Why People trade ?

People → Individuals / households
People → Firms
People → Nations.

(1) Differences in Natural Endowments.

Example.

Australia	Saudi Arabia
Wheat	Oil.

Australia sells wheat to Saudi Arabia in exchange for oil.

Example 2

You	your neighbour.
Apple	Orange.

(2) Fixed Costs of production.

John can either trade his expertise as a doctor for Peter's and emma's expertise as lawyer and accountant or he can also do a law and accounting degree.

John.

Doctor 4 years
Law 4 years
Accouting 4 years

} Time Consuming + Costly. and unproductive.

Best to trade with others who have already incured this fixed cost.

(3) Absolute Advantage.

Assumed.

Two goods — Cars, Rice

Two Countries — Aus, Jpn.

Japan → 500 units of labour

Australia → 100 units of labour

Technology

Australia: 5 units of labour ⇒ 1 car

10 units of labour ⇒ 1 ton of rice

Japan: 10 units of labour ⇒ 1 car.

5 units of labour ⇒ 1 ton rice.

In this example Ausbalia is more productive than Japan in producing Cars whereas Japan is more productive than Ausbalia in producing rice.

In other words Ausbalia has an Absolute Advantage in producing Cars ~~whereas~~ whereas Japan has Absolute Advantage in producing rice.

Ausbalia produces only Cars whereas Japan produces only rice.

Ausbalia exchanges Cars for rice.

This is trade by Absolute Advantage.

What if Ausbalia is better than Japan in producing both goods?

The principle of comparative advantage

Same as Before

- Imagine
  - Only two goods (car and rice)
  - Only two countries (Australia and Japan)
- Resource endowment
  - Australia – 100 units of labour
  - Japan – 500 units of labour
- Technology
  - Australia: 5 units of labour for 1 car, 1 unit of labour for 1 ton of rice
  - Japan: 10 units of labour for 1 car, 5 units of labour for 1 ton of rice

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→ Australia is better than Japan is producing both the goods.

Is there a reason for Australia to trade with Japan?

If so, is this trade going to benefit Australia? what about Japan?

The principle of comparative advantage

- Questions
  - Should they trade?
  - If so, what should each produce?
  - And at what terms should they trade? → how much for what?
- Without trade (self-sufficiency or autarky), each country chooses consumption allocation on its production possibilities frontier.

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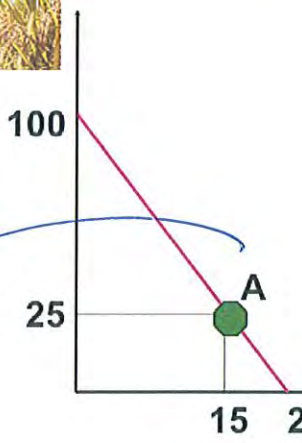
Lets first consider the situation in which they do not trade. The autarky situation :

→ As trade is voluntary. Each country will engage in trade only if they are better off compared to their Autarky situation.

Self-Sufficiency: Australia

(a) Australia's production possibilities frontier



PPF is a straight line with the slope equal to -5

Australia's opportunity cost of 1 car is 5 tons of rice.

Australia's opportunity cost of 1 ton of rice is $\frac{1}{5}$ car.

Suppose Australia chooses point A under self-sufficiency.

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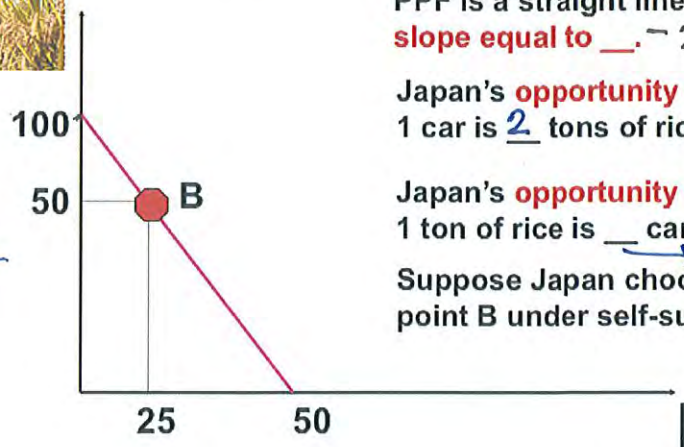
1. Slope Equal to -5
2. 1 car = 5 tons of rice
3. 1 ton of rice = 1/5 of a car

