

# INTERNATIONAL TRADE THEORIES

LESSON V



**SILESIA  
UNIVERSITY**

SCHOOL OF BUSINESS  
ADMINISTRATION IN KARVINA

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EVS/XXX

# Outline of the lecture

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1. Historical Development of Trade Theories
  2. Comparative Advantages
  3. Modern Trade Theories
  4. Constant and Increasing Opportunity Costs
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# HISTORICAL DEVELOPMENT OF TRADE THEORIES



- **The Mercantilists, 1500–1800**
- A strong foreign-trade sector
- Favorable trade balance
- Net payments - gold and silver
- Increased spending
  - Rise in domestic output and employment
- Promote a favorable trade balance
- Government regulation of trade
  - Tariffs, quotas, other commercial policies
- Static view of the world economy

## Mercantilism

The Mercantilist Argument for Colonial Expansion



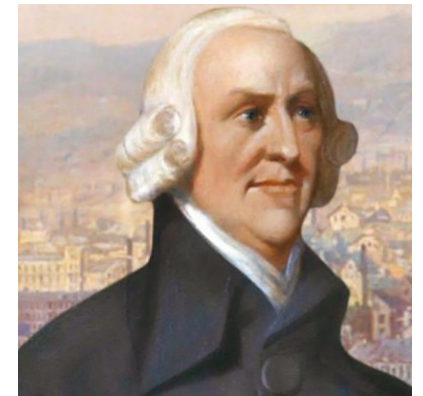
Source: Philip Dorf, *Our Early Heritage: Ancient and Medieval History*,  
Oxford Book Company (adapted)

# HISTORICAL DEVELOPMENT OF TRADE THEORIES



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- **The Mercantilists under attack**
- David Hume's price-specie-flow doctrine
  - A favorable trade balance is possible only in the short run
- 1776, Adam Smith - The Wealth of Nations
  - World's wealth is not a fixed quantity
- International trade
  - Increase the general level of productivity within a country
- Increase world output (wealth)

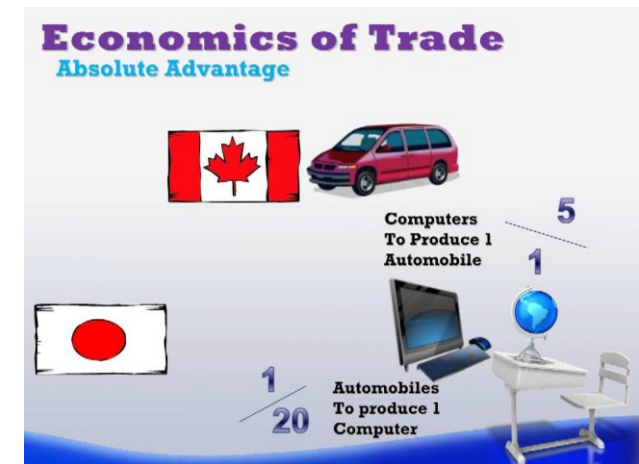


# HISTORICAL DEVELOPMENT OF TRADE THEORIES



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- **Why Nations Trade: Absolute Advantage**
- Adam Smith – free trade advocate
- Production costs differ among nations
- Different productivities of factor inputs
- Labor – homogenous
- Absolute cost advantage
- Uses less labor to produce one unit of output





- **Principle of absolute advantage**
  - A two-nation, two-product world
  - International specialization and trade
  - One nation - absolute cost advantage in one good
  - The other nation - absolute cost advantage in the other good
  - Each nation must have a good that it is absolutely more efficient in producing than its trading partner
  - Import goods – if absolute cost disadvantage
  - Export goods – if absolute cost advantage
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## World output possibilities in the absence of specialization

### OUTPUT PER LABOR HOUR

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#### Nation

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#### Wine

#### Cloth

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United States

5 bottles

20 yards

United Kingdom

15 bottles

10 yards

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- **Why Nations Trade: Comparative Advantage**
- 1800, David Ricardo (1772–1823)
- Free trade
- Mutually beneficial trade can occur whether or not countries have any absolute advantage
- Principle of comparative advantage
- Emphasized comparative (relative) cost differences







