

Introduction and Gains from Trade

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Econ S-10A, Harvard University
Prof. Josh Abel

Textbook chapters 2 and 3

What is economics?

What is economics?

- Hard to pin down: covers so much!
 - International trade
 - Poverty
 - Inflation
 - Stock market
 - Discrimination
 - Marriage “market”
 - Education
 - Aging
 - ...there is very little that economists do not feel qualified to study
- A working definition
 - *The study of how individuals, organizations, and societies deal with scarcity.*

Scarcity

- A society has to allocate resources between consumption goods and defense spending
- A consumer has to allocate spending between food, medical care, entertainment, etc.
- A student needs to decide how much time to spend training in school
- A worker has 24 hours in the day to work, sleep, relax, and do chores
- A household has to allocate income between consumption and savings
- An investor has to allocate a portfolio between cash, stocks, bonds, etc.

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- *All of these involve TRADEOFFS*
 - Economics is about how these tradeoffs are navigated
 - If we all had infinite time and resources, economics would not exist

Decisions and Equilibrium

- People make decisions based on incentives and rules
 - Market provides incentives (i.e. prices)
 - Governments create rules
 - Rule-heavy (“command-and-control”) vs. incentive-heavy (“laissez faire”)
 - Most modern governments influence incentives with things like taxes

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- Equilibrium: people’s decisions are consistent with each other (i.e. things add up)
 - Not allowed: we all want to buy computers but no one wants to make them
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 - Government could conscript people into computer production and/or ration them
- Society “makes decisions” that:
 - Are shaped by people’s decisions
 - Shape people’s decisions
 - Circular logic (Apple affects the price, the price affects Apple)
 - Can be difficult to think through!

Models

- Economists are famous for using models to understand just about everything
 - Models are simplifications of reality
- The reality of the market for computers involves millions of different, complex people interacting in complex ways
 - A model ignores almost all of that complexity
 - Just focus on their willingness-to-pay for a computer and ability to produce computers – nothing else!
 - Assume they interact in a single, organized marketplace

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 - Assume they interact in a single, organized marketplace
- Models allow economists to make “sharper” predictions than most social scientists
 - “An improvement in smartphone technology will lower the price of computers.”
 - If we tried to embrace all the complexity, we would get bogged down in it
- Must always be skeptical of our models and evaluate their performance
 - No model gets everything right, but a good one offers an important insight that is true
 - “All models are wrong, but some are useful.”

Positive and Normative Questions

- Economics is powerful in part because of its ability to make sharp predictions
 - It makes testable predictions about Positive Questions (“how things work”)
 - If the government imposes a tax on a good, will the price change? (Yes. Increase.)
 - If the government imposes a tax on a good, will the quantity produced change? (Yes. Decrease.)
 - If the government increases a tax on a good, will its revenue increase? (Very likely, but not necessarily.)

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- Economics also addresses certain Normative Questions (“how things *should* work”)
 - Are markets efficient or wasteful?
 - When and how can government improve market outcomes?
 - What are effective ways to combat poverty?

A Little Economics Goes a Long Way

- Even just 1 semester of economics will:
 - Teach you a lot about how our world operates
 - Teach you a lot about efforts to improve society
 - Allow you to understand things you read in the newspaper
 - Make better contributions to debates about current affairs and policy

Gains from Trade

Fundamentals of economic analysis

- 2 fundamental components of nearly every economic analysis
 1. Possibilities Set
 - List of all options available to the “economic agent”
 - E.g. “Soup or salad?”
 2. Choice
 - Selection made by economic agent from the Possibilities Set
 - E.g. “Soup, because I’m cold.”

Today, we focus on the Possibilities Set: more fundamental, less complicated

Example Possibilities Sets

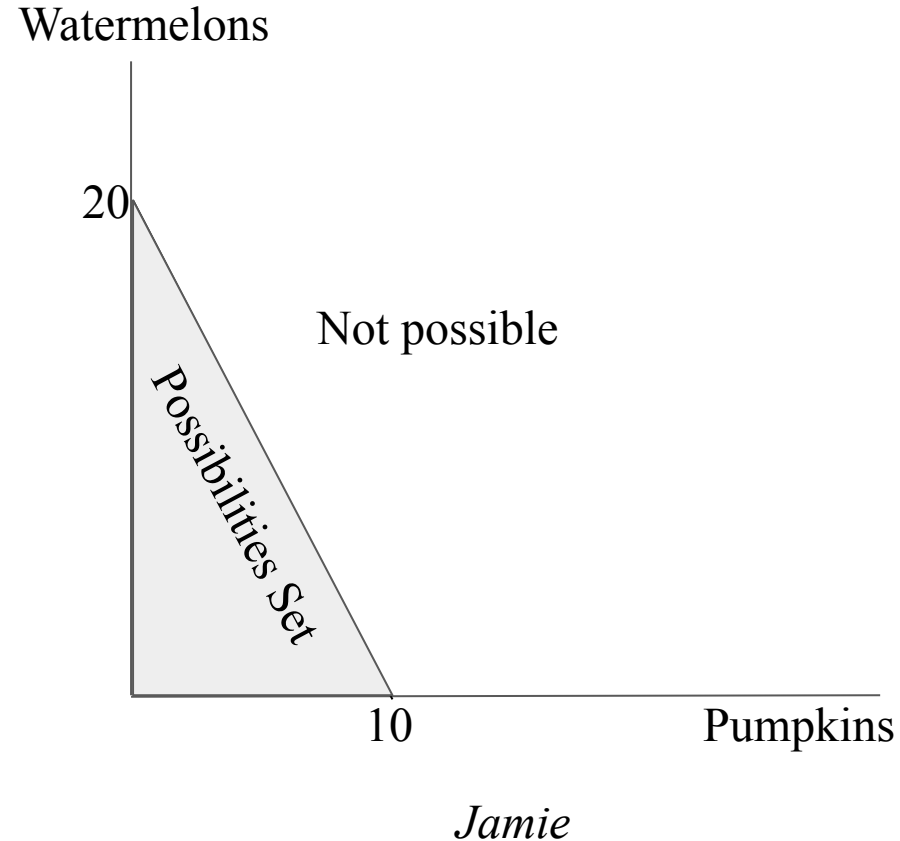
- On a Saturday, you have 24 hours to allocate between Sleep and Hobbies
 - 0 hours of Sleep, 24 hours of Hobbies
 - 1 hours of Sleep, 23 hours of Hobbies
 - ...
 - 24 hours of Sleep, 0 hours of Hobbies
- A household with income of \$75K can spend on Vacations and Jewelry
 - No Vacations, \$75K on Jewelry
 - \$1K on Vacations, \$74K on Jewelry
 - ...
 - \$75K on Vacations, no Jewelry
- A country can choose between Consumption and Military
 - Weak Military and lots of Consumption? The reverse? Something in between?

