Yuxuan Wang

Data science, Applied Math

Yuxuan (Leo) Wang is a sophomore at Duke Kunshan University. He is interested in data analysis, math, and business. In this course, he expects to learn some basic concepts as well as theories in economics and develop an economical way of thinking. By taking this course, he also wants to find out whether economics can be a potential major for him. He believes that combining data analysis skills with economics principals helps to solve economic problems. In his spare time, he loves to play badminton, table tennis, and tennis. He is willing to have fun with all of you.

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Marginal Changes In Real Life

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Marginal changes refer to small incremental adjustments to a plan of action. Measuring marginal changes rationally usually contributes to the optimal decision. In our daily lives, we do not always face significant issues. Instead, we are faced with small issues that can be split into many steps. For example, when we eat, the whole process consists of several mouthfuls of food. In this case, what we need to consider is the marginal change or the next mouthful of food, provides you with more enjoyment of taste or more pain of being stuffed, so that we can decide when to stop to make the meal most satisfying. However, the real condition can be more specific. For example, in the last case, some people may also consider the influence on their body shape, which makes it hard to tell when marginal costs exceed marginal benefits.

How Market Works

Round Table Conversations




Author: Yuxuan Wang
Contributor 1: Jingwei Li
Contributor 2: Zi Xun
Contributor 3: Qinyue Lei

Summary

The outbreak of COVID-19 early this year brings vast differences to our lives as well as an outside shock to the mask market. The demand for masks increases dramatically during this period, followed by an increase in supply. The equilibrium price of masks first increases and then decreases. Our group discussed how the market adapts to such an incident.

We apply some methodologies, such as demand and supply curve, to the problem to help us have a clearer view during the discussion. The lessons we learned is that we may apply those economic methodologies to predict the future market trend.

Conversations: Outside Shock

Jingwei Li: We can talk about the mask market during the epidemic. The accident must have had a considerable impact on the initially competitive market.

Yuxuan Wang: In this case, the Outside shock is the coronavirus. People were not expecting such an emergency that they were utterly unprepared for it.

Xun Zi: I agree. It takes time for the market to adapt to the situation.

Conversations: Supply and Demand Change

Zi Xun: We can analyze the change of supply and demand with the help of the supply and demand curve.

Yuxuan Wang: Indeed. After the break out of COVID-19, the quantity demanded of masks would dramatically increase due to the practical need for masks as well as people's panic. As a result, the demand curve would shift to the right.

Jingwei Li: Then, after realizing making masks is profitable, mask manufacturing companies began to increase the manufacture of masks and supply more. Thus, the supply curve would shift to the right, too.

Yuxuan Wang: Considering the fact that the price of the mask now is higher than the original, the shifting of the supply curve is not as dramatic as that of the demand curve.

Jingwei Li: Yes. And the process would happen slowly.

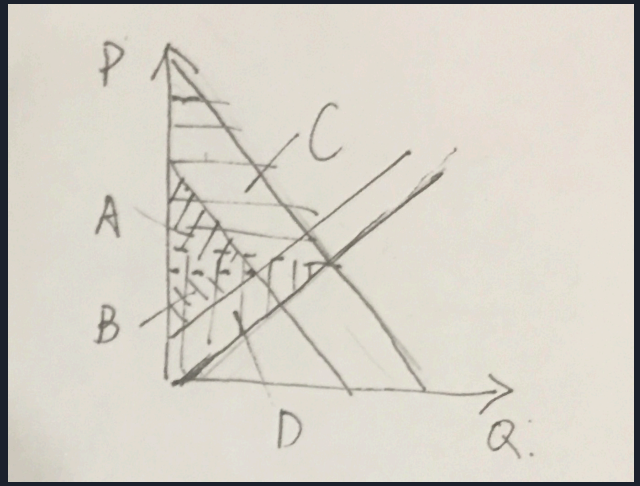
Conversations: Equilibrium Price and Quantity Change

Qingyue Lei: The original equilibrium price of masks is relatively low. After the demand curve shifted, the equilibrium price increase sharply. And after the supply curve shifted, the equilibrium price decreased, but remained higher than the original equilibrium price.