- Principle of comparative advantage
  - Even if a nation has an absolute cost disadvantage in the production of both goods
  - The less efficient nation
  - Specialize in and export the good in which it is relatively less inefficient
  - Where its absolute disadvantage is least
  - The more efficient nation
  - Specialize in and export that good in which it is relatively more efficient
  - Where its absolute advantage is greatest
-



- Principle of comparative advantage, simplified model - assumptions:
  - 1. The world consists of two nations
    - Each – use a single input, produce two commodities
  - 2. In each nation, labor is the only input
    - Fixed endowment of labor
    - Labor is fully employed and homogeneous
  - 3. Labor can move freely among industries
    - Within a nation
    - But is incapable of moving between nations
-



- **Principle of comparative advantage, simplified model - assumptions:**
  - 4. Technology - fixed for both nations
    - Different nations may use different technologies
    - All firms within each nation - a common production method for each commodity
  - 5. Costs do not vary with the level of production
    - Proportional to the amount of labor used
  - 6. Perfect competition prevails in all markets
    - All are price takers
    - Identical products
    - Free entry to and exit from an industry
    - Price of each product = product's marginal cost of production
  - 7. Free trade occurs between nations
    - No government barriers to trade
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- **Principle of comparative advantage, simplified model - assumptions:**
- 8. Transportation costs are zero
  - Consumers - indifferent between domestically produced and imported versions of a product if the domestic prices of the two products are identical
- 9. Firms make production decisions in an attempt to maximize profits
  - Consumers maximize satisfaction through their consumption decisions
- 10. There is no money illusion
  - When consumers make their consumption choices and firms make their production decisions, they take into account the behavior of all prices
- 11. Trade is balanced
  - Exports must pay for imports
  - Ruling out flows of money between nations



## World output possibilities in the absence of specialization

### OUTPUT PER LABOR HOUR

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<b>Nation</b>	<b>Wine</b>	<b>Cloth</b>
United States	40 bottles	40 yards
United Kingdom	20 bottles	10 yards

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## Examples of comparative advantages in international trade

<b>Country</b>	<b>Product</b>
Canada	Lumber
Israel	Citrus fruit
Italy	Wine
Jamaica	Aluminum ore
Mexico	Tomatoes
Saudi Arabia	Oil
China	Textiles
Japan	Automobiles
South Korea	Steel, ships
Switzerland	Watches
United Kingdom	Financial services

- **Modern trade theory**
- More generalized theory of comparative advantage
- Use a production possibilities schedule
- Transformation schedule



- **Production possibilities schedule**
- Various alternative combinations of two goods
- A nation can produce
  - When all of its factor inputs
- Land, labor, capital, entrepreneurship
  - Are used in their most efficient manner
- Maximum output possibilities of a nation