Possibilities Set

- The Possibilities Set embodies the idea of scarcity (“only 24 hours in a day”)
- Possibilities Sets have 2 basic determinants
 1. Endowed inputs (e.g. hours in a day, available income, raw materials)
 2. Technology, which converts inputs into outputs

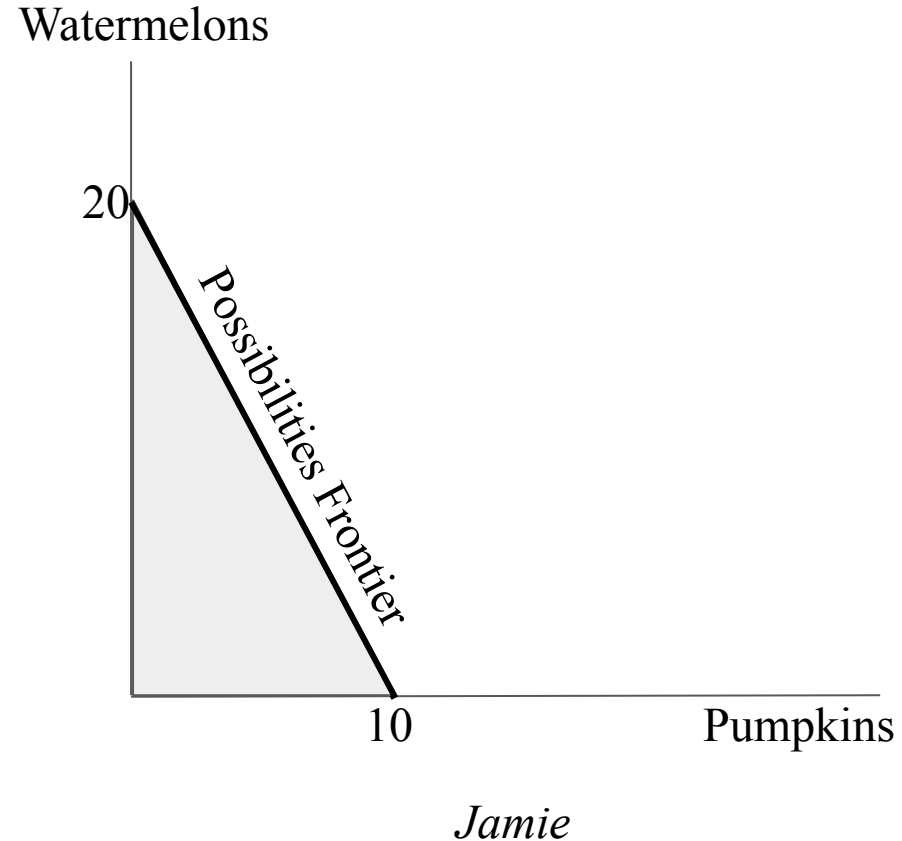
A Possibilities Set with 2 “Goods”

- Jamie has a garden with 20 square feet
 - Endowed inputs
- 1 square feet can produce 1 Watermelon;
2 square foot can produce 1 Pumpkin
 - Technology



