Trade Costs and Export Decisions

- Most U.S. firms do not report any exporting activity at all — sell only to U.S. customers.
  - In 2002, only 18% of U.S. manufacturing firms reported any sales abroad.
- Even in industries that export much of what they produce, such as chemicals, machinery, electronics, and transportation, fewer than 40 percent of firms export.
Trade Costs and Export Decisions

- Trade costs help explain why only a subset of firms export, and why exporters are relatively larger and more productive (lower marginal costs).
- In the United States, an exporting firm in a typical manufacturing industry is on average more than twice as large as a firm that does not export.

Table 8-3: Proportion of U.S. Firms Reporting Export Sales by Industry, 2002

<table>
<thead>
<tr>
<th>Industry</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printing</td>
<td>5%</td>
</tr>
<tr>
<td>Furniture</td>
<td>7%</td>
</tr>
<tr>
<td>Apparel</td>
<td>8%</td>
</tr>
<tr>
<td>Wood Products</td>
<td>8%</td>
</tr>
<tr>
<td>Fabricated Metals</td>
<td>14%</td>
</tr>
<tr>
<td>Petroleum and Coal</td>
<td>18%</td>
</tr>
<tr>
<td>Transportation Equipment</td>
<td>28%</td>
</tr>
<tr>
<td>Machinery</td>
<td>33%</td>
</tr>
<tr>
<td>Chemicals</td>
<td>36%</td>
</tr>
<tr>
<td>Computer and Electronics</td>
<td>38%</td>
</tr>
<tr>
<td>Electrical Equipment and Appliances</td>
<td>38%</td>
</tr>
</tbody>
</table>

Multinationals and Outsourcing

• **Foreign direct investment** refers to investment in which a firm in one country *directly controls or owns* a subsidiary in another country.

• If a foreign company invests in at least 10% of the stock in a subsidiary, the two firms are typically classified as a **multinational corporation**.
  - 10% or more of ownership in stock is deemed to be sufficient for direct control of business operations.

Multinationals and Outsourcing

• *Greenfield* FDI is when a company builds a new production facility abroad.

• *Brownfield* FDI (or cross-border mergers and acquisitions) is when a domestic firm buys a controlling stake in a foreign firm.

• Greenfield FDI has tended to be more stable, while cross-border mergers and acquisitions tend to occur in surges.
Multinationals and Outsourcing

- Developed countries have been the biggest recipients of inward FDI.
  - much more volatile than FDI going to developing and transition economies.
- Steady expansion in the share of FDI flowing to developing and transition countries.
  - Accounted for half of worldwide FDI flows in 2009.
- Sales of FDI affiliates are often used as a measure of multinational activity.

Fig. 8-9: Inflows of Foreign Direct Investment, 1980-2009
Multinationals and Outsourcing

- **Horizontal FDI** when the affiliate replicates the same production process elsewhere in the world.

- **Vertical FDI** when the production chain is broken up, and parts of the production processes are transferred to the affiliate location.

Multinationals and Outsourcing

- Vertical FDI is mainly driven by production cost differences between countries (for those parts of the production process that can be performed in another location).

- Vertical FDI is growing fast and is behind the large increase in FDI inflows to developing countries.
Multinationals and Outsourcing

- Horizontal FDI is dominated by flows between developed countries.
  - Both the multinational parent and the affiliates are usually located in developed countries.
- Locate production near large customer bases.
  - Hence, trade and transport costs play a much more important role than production cost differences for these FDI decisions.

Fig. 8-10: Outward Foreign Direct Investment for Top Countries, 2007-2009

The Firm’s Decision Regarding Foreign Direct Investment

- **Proximity-concentration trade-off:**
  - High trade costs associated with exporting create an incentive to locate production near customers.
  - Increasing returns to scale in production create an incentive to concentrate production in fewer locations.

