







Economic Geography

- **Primary** economic activity
 - Closest contact with natural resources
 - Generally, lowest income
- **Secondary:** value added (manufacturing)
- **Tertiary:** services for primary or secondary
- **Quaternary:** information-based services

Secondary Economic Activity

Secondary economic activity

- Site and situation for industry
- Weber's locational triangle
- Globalization and manufacturing

Secondary economic activity

- ❑ The secondary sector of industry includes those economic sectors that create a finished, usable product: manufacturing and construction
- ❑ This sector of industry generally takes the output of the primary sector and manufactures finished goods or where they are suitable for use by other businesses, for export, or sale to domestic consumers
- ❑ This sector is often divided into light industry and heavy industry

Secondary economic activity

- ❑ Many of these industries consume large quantities of energy and require factories and machinery to convert the raw materials into goods and products
- ❑ They also produce waste materials and waste heat that may pose environmental problems or cause pollution
- ❑ Adding value to primary products
- ❑ Manufacturing, processing, energy, construction
- ❑ Where? culture and economy > physical environment

Secondary economic activity



Industrial Revolution

- ❑ 1750s in Great Britain
- ❑ From cottage industry to factories
- ❑ Technological change: steam engine
 - Iron: blast furnaces stay hot
 - Coal needed as fuel
 - Steam locomotive (1812)

Industrial Revolution & geography

- ❑ Clustering of industrial activity
- ❑ New or old cities
- ❑ Rapid population growth
- ❑ Social changes
- ❑ New industries: chemicals, food processing

Industrial Revolution Hearths

- ❑ The Industrial Revolution originated in areas of northern England
- ❑ Factories often clustered near coalfields

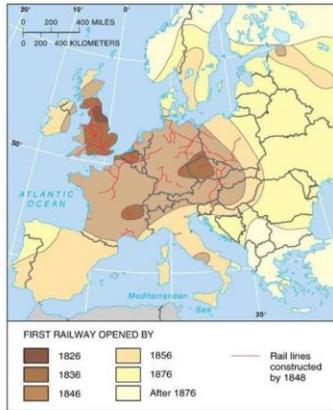


Where does industry locate?

- Situation factors
 - Cost of carrying inputs vs. outputs
 - Accessibility to different modes of transportation
- Site factors
 - Cost of land
 - Cost and skill of labor
 - Availability of capital

Diffusion of Railways

The year by which the first railway opened shows the diffusion of railways and the Industrial Revolution from Britain



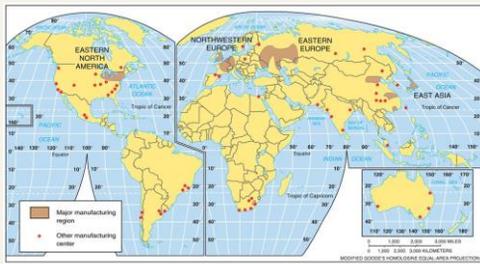
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Agglomeration economies

- Economies of scale: producing additional units costs less than producing the first few
- Benefits of concentrating many firms in one place
- Benefits of concentrating many firms in one industry in one place

Manufacturing

Manufacturing Regions



The world's major manufacturing regions are found in North America, Europe, and East Asia. Other manufacturing centers are also found elsewhere

Industrial Regions of North America

- The major industrial regions of North America are clustered in the northeast U.S. and southeastern Canada, although there are other important centers





Manufacturing Centers in East Asia

Many industries in China are clustered in three centers near the east coast. In Japan, production is clustered along the southeast coast.

Five location factors

- Raw materials
 - From primary activity or manufactured goods
 - Most important when:
 - Bulky or heavy inputs
 - Lose weight in processing
 - Perishable inputs

Five location factors

- Market
 - Final consumer or another firm
 - Most important when:
 - Bulky or heavy outputs
 - Weight added in processing
 - Perishable outputs

Five location factors

- Energy
 - More important historically than today
 - Mills in Britain, New England, etc.
- Labor
 - Price, skill, availability
 - Usually not mobile
- Transportation
 - Costs vary by mode, distance, transfers

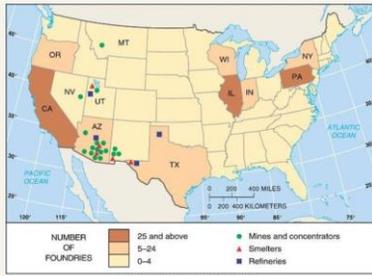
Five location factors



Five location factors



Copper Industry in North America



Copper mining, concentration, smelting, and refining are examples of bulk-reducing industries. Many are located near the copper mines in Arizona



Integrated Steel Mills

Integrated steel mills in the U.S. are clustered near the southern Great Lakes, which helped minimize transport costs of heavy raw materials.