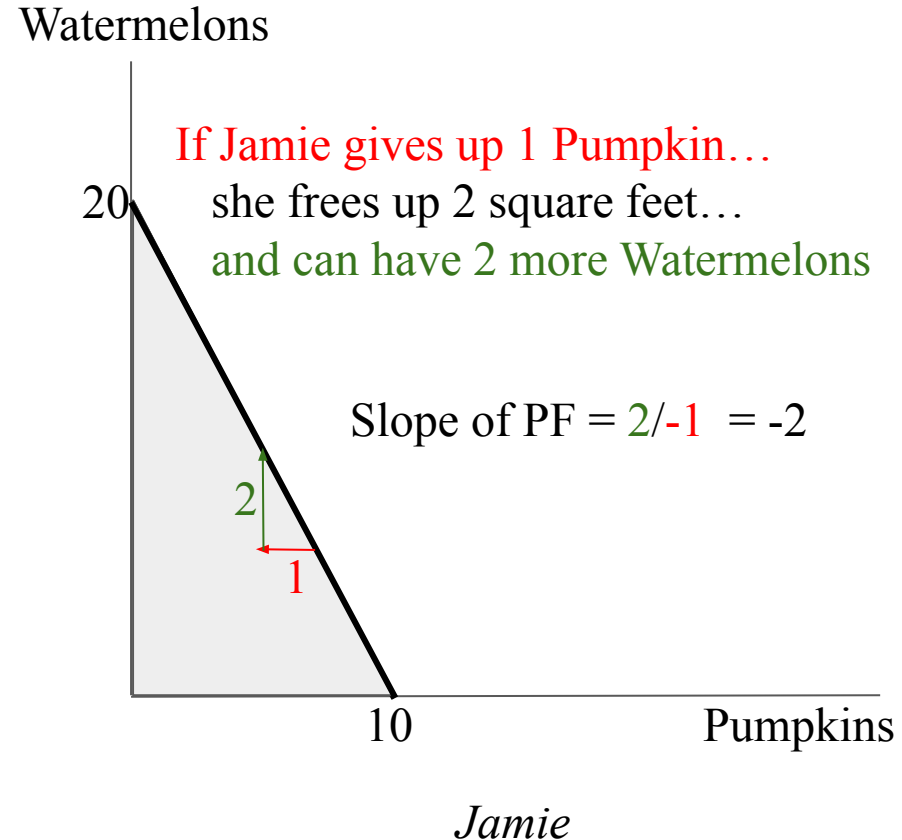
Possibilities Frontier

- Jamie has a garden with 20 square feet
- 1 square feet can produce 1 Watermelon;
- 2 square foot can produce 1 Pumpkin
- Possibilities Frontier: edge of PS
 - No waste
 - More of one requires less of the other



Slope of Possibilities Frontier

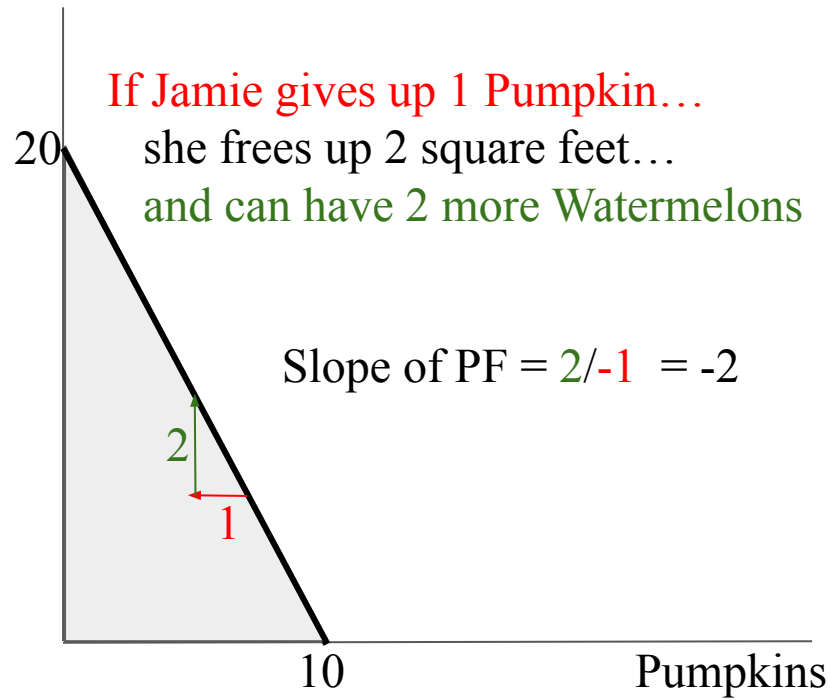
- Jamie has a garden with 20 square feet
- 1 square foot can produce 1 Watermelon;
2 square foot can produce 1 Pumpkin
- Possibilities Frontier: edge of PS
- Slope of PF: “how much of one good do I give up to get the other?”



Opportunity Cost

- Jamie has a garden with 20 square feet
- 1 square foot can produce 1 Watermelon;
2 square foot can produce 1 Pumpkin
- Possibilities Frontier: edge of PS
- Slope of PF: “how much of one good do I give up to get the other?”
- Slope of PF reveals Opportunity Cost
 - What you give up to get a good
 - Jamie gives up 2 W to get 1 P
 - Jamie gives up 0.5 P to get 1 W

Watermelons

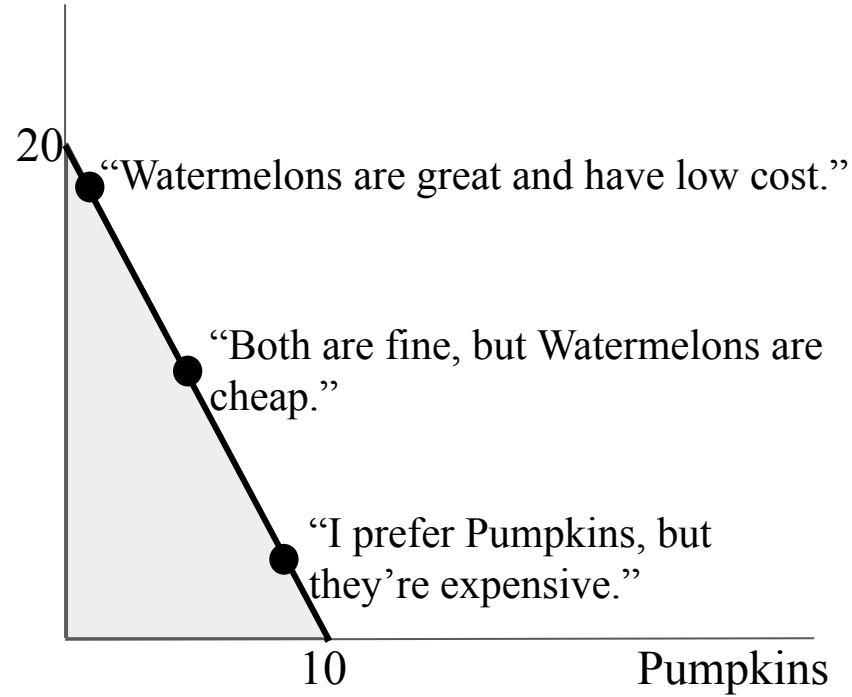


Jamie

Choice

- Jamie has a garden with 20 square feet
- 1 square foot can produce 1 Watermelon;
2 square foot can produce 1 Pumpkin
- Possibilities Frontier: edge of PS
- Slope of PF: “how much of one good do I give up to get the other?”
- Slope of PF reveals Opportunity Cost
 - Jamie gives up 2 W to get 1 P
 - Jamie gives up 0.5 P to get 1 W
- Choice should be somewhere on PF

