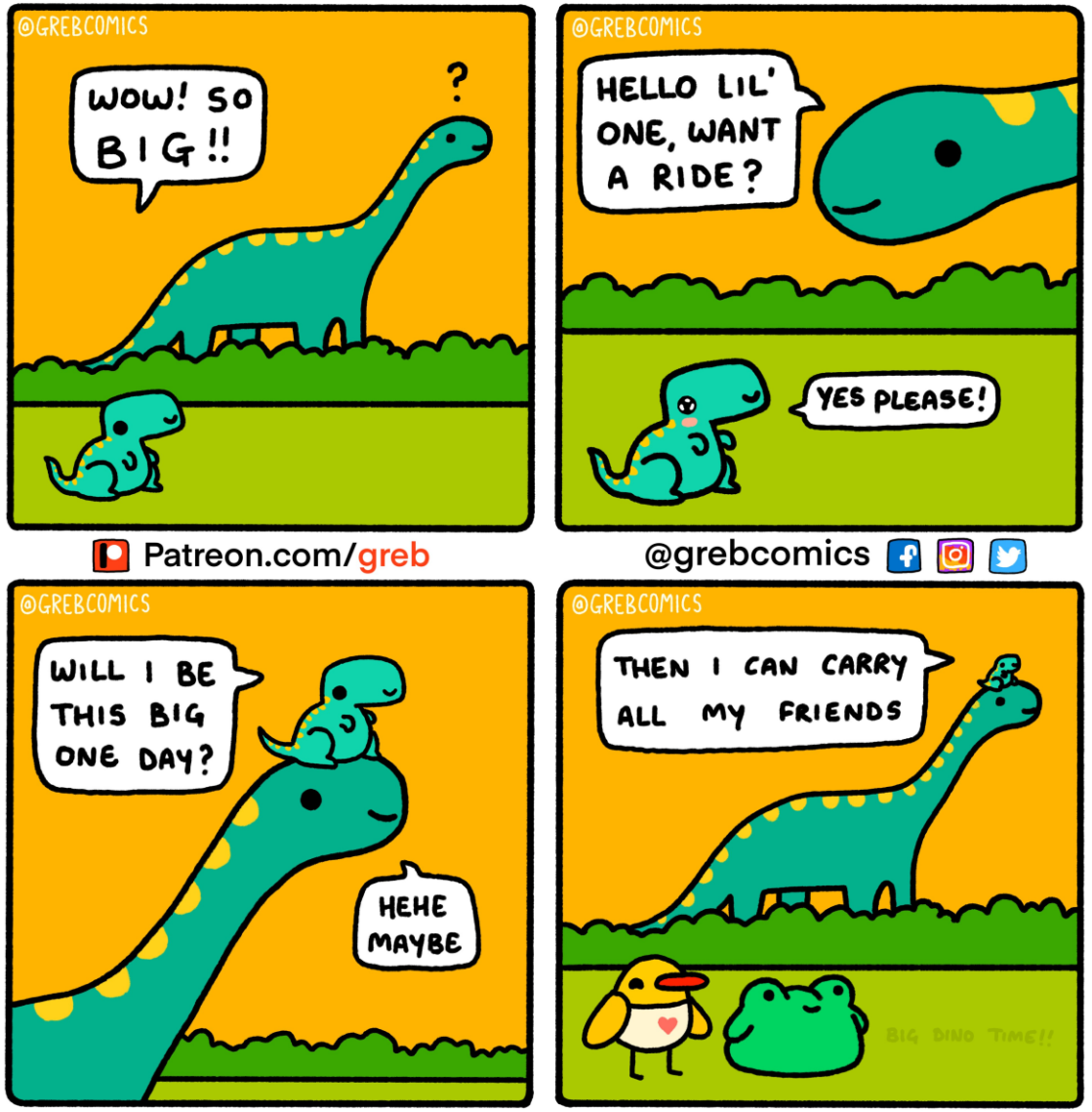
Trade: The Gains from Trade

Chapter 2



Objective

- To understand why trade occurs and why it is valuable.

