

# The Impacts of COVID-19 on Stock Markets between China and the United States

Lina Peng<sup>1,\*</sup>

<sup>1</sup> University of Liverpool, Liverpool, United Kingdom

\*Lina Peng. Email: [sglpeng6@liverpool.ac.uk](mailto:sglpeng6@liverpool.ac.uk)

## ABSTRACT

The global eruption of coronavirus disease-2019 (COVID-19) public crisis has a significantly unprecedented and abnormal impact on global financial markets. This paper examines the responses of stock markets in China and the United States through the industry's aspect. Additionally, the impacts of COVID-19 on the stock market of China and the U.S. are analyzed through industry's perspective. Also, two countries and their stock market performance are compared horizontally, and the reasons for different performances are discussed. Generally speaking, findings indicate that China has a more stable stock market performance than the U.S. since China restrain the virus more successfully, suggesting governments should minimize the pandemic's effect to stabilize the market.

**Keywords:** COVID-19, Industry, Stock market, China, United States, Lockdowns.

## 1. INTRODUCTION

The global eruption of coronavirus disease-2019 (COVID-19) public crisis has imposed a significant unprecedented and abnormal impact on global financial markets [1-3]. By March 11 2020, more than 100 countries had been largely influenced by the novel coronavirus and it was declared as a global pandemic by the World Health Organization (WHO) [4]. The impact of COVID-19 has covered more than 192 countries involving billions of life worldwide [5]. This significant public health crisis could be regarded as a black swan event, and therefore may usually lead to a series of adverse market responses and disorders. The increase in COVID-19 cases will assuredly impact the U.S. and Chinese stock markets [2]. As the two largest economies globally, the economic development of the United States and China after the COVID19 pandemic has received particular attention worldwide.

Market foresight is valuable, especially during a pandemic. The stock market, displaying the sector's expectations in a unique aspect, can be a helpful tool for society by generating valuable information during the pandemic [6]. Naturally, the stock market's reaction tends to be more immediate and precise within the economic and financial system than in other sectors [1]. Goodell and Huynh emphasized that the serious pandemic might imposed an essential effect on financial sector, particularly the stock market [7]. While in point of fact,

some recent studies verify that more significant fluctuations in stock markets than before result from COVID-19 [8-10]. This statement is also supported by empirical data. For example, data from 64 advanced and developing nations from January to April 2020 [11-12] observed that the stock market had an adverse and time-variance reaction to COVID-19. Liu emphasized that the pandemic has caused a considerable negative impact on global stock markets when extending the data to the main indexes of 77 countries [13]. Topcu and Gulal reached similar conclusions when focusing on emerging markets [14].

Hence, this paper intends to review the influence of COVID-19 on the U.S. and China's stock market at the sector level and compare. The second part highlights the impacts of COVID-19 on China's stock market and the U.S. from the industry's perspective. In the third part, two countries and their stock market performance are compared horizontally, and the reasons for the differences of different performances are sorted out. Finally, common conclusions are drawn.

## 2. STOCK MARKET PERFORMANCE OF THE U.S AND CHINA

### 2.1. The U.S.

In this section, the comprehensive consequential and adverse impact that pandemic posed on the stock market