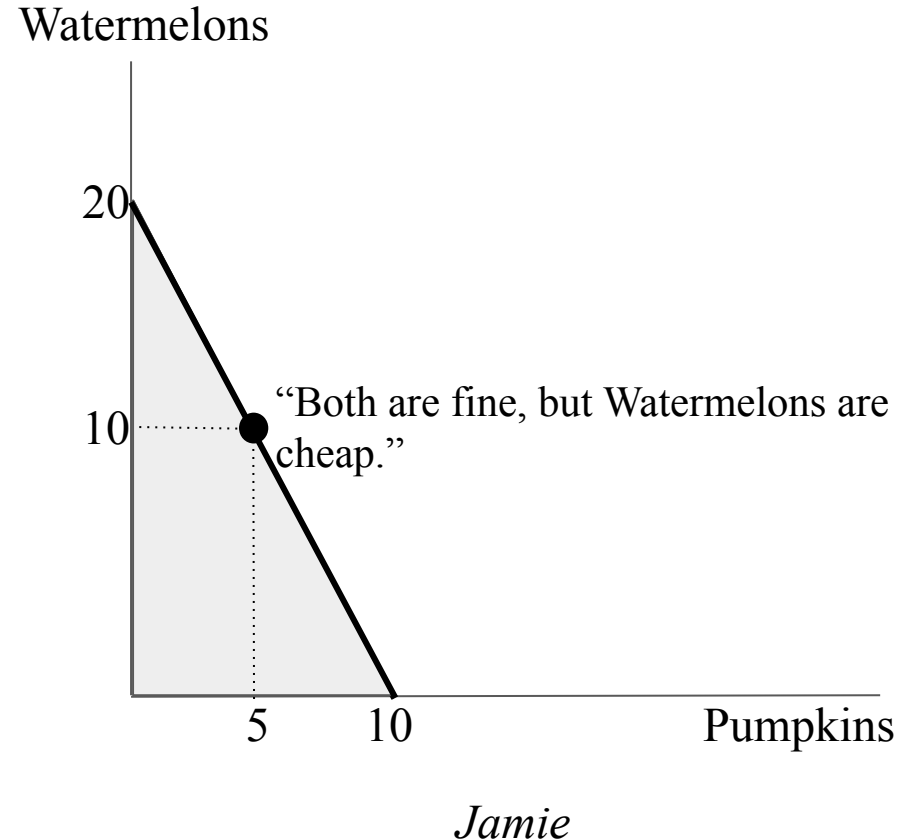
Watermelons



Jamie

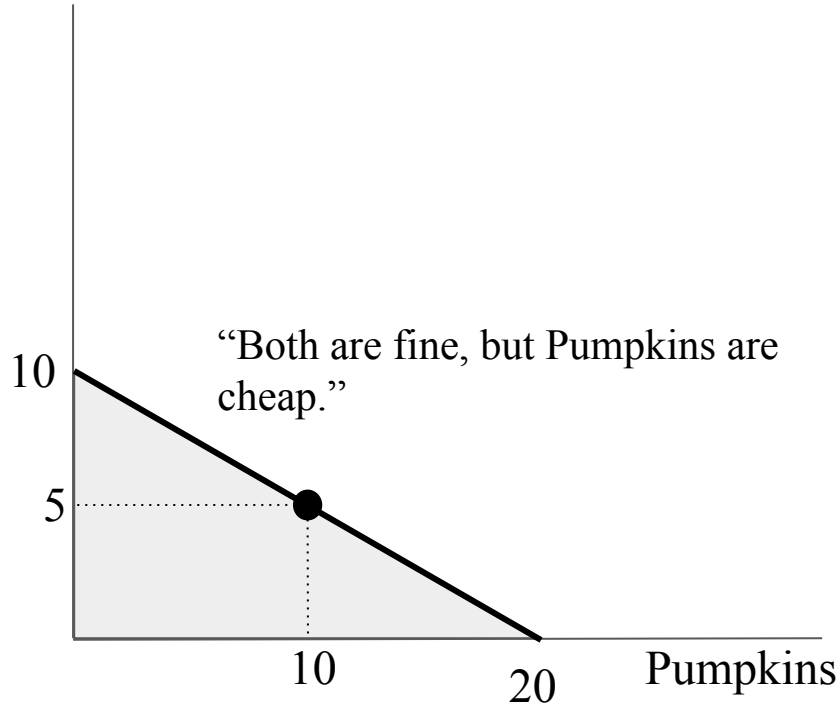
Jamie's Choice

- Jamie has a garden with 20 square feet
- 1 square foot can produce 1 Watermelon;
2 square foot can produce 1 Pumpkin
- Possibilities Frontier: edge of PS
- Slope of PF: “how much of one good do I give up to get the other?”
- Slope of PF reveals Opportunity Cost
 - Jamie gives up 2 W to get 1 P
 - Jamie gives up 0.5 P to get 1 W
- Choice should be somewhere on PF



Lee's Choice

Watermelons



Lee

- Lee has a garden with 20 square feet
- 2 square foot can produce 1 Watermelon;
1 square feet can produce 1 Pumpkin
- Opportunity Cost
 - Lee gives up 0.5 W to get 1 P
 - Lee gives up 2 P to get 1 W
- People with similar preferences can make very different choices if they have different PS/Opportunity Costs!