- Key concepts:
  I. *Gains from trade ("surplus")*
  II. *Division of labor and specialization*
  III. *Comparative/absolute advantage*

The Gains from trade

- Why do people trade?
  - This follows from our assumption of rational behavior; i.e., the marginal principle (If MB > MC , do it!)

- For example, I am willing to trade one of my baseball cards for one of yours because I will end up with a card that I value more
  - Same thing holds when I purchase a carton of milk
  - And for the seller too, of course

- Trade thus moves goods from lower value uses to higher value uses
  - The baseball card (or carton of milk) is more valuable in my hands than in the original party's hands.
  - We would not trade otherwise!

- We call the difference in values that results the "gains from trade"
  - We will also use the term "surplus"

A simple example of the “gains from trade”

- Suppose I have a slice of pizza that I would get $1 of enjoyment from consuming
- Suppose you have no pizza and would get $5 of enjoyment from consuming a slice
- If we can move that slice of pizza from me to you, we can increase its value from $1 to $5
  - But isn’t it the same slice of pizza?
- The gains from trade (or surplus) thus created are: $5 - $1 = $4

Example (continued)

- Suppose we negotiate a trade at $2 for the slice.
  - I end up with $2-$1 = $1 better off
  - You end up $5-$2 =$3 better off
  - The total gains from trade are yours plus mine = $4

- Note that the price we transact at does not affect the total gains from the trade
  - It does determine who gets more of that gain (and indeed, whether a trade occurs)
  - But notice each person's surplus will always be positive (or at least not negative)

Most people today depend on trade for most of what they consume

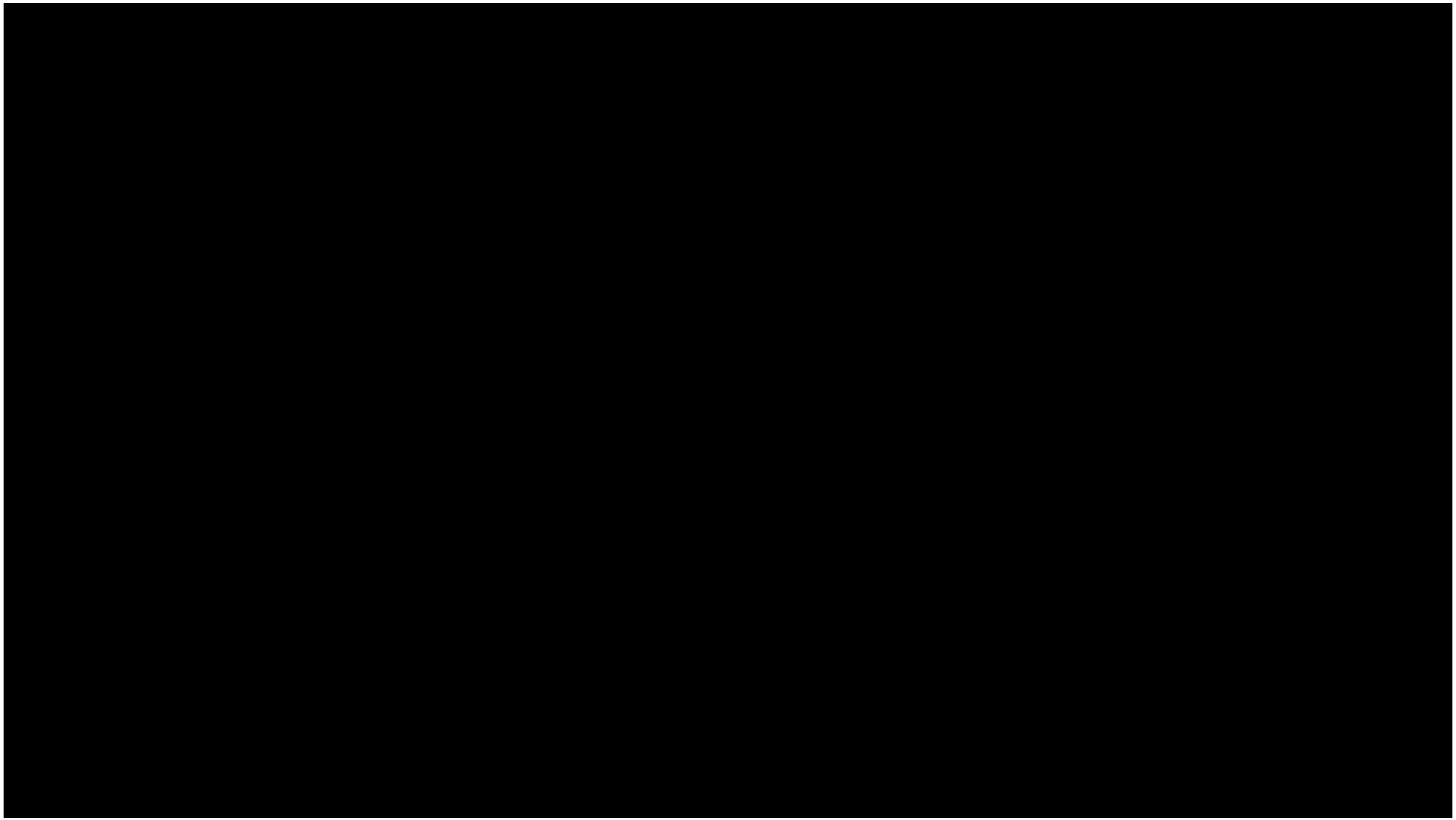
- When you wake up, you look at your Korean-made watch
- You slip on an orange shirt made in China
- You grab a coffee made from beans grown in Columbia
- You watch a football game broadcast from New York on a TV produced in Japan