in the U.S. will be viewed through the industry level. Several papers investigate the overall market performance of firms in different sectors. Mazur et al. observed high positive returns in food, software, natural gas, and healthcare stocks, and over 70% equity values have plummeted in firms of hospitality, petroleum, entertainment, and real estate sectors [15]. Furthermore, failing stocks present severe asymmetric volatility that interacts adversely with stock returns [15]. As catastrophic mortality worsens globally, healthcare and medical devices have become the best-performed industries. And as restaurants and eateries are packed up for the general public, food and grocery distribution benefits from the upward shift in demand. However, Kim et al. verified that the coronavirus outbreak negatively impacted restaurant firms' stock in the U.S. [16]. The software and technology sector also performed well due to the soaring demand for remote working resource providers and global network service expertise, resulting from an outsized portion of employees switching to online working [15]. At the same time, another massive winner is the natural gas industry. Overall, those industries earned a monthly return of over 20%. Nevertheless, crude petroleum and oil services, real estate, and entertainment and hospitality all performed badly among industries with negative return over 70%. Meanwhile, extreme negative returns appear conjointly with extreme volatility throughout the March 2020 crash [15]. Authors observe that high return industries exhibit considerably less volatility between 6% and 9%, whereas industries that plummet are excessively volatile with volatility around 20% [15]. Regardless of firm market capitalization, crude petroleum stocks are notably volatile. An astounding 130% volatility level was attained in one example. At the same time, the volatilities of Entertainment and Hospitality stocks were also close to 20% [15]. Back et al. adopted the MS-AR (1) model and stated that the mechanism of U.S. stock market volatility has changed since the occurrence of COVID-19 [17]. Results of this paper indicated that the stock market of U.S. undergone a general increase in market risk [17]. They observed raises in general and distinctive risk for 30 industries by examining their volatility [17]. In particular, increasing unavoidable risk has been detected in industries such as telecom and utilities, while declining unavoidable risk has been found in automobiles and business equipment related industries [17]. Findings of Smales indicated that even though enhanced investor attention due to the pandemic negatively impacted the total U.S. stock returns, sectors such as consumer staples, healthcare and I.T. appeared to have benefited from the increased attention [18]. This might be because that sectors related to households spending and government spending were more likely to benefit from the changes in the economy.

## 2.2. China

In this section, the comprehensive consequential and adverse impact that pandemic posed on the stock market in China will be viewed through industry level. Different industries have experienced different turbulences [15]. Several papers studied the overall stock market performance at the industry level. Wang et al. utilized the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model as well as selected data of periodic financial statements and transactions of firms from different industries in order to examine the general and diverse effect that the COVID-19 outbreak posed on China's stock market [19]. Those firms were selected from ChiNext, Shenzhen Stock Exchange (SZSE) and Shanghai Stock Exchange (SSE). The study showed that industries perceived to be influenced heterogeneously as pharmaceutical and telecommunications received positive effects while services industries, for example, accommodation, commercial services, and catering, were adversely affected [19]. Wang also found that higher debt level firms suffered more while firms with a higher level of net cash flow tended to have greater resilience to the pandemic [19]. Nevertheless, firms listed on ChiNext and industries ravaged acutely displayed contradictory. He et al. exploited event study approach to study the stocks of companies listed on the SZSE and the SSE, stock prices of diverse industries under the influence of COVID-19 [20]. The author discovered the returns of listed companies in China have soared on the SZSE, while fallen sharply on the SSE [20]. In addition, traditional Chinese industries, such as environmental, transportation, mining, heating, and electric, were severely impacted. Concurrently, excellent positive prospects and advancement were generated within high tech industries, including the health, education, manufacturing and information technology in response to the epidemic [20].

Seven papers focused expressly on single sectors. Researches by Xue et al. illustrate that finding shows that under the effect of the pandemic, positive market performance was found in industries of healthcare and information technology [21]. In contrast, opposite market reactions appeared in firms of basic life security, manufacturing, retail and service, and transportation and logistics sections [21]. Except for firms that highly emphasize big data, stock prices in negatively affected sectors are adversely related to the number of daily new confirmed cases in cities where firms' headquarters are located [21]. Paper of Yan and Qian applied an event study approach to investigate the impact of the lasting public crisis on the consumer industry in the Chinese stock market [22]. Results revealed that stocks in the consumer industry were negatively yet transitorily influenced by the pandemic in the early stage [22]. As the government keeps implementing policies, stock returns

