

Chapter 2

World Trade: An Overview

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Preview

- Largest trading partners of US and Texas
- Gravity model of how economy's size and distance influence trade
- Borders and trade agreements
- Globalization then and now – world shrinking?
- Changing composition of trade
- Multinational corporations and outsourcing

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Who Trades with Whom?

- Five largest trading partners with the US are Canada, China, Mexico, Japan and Germany (Mexico was ahead of China earlier).
- Total value of imports from and exports to Canada (trade volume) in 2005 was almost \$500 billion dollars (over 550B in 2008).
- Ten largest trading partners with the US accounted for 50% of the value of US trade in 2005.

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Who Trades with Whom? US 2006

Country	Total trade (\$ billion)
Canada	500
Mexico	335
China	338
Japan	216
Germany	139
United Kingdom	96
South Korea	61
Taiwan	67
France	85
Malaysia	50

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Who Trades with Whom? US 2008

Partner Country	Imports	Exports	Trade Balance	Trade Volume
Canada	335B	222B	-112B	557B
China	338B	67B	-270B	405B
Mexico	216B	132B	-85B	348B
Japan	139B	61B	-78B	200B
Germany	96B	50B	-46B	146B

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Who Trades with Whom? TX Imports 2004

- Total Texas imports \$202B
- \$109B (68%) from Mexico
- Venezuela, Saudi Arabia and China next with \$8-9B (5-6%) each
- Canada not in top 10 countries of origin for Texas imports

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Who Trades with Whom? TX Exports 2008

- Total Texas exports \$192B (15% of all US exports), highest of all states (California 145B, New York 80B).
- If Texas were a nation, it would rank among top 20 exporting countries (FRBD 2007).
- Compared to US, Texas exports a larger share of its output, depends on exports for more of its jobs, sends more sophisticated products overseas and employs higher-skilled workers in export-related jobs (FRBD 2007).

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Who Trades with Whom? TX Exports 2008

- Top three destinations: Mexico 62B (32%), Canada 19B (10%), China 8B (4%)
 - ♦ Texas lags California and US in diversification across countries (FRBD 2007).
- Top five industries: Chemicals 38B, Computers and electronic parts 35B, Machinery except electrical 27B, Petroleum and coal 25B, Transportation equipment 17B

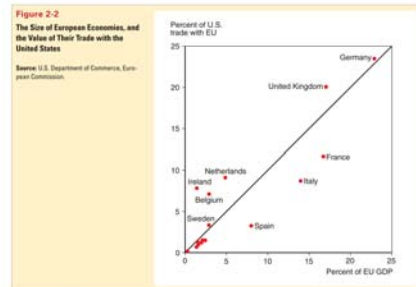
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The Gravity Model: Size Matters

- Most US trade is with countries with large **gross domestic product (GDP)**.
 - ♦ Larger economies produce more goods and services, so they have more to export.
 - ♦ Larger economies are able to buy more imports.
- More US trade with larger European Union (EU) countries than with smaller ones.

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The Gravity Model: Size Matters



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The Gravity Model

Other things besides size matter for trade:

1. **Distance** between markets influences transportation costs and therefore the cost of imports and exports.
 - ♦ Distance may also influence personal contact and communication, which may influence trade.
2. **Cultural affinity**: if two countries have cultural ties, it is likely that they also have strong economic ties.
3. **Geography**: ocean harbors and a lack of mountain barriers make transportation and trade easier.

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The Gravity Model

4. **Multinational corporations**: corporations spread across different nations import and export many goods between their divisions.
5. **Borders**: crossing borders involves formalities that take time and perhaps monetary costs like tariffs.
 - ♦ These implicit and explicit costs reduce trade.
 - ♦ The existence of borders may also indicate the existence of different languages (see 2) or different currencies, either of which may impede trade more.