No Trade

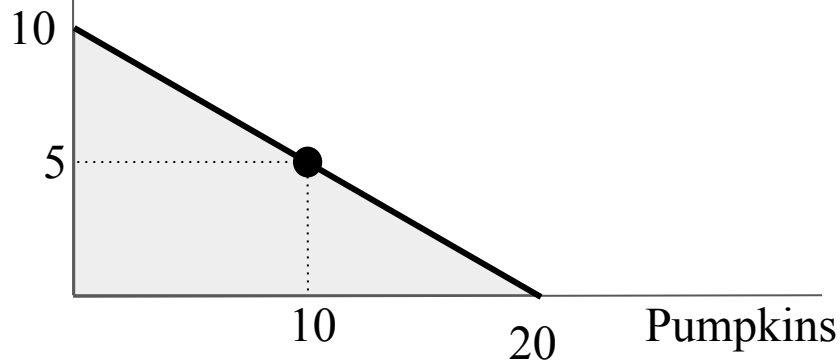
Watermelons

15 total Watermelons

• Lee: 5; Jamie: 10

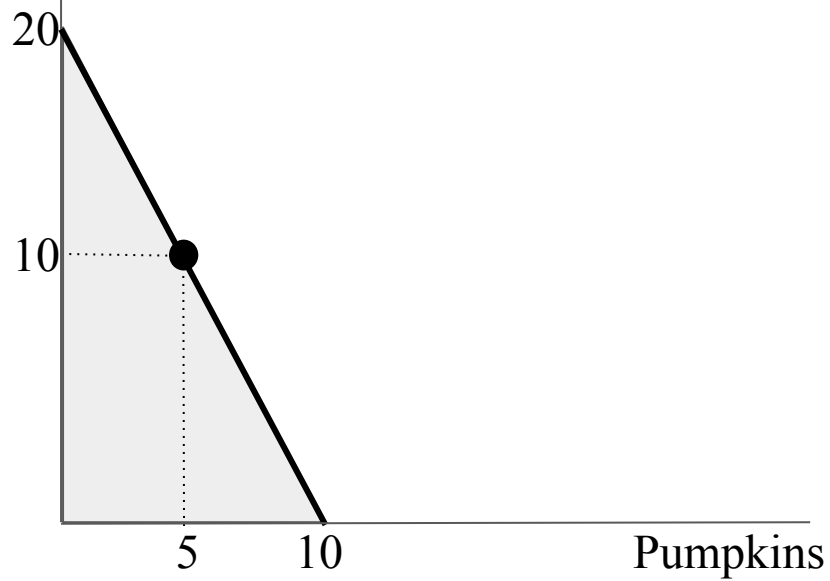
15 total Pumpkins

• Lee: 10; Jamie: 5



Lee

Watermelons



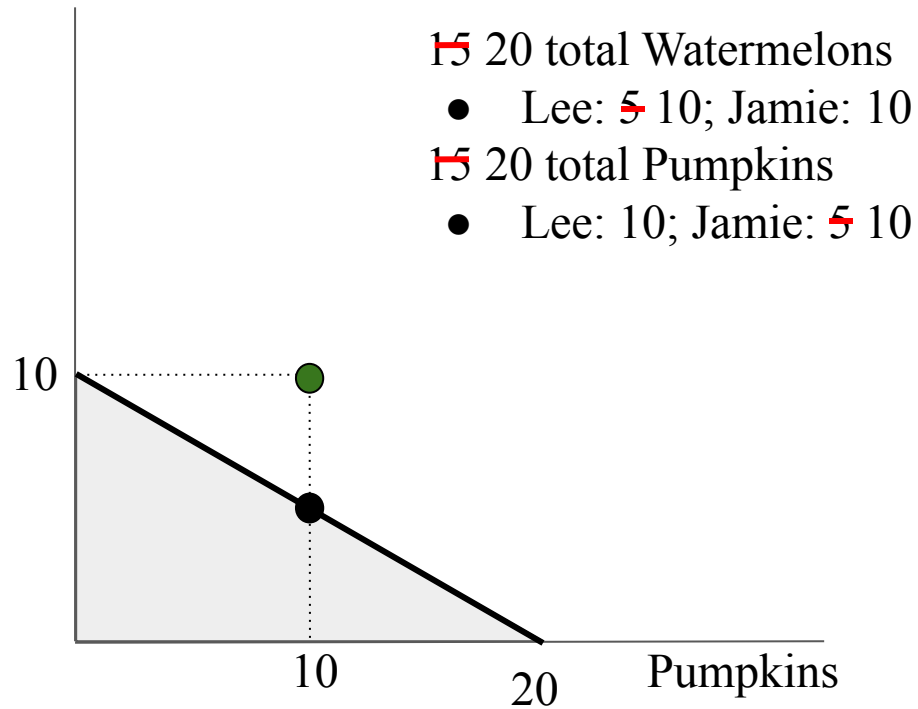
Jamie

A Proposed Trade

- Suppose Jamie and Lee made the following agreement
 - Jamie grows exclusively Watermelons
 - 20 square feet yields 20 Watermelons
 - Lee grows exclusively Pumpkins
 - 20 square feet yields 20 Pumpkins
 - The crop yield is then split evenly
 - 10 Watermelons each for Jamie and Lee
 - 10 Pumpkins each for Jamie and Lee