Steel Mini-mills



Mini-mills produce steel from scrap metal, and they are distributed around the country near local markets. These are the two largest mini-mill operators

Location of Beer Breweries



Beer brewing is a bulk-gaining industry that needs to be located near consumers. Breweries of the two largest brewers are located near major population centers

Globalization

- Increasing interconnection of the world
- Economic
 - Stock markets, international finance
 - Transnational corporations
- Political
- Cultural

U.S. Auto Industry

- Ransom Olds (Oldsmobile, and later a division of General Motors) started the concept of the assembly line with the curve dash olds in 1896 (based on a buggy carriage platform)
- Henry Ford's Model T assembly line, took Ransom's concept a step further streamlining the process
- Large batches of a standardized product
- Large inventory in warehouse
- Workers could afford to buy product

Site selection for Saturn

- GM considered a variety of economic and geographic factors when it searched for a site for producing the new Saturn in 1985
- The plant was eventually located in Spring Hill, TN



Motor Vehicle Parts Plants

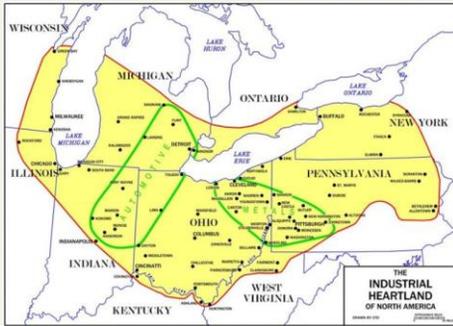
- U.S.-owned parts plants are clustered near the main final assembly plants
- Foreign-owned plants tend to be located further south, where labor unions are weaker



Agglomeration economies

- Certain places concentrate in certain products
 - Cars in Detroit,
 - Steel in Pittsburgh,
 - Chemicals in New Jersey
- Considerable multiplier effects
- Strong industrial regions

Agglomeration economies



Agglomeration economies



Overall view of U.S. Steel's Homestead Works as it looked in 1989 after it was shut down



Two trains rumble through Muncie, IN, on a summer Sunday afternoon

...to flexible production

- Cheap long-distance transportation
- Separate out production processes
- More flexible production
 - Small batches, not mass production
 - Workers forced to be flexible
 - Just-in-time: minimize warehousing

...to flexible production

- ❑ The five location factors matter at each stage of production
- ❑ One production line, many continents
- ❑ Rapid growth where labor is cheap
- ❑ "Race to the bottom"

...to flexible production

- ❑ Places specialize by function, not product
 - ❑ New York: "command and control"
 - ❑ India, Ireland: call centers
 - ❑ Jamaica, Dakotas: data processing

Five location factors: textiles

- ❑ **Labor:** largest percentage of cost (and low-skilled)
- ❑ **Raw materials:** cotton, other fibers
- ❑ **Market:** population concentrations
- ❑ **Energy:** moderately important
- ❑ **Transportation:** not too important

Five location factors: textiles

- Spinning fiber into yarn
 - Close to cotton, fiber production
- Weaving yarn into fabric
 - Low labor costs
- Designing clothing
 - Skilled labor needed
- Cutting and sewing
 - Unskilled labor

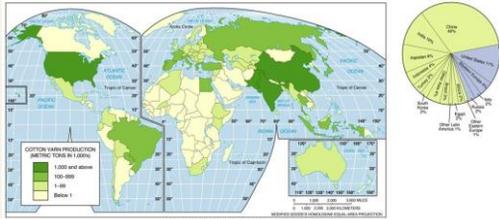
Five location factors: textiles

- Where is labor cheapest?
- High unemployment
- Few or weak unions
- Immigrants and/or women

Five location factors: textiles

- Stage 1: Early industrial cities
 - Lowell, MA; Manchester, UK
- Stage 2: Underdeveloped regions
 - Southern U.S.
- Stage 3: Underdeveloped countries
 - Mexico and southwards
 - East Asia and westwards

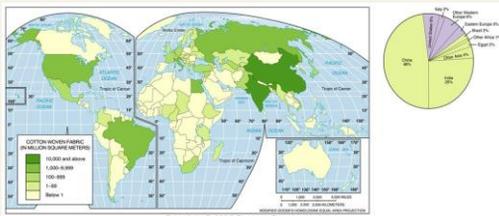
Cotton Yarn Production



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Production of cotton yarn from fiber is clustered in major cotton growing countries, including the U.S., China, India, Pakistan, and Russia