of the industry preserve stable growth [22]. Sun et al. had observed a soaring demand for pharmaceutical products, resulting in the aggregate excess return at the pharmaceutical sectoral level [23]. Fu and Shen have observed significant adverse performance in energy firms and found that when goodwill impairment became a moderating factor, firms that presented greater goodwill positions were less impacted by the crisis than those with weaker goodwill values [24]. They intended to raise awareness for decision makers to take the necessary steps to minimize the impact of COVID-19 in the energy industry [24]. While Wu et al. confirmed that the consumer and labour-intensive industries were the most affected industries in the short term [25]. As an illustration, the abnormal output value would be 6.3% lower than the value at the normal stage [25]. Wu et al. adopted an event study method and concluded that the public threat negatively impacted tourism sector stocks [26]. Liew claimed that the tourism industry experienced a universally negative impact due to the epidemic [27]. The author revealed that the stock value of tourism counters in both SSE and SZSE had plunged [27]. Lee et al. studied the hospitality stock returns during the epidemic and observed an unforeseen positive movement in the COVID-19 epidemic, which boosted the exchange rates and reduced the returns on hospitality industry and stock market [28]. In addition, they also found that an increase in hospitality industry returns is related to nonnegative movement in stock market returns [28].

### **3. COMPARISON**

The global markets were sent into panic. The disease imposed a momentous and detrimental force on return and volatility of stock markets, which are two vital indicators of market performance [29]. It affected the markets by increasing the number of COVID-19 confirmed cases and fatalities. The crisis started in China's Hubei Province sent tremors through the global economy, wiping out global markets and sending shock waves around the world [30].

#### ***3.1. Winning and Losing Industries***

Some sectors reacted similarly and some appear to be different in both countries. According to Table 1 and Table 2, healthcare and high tech industries gained substantially while energy, retailing, and transportation experience damages in both countries [31]. Halal and Gautam concluded that the confidence of stock investor had experienced a drop as a result of the risk caused by the crisis [32]. Even though numerous sectors were to evaded by investors, they still value the healthcare industry as valuable [23;33]. The correspondence is that positive abnormal returns have been found in health sector's firms [15; 20; 23]. There are industries presented differently among the two countries (Table 1 & 2). For instance, utilities benefited abundantly in the U.S. but

were negatively impacted in China [31]. However, it is believed that the Chinese utility sector will be impacted limitedly by COVID-19 [34].

#### ***3.2. Government Interventions Behind the Performance***

Hamal and Gautam applied the Systematic Literature Review (SLR) methodology to conduct a review of various journal articles [32]. They analyzed the epidemic's short-term impacts on the stock market. It showed that the government's actions had a negative impact on the market's volatility and overall performance. Nevertheless, sign of stabilization in stock markets had been observed by Hamal and Gautam and they predicted that markets would eventually recover in the long term. This was largely attributed to the government's response to the global financial crisis [32].

In fact, stock markets of China appear to be more stable than the U.S. during the pandemic [1; 35]. Gas et al. estimated that COVID-19 might impose fewer effects on stock market in China but brought a relatively constant and consequential influence on the U.S. stock market [36]. Contrasted with the U.S., China's achievement results from more powerful and more immediate government responses and better public cooperation [37]. Ren analyzed how various factors have affected the implementation of lockdown orders in the U.S. and China [38]. These include the strength of local territorial authorities and the tensions between national and local governments. Notably, the Chinese government implemented more rigorous physical distancing policies and mobility control, along with more extensive testing, tracing, and isolation policies after the initial outbreak [37]. In contrast, the U.S. showed minor attempts to undertake the disaster at the national level [38]. The Trump administration mainly dismissed the crisis as exaggerating despite the intimidation COVID-19 brought to the world became more patent, resulting in the U.S. losing critically valuable weeks in realizing serious policies to combat the virus [39]. Moreover, states have to compete with each other while bidding for essential pharmaceutical equipments in the private market due to lacking centralized redistribution [39]. Phan and Narayan analyzed the stock price movements of COVID-19 during its evolution in real-time and showed that travel restrictions in countries most affected by COVID-19 were helpful to the recovery of financial markets [40]. However, the U.S. implemented lockdowns much less rigorously than China, where strict lockdowns are imposed. Public transportation was not suspended, and people were free to travel between cities and regions in most states [38].

