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Economics 201

The Consumer Equilibrium

Assume that Jane is walking around a church picnic and that she hasn't eaten all day. In an effort
to quench those hunger pangs, Jane walks over to a snack booth to get some pizza because that's
like her totally favorite food. Upon reading the sign on the wall, she notes that pizzas are $2 per
slice. If we assume money is not going to constrain her decision, an interesting economic
question is to ask if we can predict how many slices of pizza Jane will buy?

We begin by recognizing that economists believe individuals make decisions on the basis of
marginal analysis. That is, we analyze decisions by looking at how small changes in
consumption, production, etc., affect someone like Jane in terms of benefit and cost.

Cost in this example is a very straightforward concept, it's obviously the price of each unit Jane
buys, which would be the price of a slice of pizza. We've already established that pizza is being
sold at $2 per slice in this example, and so this is the cost that Jane faces when making her
buying decision. Let's add to this by also assuming that the snack booth doesn't give you a
quantity discount, which means that the price is $2/slice no matter how many slices that Jane
decides to buy. If we define the marginal cost as the cost of each additional unit of pizza, then
the marginal cost (MC) associated with Jane's buying decision in this example is the price of
pizza (i.e. MC is always equal to $2).

Let's assume that the benefit derived from consuming each slice of pizza is satisfaction – as in
the satisfaction or happiness one gets from eating something like pizza. Remember, however,
that we ultimately want to compare benefit and cost, and so we obviously need to monetize our
benefit. In other words, although satisfaction may be the benefit you derive from eating pizza,
we want to monetary value of that satisfaction – as this is something we can compare to MC.

To monetize benefit in this situation, we can ask about the monetary value that Jane would place
on receiving a certain amount of satisfaction. E.g., let's say that Jane has a ranking system,
where she equates smiley faces (e.g. similar to how someone may rank a restaurant or movie)
with specific dollar amounts. Assume that Jane claims each smiley face to represent $1 worth of
satisfaction. Therefore, if a slice of pizza is viewed by Jane as being the equivalent of an 8
smiley face satisfaction ranking, then we can say that this slice of pizza carried the equivalent of

$8 worth of satisfaction. If we define the marginal benefit (MB) as the monetized benefit derived from each slice of pizza, then for this slice of pizza, MB = $8.

Although it's always the case that MC = $2 in our example, the same is not true about MB. Due to the Law of Diminishing Returns, we know that the benefit received from each additional slice of pizza will at least eventually decrease. I.e., as Jane buys more slices of pizza, she gets less benefit from each additional slice and so we get smaller and smaller values for MB.

If the first slice is associated with MB = $8, then Jane would buy that first slice of pizza since MB > MC in that situation. When MB > MC, this is a signal to Jane that she should do more of this particular activity, and so we expect to see her buy more slices of pizza.

As Jane continues to buy slices of pizza, one at a time, we know that she eventually get to a point where MB = $2. Let's say that this occurs when we purchases a 4th slice of pizza. If, in this situation, MB = $2, then we know that MB = MC. We can argue that Jane will buy this 4th slice of pizza, because the benefit of the 4th slice is no less than the cost of that 4th slice, and because she doesn't lose anything in this transaction, it's something she would do. In other words, Jane will continue buying slices of pizza until she arrives at a point where she doesn't get enough benefit from a particular slice to justify spending $2 on that slice.

With that final statement in mind, what would happen if Jane buys a 5th slice of pizza? We know that she'd get less benefit from the 5th slice than she received from the 4th slice. That means that if she did buy a 5th slice, then she'd be in a situation where MB < MC. This result, where MB < MC, is a signal to Jane that she should do less of this particular activity – i.e. she should reserve direction and buy less pizza than 5 slices.

When we consider the 3 possible outcomes covered here (MB > MC, MB = MC and MB < MC), and ask where Jane would find her equilibrium, we know to look for a situation where she has no tendency to make any changes. I.e., she wants to find an outcome where she has no incentive to buy more pizza and no incentive to buy less pizza. That outcome occurs when MB = MC. As this is a consumption decision and because the definition of equilibrium involves finding a point where there's no tendency to make any changes, we can call this outcome a consumer equilibrium. The consumer equilibrium represents a point where exchange will take place.