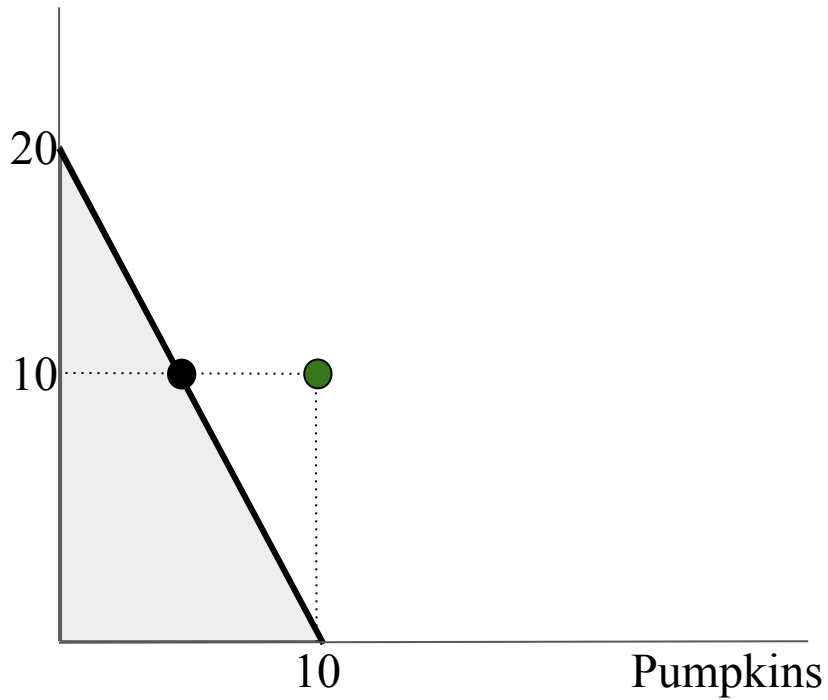
A Proposed Trade, Visualized

Watermelons



Lee

Watermelons



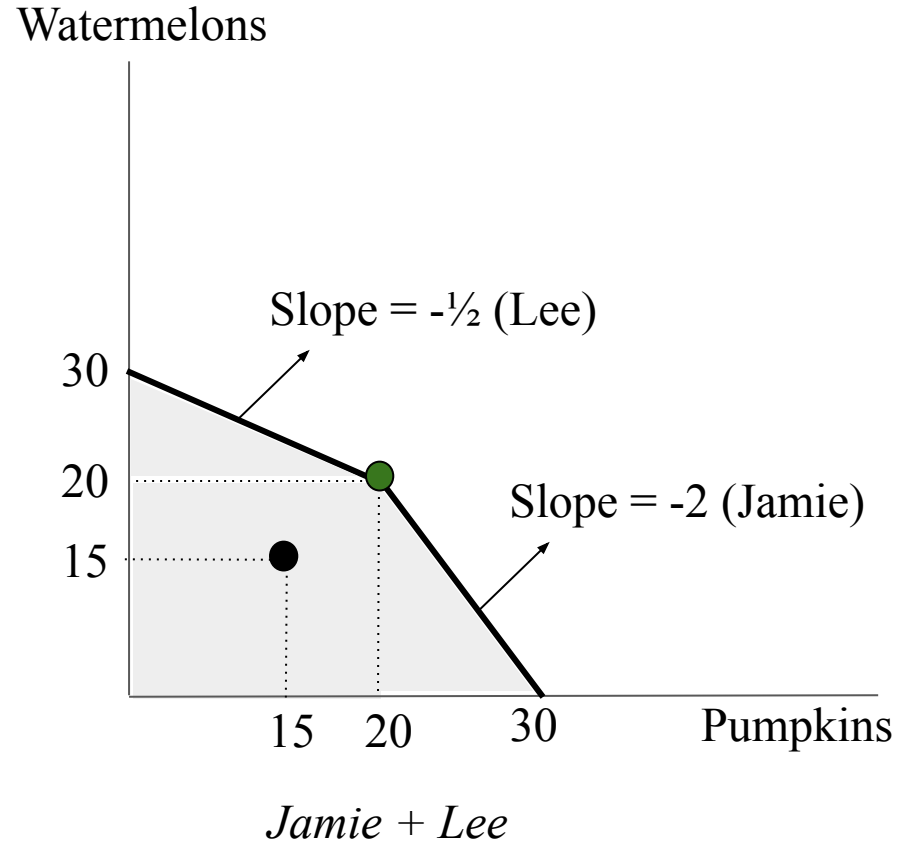
Jamie

Comparative Advantage and Gains From Trade

- Jamie has a Comparative Advantage in producing Watermelons
 - Lower Opportunity Cost (0.5 Pumpkins, as opposed to 2 Pumpkins for Lee)
- Lee has a Comparative Advantage in producing Pumpkins
 - Lower Opportunity Cost (0.5 Watermelons, as opposed to 2 Watermelons for Jamie)
- So, Jamie should focus on Watermelons and Lee on Pumpkins
 - Specialization increases the “size of the pie”
 - Trade can then divide the pie to make everyone better off

