

# Research on the Impact of COVID-19 on the Entertainment Industry: Take the Walt Disney Company as an Example

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## ABSTRACT

Starting in 2020, the COVID-19 began to spread globally, leading to a severe global economic recession. Many countries have imposed lockdown measures and travel restrictions because of the spread and harm of COVID-19. So, the balance between demand and supply has been broken, and many industries have been facing great challenges. The Walt Disney Company (TWDC), which focuses on the films industry and tourism, is facing a crisis. In this paper, the correlation between the number of new global confirmed cases and Disney's stock price was calculated by analyzing the current situation of COVID-19, Disney's operating and stock price fluctuations. The data collection comes from the relevant websites. The author applied scientific knowledge and used research results of technological development in business operations, inferring a certain correlation between the number of newly confirmed cases worldwide and the stock price of The Walt Disney Company. It was found that the COVID-19 pandemic has impacted the offline business and, on the contrary, promoted the online business. Therefore, it is necessary to make adjustments in economic strategy, not only to continue to develop the original offline business but also to innovate in the new media and online business.

**Keywords:** *COVID-19, The Walt Disney Company, Stock, Correlation*

## 1. INTRODUCTION

The COVID-19 was first detected in China, in late 2019, and has since triggered a global spread that has caused the global economy to experience a severe recession. By the time this paper was revised, the cumulative number of global confirmed cases of COVID-19 had exceeded 200 million, over 4 million deaths. Many countries have imposed lockdown measures and travel restrictions because of the rapid speed the epidemic spreads and the fact it endangers people's lives. This has seriously affected people's life and work, bringing the world to a standstill. As a result, the balance between demand and supply has been broken, and many industries have been faced great challenges.

The Walt Disney Company was founded in 1923. It is a diversified global entertainment company and has been in business for 98 years. The company started from the film and television industry, involving many popular animations, and developed to film and television industry and tourism as the majority industry. In this situation,

Disney is facing an operational crisis amid the COVID-19 pandemic.

At present, there are not many papers studying the impact of the COVID-19 on various industries. This paper refers to Jian Han and Qing Zhu's article "Impact of COVID-19 on the Mining Market" and "2019-NCov Correlates with Global Stock Markets" by Xiwei Zhong and Yingyi Wu. The purpose of this article is to analyze the entertainment industry under the impact of COVID-19. This paper takes Disney Company as an example to conduct an overview analysis through its stock and annual reports from 2016 to 2021.

## 2. THE GLOBAL DEVELOPMENT OF THE COVID-19

On January 3rd, 2020, it was the first time that Chinese officials provided the case information of "viral pneumonia of unknown cause" to the Worldwide Health Organization (WHO). A week later, Chinese media reported the first death from the COVID-19. It was discovered that viral pneumonia was an uncommon disease. The novel coronavirus spreads in humans with a

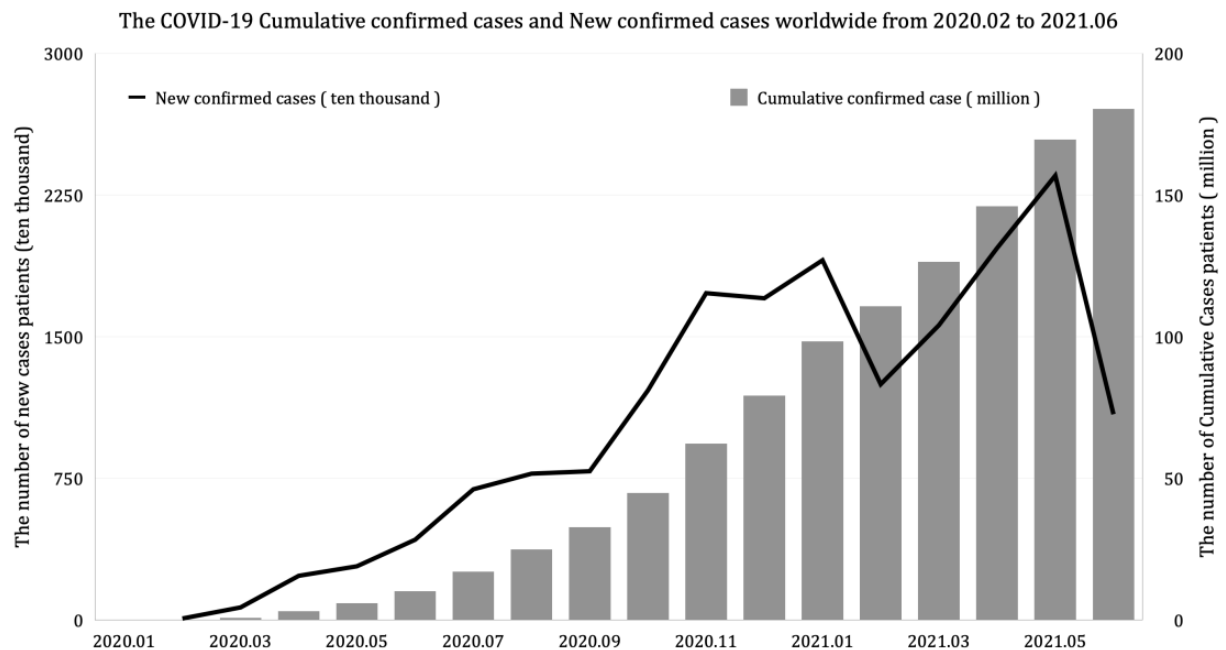
long incubation period and is capable of transmission. It can cause colds and serious illnesses such as Middle East Respiratory Syndrome (MERS), severe acute respiratory syndrome (SARS) and even death in some severe cases.