- Why is interdependence like this the norm?

Specialization and the Division of Labor

- What do we call a person who does not specialize, but rather produces all that he/she consumes (food, clothing, housing, etc.)?
- Here is an example of specialization from Adam Smith about pin production
  - 10 workers each assigned the task of making a whole pin could produce *10 pins per day*
  - However, if instead…
    - Pin production is broken into discrete tasks (as it was in Smith's day)
    - and each worker specializes in a particular task.
  - 10 workers could make *48,000 pins a day!*
  - In other words, worker productivity could increase from 1 to 4,800 pins per day!
- Gains to specialization are even larger in the modern world!
- And, of course, workers who specialize must depend on trade for all the things they don't produce

Consider a chicken sandwich



Comparative Advantage (intro)

- Important distinction between absolute and comparative advantage:
  - *Absolute advantage:* the ability to produce the same good using fewer inputs than another producer
  - *Comparative advantage:* the ability to produce a good at a lower *opportunity cost.*
    - The opportunity cost of producing a good is giving up the opportunity to produce another good, maybe one that you are even *more* efficient at producing.
- In other words, even if someone has an *absolute* advantage in producing *everything,* she does not have the *comparative* advantage in everything.

Specializing according to Comparative advantage

Objective

- To understand comparative advantage (an application of opportunity cost)
  - And why it is not possible for one trading partner to be able to do *everything* at lower cost

Reviewing the Gains from Trade

- Increasing division of labor, specialization, and trade is an important part of the enormous increase in wealth we have seen over the last few centuries
  - A society in which each person grows his/her own food and makes his/her own clothing is a VERY poor society (in material terms)

- Specialization is based on one's comparative advantage
  - In other words, you do not trade with parties because they are able to produce a good (or complete a task, etc.) using fewer resources ("absolute advantage") . . .
  - . . . but because they can do it at a lower opportunity cost than you

Specialization and trade is based on comparative advantage

A simple example: Imagine a world . . .

- With only two nations (it could be two individuals)
  - U.S. and France

- Each producing only two goods
  - Beer
  - Wine

- How should they allocate their resources?
  - What should they produce?
  - What should they trade?

Let's put in some numbers

Note: US can produce both goods for fewer resources (hours) than France

Example:	*Hours needed to make:*	
	Barrels of beer	*Casks of Wine*
US	1	1
France	4	2

- In one eight-hour day, the US can make either 8 barrels of beer or 8 casks of wine, or some combination of the two.
- In one eight-hour day, France can make either 2 barrels of beer or 4 casks of wine, or some combination of the two.
- Who can produce wine more cheaply (i.e., at lower opportunity cost), the U.S. or France?

