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Usually, staying up late somewhere, or going back home after the concert of popular artist, we take the smartphone to order an Uber taxi, and we find the following thing – the fare is n times the regular rate. This is surge pricing – Uber’s pricing system.

Surge pricing depends on the frequent fluctuations in demand and supply for services in the market. Such systems are sometimes used on motorways to regulate traffic or on energy markets in order to regulate prices. A “ reduced” copy of this practice is the situation in which sellers inflate the prices of essential goods (water, batteries) after natural disasters.

Obviously, consumers do not like these methods. They are offended by the fact that the same trip can cost differently, depending on the day or even the hour. At the same time, the pricing system described above demonstrates that the market is able to adapt to emerging situations. When the demand for taxi services in a certain area rises and the waiting time for the car increases, the client who orders taxi is informed that the fare will be more than usual. When tariffs grow, the market begins to work. Higher fare rationalizes the market and forms a queue for cars from those customers who are willing to pay: as a rule, they are wealthy consumers or those who do not have alternatives, and they are forced to go only by taxi.

Increasing the price of travel for those customers who simply do not have a choice of another means of transportation sounds like a fraud, however, without surge pricing, these passengers will not have a chance to call a taxi, waiting in the general queue. Recently, Uber published a report in which it clearly showed how the surge pricing system works in practice by the

example of two events in New York. So, after the end of one of the popular concerts in Manhattan, the number of activations of the Uber application in this area increased several times within a few seconds. The algorithm of price formation, which is used by the service program, allowed to increase the average waiting time of the car only slightly, and the percentage of completed orders did not fall below 100%. On the eve of the New Year, the price surge algorithm did not function, and as a result, the average waiting time of the machine increased from 2 minutes to 8, and the percentage of completed orders fell to 25%. The above comparison may slightly overestimate the results of the Uber algorithm. All taxi drivers, even without the help of systems, know that in the places of various concerts and festivals, there is always a larger number of taxis.

Nevertheless, the possibility of earning an additional tariff can motivate drivers to forecast high-demand places and prepare for an influx of customers. Surprisingly, the fact is that the more Uber will use the price surge algorithm, the less it will need it. “ Proactive” tactics of drivers and miscalculation of places of potential excitement will help to eliminate the imbalance of demand, which causes the need for higher prices. Our group decided that it would be interesting from microeconomics point of view to model “ surge pricing situation” on demand and supply curves. When demand on Uber taxi is regular price remains the same for everyone.

But during time when demand increases and the availability of drivers is less than number of riders trying to place an order, surge pricing algorithm, employed by Uber in order to equilibrate supply and demand, takes place. According to this algorithm multiple is assigned to the order and it derives “

surge price”, multiplying the standard fare. Graph 1 below shows market equilibrium during period of regular price and regular demand on Uber. Let’s say, it is not uber-busy period and fare is at its regular level. Therefore, equilibrium price is P* and equilibrium quantity is Q*, market equilibrium is at point e, as we can see it from the graph 1.

Graph 1. Graph 2 shows us the market condition in period when spike in demand takes place. Demand increases and we see that it shifts from D to D’ and price rises from P* to P’. Spike in demand induces drivers to drive, therefore supply rises as well (it expands along the supply curve) and quantity shifts from Q* to Q’, therefore there is a new equilibrium point at e’.