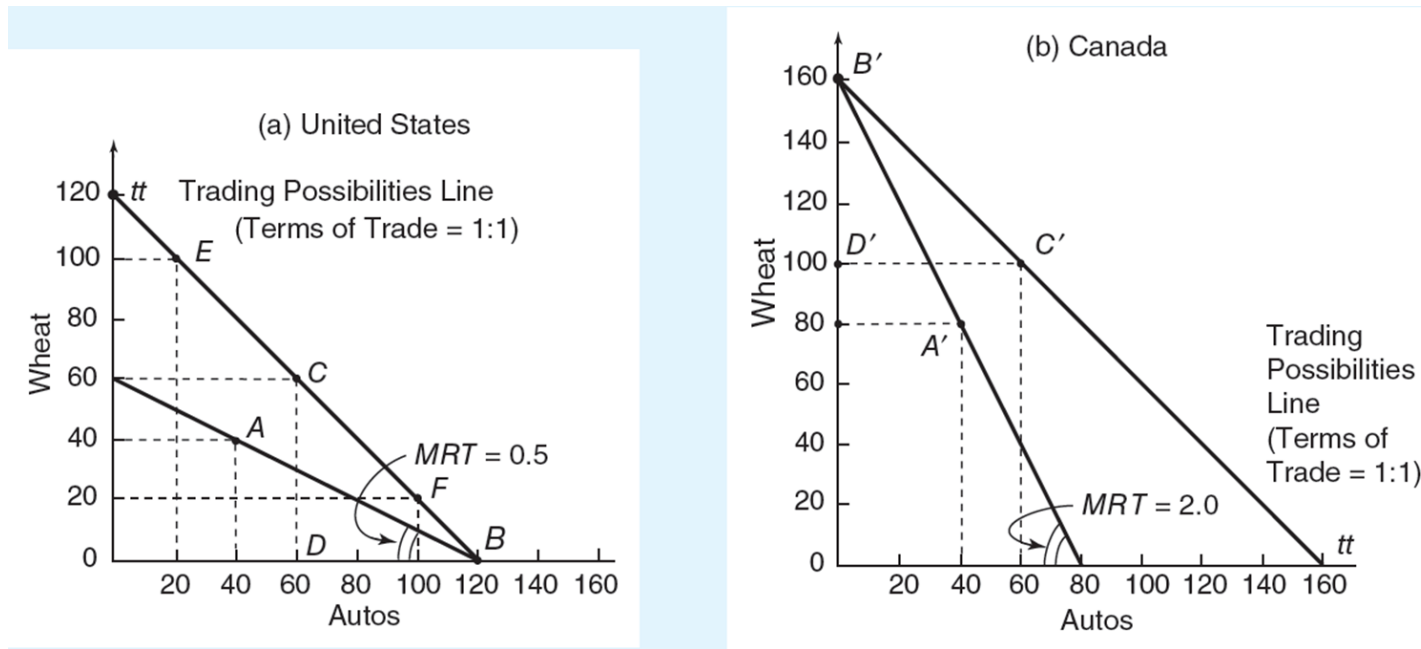


# MODERN TRADE THEORIES



## Figure 1: Trading under constant opportunity costs

With constant opportunity costs, a nation will specialize in the product of its comparative advantage. The principle of comparative advantage implies that with specialization and free trade, a nation enjoys production gains and consumption gains. A nation's trade triangle denotes its exports, imports, and terms of trade. In a two nation, two product world, the trade triangle of one nation equals that of the other nation; one nation's exports equal the other nation's imports, and there is one equilibrium terms of trade.



- **Marginal rate of transformation, MRT**
- The amount of one product a nation must sacrifice to get one additional unit of the other product
- Rate of sacrifice = opportunity cost of a product
- Absolute value of the slope of production possibilities schedule
- For Figure 1:

$$MRT = \frac{\Delta Y}{\Delta X}$$



- **Constant opportunity costs**
  - Straight line production possibilities schedules
  - Factors of production
    - Perfect substitutes for each other
    - All units of a given factor are of the same quality
  - Autarky
    - Absence of trade
  - Basis for Trade
    - Principle of comparative advantage
  - Direction of Trade
    - Specialize and export the good with the lowest opportunity cost
    - Production Gains from Specialization
    - Production gains for both countries
    - Arise from the reallocation of existing resources
    - Static gains from specialization
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- **Consumption Gains from Trade**
  - Trade = consumption gains for both countries
  - Consumption points
  - Outside domestic production possibilities schedules
  - Consume more of both goods
  - **Terms of trade**
  - Rate at which a country's export product is traded for the other country's export product
  - Define the relative prices of the two products
-

## Gains from specialization and trade by constant opportunity costs

### (a) Production Gains from Specialization

	BEFORE SPECIALIZATION		AFTER SPECIALIZATION		NET GAIN (LOSS)	
	Autos	Wheat	Autos	Wheat	Autos	Wheat
United States	40	40	120	0	80	-40
Canada	40	80	0	160	-40	80
World	80	120	120	160	40	40

