

# ECON 101 - Economic Principles

## Final Presentation

By Naol Basaye

# Naol Basaye

## Data science, Economics



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Naol Basaye is a sophomore at Duke Kunshan University, working towards a bachelor's degree in Interdisciplinary Data Science. Highly interested in Financial Markets and Digital Marketing, Naol plans to build a career in a collaboration between Data Science and Economics.

Naol worked as an assistant to the Specialist of University Branding and Marketing at Duke Kunshan University for a year as a student worker at Duke Kunshan University Office of Communications and Public Affairs. From doing research to planning and covering events, he worked with a passionate team of professionals to make changes that glorify the brand and positively impact the school community.

Besides running a charity organization he founded to support needy children with education materials, Naol spends his time, besides studies, on reading business topics he is interested in and presenting his findings through YouTube videos. He hopes to one day become a significant and influential figure in his field, and the world, to effect good.

# People Respond to Incentives



**Naol Basaye**

Incentive is something (reward (disincentive, a punishment)) that causes people to act or not to act. If people can benefit by doing (or not) from the provided incentive, people (rational people) will act on it.

For example, I am discouraged from studying in the afternoon because it is hot where I am. To better manage my time, I provide myself with an incentive – extra entertainment after I complete my studies in the afternoon.

Granted, taking extra entertainment time after studying will take more time away from my other plans. But when compared, I would waste more time by not studying in the afternoon than I would enjoying extra entertainment.



# How Market Works



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# Summary

Oil producers most usually produce oil with the predicted demand and price their products as such. However, when the COVID-19 pandemic hit, the producers' predictions proved erroneous, and demand fell sharply. But since the producers have already stored much of the oil, there was an excess amount of oil in the market that eventually led to a negative price of -\$37.63 a barrel in West Texas Intermediate Crude Oil on April 20, 2020. My research looked into the Outside shock to the oil market, Supply and Demand change, Equilibrium price and Quantity change, and Total surplus.

The lag in response to the lower demand led to a sharp price fall. After the demand curve shifted to the left, the supply curve started to catch up with the shift by shifting left after some time. However prices are increasing to restore equilibrium price, the total surplus has decreased.



# Outside Shock

In normal times, most people would go out of their homes to drive or ride a motorized vehicle or an aircraft to commit to work or travel. However, with the breakout of COVID-19, most countries ordered a Stay in Place order that prohibited the near entirety of human movement. Consequently, people demanded less gas and oil than usual.

With the fall of demand, the products that were in store were not distributed to the consumer as planned. However, in the meantime, the production of more oil continued underway as shutting oil wells down would be very costly in the long run. With the combination of already in-store oil and new production, storage became a severe issue leading to producers willing to pay purchasers to take the oil off their storage facilities.

This outside shock to the oil and gas market, the COVID-19 pandemic, led to a higher supply than demand, effectively leading to the fall of equilibrium price.



# Supply and Demand Change

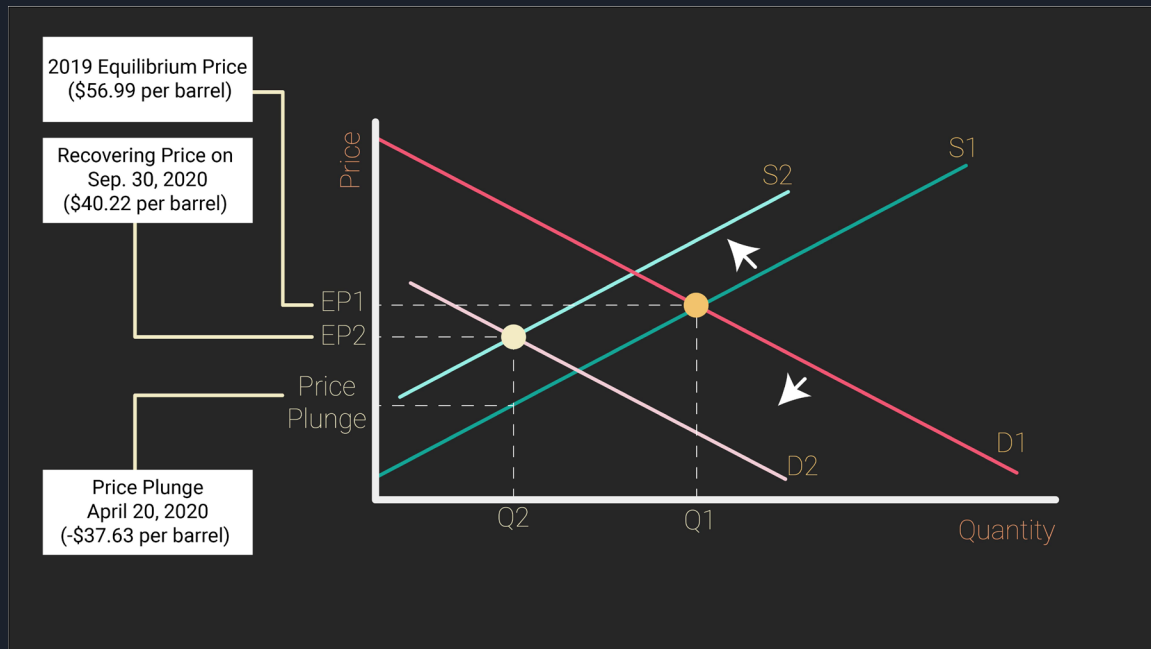
In 2020, according to U.S. Energy Information Administration, the U.S. liquid fuel consumption was projected to fall by 23% or 4.6 million barrels per day.

