About Costs
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What are COSTS?

- To increase output, a firm must hire more workers, which means increased costs to the firm. The relationship between output and cost can be illustrated by three cost concepts: total cost, marginal cost, and average cost.

Total Cost

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- A firm's total cost (TC) is the cost of all the resources it uses in making its product. These can include property, materials, etc. Total cost is broken over total fixed cost and total variable cost.

- A firm's total fixed cost (TFC) is the cost of all the constant inputs the firm uses. As the term "fixed" implies, this value does not change, regardless of the output level.

- A firm's total variable cost (TVC) is the cost of all the variable inputs the firm uses. As the term "variable" implies, this value changes in response to changes in the output level.

- Based on our understanding of total cost, we arrive at the following formula:

\[ TC = TFC + TVC \]

Marginal Cost

- A firm's marginal cost (MC) measures the rise in total cost resulting from a single unit increase in output. This value is equivalent to the increase in total cost divided by the increase in output.
Average Cost

- Average cost can be broken over the following three categories: average fixed cost, average variable cost, and average total cost.

- Average fixed cost (AFC) represents the total fixed cost over each unit of output.

- Average variable cost (AVC) represents the total variable cost over each unit of output.

- Average total cost (ATC) represents the total cost over each unit of output.

- Based on our understanding of average cost, we arrive at the following formula:

\[ \text{ATC} = \text{AVC} + \text{AFC} \]
Glossary

Average Fixed Cost (AFC): total fixed cost over each unit of output (AFC = TFC/Q).

Average Total Cost: total cost over each unit of output (ATC = TC/Q OR ATC = AFC + AVC).

Average Variable Cost (AVC): total variable cost over each unit of output (AVC = TVC/Q).

Fixed Cost: cost that is not dependent on the output level; cost of a constant input.

Marginal Cost (MC): the rise in total cost resulting from a single unit increase in output (MC = change in TC/change in Q).

Output (Total Product): total quantity produced (Q).

Total Fixed Cost (TFC): cost of all the fixed inputs.

Total Variable Cost (TVC): cost of all the variable inputs.

Total Cost (TC): cost of all inputs (TC = TFC + TVC).

Variable Cost: cost that changes dependent on the output level; cost of a variable input.
References