

Important Definitions:

- **Total Fixed Cost (TFC):** = Amount that the supplier must expend even if production is zero. (ie cost to rent a factory)
- **Total Variable Cost (TVC):** = Amount which must be expended to bring output from zero to a quantity q .
- **Total Cost (of producing q)** = $TFC + TVC(q)$
- **Average Fixed Cost (AFC)** = Total Fixed Cost / q .
- **Average Variable Cost (AVC)** = Total Variable Cost / q .
- **Marginal Cost (MC).** Marginal Cost = the cost of the last unit produced when a total of q units have already been produced.

| Quantity of Snickers Bags | MC | AVC | AFC | ATC |
|---------------------------|----|--------|--------|--------|
| 1 | 3 | _____. | 10 | _____. |
| 2 | 1 | _____. | _____. | _____. |
| 3 | 3 | 2.3 | 3.3 | 5.7 |
| 4 | 6 | 3.25 | 2.5 | 5.75 |
| 5 | 10 | 4.6 | _____. | 6.6 |
| 6 | 15 | 6.3 | 1.7 | _____. |
| 7 | 21 | _____. | 1.43 | 9.85 |



The marginal cost curve must cross the AVC at the minimum AVC, and the MC must cross the ATC at the minimum ATC. Suppose you're keeping track of your QPA, if at any semester your QPA for that semester is higher than your average (cumulative) QPA then your average QPA will go up. Your semester QPA will pull down your average QPA if it is lower than your average QPA.

Maximizing Profit

Suppose that the Snickers manufacturer wants to maximize his profits, what quantity should be produced if the market price of 13.3 oz of chocolate is \$6? ($p^* = \6).

_____.

What if $p^* = \$15$? _____. What if $p^* = \$10$? _____.

Suppose fixed costs go up by 10%. Then what happens to AFC, AVC, ATC and MC. Would ATC go up by 10%, more than 10%, or less than 10%? Why?

Suppose the wage rate goes up by 10%, and the labor is the **only** variable cost. What happens to the AFC, AVC, ATC, and the MC?

Would ATC go up by 10%, more than 10%, or less than 10%?

When there is a tax on a good it means that the supplier has to pay a certain amount to produce a good, and when there is a subsidy it means that the supplier will be paid a certain amount to produce a good.

Ex. Suppose the government imposes a **lump sum tax** of \$5 on chocolate manufacturers. What happens to the AFC, AVC, ATC, and MC? How does this affect quantity produced if $p^* = \$10$ at the time?

Now suppose the government decides to aid the beleaguered chocolate industry by providing a **flat rate subsidy** of \$1 for every 13.3 oz of chocolate produced. What would happen?

The MC would be reduced. What about AVC, and ATC?

What would happen to quantity produced if the $p^* = \$10$ at the time?