#### 4. TABLES

**Table 1.** Industries Impacted by COVID-19 in the U.S.

Impact	Industries
Positive	Natural gas
	Food
	Healthcare
	Software
	Automobiles
	Business equipment
	Consumer staples I.T.
Negative	Petroleum
	Real estate
	Entertainment
	Hospitality
	Telecom
	Utilities

**Table 2.** Industries Impacted by COVID-19 in China.

Impact	Industries
Positive	Pharmaceutical
	Telecommunications
	Manufacturing
	Information technology
	Education
	Health
Negative	Accommodation
	Catering
	Commercial services
	Transportation
	Mining
	Electric
	Heating
	Environmental

#### 5. CONCLUSION

The global stock markets experienced a severe shock following the COVID-19 pandemic. The paper presents the impact of the pandemic on the industrial stock markets in the U.S. and China. The results of the paper reveal that stock markets were hit but began showing signs of stabilization under the effort of governments interventions. By studying the effects on the stock market, this paper can help policymakers to comprehend

the dynamics of the market in order to minimize the impact of the pandemic on investors and stock markets. During times of crisis, the public's negative sentiment about stocks has shown great ripple influence towards decisions made by investors in the stock markets. Since the COVID-19 pandemic is ongoing and it is still not feasible to predict the scope of its repercussions across the world, policymakers should step up their efforts in preventing and controlling the spread of the disease and support the study and improvement of vaccines that are crucial to the advancement of the stock market.

#### REFERENCES

- [1] Bai, L., Wei, Y., Wei, G., Li, X., & Zhang, S. (2020). Infectious disease pandemic and permanent volatility of international stock markets: A long-term perspective. *Finance Research Letters*. <https://doi.org/10.1016/j.frl.2020.101709>
- [2] Nian, R., Xu, Y., Yuan, Q., Feng, C., & Lendasse, A. (2021). Quantifying Time-Frequency Co-movement Impact of COVID-19 on U.S. and China Stock Market Toward Investor Sentiment Index. *Frontiers in Public Health*, 9. <https://doi.org/10.3389/fpubh.2021.727047>
- [3] Phan, D. H. B., & Narayan, P. K. (2020). Country Responses and the Reaction of the Stock Market to COVID-19—a Preliminary Exposition. *Emerging Markets Finance and Trade*, 56(10), 2138–2150. <https://doi.org/10.1080/1540496X.2020.1784719>
- [4] Ishak, N., Shahar, H. K., & Chee Jiun, R. C. (2021). Cyclical industries' stock performance reaction during COVID-19: A systematic literature review. *Jurnal Ekonomi Malaysia*, 55(1). <https://doi.org/10.17576/JEM-2021-5501-11>
- [5] Johns Hopkins University & Medicine. (2021). Coronavirus COVID-19 global cases by the Center for Systems Science. <https://coronavirus.jhu.edu/map.html>, 13 Apr
- [6] Wagner, A. F. (2020). What the stock market tells us about the post-COVID-19 world. *Nature Human Behaviour*, 4(5), 440. <https://doi.org/10.1038/s41562-020-0869-y>
- [7] Goodell, J. W., & Huynh, T. L. D. (2020). Did Congress trade ahead? Considering the reaction of US industries to COVID-19. *Finance Research Letters*, 36. <https://doi.org/10.1016/j.frl.2020.101578>
- [8] Corbet, S., Hou, Y., Hu, Y., Lucey, B., & Oxley, L. (2021). Aye Corona! The contagion effects of being named Corona during the COVID-19 pandemic. *Finance Research Letters*, 38. <https://doi.org/10.1016/j.frl.2020.101591>

