Introductory Macroeconomics

Lecture 17: international trade, part one

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This Lecture

- Core concepts in international trade
  - absolute/comparative advantage
  - production possibilities curve
  - how trade occurs and gains from trade
- BOFAH chapter 16

Key Questions in International Trade

- What are the gains from trade?
- What is the direction of trade? That is, which goods are exported and imported?
  - Australia exports mineral resources, China manufactured goods, and Japan automobiles
- Who are the winners and losers from trade?
- What are the effects of protection policies?

Absolute/Comparative Advantage

- Absolute advantage:
  A worker (or economy) has an absolute advantage in producing a good if she/he is capable of producing *more of the good in the same amount of time* than the others

	shirts	pants
A	10	7
B	5	4

absolute advantage in producing shirts & pants

- Comparative advantage:
  A worker (or economy) has a comparative advantage in producing a good if she/he is capable of producing at *a lower opportunity cost* than the others

  – opportunity cost is what we give up to undertake an action

- As we will see, it is a comparative advantage that leads to specialisation of workers, opening a room for trade between workers

Example

- Assume that Bart and Lisa work 8 hours per day

	Meat Pies	Tomato Sauce
Bart	15 min	60 min
Lisa	10 min	15 min

Table: Number of minutes to produce one unit of a good

- Assume that Bart and Lisa cannot produce pies and sauce at the same time

	Meat Pies	Tomato Sauce
Bart	32	8
Lisa	48	32

Table: Maximum amount of goods produced in one day

8h × 60 min / 15 min

Bart 32 pies give up 8 sauce
1 pie ↓ sauce
1 sauce 4 pie

Lisa 48 pies give up 32 sauce
1 pie 32/48 = 2/3
1 sauce 1.5 pie

Absolute/Comparative Advantage

- Lisa has an absolute advantage in producing both pies and sauce

	Meat Pies	Tomato Sauce
Bart	0.25 units of sauce	4 pies
Lisa	0.67 units of sauce	1.5 pies

Table: Opportunity cost of production

- Bart has a comparative advantage in producing meat pies
- Lisa has a comparative advantage in producing tomato sauce
- *Specialisation* refers to a situation in which a worker focuses on producing a product that she/he has a comparative advantage of

Specialisation in Autarky

- Is specialisation better than no specialisation for the (autarky) economy?

↑ Bart & Lisa produce pie & sauce.

- *Autarky* means a country (economy) that is closed to the rest of the world

Aggregate consumption = Bart's consumption + Lisa's consumption

- A metric for evaluating the effect of specialisation is the aggregate consumption level

Agg C under specialisation > Agg C under no specialisation
⇒ specialisation is better than no specialisation

  - assume that pies and sauce are *perfect complements*

Perfect complement: good that must be consumed with another good.

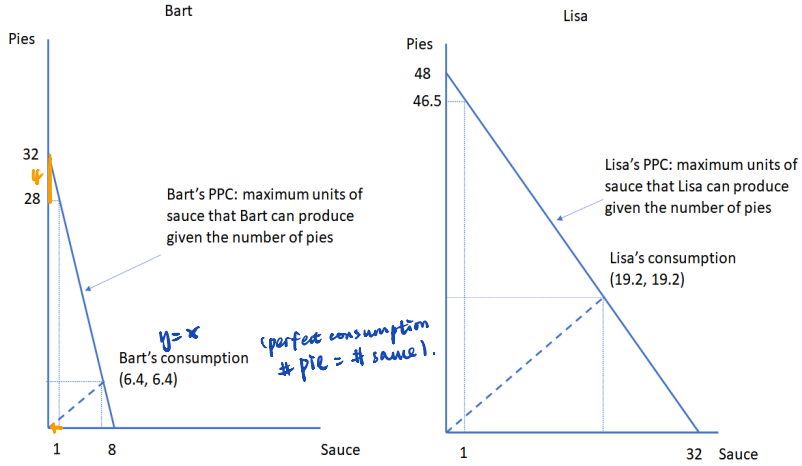
⇒ 6 pies & 0 sauce → 0 utility
3 pies & 3 sauce → + utility.

  - we should compare the aggregate consumption level of the economy with no specialisation to that of the economy with a specialisation

Production Possibilities Curve

- *Production possibilities curve* (PPC) is a graph that describes the maximum amount of one good that can be produced for each level of production of the other good
  - maximum number of pies produced given n units of sauce
    $n = 0, 1, 2, ...$ when Bar produces 0 sauce, he can produce 32 pies
  - maximum units of sauce produced given n number of pies
    $n = 0, 1, 2, ...$

PPC for Individuals



Aggregate Consumption: No Specialisation

- Bart's consumption
  - perfect complements assumption implies that the units of pies consumed and the units of sauce consumed must be the same
  - the units of pies and sauce consumed, x, solve

$$x = 32 - \frac{32}{8}x$$

- Lisa's consumption: self exercise
- Aggregate consumption in the economy with no specialization is 24.6 $(= 6.4 + 19.2)$ units of pies and sauce

(24.6, 24.6).

