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Introduction

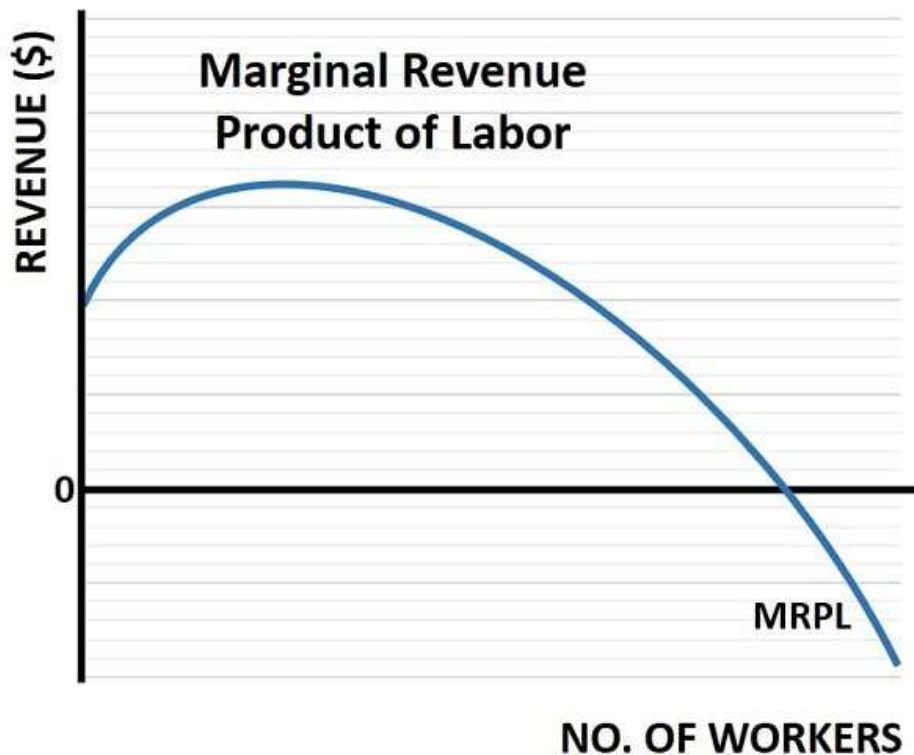
Marginal Revenue Product quantifies the additional revenue generated from employing one more unit of resource, be it labor or capital, providing critical insights into efficiency and productivity.

Understanding MRP is crucial because it provides a clear picture of the value added by each extra unit, allowing businesses to allocate resources more efficiently. This concept plays a significant role in the broader framework of marginal analysis, which is fundamental in making informed economic decisions.

Marginal revenue itself is the additional income earned from selling one more unit of a good or service. It's essential because it helps businesses determine the point at which they should stop increasing production to avoid diminishing returns. When marginal revenue equals **marginal cost**, a firm is operating at its most profitable level. This equilibrium is vital for maintaining sustainable growth and ensuring that resources are not wasted.

Marginal Revenue Product Graph

The Marginal Revenue Product graph above shows that initial recruitment of works yields strong positive growth in marginal revenue for a firm.



The marginal revenue growth then peaks and gradually reduces while still remaining positive. Eventually, marginal revenue turns negative if too many workers are recruited.

How Marginal Revenue Product is Calculated

Calculating Marginal Revenue Product involves a straightforward but insightful process. The first step is to determine the marginal product of the resource in question, which is the additional output generated by employing one more unit of that resource. For example, if hiring an extra worker leads to the production of five additional units of a product, the marginal product of labor is five. This figure provides a clear indication of the resource's productivity, which is a critical component in the overall calculation of MRP.

Once the marginal product is established, the next step is to multiply it by the marginal revenue, which is the additional income earned from selling those extra units. If each additional unit sells for \$10, and the marginal product is five units,

the marginal revenue generated from those units would be \$50. Therefore, the Marginal Revenue Product of the additional worker would be \$50.

This calculation quantifies the value added by the extra resource, allowing businesses to assess whether the cost of employing the additional resource is justified by the revenue it generates.

Marginal Revenue Product Formula

The formula for Marginal Revenue Product is:

$$\text{MRP} = \text{Marginal Product} \times \text{Marginal Revenue}$$

Where:

Marginal Product = Additional output from one more unit of input

Marginal Revenue = Additional revenue from selling one more unit of output

Marginal Revenue Product and Labor and Capital

The relationship between Marginal Revenue Product and labor is particularly significant in understanding how workforce decisions impact profitability. Labor is often one of the most substantial expenses for a business, and its efficient utilization is critical for maintaining a healthy bottom line. MRP provides a framework for evaluating the productivity of additional workers and the revenue they generate.

Businesses must consider the [law of diminishing marginal returns](#), which states that adding more of a variable resource to a fixed resource will eventually yield lower per-unit returns. For example, hiring more workers may initially cause a substantial increase in output and revenue. However, as the number of workers continues to rise, the marginal product of each additional worker will eventually decline. This occurs because the fixed resources, such as machinery or workspace, become increasingly spread thin, reducing the effectiveness of each additional worker.

- **In labor-intensive industries** such as manufacturing and construction, MRP is often used to determine the optimal number of workers needed to maximize output and revenue. These industries rely heavily on manual labor, and understanding the productivity and revenue contributions of each additional worker is crucial for maintaining efficiency and profitability.
- **In capital-intensive industries** like technology and automotive manufacturing, MRP is used to evaluate the value added by additional capital investments, such as machinery, equipment, and technology. These industries often require significant upfront investments, and understanding the MRP of capital helps businesses make informed decisions about where to allocate their capital.