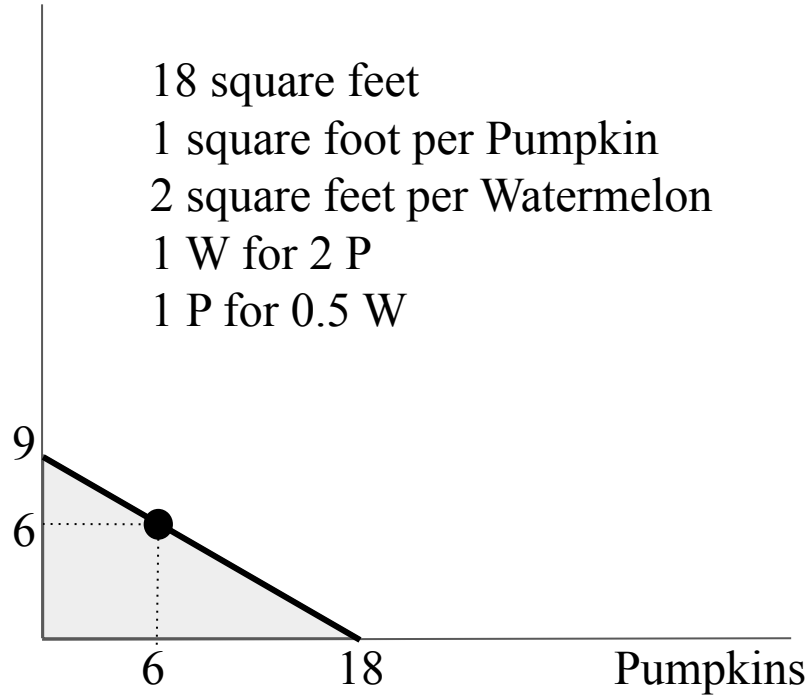
Society's Possibilities Set

- Not specializing is Inefficient (wasteful)
- When Jamie makes any Pumpkins and Lee makes Watermelons, they are not making the most of their abilities
- Specializing on your good with a Comparative Advantage maximizes output
- Trade then allocates that output beneficially
- Society **must** be better off with 20/20 rather than 15/15



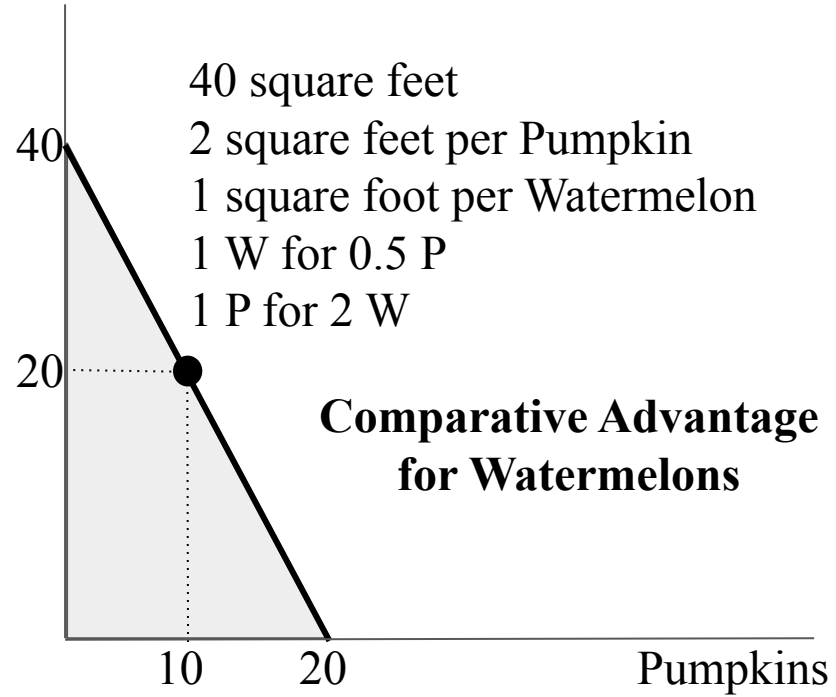
What if Jamie Can Do More of Both?

