Types of Costs

Cost refers to all expenses that a business incurs in producing its output. Example rent, electricity, salaries, wages, raw material etc etc

All of these costs are divided into 2 broad categories called fixed and variable cost.

1. ***Fixed Cost:*** any cost component that does not change with the level of output produced and therefore these cost components are not directly proportional to the level of output produced. Example is rent, electricity, salaries.

2. ***Variable Cost:*** any cost component that is directly proportional to the level of output produced by the firm. Example raw material, wages (daily or hourly wage workers), electricity (maybe)

Sum of fixed and variable cost is the total cost.

Total cost is the cost of producing a certain level of output.

And the average total cost for a business shows the cost of producing a ***typical unit of the good.***

Total Cost = Fixed and Variable Cost

Average Total Cost (ATC) = Total Cost / Total Output

Average Score of 5 tests

1 - 96
2 - 72
3 - 80
4 - 86
5 - 92

Total Score = 96+72+80+86+92
Total number of 5

Marginal Cost = is the additional cost due to producing one more unit of the good.

Total Output ------------------------ Total Cost
55 ------------------------ $ 650
56 ------------------------ $ 660

The additional $10 that the company had to spend in producing the 56th unit is called the Marginal Cost which includes the raw material and labor expense spent by the firm in producing that additional unit of the good.

Why is Marginal Cost curve J-shaped?

Marginal Product of Labor = Change in Total Output / Change in Labor

Units of Labor / Number of Employees	***Total Output***	***Marginal Product of Labor***
1	20	20
2	45	25
3	75	30
4	95	20
5	110	15
6	118	8
7	122	4
8	125	3

Marginal Product of Labor (MPL) increases initially as a business hires more units of labor and then after hitting the highest point it starts to decrease. Therefore the marginal product of labor starts diminishing beyond a certain level of labor being hired.

For example: lets assume a restaurant that has limited amount of cooking utensils example the oven, the cookery, the pan, so now when this business increasing its number of chefs initially with more cooking staff they will be able to produce meals for larger number off customers however after a certain point the numbers of chefs will outnumber the cooking utensils (capital) and therefore then each chef would need to wait for utensils to be freed by their fellows before they could use that.

The marginal product labor (MPL) is the reason for the J-shaped Marginal cost Curve. When marginal product of labor is increasing it means that each successive unit of labor is producing more than the previous unit and therefore each additional unit of output will cost you less in terms of labor expenses and on the other hand when MPL starts to diminish then marginal cost will start to rise by the same explanation provided above.

The Relationship between MC and ATC

The marginal cost curve will always pass from the lowest point of the ATC curve. And this is mathematically true and therefore will hold true for all businesses at all points in time.

Average Score of 5 tests

1 - 96
2 - 72
3 - 80
4 - 86
5 - 92
6 - 82

Total Score = 96+72+80+86+92 = 426
Total number of 5

Average Score = 85.2 Marks

There are five more tests remaining for the class.

If the student scores 89 marks on the 6th test then would the average score increase, stay constant or decrease?

MC is basically the cost of producing the last unit of the good. And the ATC is the the prevailing cost of producing a typical unit of the good.

Therefore is the MC is lower than the existing average your average will decrease and vice versa if the MC of the last unit is higher than the prevailing average your average will rise.

The relationship between Short Run and Long Run Cost curves of a business

Short Run: is any time period during which at least one factor of production is in fixed quantities (which means that it cannot be increased or decreased in quantity)

Long Run: is the time period after short run when all factors of production of a business are variable (meaning the quantities of all factors of production can be changed)
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Explanation: there is a new restaurant that is doing good business and at the moment they only have one outlet. Initially when it was a single outlet and the business started receiving more orders they would have hired more staff (Labor) to meet the increasing demand.

However, beyond a certain level of demand it would be impossible for the restaurant to satisfy rising demand just by hiring more people in the existing outlet and therefore they would need to open more branches. That this point when a business opens another outlet / branch is when it has moved from a short run to long run. Because now with another branch more capital like furniture and kitchen utensils etc will be increased.

When this restaurant business will expand from one to two branches not all of its costs will increase proportional to the output. Why? Because some cost elements will be fixed like the accounting and finance, or marketing team size can stay the same as before etc etc.

The long run of a business is made up of many possible short runs. Hence Long Run is a combination of all the possible Short Runs.

The downward sloping part of LRATC (long run ATC) is because of Economies of Scale and the upward sloping part of LRATC is because of Diseconomies of scale.

What factors cause Economies of Scale?

1. *Bulk Buying Economies / Purchasing Economies:* when a firm buys raw material in bulk, the suppliers are more likely to give discounts because for them you are a major

customer and therefore the per unit cost of raw material decreases for the firm making it benefit from economies of scale.

2. *Managerial Economies of Scale:* is when a firm hires expert individuals who contribute more to the firm's output and enhance the company's efficiency therefore causing its ATC to fall.

3. *Technical Economies of Scale:* when a firm uses more machinery (capital intensive) to produce its output even though initially its fixed cost will rise but then the machine will be able to make much more output compared to labor and therefore the cost of the machine will be divided over a much larger output causing economies of scale.

4. *Financial Economies of Scale:* when a larger business goes to a bank to borrow a loan given the larger amount that it wants to borrow the bank is likely to offer lower interest rates to this business compared to any smaller borrower because the overall interest that the bank will make from the larger business will still be higher than what it would make from a smaller business. And secondly a larger business are also more trustworthy with less chances of default since they have operated in the market for long.

5. Marketing Economies of Scale
6. Risk Bearing Economies of Scale

What factors cause Diseconomies of Scale?

1. Workers get demotivated in larger companies
2. Miscommunication

Past Paper Practice

3 (a) Explain how the fixed and variable costs of a perfectly competitive firm affect its survival in the short and long run. [12]

1. ***Short Run:*** is the time period during which at least one factor of production is fixed.
   Long Run: it is the time period after short run when all of the firm's factors of production are variable.

How a firm makes a profit?

PROFIT = REVENUE - COST

PROFIT / Quantity = REVENUE / Quantity - COST / Quantity

Profit per unit = Price - ATC

When revenue is greater than cost it means that the firm is making a profit.

2. Define fixed and variable cost:

In the short run the objective of the firm is only to cover its variable cost whereas in the long run the firm would want to cover its total cost.

Therefore in the short run the firm's price is greater than its average variable cost it will keep producing but for the long run the firm needs its price to be higher than average total cost to survive.

SR ------ Price > AVC --------- Continue operating (still not profitable since total cost which is ATC is not being covered)
Price < AVC --------- the firm quits

LR ------- Price > ATC -------- continue operating as the firm will be making profit
Price < ATC --------- quit the market as the firm is not making any profit