On January 30th, 2020, the Director-General declared the novel coronavirus outbreak a public health emergency of international concern (PHEIC). It is the highest alert of WHO, which classifies COVID-19 as a "pandemic" virus. And in February, the Novel Coronavirus was named COVID-19. Since then, WHO began to look for measures to minimize losses and damage.

In March 2020, WHO and partners launched the solidarity trial. It is an international clinical trial that aims to generate robust data worldwide to find the most effective treatments for COVID-19. Moreover, WHO advised countries to implement lockdown measure, so that the COVID-19 would not transfer by countries. Self-quarantine and travel limits are also effective measurements to prevent the COVID-19 from spreading.

For the first time, the 73rd World Health Assembly was held in a virtual way because of COVID-19. The main topic of this conference was the resolution against COVID-19, including the containment of COVID-19, actions to contain the spread of the disease to recover the economy as soon as possible, and establish a foundation. WHO and Global Citizen co-hosted the "One World: Together At Home" concert. The profits from the whole concert were ultimately used for COVID-19. The concert raised a total of \$127.9 million, providing \$55.1 million to the COVID-19 Solidarity Response Fund and \$72.8 million to local and regional responders.

In November 2020, WHO announced the start of research into the origin of the COVID-19. However, in December, the SARS-CoV-2 VUI, which is a variant of COVID-19, was discovered in the UK. In March 2021, the COVID-19 vaccine Ad26.COV2.S was developed by Janssen (Johnson & Johnson) for emergency use in all countries and for COVAX roll-out [1] [2].



**Figure 1** The COVID-19 Cumulative confirmed cases and New confirmed cases worldwide.

From Figure 1., the WHO began to publish the number of cases worldwide in February 2020. The daily number of new confirmed cases continued to rise, with more than 100,000 cumulative confirmed cases worldwide in April 2020. From September to November in 2020, the number increased significantly, but in February 2021, the number of new confirmed cases decreased to 12 million. After that, it continued to increase and reached its peak in May 2021, which was also the highest value since the COVID-19 data began to publish. In that month, the number of new confirmed cases worldwide reached 23 million [3].

### 3. THE STATUS OF THE WALT DISNEY COMPANY

#### 3.1 The performance of The Walt Disney Company from 2016 to 2021

According to The Walt Disney Company's public annual report, the main economic industry of the company is divided into several departments including Media Networks, Theme Parks and Resorts, Studio Entertainment, and Consumer Products and Interactive Media. The Walt Disney Company established a new

department called Direct-to-consumer and international in 2019.

