Final Presentation

Ziang Zhou

Ziang (Alfred) Zhou

Data Science, Machine Learning, Automatic Speech Recognition (ASR)

Ziang Zhou is a Junior majoring in Data Science at Duke Kunshan University. He currently works on Computational Paralinguistic Challenges and Applications with Professor Ming Li of SMIIP Lab. Ziang has become increasingly capable of handling modern NLP and ASR challenges, especially paralinguistic problems. He has a special passion for applying biological activity detection technology supported by deep learning algorithms to the protection of endangered wildlife and the detection of human diseases. He is also interested in taking advantage of modern computational availability to create in-depth and unique insight in business analysis, that's one of the reasons he chose to take ECON 101. Although this is his third year at DKU, the economy remains a virgin field for him. He is very excited to engage in this course and see what difference this course will bring to him

Speech and Multimodal Intelligent Information Processing Lab | Duke Kunshan University

Email: ziang.zhou372@dukekunshan.edu.cn
LinkedIn: www.linkedin.com/in/ziangzhou518/

How Market Works

ECON 101 Group 5
Round Table Conversations

Author: Ziang Zhou
Contributor 1: Jinchen Zhao
Contributor 2: Meiyi Guo
Contributor 3: Jiaheng Zhao

Summary

Our group selected the case of the Chinese Movie and Cinema Market in 2020 during COVID-19. Generally speaking, the year 2020 has been a hard year to survive for firms in this industry . People were asked to keep social distancing all around the world, forcing public organizations such as cinemas out of business. Months later, after the Chinese Government released the decision to reopen the cinema, the Chinese Movie and Cinema Market has been through an interesting resurgence. This revival can be segmented into three stages. The first stage is the first batch of reopening cinemas underestimated the demand of the market and set a low price at the beginning. The next stage is about growing demand with stable supply. The final stage is about growing supply and dropping demand. Each stage must have its unique reason for changes in demand, supply, and price. In this Round Table Conversation, our group will be looking into this case from three aspects, which are Outside Shock, Demand or Supply Change, and Equilibrium Price and Quantity Change.

Conversations: Outside Shock

Author : Many factors have been affecting the Chinese Cinema and Movie Market, and COVID-19 stands out as the most devastating one. Because of the coronavirus, the audience was strongly suggested to keep themselves from all public areas, leaving the cinema and Movie industry dropping out of business.

Contributor 1: Months after the order to close the cinema, China has decided to reopen her cinemas with restrictions . The reopening of a growing number of cinemas is a positive incentive for the market .

Contributor 2: Many movies are postponed finitely or infinitely during the COVID-19. The reopening of cinemas leads to the release of new movies, and the replay of some classics

Contributor 3: At the time that cinemas reopen, a large number of students were on holiday. They have plenty of time and money to spend in the cinema, after its absence for months.

Conversations: Supply and Demand Change

We concluded that the supply and demand change of the Chinese Movie and Cinema Market can be divided into three stages.

Contributor 1: I think the first stage can be understood as the cinemas trying to test the reaction of the audience. They are concerned that people would still be afraid of coronavirus even situation in China is under control. So they set the price relatively low in the first stage. The demand was underestimated, so the demand curve shifts left, while the supply curve remains.

Contributor 3: The second stage can be analyzed from a short-term perspective. In a short period of time, the supply is limited, since not many cinemas are reopened, and it also takes time to prepare for reopening for other cinemas. On the contrary, demand is constantly growing. The reopening of the cinemas and reintroduction of postponed new movies act as incentives to the consumers. Therefore the supply remains small while the demand is growing, which results in the rise in price.

Author: I agree! But things might get a bit different in the long run. In the long term, more cinemas will get prepared for the reopening, causing the growth in supply; simultaneously, the demand remains stable. The rise in supply will shift the supply curve to its right, given the demand remains still, the equilibrium price will drop.

Contributor 2: Great point! However, I think the demand will decrease. As the summer approaching its end, more people are getting back to their routine life again. This will cause a drop in demand for the Movie and Cinema Market. Given the growing supply for this market, the price will drop without doubts.

