The incentive to trade, holding the aggregate quantity of goods constant

The economy is populated by individuals that want various goods. Each values each good differently. Voluntary trade moves from individuals that value them less to individuals that value them more.

• No reason to expect the initial allocation to be optimal,
  • i.e., maximizing the aggregate value of goods.

• Trade: individuals compare the goods they have to goods available, in terms of value.
  • “Value” is what each individual would be willing to give up to get them.
Double coincidence of wants

• When two individuals observe a double coincidence of wants, they will voluntarily trade.
  • Each partner receiving something he values more in exchange for something he values less.

• The post-trade allocation is an improvement, in terms of the values the individuals place on the goods they own.
Example: professional sports

There seem to be at least 2 distinct reasons sports franchises trade players.

• Different objectives.
    • The Yankees perceived themselves as an “old” team with slim chances of winning the AL pennant, and the Cubs had a high probability of making the playoffs.
    • With the Yankees admitting they were out of contention for the playoffs, Chapman’s arm was of relatively little use because of their small chance of making the playoffs and (mostly) expectations that they would get bad quickly unless they rebuilt their farm system.
    • The Cubs however wanted pitching talent to improve their chances of a World Series and were willing to part with promising young players—who would theoretically help the Yankees win in a future season when they have a better shot at playoff success.
  • Both teams got what they wanted by exchanging Chapman for the prospects.
Example (continued)

• Redundancy of “goods”.
  • This trade was motivated by a common objective of winning in 2016.
  • But the Mets had too many pitching options and no offense. The Pirates by contrast were trying to give utility player, Josh Harrison, an every day position.
  • After the trade both teams had stronger infields and pitching rotations (without having some of their more talented players grousing about not getting playing time).
Trade is both more powerful and more important when individuals specialize. Specialization increases both the aggregate quantity of goods and the imbalance of their allocation.

• Imbalance. Each individual devotes more resources to producing one (or a few) good(s).
  • Contrast this with self-sufficiency in which he devotes a small fraction to each of many goods he wants.
  • Sometimes called autarchy.

• Each specialist has a lot of what he specializes in but little or no other goods . . . at least in the absence of trade.
Specialization (continued)

More of the goods each individual wants must now be procured by trade.

• Why would people specialize if it just increased their reliance on trade?
• Increased productivity.

• A specialist can produce more goods per unit of input than someone who divides his inputs among many productions.
  • For concreteness think of the input as the individual’s time.
Specialization (continued)

• If a person specializes, say that he spends 4 times as much time producing this good than before. If he produces more than 4 times as much of the good, he reaps gains from specialization.
  • This is a very old principle in economics.
  • It’s actually the first sentence in the unofficial first modern economics book: Adam Smith’s *The Wealth of Nations*.

  “The greatest improvements in the productive powers of labour, and the greater part of the skill, dexterity, and judgment with which it is anywhere directed, or applied, seem to have been the effects of the division of labor.” page 3
Adam Smith’s pin example

• Smith’s famous example of specialization is pin production, concluding that 3 factors explain the gains:
  • Learning by doing: “... The increase of dexterity in every particular workman ...”
  • Less time lost in transitions between tasks.
  • The incentive to adopt labour-augmenting technology—the costs of which would not be justified by someone undertaking the production part time.
The gains are limited by the capacity of individuals to trade, though. It doesn’t do much good if specialists are constrained by consuming only what they produce.

- Lose out on variety, have severely imbalanced consumption.
- The incentive to specialize is lost.

Side point: the double coincidence of wants is another limitation but can be resolved easily with a medium of exchange, i.e., money.
Comparative advantage

• Specialization gets even better!
• The gains are magnified if individuals can choose what to specialize in. Contrast this with the method in Family Guy episode S2.3 (“Da Boom”), by which occupations are randomly chosen without considering comparative advantage.
• This is precisely what they should consider when choosing specializations—the production they can perform with the lowest opportunity cost.
• Productivity increases even more because people produce what they are relatively good at.
Who has the lowest opportunity cost?
Example

• A popular way of illustrating this is by specifying unit labor requirements for 2 goods and 2 individuals.