Woven Cotton Fabric Production



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Production of woven cotton fabric is labor intensive and is likely to be located in LDCs. China and India account for over 75% of world production

Shirt Production

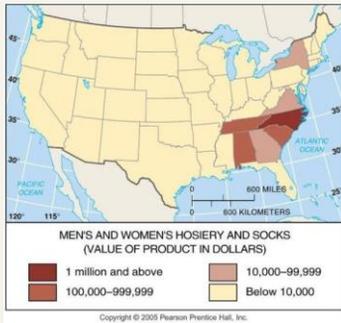


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Sewing cotton fabric into men's and boys' shirts is more likely to be located near customers in MDCs, but much production now occurs in LDCs

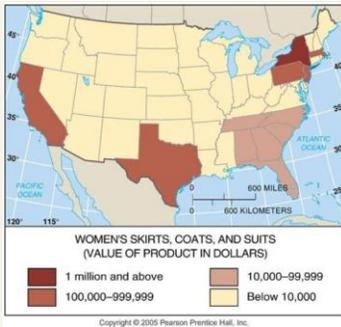
Hosiery and Sock Production

- Hosiery manufacturers usually locate near a low-cost labor force, such as found in the southeastern U.S.

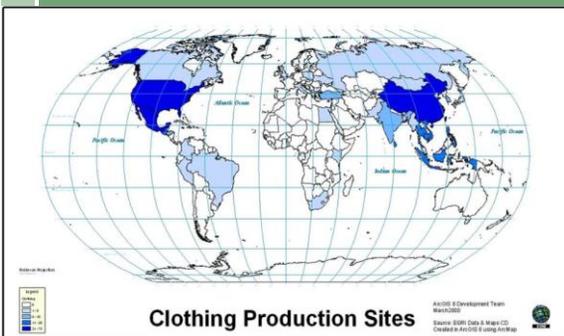


Knit Outerwear Manufacturing

- Knit outerwear requires more skilled workers, and much manufacturing is still clustered in or near New York City.



Clothing production sites



Transnational corporations (TNCs)

- ❑ Firms operating in more than one country
- ❑ Exploiting spatial differences
- ❑ But are they global?
 - ▣ 90% headquarters in Europe-US-Japan
 - ▣ 75% of investment, too

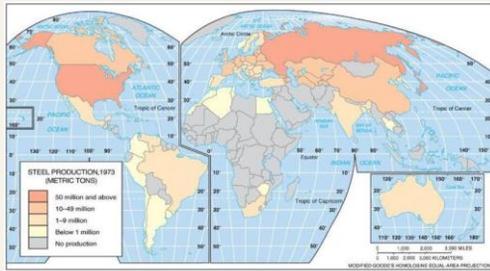
Transnational corporations (TNCs)

Company	Country with comparable GNP
General Motors	Indonesia
Ford	Iran
Exxon	Turkey
IBM	Venezuela

Industrial Problems

- ❑ Global perspective
 - ▣ Stagnant demand
 - ▣ Increased capacity
- ❑ More developed countries
 - ▣ Trading blocs
 - ▣ Disparities within trading blocs
- ❑ Less developed countries
 - ▣ Old problems for LDCs
 - ▣ New problems for LDCs

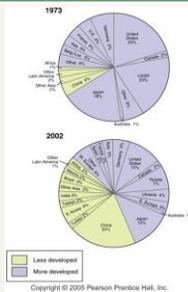
World Steel Production, 1973



The U.S., Soviet Union, and Japan were the largest steel producers in 1973, and with the rest of Europe, accounted for 90% of global steel production

Steel Production, 1973 and 2002

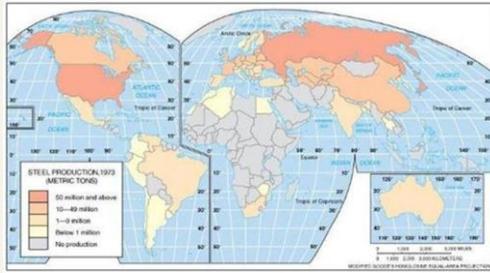
- About 60% of global steel production takes place in MDCs in 2002, compared to 90% in 1973.
- Growth of steel manufacturing in China has been especially dramatic.



Change in Steel Production 1973–2002

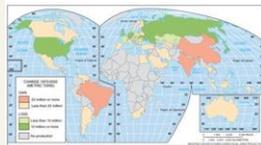
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Change in Steel Production 1973–2002



Change in Steel Production 1973–2002

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Electronic Computer Industry



Computer and parts manufacturing requires highly skilled workers and capital. It is clustered in the Northeast and the West Coast.