Conversations: Equilibrium Price and Quantity Change

Author : For the first stage, where the cinema underestimated the demand for movies, the supply curve remains, while the demand curve shifts left, and this resulted in a lower equilibrium price, together with a lower equilibrium quantity . As a result, since movie ticket is elastic, consumers respond to low prices elastically, which leads to the increase in demand.

Contributor 1: In the second stage, the short-term perspective, since the supply is limited, the supply curve would not shift . As the demand constantly grows, people are willing to pay a higher price for each ticket, which tells that the demand curve shifts right . With changes above taking place, the new equilibrium price will be higher, and the equilibrium quantity will also grow .

Contributor 3: I agree with you! Furthermore, in the third stage, when more and more cinemas are reopened, the supply grows correspondingly. Since workers and students are getting back to their routine, their leisure time will drop significantly, causing a reduction in the demand side. As a result, the supply curve shifts right, and the demand curve shifts left . This resulted in a lower equilibrium price, while it is hard to determine the change of equilibrium price.

Contributor 2: I agree. For the equilibrium quantity, I don't think it can be considered in qualitative thinking . Instead, further quantitative analysis is needed to determine the new equilibrium quantity .
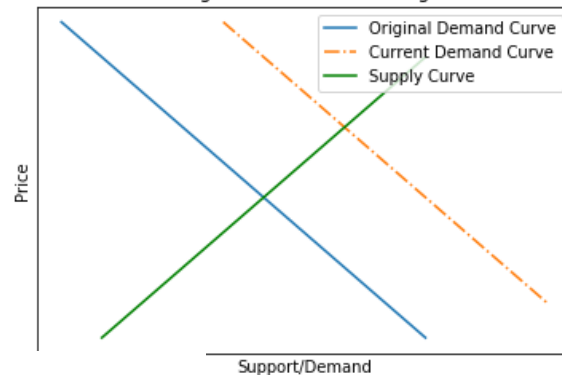
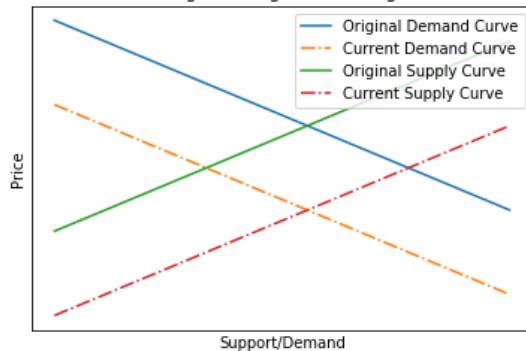# Plots: The Curve and Equilibrium Shifts in Three Stages
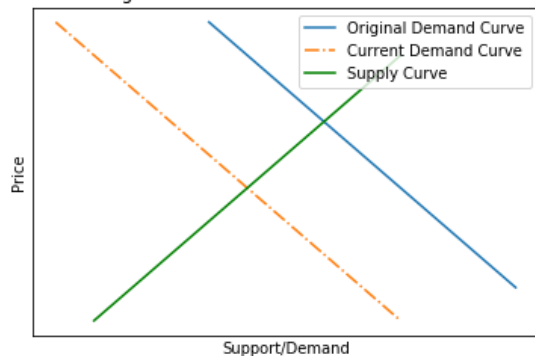
Changes of Surpluses in Each Stage

Stage 1 -> stage 2:

From stage 1 into stage 2, the demand, in other words, the number of audiences, increased due to incentives including the reopening of the cinemas after months of locking down and the reintroduction of postponed new movies. However, cinemas need time to prepare for their reopening, therefore, the supply remains. To speak in graphs, the supply curve remains while the demand curve shift to the right, leading to an increase in both consumer surplus and producer surplus, therefore an increase in total surplus.

- Stage 2 -> Stage 3(4):

Stage 3 and stage 4 can be considered together as a period when the supply grows and the demand drops. The former grows because more and more cinemas are opening again, offering more seats, and the latter falls due to people getting back to their businesses with less leisure time for movies. While supply growth will lead to a right shift of the supply curve, there will be an increase in consumer surplus, producer surplus, and total surplus. By contrast, the drop in demand will impact the opposite. It is hard to quantify the impact without more specific data. Therefore, the consumer surplus, the producer surplus, and total surplus cannot be determined in this case.