- [9] Haroon, O., & Rizvi, S. A. R. (2020). Flatten the Curve and Stock Market Liquidity—An Inquiry into Emerging Economies. *Emerging Markets Finance and Trade*, 56(10), 2151–2161. <https://doi.org/10.1080/1540496X.2020.1784716>
- [10] Zhang, D., Hu, M., & Ji, Q. (2020). Financial markets under the global pandemic of COVID-19. *Finance Research Letters*, 36. <https://doi.org/10.1016/j.frl.2020.101528>
- [11] Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? *Research in International Business and Finance*, 54. <https://doi.org/10.1016/j.ribaf.2020.101249>
- [12] Ashraf, B. N. (2021). Stock markets' reaction to Covid-19: Moderating role of national culture. *Finance Research Letters*, 41. <https://doi.org/10.1016/j.frl.2020.101857>
- [13] Liu, K. (2021). The effects of COVID-19 on Chinese stock markets: an EGARCH approach. *Economic and Political Studies*, 9(2), 148–165. <https://doi.org/10.1080/20954816.2020.1814548>
- [14] Topcu, M., & Gulal, O. S. (2020). The impact of COVID-19 on emerging stock markets. *Finance Research Letters*, 36. <https://doi.org/10.1016/j.frl.2020.101691>
- [15] Mazur, M., Dang, M., & Vega, M. (2021). COVID-19 and the march 2020 stock market crash. Evidence from S&P1500. *Finance Research Letters*, 38. <https://doi.org/10.1016/j.frl.2020.101690>
- [16] Kim, J., Kim, J., Lee, S. K., & Tang, L. (Rebecca). (2020). Effects of epidemic disease outbreaks on financial performance of restaurants: Event study method approach. *Journal of Hospitality and Tourism Management*, 43, 32–41. <https://doi.org/10.1016/j.jhtm.2020.01.015>
- [17] Baek, S., Mohanty, S. K., & Glambosky, M. (2020). COVID-19 and stock market volatility: An industry level analysis. *Finance Research Letters*, 37. <https://doi.org/10.1016/j.frl.2020.101748>
- [18] Smales, L. A. (2021). Investor attention and the response of US stock market sectors to the COVID-19 crisis. *Review of Behavioral Finance*, 13(1), 20–39. <https://doi.org/10.1108/RBF-06-2020-0138>
- [19] Wang, Z., Zhang, Z., Zhang, Q., Gao, J., & Lin, W. (2021). COVID-19 and financial market response in China: Micro evidence and possible mechanisms. *PLoS ONE*, 16(9 September). <https://doi.org/10.1371/journal.pone.0256879>
- [20] He, P., Sun, Y., Zhang, Y., & Li, T. (2020). COVID-19's Impact on Stock Prices Across Different Sectors—An Event Study Based on the Chinese Stock Market. *Emerging Markets Finance and Trade*, 56(10), 2198–2212. <https://doi.org/10.1080/1540496X.2020.1785865>
- [21] Xue, F., Li, X., Zhang, T., & Hu, N. (2021). Stock market reactions to the COVID-19 pandemic: The moderating role of corporate big data strategies based on Word2Vec. *Pacific Basin Finance Journal*, 68. <https://doi.org/10.1016/j.pacfin.2021.101608>
- [22] Yan, L., & Qian, Y. (2020). The Impact of COVID-19 on the Chinese Stock Market: An Event Study Based on the Consumer Industry. *Asian Economics Letters*. <https://doi.org/10.46557/001c.18068>
- [23] Sun, Y., Bao, Q., & Lu, Z. (2021). Coronavirus (Covid-19) outbreak, investor sentiment, and medical portfolio: Evidence from China, Hong Kong, Korea, Japan, and U.S. *Pacific Basin Finance Journal*, 65. <https://doi.org/10.1016/j.pacfin.2020.101463>
- [24] Fu, M., & Shen, H. (2020). COVID-19 and Corporate Performance in the Energy Industry. *Energy RESEARCH LETTERS*. <https://doi.org/10.46557/001c.12967>
- [25] Wu, F., Liu, G., Guo, N., Li, Z., & Deng, X. (2021). The impact of COVID-19 on China's regional economies and industries. *Journal of Geographical Sciences*, 31(4), 565–583. <https://doi.org/10.1007/s11442-021-1859-3>
- [26] Wu, W., Lee, C. C., Xing, W., & Ho, S. J. (2021). The impact of the COVID-19 outbreak on Chinese-listed tourism stocks. *Financial Innovation*, 7(1). <https://doi.org/10.1186/s40854-021-00240-6>
- [27] Liew, V. K. Sen. (2020). Abnormal Returns on Tourism Shares in The Chinese Stock Exchanges Amid The COVID-19 Pandemic. In *International Journal of Economics and Management Journal homepage* (Vol. 14, Issue 2). <http://www.ijem.upm.edu.my>
- [28] Lee, C. C., Lee, C. C., & Wu, Y. (2021). The impact of COVID-19 pandemic on hospitality stock returns in China. *International Journal of Finance and Economics*. <https://doi.org/10.1002/ijfe.2508>
- [29] Hong, H., Bian, Z., & Lee, C. (2021). COVID-19 and instability of stock market performance: evidence from the U.S. *Financial Innovation*. <https://doi.org/10.1186/s40854-021-00229-1>
- [30] Baker, S. R., Bloom, N., Davis, S. J., Kost, K., Sammon, M., & Viratyosin, T. (2020). The unprecedented stock market reaction to COVID-19. In *Review of Asset Pricing Studies* (Vol. 10, Issue 4,