→ Choice of A is governed by demand/supply of Cars and rice in Australian Economy.

Remember: In Autarky you consume what you produce.

Self-Sufficiency: Japan

(b) Japan's production possibilities frontier



PPF is a straight line with the slope equal to __. -2

Japan's opportunity cost of 1 car is 2 tons of rice.

Japan's opportunity cost of 1 ton of rice is __ car. ½

Suppose Japan chooses point B under self-sufficiency.

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1. Slope = -2
2. 1 car = 2 tons of rice
3. 1 ton of rice = ½ car

→ Assume JPN produces at point B in Autarky.

In Autarky, you consume what you produce.

Japan consumes (25 cars, 50 rice)

Arbutia consumes (15 cars, 25 rice) (from last slide)

Total Consumption = (40 cars, 75 rice)

lower opportunity cost for car.

lower opportunity cost for car.

Opportunity costs

	Japan	Australia
	2 tons of rice	5 tons of rice
	½ car	$^1/_5$ car

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Trade based on Comparative advantage is proposed by David Ricardo. Its not a straight forward concept to understand.

Let's look at the opportunity cost of each good (in terms of other good foregone) for each country

Specialisation and trade

- Australia is absolutely better at both, but relatively better at producing rice.
- Australia can produce both goods at a lower absolute cost (using fewer resources): Australia has an **absolute advantage** in both goods.
- But the opportunity cost of producing a car is lower in Japan (2 tons of rice) than in Australia (5 tons of rice): Japan has a **comparative advantage** in producing cars.
- If they trade, what should each country produce?

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Now lets think of trade based on comparative advantage.

↳ Relatively speaking

Japan is better producing Cars

Australia is better at producing Rice.

Specialisation and trade

- Suppose the two countries specialise in what they have comparative advantages in.
- Australia uses all its resources producing 100 tons of rice and Japan uses all its resources producing 50 cars.
- Under self-sufficiency, the total output the two countries consume is 75 tons of rice and 40 cars.
- So total output is larger for both goods than consumption under self-sufficiency.

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from PPF of Aust and Japan.

1.A : 100 tons of rice & B. 50 cars

2. A: 75 tons B. 40 cars

Under specialisation they produce more of both the goods and obviously consume more of both the goods. So they both are better off.

Consumption before (after) trade

- How can trade make both countries better off?
- Before trade, AUS chooses **(15, 25)** and JPN chooses **(25, 50).**
- After specialization, AUS produces (0, 100) and JPN produces (50, 0).
- Suppose AUS sells rice to JPN in exchange for car at **any price between 1 car for 2 tons of rice (JPN's opportunity cost) and 1 car for 5 tons of rice (AUS's opportunity cost).**
- Example:
  - AUS sells 60 tons of rice for 20 cars (called the terms of trade).
  - Then AUS can consume **(20, 40)** > (15, 25) and JPN can consume **(30, 60)** > (25, 50).

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→ Aus sells 60 tons of rice (which means its left with 40 tons of rice) for 20 cars.

⇒ Australia consumes (20, 40)

* Similarly JPN sells 20 cars (which means its left with 30 cars) for 60 tons of rice.

⇒ Japan consumes (30, 60)

Consumption before (after) trade

	Japan	Australia	Total
	25 (30)	15 (20)	40 (50)
	50 (60)	25 (40)	75 (100)

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Consumption ~~for~~ before trade : Blue

Consumption after trade : Red.