Screenshot of the Figure and LinkedIn Paragraph

Bitcoin Electric Consumption, TWh (annualized)
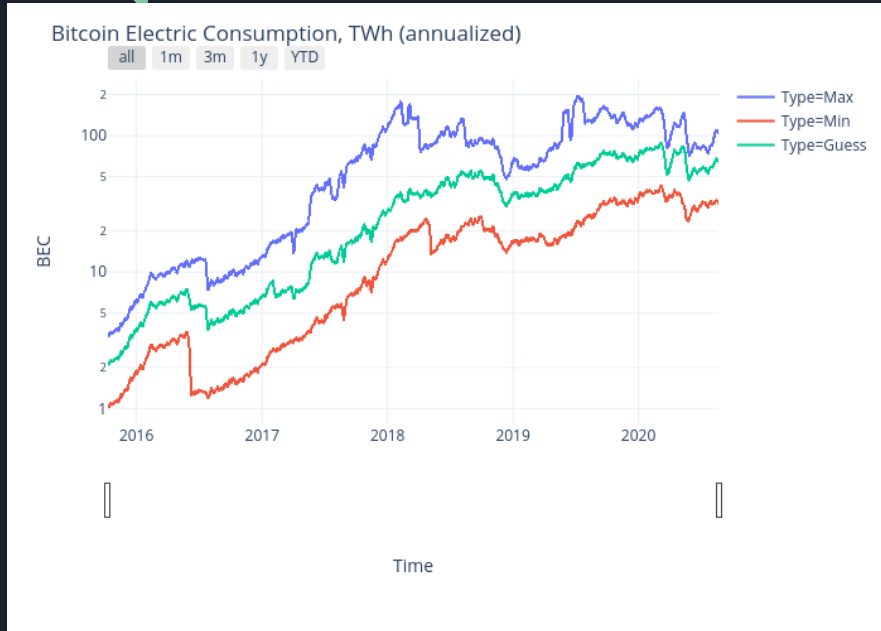
The **#Bitcoin** Electric Consumption (BEC) provides the latest and reliable index of the total electricity consumption of the Bitcoin network. The electricity consumption is estimated by terawatt-hours (TWh), and it is extremely high due to the massive implementation of crypto mining to gain bitcoins. Given the shocking price volatility of bitcoins recently, the **#BEC** index is regaining people's attention. Thanks to Professor **Luyao Zhang, Ph.D.**, the instructor of my ECON course, I managed to gain some insight into this brand-new area for me. As we can see in the chart, the BEC index has an overall growing trend, although becoming smoother than previously. We analyzed a sharp drop in 2016, but ever since then, the BEC has been growing steadily. After research into the reason for the drop, I found that in July 2016, the reward of mining was halved to 12.5 bitcoins, which might be the reason that miners get disappointed and quitted. Through this research and analysis into Bitcoin Electricity Consumption, I started to think of the reason behind certain turning points that appeared in the graph like an **#economist**.

Read LinkedIn Post here

Growths and Takeaways

Growths as An Economist and Takeaways

- Starting from scratch, I first learned about the basic ten principals, which gives me a feeling towards economics and nurtured one of the most important mindsets within me – marginal thinking. By studying the combinative and separate effects on merchant prices from perspectives of demand and supply, I become aware of the impacting factors and the way they affect demand and supply. This has brought me further understanding from the consumer and the producer perspectives towards merchants' price changing. Besides the domestic economy, I learned that international trade can be influenced in various degrees depending on the factors of each country such as tariffs and quotas.
- Besides analyzing the economy from a micro-economic perspective, I also learned as an economist to analyze on a larger scale, by looking into GDP and its components, together with the impacting factors that underly each of them. Besides, I also tried to find out how the economy from a macro sight reflects the wellbeing of each individual by looking into CPI and GDP deflator. Apart from analyzing a closed economy, which is often presumed in many economic models, I also gained an insight into the international flow of goods and capital, and how the indices like Net Export and Net Capital Outflow influence a country's financial condition. Other than analyzing an economy in the long run, I looked into the fluctuations of the economy from the perspective of a short run since we can never ignore the sticky property of wage or price adjustment.
- In the future, as I have mentioned in the first homework, marginal thinking will be a crucial takeaway from this course. It makes decision-making more reliable and efficient. Another takeaway is that, just like we are learning economics in both short runs and long runs, any decision-making process should follow this rule. Considering solutions and adjustments in a short time scale and a longer one can best prepare us for the uncertainty of the future.