### (b) Consumption Gains from Trade

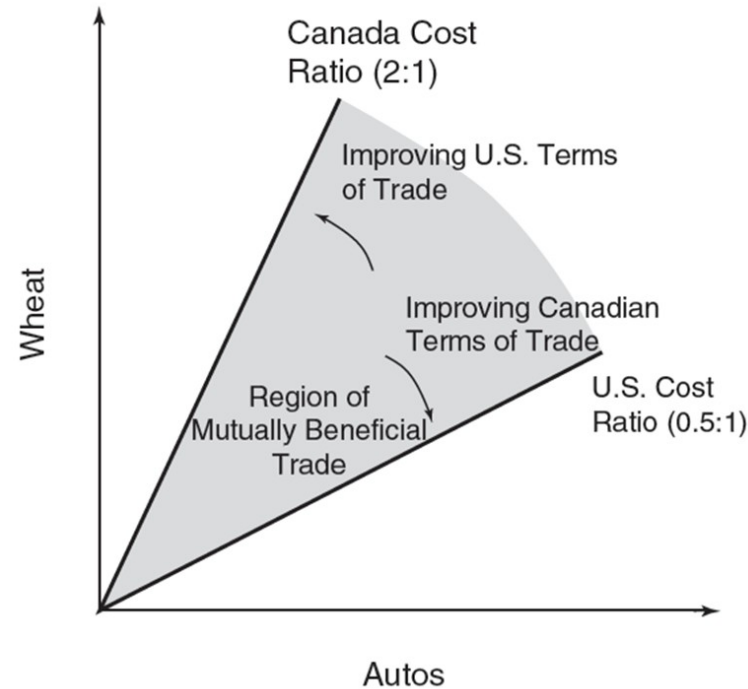
	BEFORE TRADE		AFTER TRADE		NET GAIN (LOSS)	
	Autos	Wheat	Autos	Wheat	Autos	Wheat
United States	40	40	60	60	20	20
Canada	40	80	60	100	20	20
World	80	120	120	160	40	40



- **Domestic cost ratio**
  - Negatively sloped production possibilities schedule
  - Transform into a positively sloped cost-ratio line
  - Outer limits for the equilibrium terms of trade
  - Becomes no-trade boundary
  - Region of mutually beneficial trade
  - Bounded by the cost ratios of the two countries
-

## Figure 2: Equilibrium terms-of-trade limits

The supply-side analysis of Ricardo describes the outer limits within which the equilibrium terms of trade must fall. The domestic cost ratios set the outer limits for the equilibrium terms of trade. Mutually beneficial trade for both nations occurs if the equilibrium terms of trade lies between the two nations' domestic cost ratios. According to the theory of reciprocal demand, the actual exchange ratio at which trade occurs depends on the trading partners' interacting demands.



- **Equilibrium Terms of Trade, John Stuart Mill (1806–1873)**
- Add the intensity of the trading partners' demands
- Determine the actual terms of trade
- The theory of reciprocal demand







- **Theory of reciprocal demand**
  - Within the outer limits of the terms of trade
  - Actual terms of trade are determined by the relative strength of each country's demand for the other country's product
  - Production costs determine the outer limits of the terms of trade
  - Reciprocal demand determines what the actual terms of trade will be within those limits
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- Theory of reciprocal demand
  - Best applies when both nations are of equal economic size
  - The demand of each nation - noticeable effect on market price
  - If two nations are of unequal economic size
  - The relative demand strength of the smaller nation will be dwarfed by that of the larger nation
  - Domestic exchange ratio of the larger nation will prevail
  - The small nation can export as much of the commodity as it desires
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- **The importance of being unimportant**
- For two nations engaged in international trade
- Same size, similar taste patterns
- Gains from trade – shared equally between them
  - One nation is significantly larger than the other
  - Larger nation - fewer gains from trade
  - Smaller nation - most of the gains from trade

## Trade Makes Both Countries Better Off

U.S.			
	consumption without trade	consumption with trade	gains from trade
computers	250	270	<b>20</b>
wheat	2,500	2,700	<b>200</b>
Japan			
	consumption without trade	consumption with trade	gains from trade
computers	120	130	<b>10</b>
wheat	600	700	<b>100</b>



- **Improvement in a nation's terms of trade**
  - Rise in its export prices
  - Relative to its import prices
  - A smaller quantity of export goods sold abroad
  - Required to obtain a given quantity of imports
  - Deterioration in a nation's terms of trade
    - Rise in its import prices
    - Relative to its export prices
    - Purchase of a given quantity of imports
    - Sacrifice of a greater quantity of export
-

