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Mathematical Analysis of the COVID-19 impact on the United States Economy

Introductio n

The COVID-19, a novel coronavirus originating from Wuhan, China, is now hitting the United States of America very hard and heavily impacting the daily lifestyle of every single American. One of the biggest impacts of this virus is on the United States Economy. Millions of people are out of jobs and the government is frantically trying everything they can to lift up the economy.

Analysi s

In the United States, the three primary sources used to determine the health of the economy are the Dow Jones Industrial Average, NASDAQ, and the S&P 500.

Dow Jones is a stock market index that measures the change in the stock performance of the top 30 companies in the United States.

NASDAQ and S&P 500 are similar indexes.

Since the year 2016, the economy had been on a steady increase. In February 2020, it was at the highest point ever in history and people were thriving.

Shockingly, on March 12, 2020, Dow Jones suffered its largest point loss in history. This was due to the Coronavirus fears that were starting to spread among the public.

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Over a span of a few days, over 8300 points, representing 28% of the stock market was wiped out. This set the economy back almost 4 years. Fear and anxiety started spreading as many companies could not pay their employees and others saw the value of their money dwindling.

Not only did the Dow plunge, but the NASDAQ and the S&P 500 indexes did as well.

To solve this huge problem, the government decided to infuse money into the economy using a paycheck protection program. President Trump signed a two trillion stimulus bill called the CARES (The Coronavirus Aid, Relief, and Economic Security) Act on March 27th, 2020.

Even though many Americans will be helped by this infusion, there are consequences of putting extra money into the economy.

One particular hazardous effect is inflation. Inflation occurs when the value of money goes down. So, you have to pay more to get the same things. One way to think about this is that 8 cents in 1920, is worth the same as 1 dollar now. In essence, this means that since there is more money circulating, the amount one has to spend to buy something has increased.

In actuality, there is inflation every year, usually proportional to how much the gross domestic product changes, which basically is how much a country makes. This inflation does not impact people much as many people get higher salaries in subsequent years that match the inflation rate.

In this case, since there is now much more money in the economy due to the CARES Act, the value of each unit of money has actually gone down. If this 2 trillion dollar stimulus package causes hyperinflation, extreme inflation, the United States could go into a recession.

Considering that our Government is currently in 22 trillion dollar debt, many economists believe that the printing of the two trillion dollars is a bad idea.

Others say that during a pandemic, and considering that the dollar is the currency of the world, its value is safe.

The economic damage of other recessions such as the Black Monday crash, the 9/11 downturn, and the 2008 financial crisis have taken 2-4 years to correct. The below chart depicts the time taken to recover from these economic declines.

Source: Bloomberg

In contrast, at this time, the Dow Jones is almost 50% back to its value from before the crash. This may be because the crash was due to rampant fears in the public, but now that social distancing is in place and the infection numbers are droppings, people are feeling safer.

Another sector that took a big hit from Covid-19 and has impacted students like me is education. Most kids in the country are not attending physical school anymore and their education has shifted online. Many universities are fully online now and in-person summer camps are closing. Standardized exams have also taken a big toll, some being canceled and others moved online.

Some states are slowly reopening. The country is getting back on its feet and we will get through this together. Stay strong and healthy.

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