Comparative Advantage Example (cont.)

Example:	*Hours needed to make:*	
	1 barrel of beer	1 cask of wine
US	*1(1 barrel/hour)*	*1 (1* cask/hour)
France	*4 (1/4 barrel/hour)*	*2 (1/2 cask/hour)*

- US opp cost of 1 cask of wine: 1 barrel of beer
  - To make 1 cask of wine, they give up the *opportunity* to produce 1 barrel of beer
- France opp cost of 1 cask of wine: ½ barrel of beer
  - France can produce wine at lower opportunity cost
- The U.S. can produce beer at lower opportunity cost (fewer casks of wine) than can France
- So both be made better off if they specialize according to comparative advantage and trade.
  - Well, what trade would do so?

Conclusion to example

- The U.S. has the comparative advantage in beer and France has the comparative advantage in wine
- By specializing accordingly and engaging in trade, each country can be wealthier (i.e., more beer and wine) than if it produced everything itself
  - Trade at any price between 1 and 2 casks of wine (in-between the countries' opportunity costs) for a barrel of beer makes both countries better off

- The fact that the U.S. can produce both beer and wine in fewer *hours* – has the "absolute advantage" – is irrelevant.
  - The relevant thing is what those hours could be used for.

Practice questions

1. Anyone who claims that cheaper labor in one country enables that country to produce everything at lower costs than another country, so that no trade is possible, is

   - a. exaggerating the importance of labor costs.
   - b. referring only to comparative, not to absolute cost.
   - c. not referring to monetary costs because they are measured in differing currencies.
   - d. not considering opportunity cost.

Practice questions

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Practice questions

2. I can make 4 biscuits or 12 scones in an hour. You can make 3 biscuits or 6 scones in an hour.

The cost of one of my biscuits is

- a.3/4 of your biscuits.
- b.12 scones.
- c.3 scones
- d. depends on how much I like biscuits.
- e.depends on how much you like biscuits

Practice questions

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Applying Comparative Advantage

Objective

- To develop further understanding of comparative advantage

Trade and specialization (review)

- Trade is a *voluntary* activity, undertaken because trading parties expect to be made better off
- How much better off they are made is referred to as "the gains from trade" or the "surplus"
- Potential gains from trade provide parties with a strong incentive to seek out mutually beneficial exchanges
- Trade is based largely on comparative advantage
  - That is to say, differences in opportunity costs

An example

- You are shipwrecked on a desert island!
  - Fortunately, coconuts and oysters are abundant
- After some practice, you find you can crack a coconut in 30 minutes, while it takes you 10 minutes to open an oyster
- What is the cost of a coconut? What is the cost of an oyster?

An example

- You are shipwrecked on a desert island!
  - Fortunately, coconuts and oysters are abundant
- After some practice, you find you can crack a coconut in 30 minutes, while it takes you 10 minutes to open an oyster
- What is the cost of a coconut?
  - 3 oysters
- What is the cost of an oyster?
  - 1/3 of a coconut

Robinson Crusoe show up

- RC lives on a neighboring island.
- RC's island also has abundant oysters and coconuts.
- RC is better at cracking coconuts than you are
  - It takes him 10 minutes per coconut (versus 30 for you)
- But he is no better at opening oysters than you are
  - It takes him 10 minutes per oyster (same as you)
- Who has the comparative advantage in what?
  - –In other words, who can perform which activity at lower cost?

Suppose you and RC decide to Pool your resources

- For each hour you devote to food gathering, you can
  - Crack 2 coconuts
  - Or open 6 oysters
- For each hour RC devotes to food gathering, he can
  - Crack 6 coconuts
  - Or open 6 oysters
- Suppose each of you spend half your time on coconuts and half on oysters.
  - Together you can gather 4 coconuts and 6 oysters per hour
- But what if instead . . .
  - You specialize in oysters
  - RC specializes in coconuts
- `Together you can gather ____ coconuts and ____ oysters per hour!

