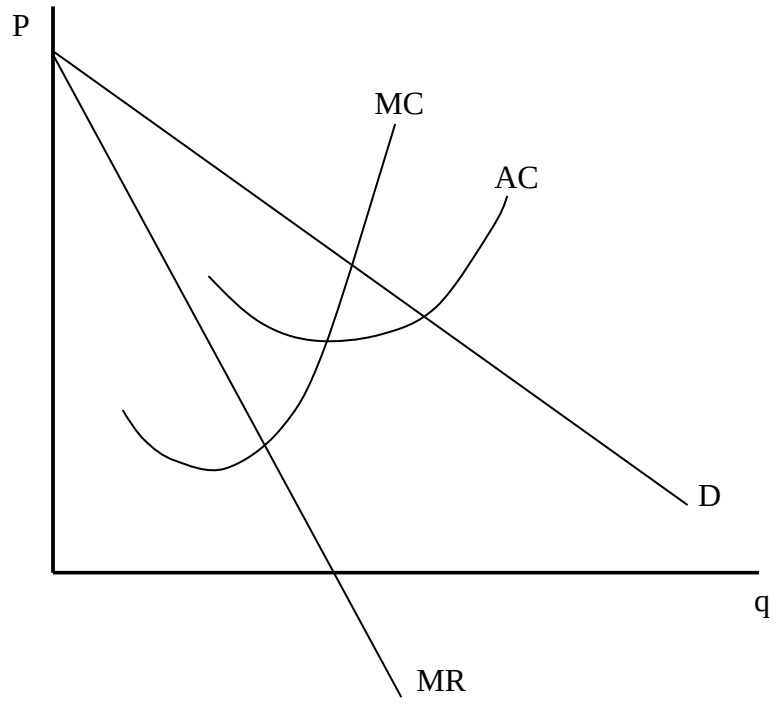
What About Constant MC?
Haworth/Econ 201

The question of constant MC was raised in the Profit Max with Math video. This handout is designed to address that topic.

Here's a typical Monopoly graph.



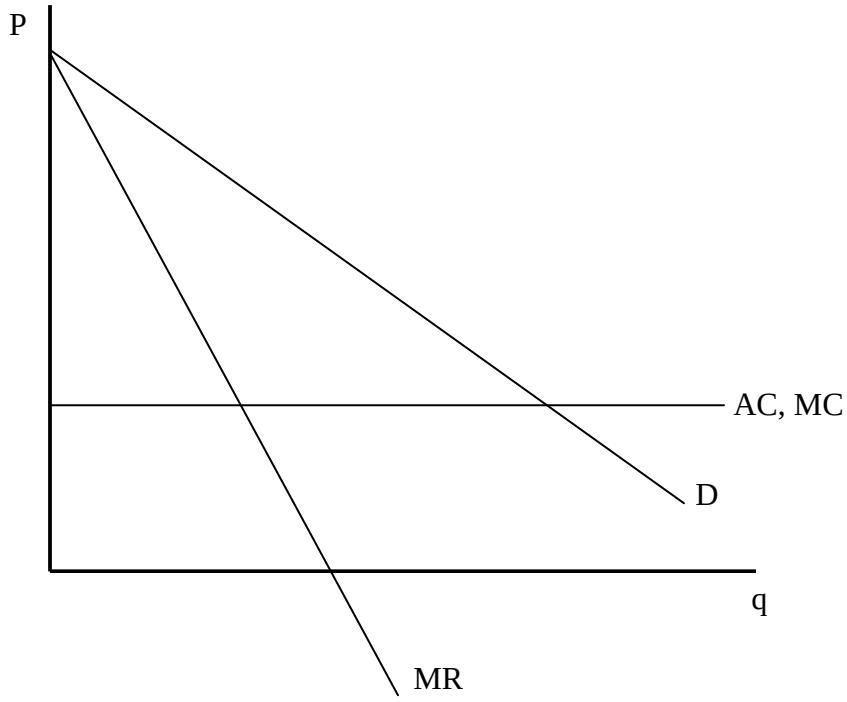
As discussed, the problem with doing the math that goes with this graph is that we end up working with a squared term in the MC equation. The math is just more difficult when we do that. Correspondingly, we can make the assumption that MC and AC are constant. In other words, make assumptions that give us a different graph (next page).

If we assume that MC and AC are constant, then they are graphed as a single horizontal line, because if AC and MC are constant, then they are both going to be equal to the same value (e.g. if AC = 60, then MC = 60).

This is obviously a simplifying assumption – an assumption we made to make the math of profit max a little easier. Is it very realistic, however, to have constant MC and AC?

When MC is constant, then this is a firm that produces a good or service where the cost rises by the same amount with every unit produced. E.g., the first unit has a cost of $60, the second unit has a cost of $60, etc. Do we see examples of that in the real world?

Here's a Monopoly graph with constant MC and AC.



Suppose you chose to fly on a plane from Louisville to Chicago and notice that there's one last seat left on the plane. If the airline sold one more ticket and filled this seat, what would that extra person cost them?

The plane would not need to hire another pilot, flight attendant or put more gas in the plane. We have to assume that the ground crew and terminal people associated with that plane are working whether someone takes this last seat or not. Assuming the passenger needs to be fed or provided with a drink, however, the plane would need to add another meal and a beverage. What would be the cost of this passenger to the plain company? It would be the cost of feeding and providing a drink to this person. If it turned out that there was another seat available, then we can conclude that the cost of this seat is also the cost of providing food and a beverage during the flight.

Therefore, we can see that constant MC and AC imply that we have a firm like an airline (or movie theater, or concert, etc) where selling more units implies adding the same cost with every additional unit sold.

As it turns out, our assumption is not that unrealistic after all.