The first department is the Media Network. Media networks rely on cable television and broadcast channel to sell programs and charge advertising. The second department is theme parks and Resorts. According to its 2019 annual report, theme parks and resorts of The Walt Disney includes: Walt Disney World Resort in Florida; Disneyland Resort in California; Disneyland Paris; Hong Kong Disneyland Resort (48% ownership interest); and Shanghai Disney Resort (43% ownership interest). In addition, the company licenses intellectual property rights to third parties to operate Tokyo Disney Resort. The main business revenue comes from theme park ticket sales, food and beverage sales in-park, hotel, cruises, and other package tours. In 2019, The Walt Disney Company spent 75 % of the fund on theme parks and experiences but adjusted to 70% in 2020. The third department is Studio Entertainment. It produces and acquires live-action and animated motion pictures, direct-to-video content, musical recordings and live stage plays.

The fourth department is Consumer products and interactive media. The main revenue comes from licensing characters and content from Disney film, television and other properties to third parties for use on consumer merchandise, and the sale of merchandise and games.

The fifth part is Directed to Consumers and International. The segment includes Disney+, ESPN+, Hotstar and Hulu launched in 2019. Among them, Disney+ is a subscription-based DTC video streaming service with Disney, Pixar, Marvel, Star Wars and National Geographic branded programming.

During 2020 and continuing into 2021, the world has been and continues to be impacted by the novel coronavirus (COVID-19) pandemic. The measurement to prevent its spread impacted our segments in several ways, most significantly at Parks, Experiences and Products.

The theme parks were closed or operating at significantly reduced capacity for a significant portion of the year. Cruise ship sailings and guided tours were suspended and retail stores were closed. The department of Studio Entertainment delayed or canceled theatrical releases, and stage play performances were suspended.

The Walt Disney Company estimated the total net adverse impact of COVID-19 on segment operating income in the second quarter of 2021. It was approximately \$2.6 billion. According to the 2021 report, Disney Parks, Experiences and Products revenues decreased 53% to \$3.6 billion, and segment operating results decreased to \$2.6 billion with a loss of \$119 million.

Including changes in the current climate and our operating environment due to the impact of COVID-19, the company has also made adjustments in staffing, including restrictions on hiring for key business positions, furloughs and effective layoffs. According to its annual report, Disney laid off 20,000 employees during the outbreak. The COVID-19 also had adverse impacts on advertising sales at Media Networks and Direct-to-Consumer & International. The Walt Disney Company acquired the Twenty-first Century Fox Inc. (subsequently renamed TFCF Corporation, a diversified global media and entertainment company) in March 2019. In 2021, Disney will close its Blue Sky Studios due to economic conditions. Because of the impact of the COVID-19, the Walt Disney Company made a quick adjustment in its economic strategy. They have shifted its focus to the Direct-to-Consumer department, so that they could transfer the movies originally intended for theatrical release to Disney+. Based on internal management reports, the estimated number of paid Disney+ subscribers of October 2020 was approximately 74 million [4] [5].

### ***3.2 The stock price of The Walt Disney Company from 2016 to 2021***

According to Figure 2., before COVID-19 (June 2016 to January 2020), the stock price of Walt Disney Company was generally on the rise. According to historical closing price data, there was a slight decline in 2016. The stock price hit a low of \$86.6 per share around October 2016. Then, the trend has steadily increased. In April 2017, the price rose to \$110.90 per share. In 2018, the stock fluctuated between \$107 and \$115 per share. It climbed to a new high in April 2019, going straight from \$109 to \$138.2. The stock price of the increase fluctuated between \$130 and \$140 per share. At the end of the year, the stock was slightly up and peaked at \$150.7 per share.