Outcome of Specialisation

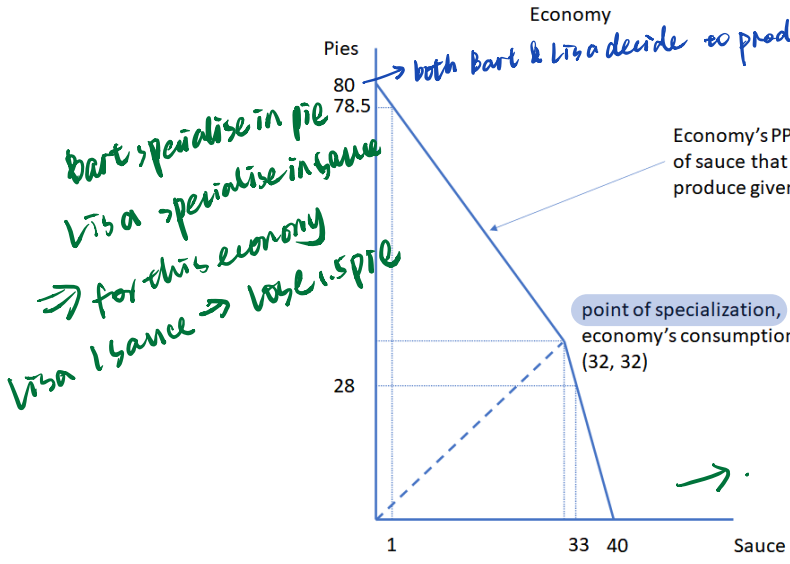
- When Bart specialises in pies, and Lisa specialises in sauce, aggregate consumption increases relative to that in an environment with no specialisation
  - 32 units of pies and sauce under specialisation whereas 24.6 units under no specialisation

page 5. Bart produce 32 pies. Lisa produce 32 sauce
⇒ in aggregate 32 unit of pie & sauce.

- Gains from specialisation applies to the international environment
  - World's total pie is larger when each country specialises in goods that it has a comparative advantage of
- It turns out that the point of specialisation is a point that maximizes the economy's utility

PPC for a Two-Worker Economy

	Meat Pies	Tomato Sauce
Bart	32	8
Lisa	48	32



How Individuals Can Benefit

- We have seen that specialisation increases the total consumption level in the economy, making the economy better off
- How can individuals be better off under specialisation?
  - they must trade with each other through a market

Bart purchase sauce from Lisa by selling pies

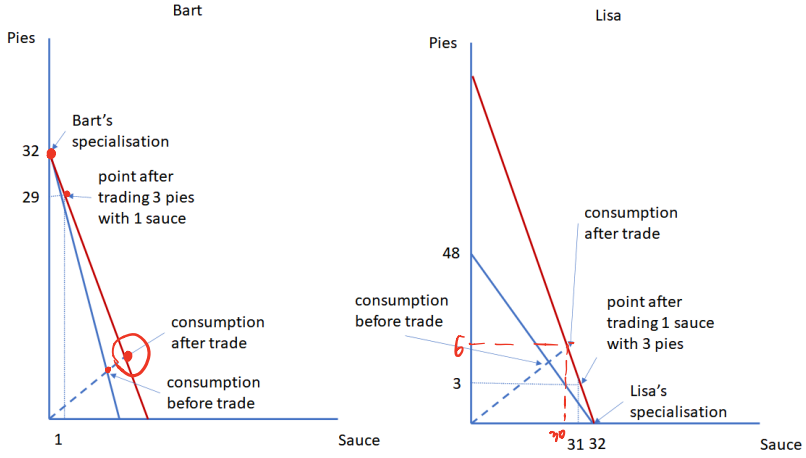
Lisa purchase pies from Bart by selling sauce

How Trade Occurs: Example

- Assume that the market price of one unit of sauce is 3 pies
- For Lisa, to attain one unit of sauce,
  - produce one unit of sauce by forgoing 1.5 units of pies
    > purchase one unit of sauce by paying 3 units of pies
  - Lisa produces sauce and purchases pies from Bart
- For Bart, to attain one unit of sauce,
  - produce one unit of sauce by forgoing 4 units of pies
    < purchase one unit of sauce by paying 3 units of pies
  - Bart produces pies and purchases sauce from Lisa

Gains from Trade for Individuals

- Red line describes attainable bundles from trade



Next Lecture

- More on international trade
  - direction of trade: which goods are imported and exported
  - winners and losers
  - protection policies: tariffs