The Firm’s Decision Regarding Foreign Direct Investment

- FDI activity concentrated in sectors with high trade costs.
  - When increasing returns to scale are important and average plant sizes are large, we observe higher export volumes relative to FDI.
- Multinationals tend to be much larger and more productive than other firms (even exporters) in the same country.
The Firm’s Decision Regarding Foreign Direct Investment

- The horizontal FDI decision involves a trade-off between the per-unit export cost $t$ and the fixed cost $F$ of setting up an additional production facility.
- If $t(Q) > F$, costs more to pay trade costs $t$ on $Q$ units sold abroad than to pay fixed cost $F$ to build a plant abroad.
  - When foreign sales large $Q > F/t$, exporting is more expensive and FDI is the profit-maximizing choice.
  - Low costs make more apt to choose FDI due to larger sales.

The Firm’s Decision Regarding Foreign Direct Investment

- The vertical FDI decision also involves a trade-off between cost savings and the fixed cost $F$ of setting up an additional production facility.
  - Cost savings related to comparative advantage make some stages of production cheaper in other countries.
The Firm’s Decision Regarding Foreign Direct Investment

• Foreign outsourcing or offshoring occurs when a firm contracts with an independent firm to produce in the foreign location.

• In addition to deciding the location of where to produce, firms also face an internalization decision: whether to keep production done by one firm or by separate firms.

The Firm’s Decision Regarding Foreign Direct Investment

• Internalization occurs when it is more profitable to conduct transactions and production within a single organization. Reasons for this include:

1. Technology transfers: transfer of knowledge or another form of technology may be easier within a single organization than through a market transaction between separate organizations.
   - Patent or property rights may be weak or nonexistent.
   - Knowledge may not be easily packaged and sold.
The Firm’s Decision Regarding Foreign Direct Investment

2. **Vertical integration** involves consolidation of different stages of a production process.
   - Consolidating an input within the firm using it can avoid holdup problems and hassles in writing complete contracts.
   - But an independent supplier could benefit from economies of scale if it performs the process for many parent firms.

Effects of Foreign Direct Investment

- Foreign direct investment should benefit the countries involved for reasons similar to why international trade generates gains.
  - Multinationals and firms that outsource take advantage of cost differentials that favor moving production (or parts thereof) to particular locations.
  - Relocating production to take advantage of cost differences leads to overall gains from trade.
Mexican Maquiladoras

- The typical plant is foreign owned and engaged in labor-intensive assembly of intermediate or final goods.
  - Employs 1.2 million workers, about a third of Mexico’s manufacturing jobs.
- The vast majority of inputs are brought from the U.S. or another country, and the output is usually sold in the U.S.
- Economic benefits spill into neighboring U.S. cities, creating jobs in manufacturing, warehousing, transportation, logistics, real estate services and major border protection programs.

Mexican Maquiladoras

- Allows production machinery and parts into Mexico tariff free as long as the assembled product returns to the United States for final sale.
  - Most plants located in border states of Northern Mexico.
  - Low-wage labor intensive operations in Mexico with capital intensive stages located in the United States.
  - Sensitive to what is going on in the United States since most of the output is sold here.
Mexican Maquiladoras

- Well-known factors drive growth of the maquiladora industry: U.S. industrial sector’s performance, exchange rates, access to U.S. markets and competition from low-wage nations.
- Expanded following NAFTA and peso devaluation
  - from 120,000 in 1980 to 1.3 million employed in 2000.

Mexican Maquiladoras

- Long period of virtually uninterrupted industry expansion and then a period of much slower job growth or even decline.
- Contracted 2000-2003 due to recession, competition from low-wage countries like China, and inability to deal with problems in its competitive environment.
- The slump converged with potent foreign competition from China, the Caribbean and elsewhere to cut maquiladora employment by 298,000 jobs, or 22.1%, in 17 months.
Mexican Maquiladoras

- Job losses were concentrated in the lowest-skill, lowest-wage sectors.
- Maquiladora industry shifting to higher-wage, higher-productivity operations.
- Mexico’s competitive advantages are proximity to the U.S., an experienced and skilled workforce and a stable political system.

