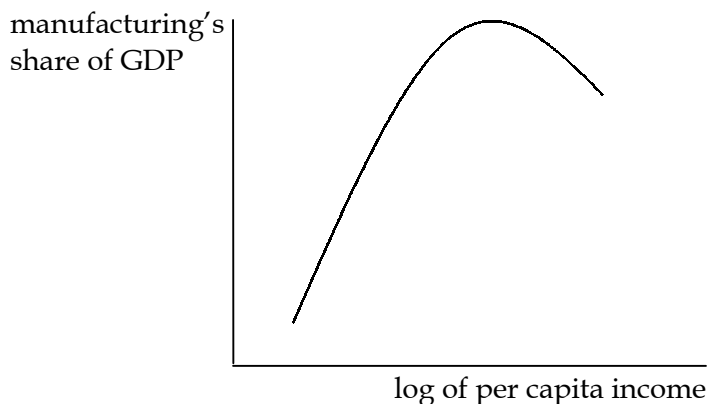


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- industry and development:  
industry could be a leading sector of development

page 653-4, figures 17-1A and 17-1B - manufacturing's share of GDP in a country rises and then decreases with per capita income:



this curve eventually turns downward because the most developed countries have larger service sectors than industrial sectors

- industry and linkages:  
backward linkages exist when the growth of an industry leads to the growth of the industries that supply it; for example, growth of the textile industry may encourage the growth of the cotton industry, which will lead to higher incomes for cotton farmers and will create a greater demand for goods and services in the countryside

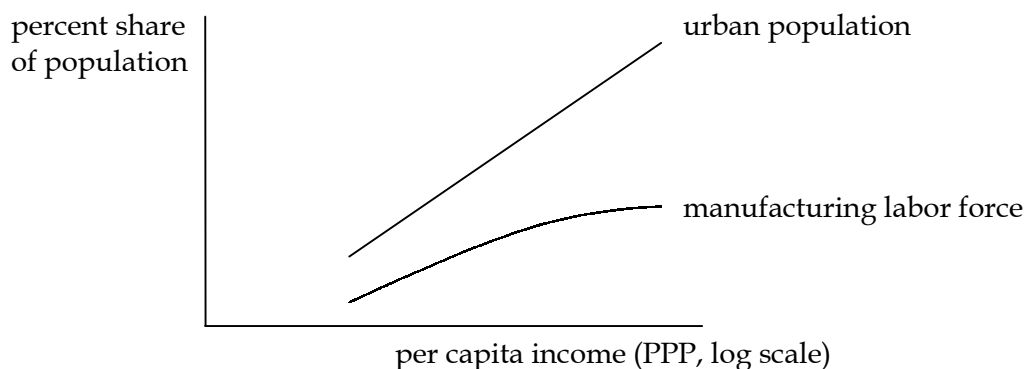
the book distinguishes between direct backward linkages and indirect linkages; for example, the auto industry has a direct backward linkage to the steel industry and an indirect backward linkage to the coal and iron industries (since coal and iron are inputs to steel production)

forward linkages exist when the growth of an industry leads to the growth of the industries that use its output as input, or when the output of an industry helps propel another industry; for example, through a forward linkage agricultural development in the United States helped create the railroad system because railroads transported agricultural products

page 657, table 17-1 - a study of direct forward and backward linkages, notice that the total backward linkages are greater than the direct backward linkages

- urban population and the industrial labor force:  
page 659, figure 17-2 - the percent share of a population in urban areas and in the manufacturing labor force:

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both the percent share of the population in urban areas and in the manufacturing labor force increase with per capita income; however, the percent share of the population in urban areas increases with per capita income steadily, but the percent share of the population in manufacturing increases at a decreasing rate; manufacturing does not employ as much of the labor force as other sectors, and urbanization is accompanied by both service and manufacturing growth

- causes of urbanization:

there is concern that development tends to be concentrated in one or two cities within a country, which could cause problems with disease, sanitation, traffic congestion, etc.

a possible reason for concentrated development at one main city: some countries have required businesses to hold permits to import machinery; the importance of these licenses lead to the necessity of having contacts with officials who distribute these licenses; firms will move toward urban areas to maintain contact with these officials; thus, a country might inadvertently distort the development of urban areas to only one or two cities, where the licenses are available

a hierarchy of the scale of cities is found everywhere in the world because of economies of agglomeration; businesses want to be near their suppliers and customers because transportation costs for goods are lower; thus, some government efforts to make urban development more dispersed may be futile or may carry hidden efficiency costs