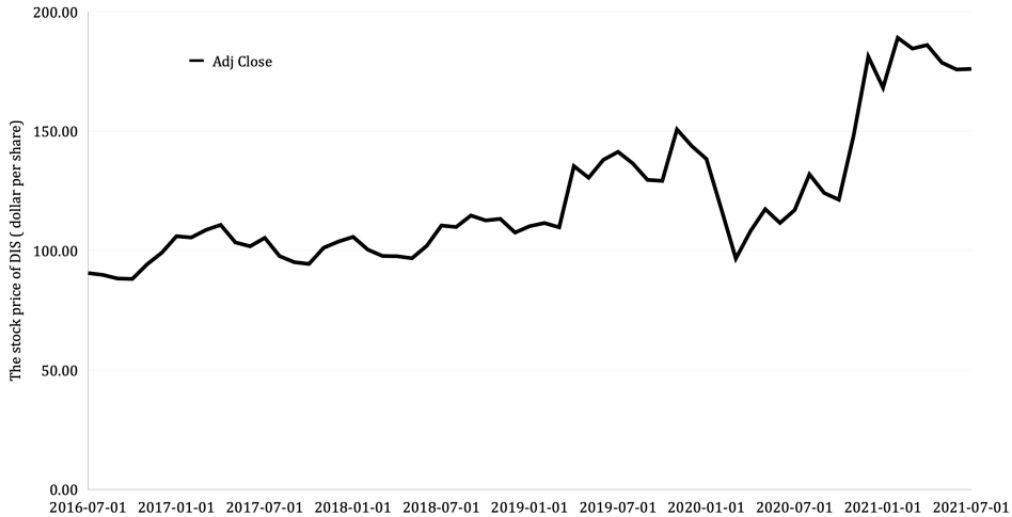


Figure 2 The Walt Disney Company Stock Price from 2016 to 2021.

After the COVID-19 outbreak began (2020.02-2021.06), stock prices plunged from \$140.4 per share to \$85.8 in February and March 2021, beginning a sustained decline. That is the lowest price Disney shares have traded for in nearly five years. This trend continued until around April 2020. Later, it rebounded with several significant rises from \$102 per share to \$127.3 in June 2020, and from \$129 per share to \$135.5 in September 2020. And the most significant increase was from \$151.50 per share to \$181.20 in November 2020. The stock price was on a downward trend in 2021. It fluctuated continuously between \$170-\$180 per share from January to February 2021 and continued to rise slightly from March onwards. On March 8, the stock hit a five-year highest price with \$201.90 per share. It was the first time for Disney’s stock to be over \$200. Since then, the stock price has continued to fall, but has

remained around \$175-\$180 per share. In May, the price of Disney’s stock was \$169.3 per share [6].

#### 4. THE RELATION BETWEEN THE COVID -19 AND STOCK OF THE WALT DISNEY COMPANY

According to Figure 3, at the beginning of the COVID-19, as the number of new global confirmed cases gradually increased, the Walt Disney Company's stock had declined to its lowest point in the past five years. This trend has continued for nearly two months, which may reflect investors' negative sentiment towards stock prices under the epidemic.

Since then, the stock price has recovered without falling due to the increasing number of COVID-19 cases.

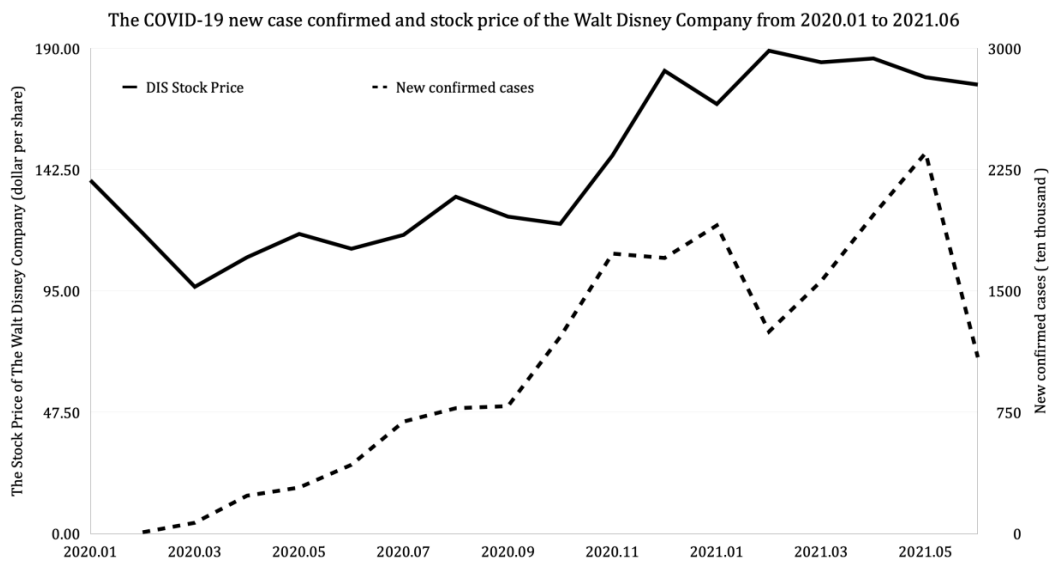


Figure 3 The COVID-19 and new cases confirmed and stock price of the DIS..