## Comodity terms of trade in 2008 (2000=100)

<b>Country</b>	<b>Export Price Index</b>	<b>Import Price Index</b>	<b>Terms of Trade</b>
Australia	273	149	183
Canada	185	146	127
United States	167	147	114
Denmark	189	182	104
Switzerland	194	194	100
Germany	174	192	91
China	102	159	64
Japan	103	182	57



- **Patterns of comparative advantage change over time**
  - Productivity increases
  - Production possibilities schedule changes
  - More output can be produced - with the same amount of resources
  - Producers - need to hone their skills to compete in more profitable areas
  - Increasing opportunity costs
    - Concave production possibilities schedule
    - Bowed outward from the diagram's origin
    - Inputs are imperfect substitutes for each other
  - MRT rises
    - Absolute slope of the production possibilities schedule
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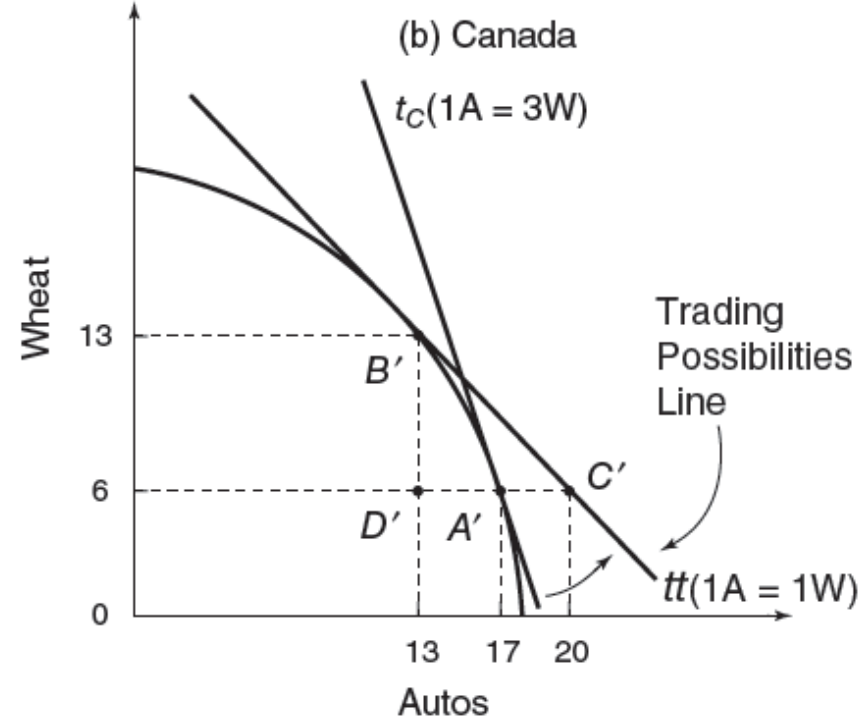
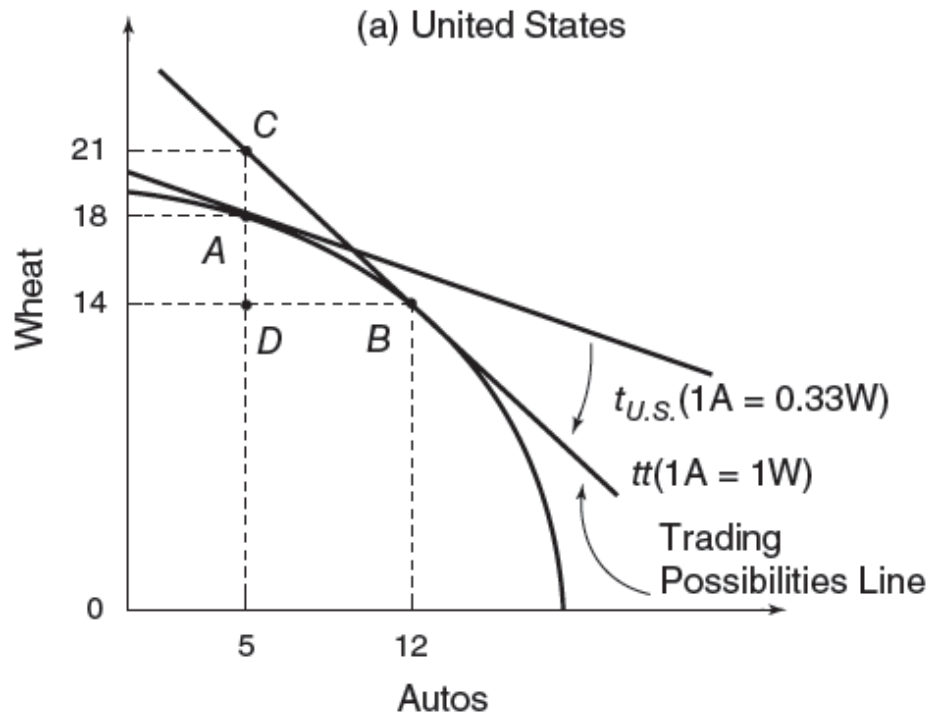
- **Increasing-Cost Trading Case**
  - One country specializes in producing one good
  - The other country specializes in producing the other good
  - Specialization continues in both nations until
    - Relative cost of one good is identical in both nations
    - One country's exports of one good are precisely equal to the other country's imports of the good
    - Same domestic rates of transformation
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# MODERN TRADE THEORIES



