



The Marginal Cost (MC) curve is the curve that follows the cost of each individual unit of production. The marginal cost is the cost of "the last one", so to speak. As you can see, after reaching its lowest point, the MC curve will rise more quickly than any of the other curves. In fact, the MC curve is the controlling factor for the average cost chart(s). This curve will go through the apex (the lowest point) of both the ATC and the AVC curves. In a competitive environment, the portion of this curve that lies above the AVC curve is also the firm's short-run supply curve.

The Average Total Cost (ATC) curve is the curve following the total cost of producing all units divided by the total number of units produced. At every point, the ATC curve is equal to the height of the AVC curve *plus* the height of the AFC curve. Because the AFC curve is constantly decreasing, the ATC curve will continually approach the AVC curve. A firm's break-even point occurs where the ATC curve crosses the MC curve.

The Average Variable Cost (AVC) curve is the curve that follows all of the firm's variable costs divided by the total number of products produced. At every point, the AVC curve is equal to the height of the ATC curve minus the height of the AFC curve. The firm's shut-down point occurs where the AVC curve crosses the MC curve.

The Average Revenue (AR) curve is the curve that follows the total revenue of a firm *divided* by the total number of units sold. In economic theory every firm will produce only the quantity of product that it will sell, so this will always be equal to the total units *produced*. This is also the purchaser's price of the item at any given level of production. Marginal Revenue (MR) is always *equal* to AR for the competitive firm. Profit is maximized where MR equals MC, therefore profit is maximized where AR equals MC for the competitive firm.

The Average Fixed Cost (AFC) curve is the curve that follows the total fixed costs *divided* by the total number of units produced. This curve is equal to the height of the ATC curve minus the height of the AVC curve. Because Total Fixed Costs (TFC) do not change in the short-run, the AFC curve will never rise. At the same time, even if production levels become very high this curve will never reach zero. The AFC curve and the MC curve do not cross at any meaningful point.