Figure 4 illustrates new global confirmed cases data and the Walt Disney Company's stock price information from January 2020 to June 2021. X represents the number of new confirmed COVID-19 cases in the world and Y represents company stock price to calculate the correlation coefficient between them. First, calculate the variance value of X and Y.  $Var(X) = 49.77$  and  $Var(Y) = 1024.28$ . Then calculate the covariance according to the covariance formula  $Cov(X, Y) = E[(X -$

$E[X])(Y - E[Y])]$ ,  $Cov(X, Y) = 188.72$ . Finally, calculate the correlation coefficient according to the correlation formula  $r(X, Y) = \frac{Cov(X, Y)}{\sqrt{Var(X)Var(Y)}}$ . The correlation coefficient between them was calculated to be 0.84. Therefore, it can be inferred that there is a certain correlation between the number of newly confirmed cases worldwide and the stock price of The Walt Disney Company.

Date	Number of COVID-19 new global confirmed cases (million people)	The stock price of DIS(dollar per share)
2020.01	0	138.31
2020.02	0.077585	117.65
2020.03	0.665487	96.60
2020.04	2.339555	108.15
2020.05	2.844491	117.30
2020.06	4.250438	111.51
2020.07	6.920633	116.94
2020.08	7.748133	131.87
2020.09	7.876805	124.08
2020.10	12.157924	121.25
2020.11	17.306405	148.01
2020.12	17.036619	181.18
2021.01	19.048951	168.17
2021.02	12.483054	189.04
2021.03	15.608544	184.52
2021.04	19.695069	186.02
2021.05	23.529904	178.65
2021.06	10.894716	175.77

**Figure 4** The COVID-19 new case confirmed and stock price of the Walt Disney Company.

**5. CONCLUSION**

In a nutshell, from the perspective of The Walt Disney Company's offline business development, since the lockdown measurement in various countries, theme parks in different countries have been closed, and retail stores have been closed and no profit return. The construction of several theme parks planned in 2019 has been suspended, while cruise projects planned for 2020 have been put on hold. Therefore, the Theme Parks, Experiences and Products department continued to decline to 44% in the second quarter of 2021, leading to a loss of \$406 million. From the perspective of The Walt Disney Company's online business development, the COVID-19 has promoted the development of Disney+. Since its establishment in 2019, the Directed to Consumers and International department has used existing film and television resources, and the films have not been released on time due to the COVID-19, to be screened on Disney+. There are 74 million subscribers on Disney+ video service. This department's profitability continued to increase, reaching 59% in second-quarter 2021, with revenue of 4 billion dollars and operating losses decline from 800 million dollars to 300 million dollars. From the perspective of the

correlation between the stock price of The Walt Disney Company and the number of new global confirmed cases. The data were used for analyzing the number of new confirmed cases worldwide and the stock price of Disney company from February 2020 to June 2021. The correlation coefficient between the number of new confirmed cases and Disney stock price was 0.84. It illustrates a strong correlation between them.

According to the analysis of the operation of Disney Company during COVID-19, the offline business of Disney Company was significantly affected by "black swan" incidents and external factors such as the COVID-19. To reduce operational risk, the Walt Disney Company could adjust the proportion of offline and online investments. Firstly, continue to develop the department of Directed to Consumers such as Disney+. The Walt Disney Company could increase investment in Disney+, and establish an excellent brand of video service. Secondly, the Walt Disney Company could develop the game business, especially the mobile games. The Walt Disney Company could rely on existing animation characters, combine them with puzzles, action and management game forms, as well as cooperate with game companies to earn revenue from licensing anime characters, visual and literary assets. Thirdly, pay

attention to the company's development through a combination of animation and education. Not only does the Walt Disney Company create, distribute, license and publish children's books, comic books, magazines and learning products in printing and digital formats, but also it establishes online educational websites and apps. Children use such websites or apps to learn for interest. The Walt Disney Company designs the animation characters to appear on the interface of the website and involves some story lines in the process of learning to construct an edutainment tool. Children also learn something from playing games, such as language games, mathematics games, science games, etc.

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