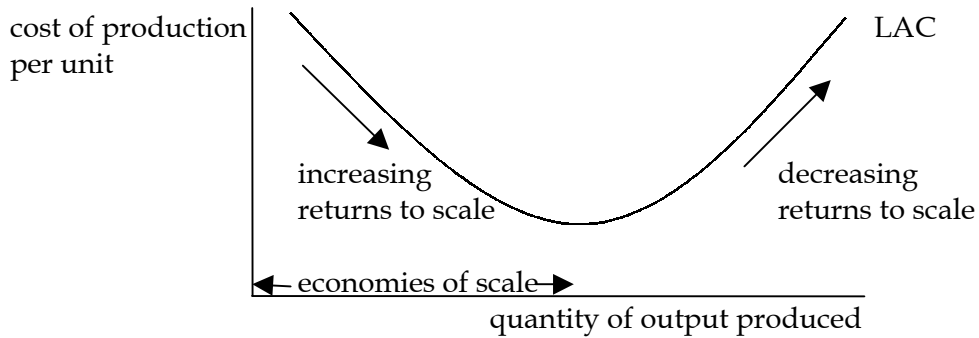
- appropriate technology:

page 662, table 1-2 and page 663, figure 17-3 illustrate a numerical example of capital-intensive and labor-intensive technologies and the impact of the cost of capital and labor; please study this

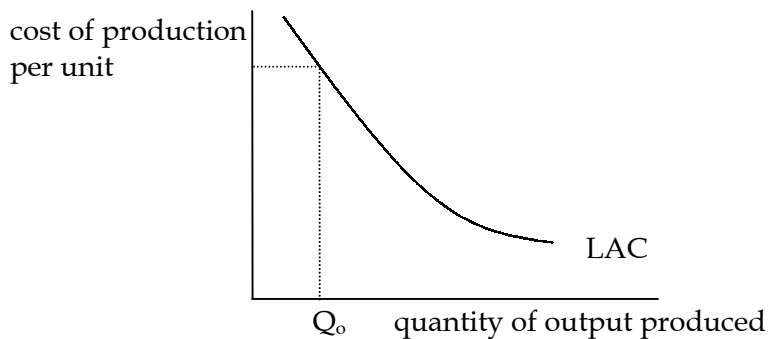
- the minimum efficient scale:

- according to microeconomic theory, the long-run average cost (LAC) curve for a firm decreases as production increases (perhaps because of labor specialization or engineering) and increases beyond a certain level of production (perhaps because of congestion or managerial inability to run such a large firm):

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page 666, figure 17-4 - the long-run average cost curve (excluding decreasing returns to scale):



a small country might not be large enough to consume the output that is produced at the minimum cost; thus, the country could be producing at  $Q_0$ , a high per unit cost, while other countries are producing at a low per unit cost, impairing the country's ability to be competitive in international markets

- page 667, table 17-3 - the minimum efficient scale (MES) as a proportion of the UK market (a middle-sized industrialized country):

for refrigerators, the MES plant meets 85% of the demand in the UK - thus, only slightly more than 1 plant would be necessary to produce refrigerators for the UK at the lowest cost; the markets in developing countries are much smaller than those for the UK, and they would not be able to produce near the MES if production were for domestic consumption only

if a developing country produced for export, then the size of the plant does not matter as long as the world market is large enough - the country could produce at the MES and export the amount it does not consume domestically; however, if a developing country chooses to be autarkic, then it will not produce near the MES and domestic consumers will pay for this inefficient choice; thus, efficiency and self-sufficiency can be in conflict

for some industries, however, the MES is small (plywood, clothing, food processing, etc.)

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should government encourage small or large industry? it is often suggested that small industry should be promoted because 1) it is more labor-intensive than larger industry and 2) industry can be better dispersed (which has potential benefits, such as a lower pollution concentration, a smaller urban population density, etc); the textbook authors suggest that where it is appropriate to have small or large industry depends on the industry; government could harm the economy by favoring either one without considering the technology involved