Watermelons



Lee

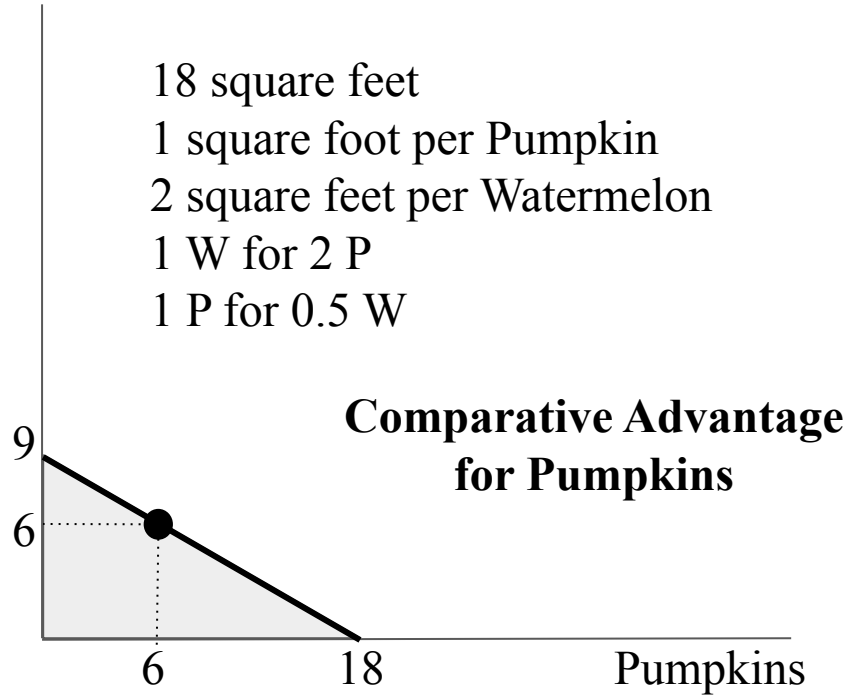
Watermelons



Jamie

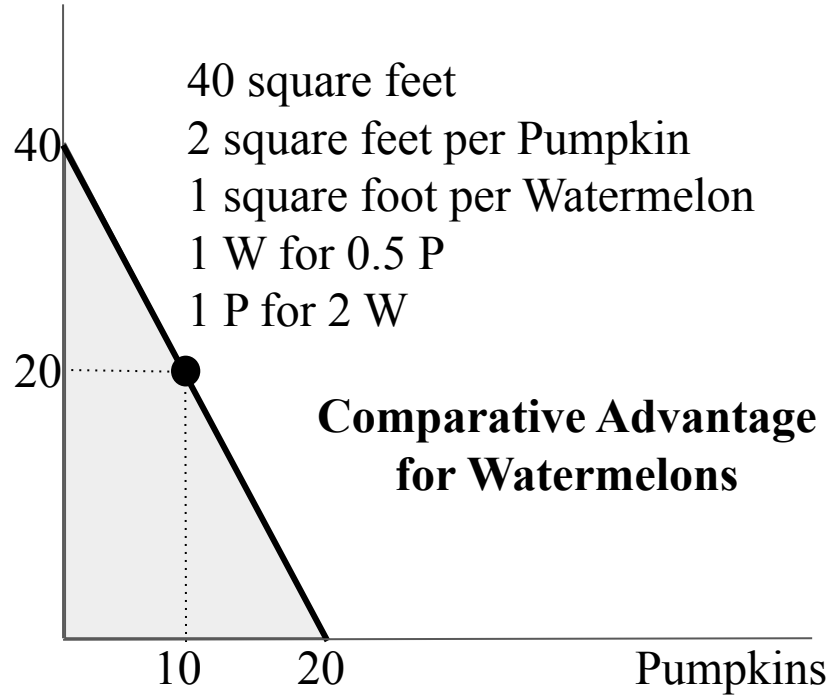
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Watermelons



Lee

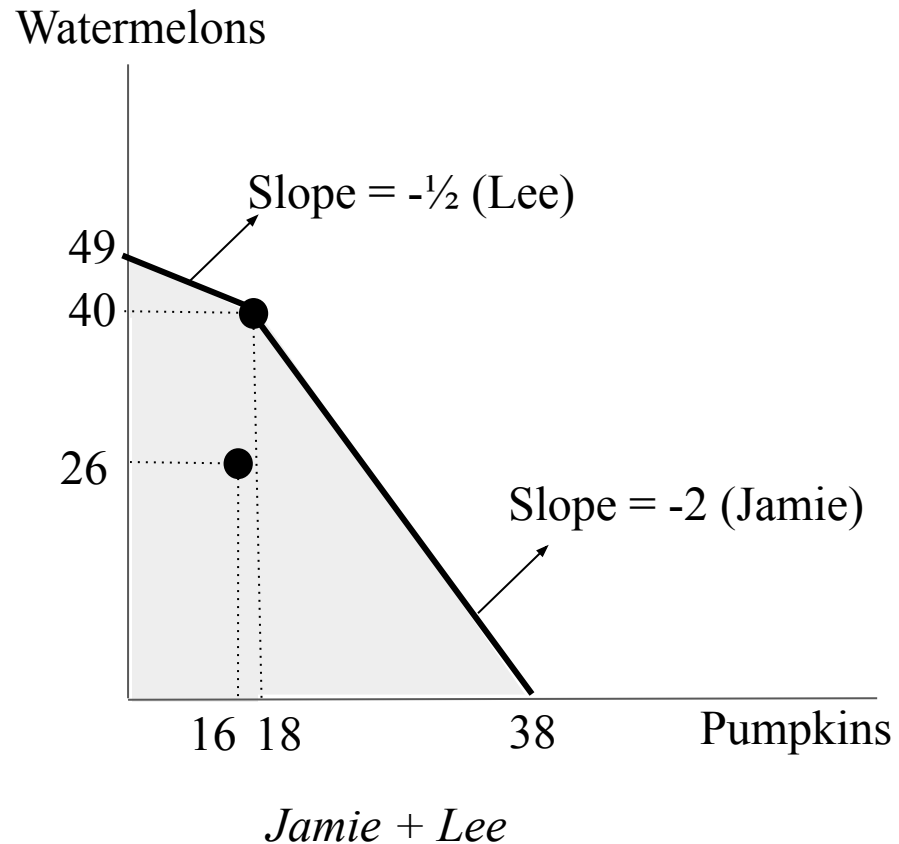
Watermelons



Jamie

Society's Possibilities Set (2)

- Lee should still specialize on Comparative Advantage (Pumpkins)
- This frees Jamie to focus more on Watermelons, her Comparative Advantage
- Just because Jamie has Absolute Advantage in both, does not mean she cannot benefit from trading with Lee!



Application 1

- Suppose you are a highly-paid computer programmer...
- ...and you're also really good at cleaning up your apartment.
- Should you spend time cleaning the apartment?

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- Suppose you are a highly-paid computer programmer...
- ...and you're also really good at cleaning up your apartment.
- Should you spend time cleaning the apartment?
- No
 - Someone on Angie's List without programming skills can clean just fine
 - Your Comparative Advantage is in programming
 - Their Comparative Advantage is in cleaning
 - Go to work, earn a bunch of money, and pay them part of it
 - You'll both be better off!

Application 2

- US has capabilities for top-notch R&D facilities and top-notch Manufacturing facilities
- Should US companies do R&D **and** Manufacturing domestically?

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- US has capabilities for top-notch R&D facilities and top-notch Manufacturing facilities
- Should US companies do R&D **and** Manufacturing domestically?
- Probably not
 - US has Comparative Advantage in R&D (highly-educated population)
 - So R&D is done in US, Manufacturing is “out-sourced” abroad
 - Apple develops iPad largely in US, manufactures largely elsewhere

Unfinished Business

- Today's analysis showed that economic agents can gain from trading with each other
 - Comparative Advantage and Specialization
- But there are many ways to benefit from trade; which will/should occur?
 - Next class: markets and prices
- World is richer overall due to international trade, but are there winners and losers?
 - Discussed in future weeks