This was due to the restriction of movement that forced people to consume less oil for the period. The sudden fall in demand, however, was not met with a comparable fall in demand. This was due to the lag in the effect of price change to production, usually a time of six-months.

Consequently, production was not cut down by 700,000 barrels per day in the U.S. until May 2020 from its 2019 levels. This led to an oversupply that resulted in high supplied quantity to low demand that had already shifted the demand curve to the left.



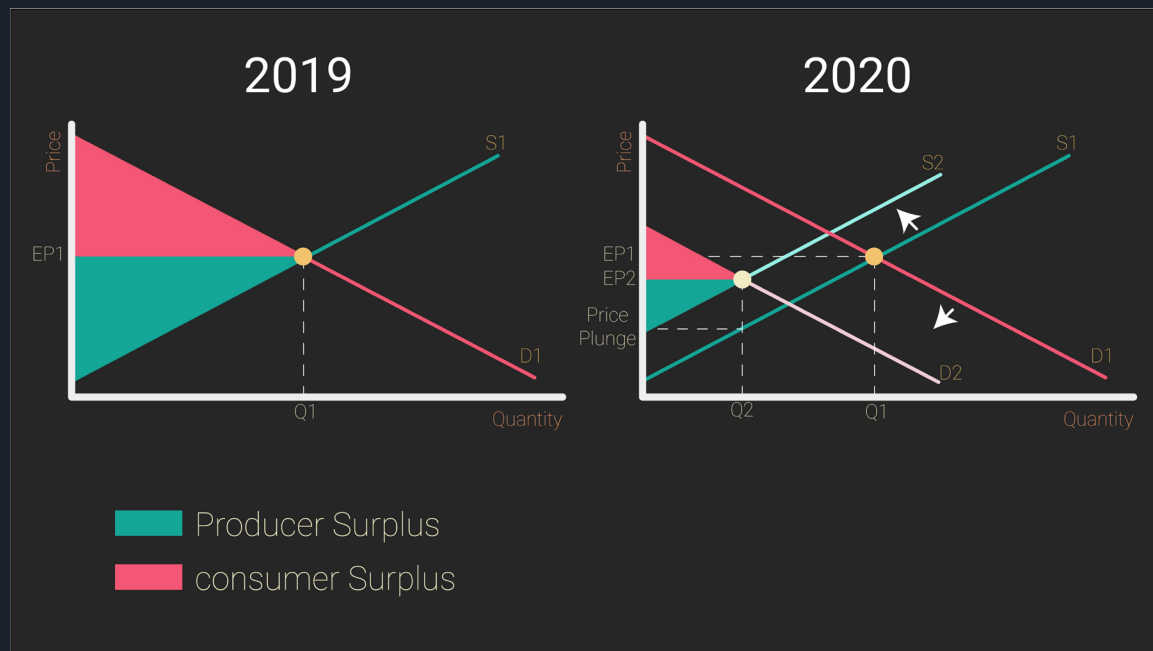
# Equilibrium Price and Quantity Change



After the price plunge of April 20, 2020, which was resulted by the fall in demand and consistency in supply, producers responded by reducing the supply.

This was, of course, a collaborated response from U.S. producers and OPEC+ producers. As of September 30, 2020, the price of WTI is adjusting to the supply and demand.

# Consumer, Producer, and Total Surplus



These events led to a decrease both in consumer surplus and producer surplus, thus a decrease in total surplus.

Consumers that consumed  $Q_1$  amount of oil for  $EP_1$  price now had to cut their consumption. This decreased the height of their 'surplus-triangle.'

Producers, as well, faced the same fate with a decrease in their production and price. Consequently, the total surplus decreased.

# Addressing Macro Data as Economist

There is a considerable amount of disagreement regarding the importance of cryptocurrency in relation to government control and freer open markets. From my Intro to Economics class at Duke Kunshan university with Luyao Zhang, Ph.D., we took a look at Bitcoin Electric Consumption (BEC) in Terawatt-hour (annualized) since late 2015. We observed a general increasing trend in BEC, with a steep slope from late 2015 to mid-2016 followed by a sharp drop possibly due to the Bitfinex hack of about 120,000BTC, and a less steep slope after post-early-2018. This means, for the world economy in general, an increase in the consumption of electricity, which translates into higher GDP. In the meantime, it indicated an increase in the trend into common currency, which is the base for an open economy.

LinkedIn post: <https://bit.ly/33LZPQU>

Graph: <https://bit.ly/34MYoBe>



# Growth as an Economics

Throughout this course, I was able to:

- Understand the basic concepts of Economics that govern society.
- Get the basic understanding of Economic reasons that effect a stable economy, unstable economy, economic crash and failure, open markets, and government policies to affect them.

Finally, I have acquired the ability to make decisions based on opportunity costs.

Thank You,