If you compare total Consumption before and after trade. you see that the gains from trade.

$= (10, 25)$

These gains are distributed as

Australia (5, 15)

Japan (5, 10)

What determines, how the gains from trade are going to be distributed?

The answer is "terms of trade" or the rate of exchange ~~not~~ between Cars and rice.

A1: Lets hypothetically assume that everything else remains same but:

~~Australia sells 50 Cars for~~

Australia sells 50 tons for rice for 25 Cars. (i.e. 2 rice = 1 Car)

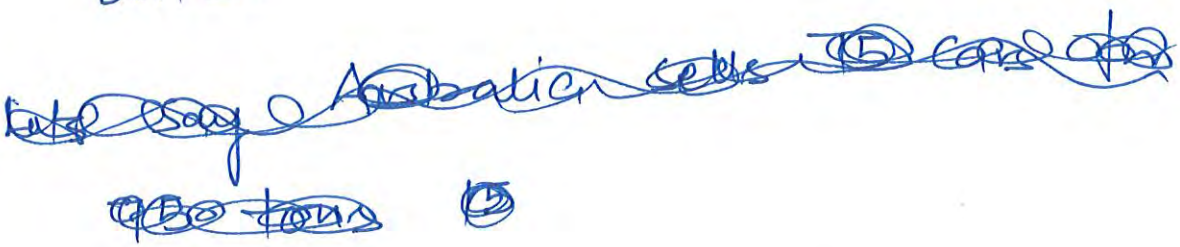
Lets ~~red~~ re-calculate the previous table

	Japan	Australia	Total
Car	25 (25)	15 (25)	40 (50)
Rice	50 (50)	25 (50)	75 (100)

Total gains from trade are still the same, but the way these gains are distributed has changed.

Now all the gains go to Arsbalia and Japan remains same as it was under autarky situation.

A2: Look at another hypothetical exchange rate.



Lets say Arsbalia sells 75 tons of rice for 15 Car. (1 car = 5 tons of rice)

	Japan	Arsbalia	Total
Cars	25 (35)	15 (15)	40 (50)
Rice	50 (75)	25 (25)	75 (100)

In this situation all the gains go to Japan.

Opportunity cost and trade

- Opportunity costs **play two roles here**.
- First, it **determines the pattern of specialisation by determining comparative advantages**.
- Second, it tells us how the **terms of trade (relative price) should be determined**.
- In the example, any price between 1 car for 2 tonnes of rice (Japan's opportunity cost) and 1 car for 5 tonnes of rice (Australia's opportunity cost) are acceptable.
- But where does this price come from?
- This is one of the key questions we answer in the next 10 weeks!

→ lets generalise this

Range of mutually beneficial trade.

2 rice < 1 car < 5 rice

Exercise: Try to re-calculate the previous table for following terms of trade:

A: 1 car = 1 rice

B: 1 car = 6 rice.

and how gains of trade are distributed?

Comparative advantage and trade: recap

- Should they trade?
- A: Yes
- If so, what should each produce?
- A:
- And at what terms should they trade?
- A:

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1. Yes.
2. Australia should produce Rice and Japan should produce Car i.e. each country should produce the good for which they have lower opportunity cost. or simply have Comparative advantage.
3. At the terms between the opportunity cost of two countries.

Basically, anywhere in the range of

~~2 Car < 2 Rice~~

2 rice < 1 car < 5 rice

David Ricardo (1772 – 1823)

On the principles of political economy and taxation (1817)

Recap and what is to come

- Every economic decision involves a tradeoff.
- Facing tradeoffs, efficiency is a good guideline for decision making.
- In making an efficient decision, the relevant cost is the opportunity cost of an activity.
- The notion of opportunity cost and comparative advantage can explain the existence and gains from trade.
- The next class is on the most important resource allocation mechanism: markets, demand and supply.