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The Gravity Model: Specification

- In its basic form, the gravity model assumes that only size and distance are important for trade in the following way:

$$T_{ij} = A \times Y_i \times Y_j / D_{ij}$$

- where

T_{ij} is the value of trade between country i and country j
 A is a constant
 Y_i the GDP of country i
 Y_j is the GDP of country j
 D_{ij} is the distance between country i and country j

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The Gravity Model

- The gravity model works fairly well in predicting actual trade flows, as the figure above representing US–EU trade flows suggested.
- Estimates of the effect of distance from the gravity model predict that a 1% increase in the distance between countries is associated with a decrease in the volume of trade of 0.7% to 1%.

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The Gravity Model: Borders and Trade Agreements

- Besides distance, borders increase the cost and time needed to trade.
- Trade agreements* between countries are intended to reduce the formalities and tariffs needed to cross borders, and therefore to increase trade.
- The gravity model can assess the effect of trade agreements on trade.
 - Does a trade agreement lead to significantly more trade among its partners than one would otherwise predict given their GDPs and distances from one another?

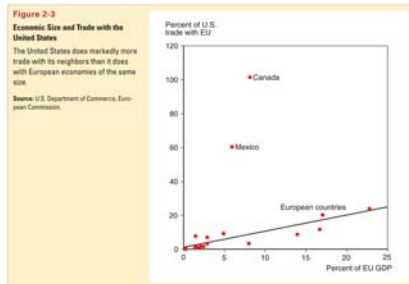
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Borders and Trade Agreements

- The US has signed a free trade agreement with Mexico and Canada in 1994, the North American Free Trade Agreement (NAFTA).
- Because of NAFTA and because Mexico and Canada are close to the US, the amount of trade between the US and its northern and southern neighbors as a fraction of GDP is larger than between the US and European countries.

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Borders and Trade Agreements



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Borders and Trade Agreements

- Yet even with a free trade agreement between the US and Canada, the border between these countries still seems to be associated with a substantial reduction in trade.
- British Columbia trades far more as a share of GDP with a Canadian province (such as Ontario) than with a US state (such as Ohio) that is similar distance away.

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Borders and Trade Agreements

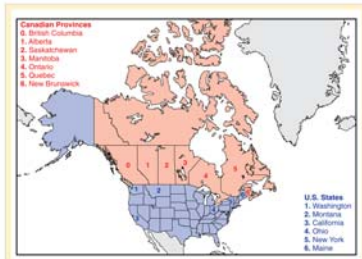


Figure 2-4
Canadian Provinces and U.S. States That Trade with British Columbia

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Borders and Trade Agreements

TABLE 2-3 Trade with British Columbia, as Percent of GDP, 1996

Canadian Province	Trade as Percent of GDP	Trade as Percent of GDP	U.S. State at Similar Distance from British Columbia
Alberta	6.9	2.6	Washington
Saskatchewan	2.4	1.0	Montana
Manitoba	2.0	0.3	California
Ontario	1.9	0.2	Ohio
Quebec	1.4	0.1	New York
New Brunswick	2.3	0.2	Maine

Source: Howard J. Wall, "Gravity Model Specification and the Effects of the U.S.-Canadian Border," Federal Reserve Bank of St. Louis Working Paper 2000-024A, 2000.

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Has the World Become "Smaller"?

- The negative effect of distance on trade according to the gravity models is significant, but it has grown smaller over time due to modern transportation and communication.
 - ♦ Wheels, sails, compasses, railroads, telegraph, steam power, automobiles, telephones, airplanes, computers, fax machines, internet, and fiber optics, are all technologies that have increased trade.
- But history has shown that political factors, such as wars, can change trade patterns much more than innovations in transportation and communication.

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Has the World Become "Smaller"?

- Globalization is not new.
- Two main periods of globalization:
 - ♦ 1840–1914: economies relied on steam power, railroads, telegraph, telephones.
 - Globalization was interrupted and reversed by wars and depression.
 - ♦ 1945–present: economies rely on telephones, airplanes, computers, internet, fiber optics,...

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Has the World Become "Smaller"?

- Only in the last few decades has international trade become more important to the British economy than it was in 1910.
- Even today, international trade is less important for the US than it was to the UK before 1910.

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Has the World Become "Smaller"?

