

Market unravelling essay



**ASSIGN
BUSTER**

Asymmetry of information is said to occur when, in economic activities, some agents are better informed than others. For example, sellers of a particular product will know more about it's quality than potential buyers, especially in the case of second hand goods. The existence of asymmetric information has important implications for the functioning of markets. George Akerlof's paper, ' The Market for Lemons,' argued that asymmetric information actually leads to market unravelling, an extreme form of market failure, where goods fail to be bought and sold at all. To explain Akerlof's argument, I will examine the market for used cars.

There is often great surprise concerning the large price difference between new cars and those which have just left the showroom. Usually the explanation for this price difference is the feel-good factor of owning a new car. Akerlof offers a different explanation. Imagine we have four types of car, there are new cars and used cars, aswell as good cars and bad cars. A new car may be good or bad, as may a used car.

Assume that individuals in the market for cars buy their cars without knowing whether they are good or bad. After owning a car, all individuals can get a good idea concerning the condition of the car. Now the owners of the cars have more knowledge concerning the quality of the cars than potential buyers, hence an asymmetry in information has occurred. The asymmetry in information is the reason why used cars sell for much less than brand new ones. Potential buyers will be suspicious of the quality used cars. The fact that a used car is for sale indicates it may be a bad car, or as Akerlof describes them, a " lemon", simply because owners of decent cars are

unlikely to sell them. Buyers, therefore, would only buy used cars at a discount.

We can now go on to explain why this asymmetry of information leads to complete market unravelling. First of all, we need to make several assumptions. We assume that in the market for cars, there are more potential buyers than sellers. Also, individuals in the market are expected utility maximisers, who are risk neutral. Individuals therefore base their decisions on expected utility. The quality of a car is unknown unless it is used for a period of time, and the quality distribution is the same for brand new cars and almost new cars. The cars are all of good quality, even those which have been used for a short period of time, say a week.

We need a function to show the expected quality of the cars, since demand is dependent upon both the price and the expected quality of the car. We assume that the expected quality of the car is the highest price buyers are willing to pay for it. For simplicity, we will model the quality function as having a uniform distribution, ranging from zero to two. This means that the probability for buyers of getting each level of quality is the same, and quality is a continuous measure ranging from zero to two. We will index quality using $q^{\frac{1}{2}}$.

Sellers have a lowest price at which they are willing to sell. This is called the reservation selling price, which we will index. The reservation price is an increasing function of quality, as quality of the car increases, so does its minimum price. For our example, we will assume this price is q and that this

price is the same for everyone and is known. For all quality levels, the reservation price is less than or equal to the highest buying price.

Now we have established the foundations of the model, I will analyze two cases: the market for brand new cars, and the market for second hand cars. In the market for new cars, the actual quality of the cars is unobservable to everyone. Because individuals are expected utility maximisers, they will base their decisions on the expected quality of the car. Expected quality in this case is one. (Due to the uniform distribution of quality, ranging from zero to two.) One is therefore the maximum price potential buyers are willing to pay.

The reservation price is. The price is less than the maximum buyers pay: ??

1. Therefore, all cars will be on the market. The equilibrium price will end up being one, as prices will be pushed up as a result of there being more buyers than sellers. In the market for almost new cars, quality is observable to the owners only. In this case, given an initial arbitrary price p , cars with quality subject to the reservation price being less than or equal to this arbitrary price p are on the market: This is illustrated on the diagram below:

We know the price "cutoff" point is p , but what is the quality cutoff? We obtain this by rearranging the following equation: $r = \frac{3}{2}p$. Hence, we know that any cars with quality level above $\frac{3}{2}p$ are excluded from the market, as are cars with price higher than p . Suppose the quality cutoff, $\frac{3}{2}p$, is less than 2. In this instance, the expected quality of cars on the market, which we will denote $q(p)$, is $\frac{3}{4}p$. Price will be less than $\frac{4}{3}$, which we know from rearranging the equation: $\frac{3}{2}p < 2$. If the quality cutoff is above 2, then the expected quality remains the same as before, because the quality cutoff is

outside of the quality distribution. In this case, $\frac{3}{2}p > 2$, therefore price will be above or equal to $\frac{4}{3}p$.

So, the expected quality function is as follows: $(p) = \frac{3}{4}$ for $p < \frac{4}{3}$, $(p) = 1$ for $p \geq \frac{4}{3}$. We can show this function diagrammatically: What will be the equilibrium price in this example? Given an initial market price p , potential buyers will decide to buy these cars if their expected quality is more than or equal to this initial price: $(p) \geq p$. If the expected quality of cars is above this arbitrary price: $(p) > p$, then because there are more buyers than sellers, the price will increase until the expected quality is actually the same as the price of the car. Therefore, the equilibrium price is where $(p) = p$.

This is represented on the previous diagram using a 45-degree line. We can now find where the equilibrium in the market will be, as it should be where the price line and the expected quality line intersect. This is shown below: As the diagram illustrates, the only equilibrium is where price is zero and expected quality is zero. From looking at the uniform distribution of quality, we can see that the proportion of cars with quality equal to zero, is actually zero. This is an odd result, as it means there are practically no cars for sale in the market, even though there are potential buyers and sellers, hence the market completely unravels.