- pp. 742–758). Oxford University Press.  
<https://doi.org/10.1093/rapstu/raaa008>
- [31] Ramelli, S., & Wagner, A. (2020). What the Stock Market Tells Us about the Consequences of COVID-19. <https://voxeu.org/article/what-stockmarket-tells-us-about-consequences-covid-19>
- [32] Hamal, J. B., & Gautam, R. R. (2021). Capital Market Response to COVID-19 Pandemic – A Systematic Review on Stock Volatility and Performance. *Marsyangdi Journal*, 2(1), 27–49. <https://doi.org/10.3126/mj.v2i1.39963>
- [33] Erdem ÖNCÜ, A. (n.d.). The impact of covid-19 on health sector stock returns.
- [34] Fitch Rating. (2020). Limited Impact on China Utilities from Coronavirus. 28 February. <https://www.fitchratings.com/research/corporate-finance/limited-impact-on-china-utilities-from-coronavirus-28-02-2020>
- [35] Ali, M., Alam, N. & Rizvi, S. A. R. (2020). Coronavirus (COVID-19) – An epidemic or pandemic for financial markets. *Journal of Behavioral and Experimental Finance* 100341. doi:10.1016/j.jbef.2020.100341.
- [36] Gao, X., Ren, Y., & Umar, M. (2021). To what extent does COVID-19 drive stock market volatility? A comparison between the U.S. and China. *Economic Research-Ekonomiska Istrazivanja*. <https://doi.org/10.1080/1331677X.2021.1906730>
- [37] Ma, M., Wang, S., Wu, F., Akin, L. B., Helliwell, J. F., Layard, R., Paculor, S. F., Gueneviere, J., Bartels, E., Harris, M. N., Hu, Y., Huang, H., & Ling, X.-. (n.d.). *COVID-19 Prevalence and Well-being: Lessons from East Asia World Happiness Report 2021*.
- [38] Ren, X. (2020). Pandemic and lockdown: a territorial approach to COVID-19 in China, Italy and the United States. *Eurasian Geography and Economics*, 61(4–5), 423–434. <https://doi.org/10.1080/15387216.2020.1762103>
- [39] Christensen, T. J. (2020). A modern tragedy? COVID-19 and U.S.-CHINA relations executive summary.
- [40] Phan, D. H. B., & Narayan, P. K. (2020). Country Responses and the Reaction of the Stock Market to COVID-19—a Preliminary Exposition. *Emerging Markets Finance and Trade*, 56(10), 2138–2150. <https://doi.org/10.1080/1540496X.2020.1784719>