Yuxuan Wang: The Chinese government also set a price ceiling for the mask price. Therefore, the price of masks might not reach the equilibrium price. Then, a gap between quantity demanded and supplied might occur, and caused a shortage of masks in the market.

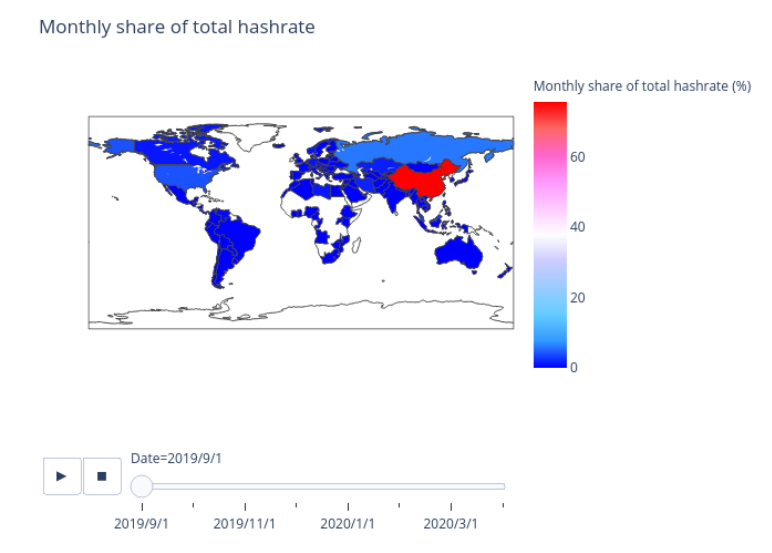
Jingwei Li: Another point I want to mention is elasticity. Before the break out of COVID-19, masks were normal goods. During the epidemic, masks became the necessities of our daily lives. The slope of the curve represents the elasticity of a good, and thus the demand curve would become steeper than before.

Conversations: the Change in Consumer Surplus, Producer Surplus, and Total Surplus



Before the COVID-19, the consumer surplus is represented as region A, while the producer surplus is represented as region B. After the COVID-19, the consumer surplus is represented as region A, while the producer surplus is represented as region B. After the epidemic, both supply curve and demand curve shift to the right. The equilibrium price increases. As a result, as is shown in the figure, the producer surplus and the total surplus increases. Meanwhile, the change consumer surplus remains unknown, because the height of the triangle decreases, while the base increases.

Addressing Macro Data



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https://chart-studio.plotly.com/~zlysunshine2020/45/#plot
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Hashrate is how we measure how much computing power everyone around the world is contributing to mining Bitcoin. Miners use their computer processing power to secure the network, record all of the Bitcoin transactions, and get rewarded in bitcoin for their efforts. As is seen from the graph, China's share of total hashrate remains about sixty percent, while the share of America, Russia, and Kazakhstan all increase by about ten percent from September 2019 to April 2020. The graph shows that more countries are paying attention to Bitcoin mining. More people's joining makes the Bitcoin network more secure and complicated to mine Bitcoin in the future.

Self Reflection

In this course, professors not only imparts basic knowledge of economics but also encourages us to apply the knowledge to cases in real life. What benefits me most is how economics work as a team and take advantage of figures to deal with daily life issues. Although I may not be an economist in the future, I believe the knowledge and ideas I learn in this course will eventually be helpful.

One of the biggest takeaways for my future decision-making is that if you believe you are right, do not mind the rejections. Another important takeaway is do not deposit money into the bank. I can invest myself rather than giving the chance to the bank.

Future Economist Perspective

The reason why I wanted to be an Economist might be that Economists are able to see through the economical events and predict what is about to happen in the future. Via such ability, economists can react to events more rationally and maximize their profit.
If I win Nobel Price in the future, I think the subject might be a program to collect data and make the best decision for governments to reach the market efficiency.