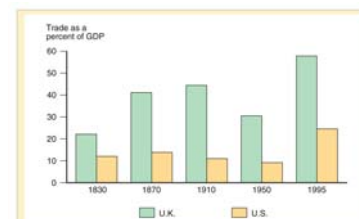


Figure 2-5

The Rise, Fall, and Rise of International Trade Since 1830

Source: Richard E. Baldwin and Philippe Martin, "Two Waves of Globalization: Superficial Similarities, Fundamental Differences," in Horst Siebert, ed., *Globalization and Labor* (Tübingen: Mohr, 1998).

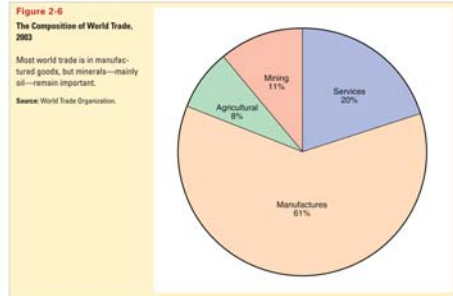
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Changing Composition of Trade

- What kinds of products do nations currently trade, and how does this composition compare to trade in the past?
- Today, most of the volume of trade is in *manufactured products* such as automobiles, computers, clothing and machinery.
 - ◆ *Services* such as shipping, insurance, legal fees and spending by tourists account for 20% of the volume of trade.
 - ◆ *Mineral products* (e.g., petroleum, coal, copper) and *agricultural products* are a relatively small part of trade.

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Changing Composition of Trade



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Changing Composition of Trade

- In the past, a large fraction of the volume of trade came from agricultural and mineral products.
 - ◆ In 1910, Britain mainly imported agricultural and mineral products, although manufactured products still represented most of the volume of exports.
 - ◆ In 1910, the US mainly imported and exported agricultural products and mineral products.
 - ◆ In 2002, manufactured products made up most of the volume of imports and exports for both countries.

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Changing Composition of Trade

TABLE 2-4 Manufactured Goods as Percent of Merchandise Trade

	United Kingdom		United States	
	Exports	Imports	Exports	Imports
1910	75.4	24.5	47.5	40.7
2002	82.6	80.4	82.1	77.8

Source: 1910 data from Simon Kuznets, *Modern Economic Growth: Rate, Structure, and Speed*. New Haven: Yale Univ. Press, 1966. 2002 data from World Trade Organization.

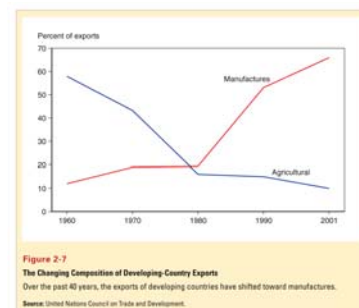
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Changing Composition of Trade

- Developing countries, or low and middle-income countries, have also changed the composition of their trade.
 - ◆ In 2001, about 65% of exports from developing countries were manufactured products, and only 10% of exports were agricultural products.
 - ◆ In 1960, about 58% of exports from developing countries were agricultural products and only 12% of exports were manufactured products.

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Changing Composition of Trade



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Multinational Corporations and Outsourcing

- Before 1945, **multinational corporations** (firms with activities in multiple countries) played a small role world trade.
- Today about one third of all US exports and 42% of all US imports are sales from one division of a multinational corporation to another.

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Multinational Corporations and Outsourcing

- **Outsourcing** occurs when a firm moves business operations out of the domestic country.
- Outsourcing increases amount of trade.
- Potential outsourcing in services (19%) larger than for manufactures (12%).

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Summary

1. The 5 largest trading partners with the US are Canada, China, Mexico, Japan and Germany.
2. The largest economies in the EU undertake the largest fraction of the total trade between the EU and the US.
3. The gravity model predicts that the volume of trade is directly related to the GDP of each trading partner and is inversely related to the distance between them.

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Summary

4. Besides size and distance; culture, geography, multinational corporations and the existence of borders influence trade.
5. Modern transportation and communication have increased trade, but political factors have influenced trade more in history.
6. Today, most trade is in manufactured goods, while historically agricultural and mineral products made up most of trade.

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