

Laws Of Returns

Causes of increasing returns to scale:

The increasing returns to scale are due to technical and/or managerial indivisibilities. Usually most processes can be duplicated, but it may not be possible to halve them. One of the basic characteristics of advanced industrial technology is the existence of 'mass-production' methods over large sections of manufacturing industry. 'Mass-production' methods (like the assembly line in the motor-car industry) are processes available only when the level of output is large. They are more efficient than the best available processes for producing small levels of output.

For example, assume that we have three processes:

The K/L ratio is the same for all processes and each process can be duplicated (but not halved). Each process has a different 'unit'-level. The larger-scale processes are technically more productive than the smaller-scale processes. Clearly if the larger-scale

processes were equally productive as the smaller-scale methods, no firm would use them: the firm would prefer to duplicate the smaller scale already used, with which it is already familiar. Although each process shows, taken by itself, constant returns to scale, the indivisibilities will tend to lead to increasing returns to scale.

For $X < 50$ the small-scale process would be used, and we would have constant returns to scale. For $50 < X < 100$ the medium-scale process would be used. The switch from the smaller scale to the medium-scale process gives a discontinuous increase in output (from 49 tons produced with 49 units of L and 49 units of K, to 100 tons produced with 50 men and 50 machines). If the demand in the market required only 80 tons, the firm would still use the medium-scale process, producing 100 units of X, selling 80 units, and throwing away 20 units (assuming zero disposal costs).

This is one of the cases in which a process might be used inefficiently, because this process operated inefficiently is still relatively efficient compared with the small-scale process. Similarly, the switch from the medium-scale to the large-scale process

gives a discontinuous increase in output from 99 tons (produced with 99 men and 99 machines) to 400 tons (produced with 100 men and 100 machines).

If the demand absorbs only 350 tons, the firm would use the large-scale process inefficiently (producing only 350 units, or producing 400 units and throwing away the 50 units). This is because the large-scale process, even though inefficiently used, is still more productive (relatively efficient) compared with the medium-scale process.