## Figure 3: Trading under increasing opportunity costs

With increasing opportunity costs, comparative product prices in each country are determined by both supply and demand factors. A country tends to partially specialize in the product of its comparative advantage under increasing cost conditions.

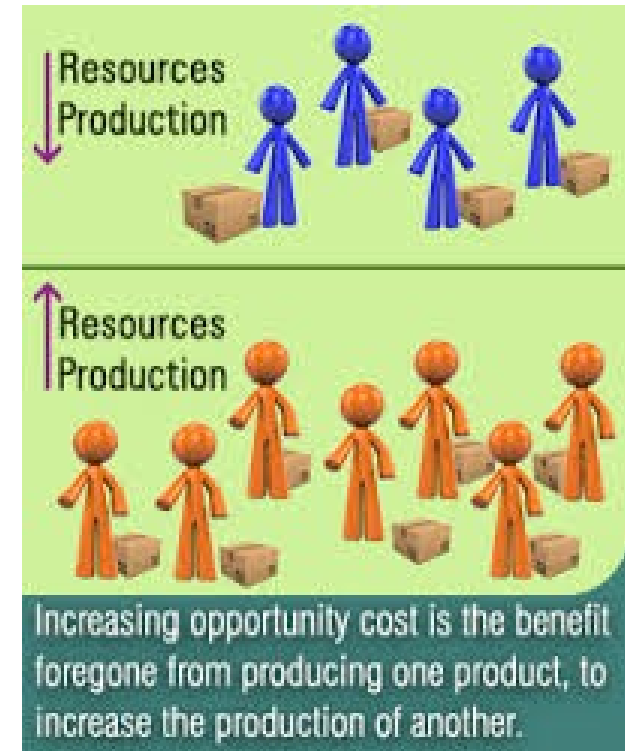




# MODERN TRADE THEORIES



- **Production gains**
- More of each good is being produced
- **Consumption gains**
- Both countries consume more of at least one good
- **The trade triangle**
- Exports, imports, and terms of trade
- Same for both countries



## Gains from specialization and trade – increasing opportunity costs

### (a) Production Gains from Specialization

	BEFORE SPECIALIZATION		AFTER SPECIALIZATION		NET GAIN (LOSS)	
	Autos	Wheat	Autos	Wheat	Autos	Wheat
United States	5	18	12	14	7	-4
Canada	17	6	13	13	-4	7
World	22	24	25	27	3	3

### (b) Consumption Gains from Trade

	BEFORE TRADE		AFTER TRADE		NET GAIN (LOSS)	
	Autos	Wheat	Autos	Wheat	Autos	Wheat
United States	5	18	5	21	0	3
Canada	17	6	20	6	3	0
World	22	24	25	27	3	3



Thank you for your Attention!

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