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- Suppose each of you spend half your time on coconuts and half on oysters.
  - Together you can gather 4 coconuts and 6 oysters per hour
- But what if instead . . .
  - You specialize in oysters
  - RC specializes in coconuts
- `Together you can gather __6__ coconuts and __6__ oysters per hour!

Specialization and Trade

- RC has the comparative advantage in coconuts
  - 1 coconut costs him 10 minutes or 1 oyster
  - 1 coconut cost you 30 minutes or 3 oysters
- You have the comparative advantage in oysters
  - 1 oyster costs you 10 minutes or 1/3 of a coconut
  - 1 oyster costs him 10 minutes or 1 coconut
- (It is important to recognize that it is not the minutes themselves that are the cost, .but what can be done with those minutes)
- Specializing and trading can make both you both better off
  - You can more than double what either of you could achieve alone

What happens if RC gets even better at cracking coconuts?

- Suppose he gets so much practice he is now able to crack a coconut in just 5 minutes.
  - He is better off! (obviously)
- But note, that his cost of an opening an oyster has risen from 1 coconut to 2 coconuts.
  - By becoming a better coconut cracker, he becomes a comparatively worse oyster opener
- And this helps you, by increasing the price (number of cracked coconuts) he is willing to pay (give up) for opened oysters!
  - Before RC would only trade if he could get more than 1 oyster for each of his coconuts (that was his opportunity cost).
  - Now he is willing to trade if he can get more than ½ an oyster for each of his coconuts (that is his opportunity cost)

Three important lessons

I. Just by rearranging who does what – by specializing and trading – can produce more goods even if no one gets more productive!

II. As long as opportunity costs differ, there will be potential trades that make both parties better off
    I. (even if one trading partner is "better" at everything)

III. When specialization makes one trading partner more productive, both trading partners benefit

So why is international trade controversial?

I. Comparative advantage applies to individuals
   a) Should Tiger Woods cut his own lawn? (what is the opportunity cost?)
   b) Are you learning to specialize?

II. It also applies to countries
   a) Should the U.S. grow bananas?
   b) Should South Carolina produce textiles?

III. So why do so many people resist free trade agreements?
   a) Not all benefit equally
      a) Workers and firms in import-competing and new technology competing industries
      b) But workers in industries that use traded goods as inputs and consumers are made better off
   b) In total, benefits to winners > costs to losers

IV. In this sense trade is just like the introduction of new technologies!
   a) Both int'l trade and new technologies get us better products at lower prices

Practice questions

3. I can make 4 biscuits or 12 scones in an hour. You can make 3 biscuits or 6 scones in an hour.

We could both be made better off if I

- a. specialize in making scones
- b. specialize in making biscuits.
- c. specialize in both making scones and making biscuits.
- d. let you specialize in both scones and biscuits.

Practice questions

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- d. let you specialize in both scones and biscuits.

Practice questions

4. I can make 4 biscuits or 12 scones in an hour. You can make 3 biscuits or 6 scones in an hour.

A trade that would help us both is

- a.one of my scones for 4 of your biscuits.
- b.one of my biscuits for 1/4 of your scones.
- c.one of your scones for 1/5 of my biscuits.
- d.one of your biscuits for 2.5 of my scones.

Practice questions

4. I can make 4 biscuits or 12 scones in an hour. You can make 3 biscuits or 6 scones in an hour.

A trade that would help us both is

- a. one of my scones for 4 of your biscuits.
- b. one of my biscuits for 1/4 of your scones.
- c. one of your scones for 1/5 of my biscuits.
- d. one of your biscuits for 2.5 of my scones.

Practice questions

5. If England can make 10 umbrellas or 5 smoked fish in a day while Norway can make 5 umbrellas or 5 smoked fish,

a. England has the comparative advantage in umbrellas and Norway has it in fish.

b. Norway has the comparative advantage in umbrellas and England has it in fish.

c. England is better at both umbrellas and fish.

d. Norway's fish cost the same amount as England's.

Practice questions

5. If England can make 10 umbrellas or 5 smoked fish in a day while Norway can make 5 umbrellas or 5 smoked fish,

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b. Norway has the comparative advantage in umbrellas and England has it in fish.

c. England is better at both umbrellas and fish.

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