• Each person can divide his time between producing either good, and the amount of time required to produce 1 unit can vary across individuals and goods. E.g.,

<table>
<thead>
<tr>
<th></th>
<th>Produces 1 Bookcase in</th>
<th>Produces 1 Quilt in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stan</td>
<td>3 hours</td>
<td>6 hours</td>
</tr>
<tr>
<td>Oliver</td>
<td>6 hours</td>
<td>24 hours</td>
</tr>
</tbody>
</table>
Example (continued)

<table>
<thead>
<tr>
<th></th>
<th>Opp. Cost of 1 Bookcase</th>
<th>Opp. Cost of 1 Quilt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stan</td>
<td>½ Quilt</td>
<td>2 Bookcases</td>
</tr>
<tr>
<td>Oliver</td>
<td>¼ Quilt</td>
<td>4 Bookcases</td>
</tr>
</tbody>
</table>

• Their opportunity costs are what they forego by producing one good.

• In this example Stan has a comparative advantage at making quilts, and Oliver has a comparative advantage at bookcases.

• Oliver has a comparative advantage even though Stan has absolute advantage (in both goods). But since Stan can’t specialize in both goods, Oliver will specialize in the one in which Stan’s absolute advantage is smaller.
• Specializing according to comparative advantage allows trade to give them both more of at least 1 good compared to autarchy.

• Graphically shown by a Production Possibilities Frontier. For Stan and Oliver, like picture.
  • Assume each has 48 hours to produce goods.

• The set of all combinations of output for each person, given 48 hours.
Example (continued)

- Individuals can go beyond their PPFs by specializing and trading.
- Both willing to trade as long as the terms of trade offer an improvement compared to their own opportunity costs.
- Stan begins with 8 quilts and 0 bookcases. Oliver begins with 8 bookcases and 0 quilts.
  - See pictures, next slides.
Example (specialization)

Stan specializes in quilts due to a lower opportunity cost of quilts than Oliver.
Example (specialization)

Oliver specializes here: lower opportunity cost of bookcases than Stan.
Example (continued)

• As long as Stan must give up less than 1 quilt per 2 bookcases, he will trade voluntarily.

• And as long as Oliver gets more than 1 quilt per 4 bookcases, he will trade voluntarily, too.

• So if the terms of trading quilts for bookcases (“x”) is between

\[ \frac{1}{4} < x < \frac{1}{2}, \]

both parties gain from trade, specializing according to comparative advantage.
Example (concluded)

Consider an initial allocation in which Stan produces and consumes 6 quilts and 4 bookcases per week; Oliver produces 1 ½ quilt and 2 bookcases per week.* If instead Stan specializes by producing 8 quilts and the terms of trade are 1 quilt per 3 bookcases, he can trade 1 ½ per quilt per week in exchange for

\[
\frac{3}{2} \times 3 = 4 \frac{1}{2}
\]

bookcases per week.

*They never transact partially-finished quilts/bookcases. These are rates per unit of time.
Example (autarchy)

Production and consumption, pre-specialization, pre-trade.
Starting from specialization, they can trade at a rate of 1 bookcase per 3 quilts; dotted lines have slope of -1/3.
Example (higher consumption!)

• Now Stan has 6 ½ quilts and 4 ½ bookcases.
• Oliver has 1 ½ quilts and 3 ½ bookcases. These combinations were both previously unattainable without trading.
Conclusion

• Specialization according to comparative advantage generalizes to trade across international borders.

• As in the preceding example, higher consumption is associated with the more productive trading partner, i.e., wages are determined by productivity.

• This issue will be examined in greater detail later in the semester (Chapter 9).
Family Guy Comparative Advantage

**Brian:** Ah, excuse me, Mr. Mayor. We have an outsider who wishes to join our community.

**Peter:** Welcome to my fair city! If you want to become a citizen, you have to get a job.

**Man:** Well, before the disaster, I was a physician.

**Cleveland:** That's terrific. We need a doctor.

**Peter:** We sure do. Let's hope you get it. Now pick a job out of the hat. Ah, "Village idiot." That's a good one. On Tuesdays, you get to wave your penis at traffic. Congratulations.
Why I Do Not Own One of These