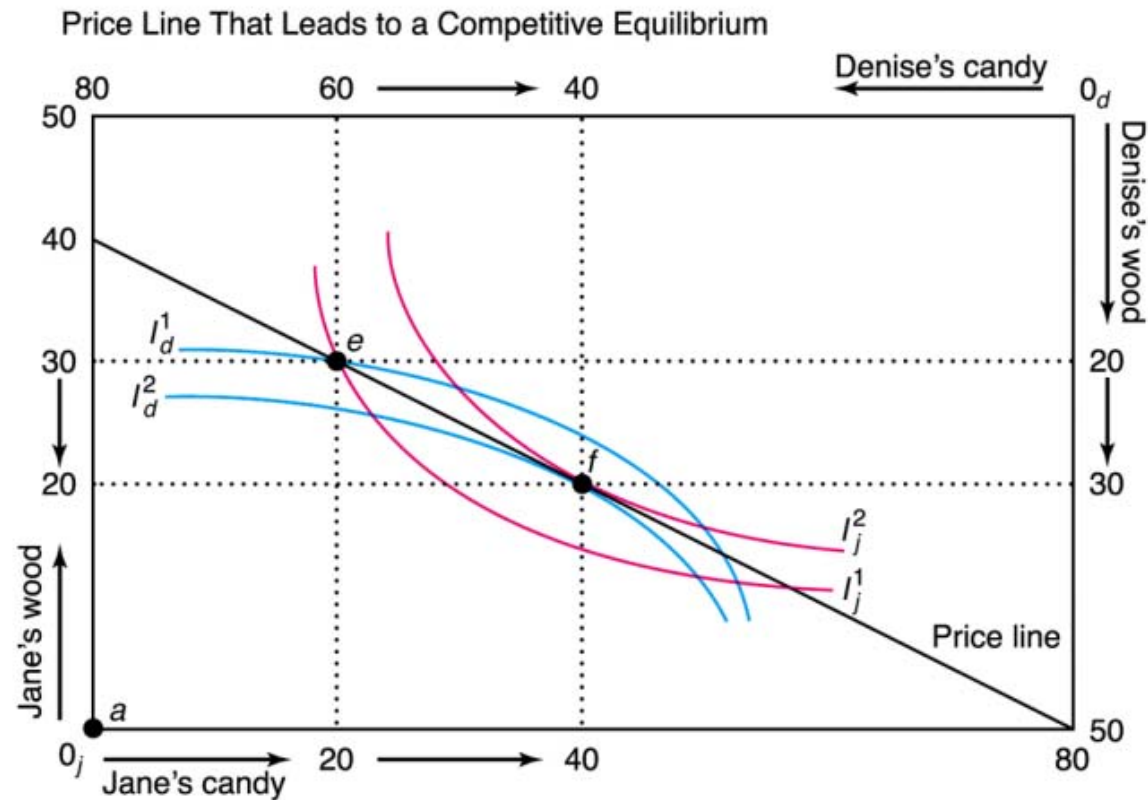
Edgeworth Box and Prices



- The relative prices are represented by a straight line and pass through the initial endowment (same as the budget constraint).
- The prices will change so that there is no excess demand or supply (Invisible Hand).

Trade Equilibrium

Edgeworth Box and Invisible Hand



The market will clear with the help of the Invisible Hand.

Trade Equilibrium

Competitive Equilibrium

Fact

In a competitive market, prices adjust until the quantity supplied equals the quantity demanded (the work of the Invisible Hand).

Definition

A **competitive equilibrium** (or market equilibrium, or Walrasian equilibrium) is a set of prices and allocations such that the market clears.

Trade Equilibrium

Competitive Equilibrium

Fact

In a competitive equilibrium the indifference curves of both types of consumers are tangent at the same bundle on the price line. As a result:

$$MRS_j = -\frac{p_c}{p_w} = MRS_d$$

Theorem (First Theorem of Welfare Economics)

Any competitive equilibrium is Pareto efficient.