Brainstorm about the Future
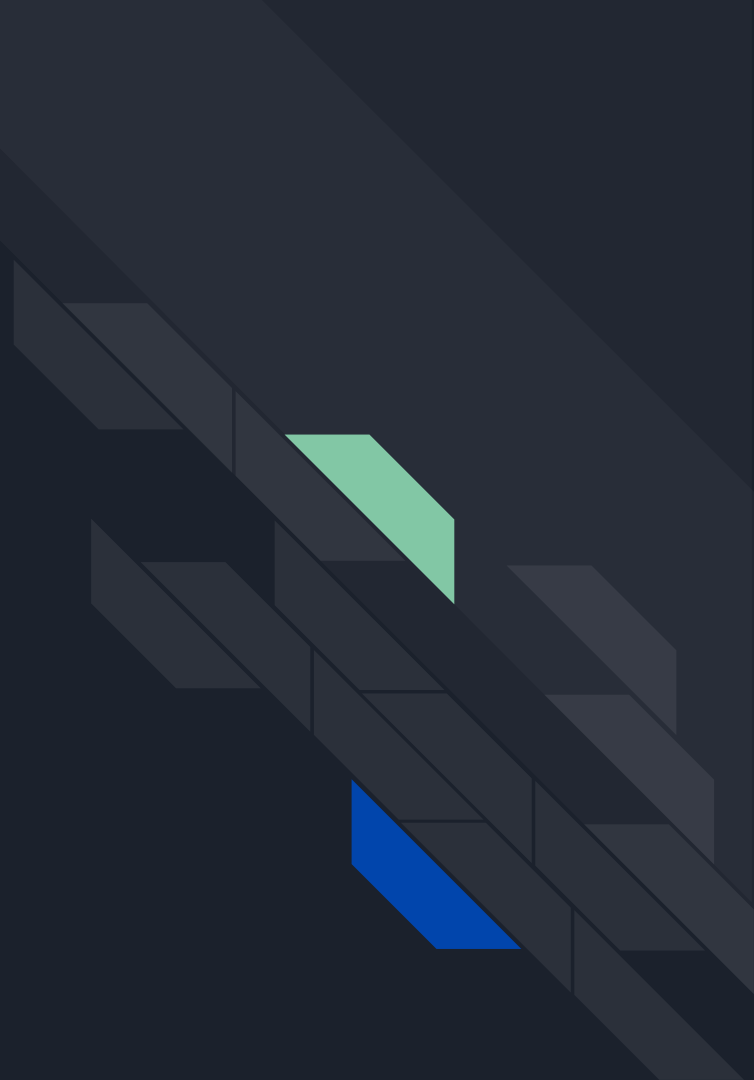
Although I am a data science major, I reserve the possibility to become an economist. I have always been more interested in the underlying cause than the phenomenon. And that's why econ has a charm in me that economists always investigate the phenomenon with rigorous reasoning. This mindset overlaps with that of Data Science since we as well tried to debunk the outliers of some deceptive data through rigorous and discreet analysis. After learning the introduction of economics, I gained a more systematic insight into how the economy works from the perspectives of the microeconomy and macroeconomy.

Shall I win the Nobel Prize in the future, I would like to include the following in my winning remarks. It was such an honor to win this prize! Thanks to my family for their support, I was able to devote myself to the researches in the economy. Thanks to Duke Kunshan University, I was well-equipped with rigorous thinking and global vision in a metropolitan and inter-disciplinary academic atmosphere. Thanks to Professor Luyao Zhang, who brought me into this field, I was granted with vision and expertise in Data Science and Economics. I really appreciate all the obstacles and opportunities that have brought me this to where I am now. I will keep contributing what I can for the well-being of the entire humanity.

Thank You!