Mexican Maquiladoras

- Three sectors dominate activity on the Texas border:
  - Electronics, transportation equipment and electrical machinery.
- Most electronics maquiladoras on the California border are under Asian ownership and make products such as televisions, CD players, printers and copiers.
  - Consumer electronics firms needed access to Asian suppliers.
- Auto suppliers wanted the best access to the U.S. heartland and often chose cities on the Texas border.
- Apparel sector opted for the lower wages of central Mexico.
Mexican Maquiladoras

- Textiles & Apparel: Before 1994, most U.S. clothing companies produced and cut fabric in the U.S., exporting it for sewing and finishing and re-importing the final product.
- Strict quotas limited each country’s re-imports, keeping apparel activity spread across nations.
- Mexico’s cutting and sewing sector boomed as companies shifted operations from around the world to take advantage of access to the large North American market.
  - Hours worked in textile and apparel maquiladoras expanded 22.9% a year between 1990 and 2000.

Mexican Maquiladoras

- New trade initiatives slowly dismantled the edge NAFTA gave Mexican apparel exports. The Caribbean Basin trade initiative expanded U.S. market access to 24 low-wage countries throughout the Caribbean and Central America.
- The final blow came in January 2005 with the phase-out of the MFA, a pact that had sharply limited U.S. textile and apparel imports from India, China, Bangladesh and other low-cost Asian countries.
Mexican Maquiladoras

- Electronics: The value of a Mexican location was low-tariff access to U.S. markets.
- China’s entry into the World Trade Organization in 2001 lowered tariffs on China’s U.S. shipments.
- Production for the U.S. market shifted from Mexico to China.
  - China’s lower wages in many cases trumped Mexico’s proximity to the U.S.
- Transportation equipment: The parts and components segment remains concentrated on the border, and its primary focus remains U.S. assembly operations.

Maquiladoras on the U.S.–Mexico border were quickly drawn into the collapse of U.S. manufacturing in late 2008, which heavily affected the automobile and consumer electronics sectors.
- Mexico’s maquiladora industry remains closely tied to the U.S. economy.
Mexican Maquiladoras

- Maquiladora employees draw their wages in Mexico but do a significant share of their shopping in the United States
  - Stimulating employment in local retail & service sectors.
- A 10% increase in maquiladora payroll results in a 2-4% increase in employment in El Paso, McAllen, Laredo and Brownsville.
- During the early 1980s Ciudad Juárez maquiladoras accounted for one of five jobs created in El Paso, mostly in the service sector.

Mexican Maquiladoras

- U.S. border states, except Arizona (where job losses ranged from negligible to small), gained jobs as a result of growth in the maquiladora industry.
  - Many suppliers shifted to border cities from the Midwest.
- The manufacturing sectors that supply the maquiladoras paid about 40 percent more in hourly wages than the apparel, textile and leather industries that traditionally operated in El Paso.
- A 10% increase in maquiladora output in a Mexican border city will increase employment in its U.S. city pair by 1-2%.
Mexican Maquiladoras

- Increases in Mexican wages plus the rise of new low-wage alternatives such as China, India and Vietnam has broadened U.S. options for manufacturing, pushing some maquiladora activity abroad.
- Mexico generally has looked at the loss of the lowest wage jobs as an inevitable price of progress.
  - Increasing domestic wage levels must be seen as a positive aspect of economic development.

Mexican Maquiladoras

- In 2000, 90% of inputs to the maquiladoras came from the United States, and in 2004 that number was only 59%.
- Texas border cities in the 1990s developed rapidly as a critical, new part of this supply chain, with suppliers shifting from the Midwest to the U.S.–Mexico border.
- Not just the maquiladora industry is affected by foreign competition, but the U.S.-based supply chain as well.
Summary

- Multinationals are typically larger and more productive than exporters, which in turn are larger and more efficient than firms that sell only to the domestic market.
- Multinational corporations undertake foreign direct investment when proximity to consumers is more important than concentrating production in one location.
- Firms produce where most cost-effective: they replicate entire production process abroad or locate stages in different countries.
- Firms also decide whether to keep transactions within the firm or contract with another firm.