Law of diminishing productivity

Economics

Diminishing returns, also called law of diminishing returns or principle of diminishing marginal productivity, economic law stating that if one input in the production of a commodity is increased while all other inputs are held fixed, a point will eventually be reached at which additions of the input yield progressively smaller, or diminishing, increases in output. In the classic example of the law, a farmer who owns a given acreage of land will find that a certain number of labourers will yield the maximum output per worker. If he should hire more workers, the combination of land and labour would be less efficient because the proportional increase in the overall output would be less than the expansion of the labour force.

The output per worker would therefore fall. This rule holds in any process of production unless the technique of production also changes. Early economists, neglecting the possibility of scientific and technical progress that would improve the means of production, used the law of diminishing returns to predict that as population expanded in the world, output per head would fall, to the point where the level of misery would keep the population from increasing further. In stagnant economies, where techniques of production have not changed for long periods, this effect is clearly seen. In progressive economies, on the other hand, technical advances have succeeded in more than offsetting this factor and in raising the standard of living in spite of rising populations.

Production

In economics, production is the act of creating output, a good or service which has value and contributes to the utility of individuals. The act may or may not include factors of production other than labor. Any effort directed

toward the realization of a desired product or service is a " productive" effort and the performance of such act is production. The relation between the amount of inputs used in production and the resulting amount of output is called the production function.

Stages of production Production can be distinguished into three stages: 1. Primary producers directly extract natural resources. 2. Secondary producers process resources to turn them into intermediate goods. 3. Tertiary producers provide final goods or services to the consumer.

Production Function Factors of production means inputs and finished goods means output. Input decides the quantity of output i. e. output depends upon input. Input is the starting point and output is the end point of production process and such input-output relationship is called as " Production Function". All factors of production like land, labour, capital and entrepreneur are required altogether at a time to produce a commodity. In economics, production means creation or an addition of utility.

Land Refers to physical land and other natural resources, e. g. the land that a building is constructed on, oil that is extracted from under the sea, under the land, forests, and fish reserves. Providers of land receive rent. Labour

Refers to physical and mental effort - e. g. stacking shelves in a supermarket, or calculating the final accounts of a company. Providers of labour receive wages. Capital Exists at two levels. First of all we have financial capital. But more importantly, this is used to purchase physical capital that goes into making other things. Physical capital consists of

machinery, equipment, tools, etc. Providers of capital receive interest. Entrepreneurship

Is the skill of combining the other factors of production. Entrepreneurs are the risk takers that set up and run business enterprises. Entrepreneurs receive profit.

The specification of production time periods is a convenient way to understand and explain production activity by a firm, which then provides insight into market supply. The standard distinction is generally between short run, with at least one fixed and one variable input, and the long run, with all inputs variable. However, in some cases, the very short run or market period, with all inputs fixed, is the proper time period. And in other circumstances it is useful to consider the very long run, with inputs beyond the control of the firm also variable. The primary production time period distinction is between the short run and the long run. The short run is the primary focus of analysis when it comes to explaining and understanding market supply and the law of supply. Short Run

The short run is the production time period in which at least one input under the control of the firm is variable and at least one input is fixed. This time period is relevant for short-run production analysis. In particular, with one fixed and one variable input, the law of diminishing marginal returns guides short-run production and determines how a firm responds to changes in the market price. Long Run

The long run is the production time period in which all inputs under the control of the firm are variable. This time period is relevant for long-run

production analysis. In particular, with all inputs variable, long-run production is guided by returns to scale rather than marginal returns and the law of diminishing marginal returns.

Marginal productivity theory is a cornerstone in the analysis of factor markets and the input side of short-run production. It provides insight into the demand for factors of production based on the notion that a profit-maximizing firm hires inputs based on a comparison between the productivity of the input and the cost of the input.

Diminishing Marginal Productivity Diminishing marginal productivity is the understanding that using additional inputs will generally increase output, but there also is a point where adding more input will result in a smaller increase in the output, and there is another point where using even more input will lead to a decrease in output. A hypothetical example:

Using no fertilizer to produce wheat may yield 15 bushels per acre. Using 50 pounds of fertilizer may increase the yield to 25 bushels; that is, an increase of 10 bushels as a result of using 50 pounds of fertilizer. Using another 50 pounds (for a total of 100 pounds) may increase the yield to 32 bushels; that is, the second 50 pounds of fertilizer increased the yield by only 7 bushels.

Furthermore, adding another 50 pounds (for a total of 150 pounds) may result in a yield of only 30 bushels; that is, the final 50 pounds of fertilizer actually damaged the crop and reduced the yield by 2 bushels. We could develop a similar example using student study time; some study time will result in an improved understanding of the subject matter, but there will be a point where additional study time (e. g., repeatedly reviewing the same

material) will not enhance the student's understanding. (However, this does NOT mean that students can get by investing NO time in studying!!) A third example to illustrate diminishing marginal productivity could involve determining how many people should be assigned to the crew of a piano moving truck.

One truck and one worker may not be an effective piano moving business because it is difficult for one person to move a piano. One truck with two or three workers might be quite productive. One truck with four, five or six workers may be less productive than if there were fewer workers. With too many workers, they begin to trip over one another, there is not enough room for all of them to lift on the piano at one time (so some workers merely watch the others move the piano), and there may not be enough room in the truck for all of them to travel from site to site.

We also can return to our previous example of a chocolate cake; adding more chocolate to the batter initially improves the taste of the cake, but adding even more chocolate will eventually detract from the taste of the cake. As stated by others, if diminishing marginal productivity was not a reality, we could raise all the food we need in a flower pot by simply adding more seed, fertilizer, water, etc.