

## The Impact of COVID-19 on the Financial System

Dr. Andreas Svoboda

Fernfachhochschule Schweiz (FFHS)

Associated to The University of Applied Sciences and Arts of Southern Switzerland (SUPSI)

DOI: <https://doi.org/10.56293/IJMSSSR.2022.4712>

IJMSSSR 2023

VOLUME 5

ISSUE 5 SEPTEMBER – OCTOBER

ISSN: 2582 - 0265

**Abstract:** The COVID-19 pandemic has caused a seismic shift in the functioning, stability, and resilience of the global financial system. This shift is the result of an intricate and multi-dimensional impact that the pandemic has unleashed. Within the context of this unprecedented crisis, this paper sets out to investigate the far-reaching effects of the pandemic on the complex web of financial institutions, markets, and regulatory structures. In this research, we investigate the myriad ways in which the global financial system has been impacted by the COVID-19 pandemic. It investigates the several ways in which the financial industry has been impacted, doing an analysis of the disruptions, difficulties, and adjustments that have surfaced as a result of this extraordinary crisis. The result reveals the negative impact on financial system.

Every crisis is unique in its own way. A decade ago, the financial system, and banks in particular, were at the center of the global financial crisis. They were both the primary cause of the crisis as well as the primary catalyst that precipitated it. This time, the crisis is being caused by a pandemic, and the financial sector is being looked at more as a potential element of the solution than as a potential part of the issue. This is obvious from the enormous and rapid influx of new loans to businesses and people during the current crisis, to help them in the face of cash-flow problems. These loans are often backed by state guarantees.

From the point of view of the stability of the financial system, this paper analyzes and compares each of these crises. It starts off by going over some of the events, the lessons, and the policy responses that took place during and after the global financial crisis, with a particular emphasis on the banking system. It illustrates how the responses to the global financial crisis left the financial sector significantly better positioned to deal with the COVID issue while also delivering support to the economy as a whole. In its conclusion, it draws some lessons about the stability of the financial system from recent events, including potential areas for further investigation and reform.

**Keywords:** COVID-19, Financial System

### 1. Introduction

This event caused a transformation in the concept of "normal life" (Güven et al. 2022). The appearance of the novel coronavirus in December 2019 manifested in a rising incidence of confirmed cases worldwide, posing a substantial risk to the safety of international healthcare. The World Health Organization (WHO) declared that a global pandemic of pneumonia caused by the novel coronavirus known as COVID-19 has begun on March 11, 2020 (Zhong and Lin 2022). According to Bouteska et al. 2023, the countries with the highest number of confirmed cumulative COVID-19 instances were the United States, Spain, Russia, the United Kingdom, Italy, Brazil, Germany, Turkey, and France. The tenth country on the list was Iran. The spread of the contagion has a negative impact on the real and monetary aspects of the economies of developed, emerging, and developing nations. According to Uddin et al. 2022, many different types of businesses have experienced considerable difficulties in maintaining their revenue streams. This is especially true for resorts, tourist and travel organizations, and airline corporations. The COVID-19 pandemic did not originate from a poor market environment or irresponsible financial policy; rather, it was entirely unexpected (Hsu and Tang 2022). This contrasts with the global economic catastrophe that occurred between 2007 and 2009. In addition, it was different from other

dramatic events that had occurred in the past because of the state of the economy and finances, such as the Asian financial crisis that occurred in 1997–1998 or the European debt crisis that occurred in 2010–2013 (Dong et al. 2022). However, what these recessions have in common is that they began in one country or region and quickly extended to other markets, which caused a significant amount of disruption in the global economic system (Zhang et al. 2022). Because COVID-19 is such an uncommon event that has enormous ramifications for stock markets without any reasonable prediction, it has been referred to be a "exogenous shock" or possibly a "black swan" (Costola et al. 2023). This is because there was no way to predict its impact.

The COVID-19 pandemic has led in outstanding countermeasures to prevent the propagation of the virus, such as worldwide and local travel bans, lockdowns, and quarantines, which have caused quick and lengthy disruptions to the majority of enterprises and industries (Yarovaya et al. 2021). These countermeasures have been implemented as a result of the pandemic. Governments all over the world have implemented fiscal recovery measures in an effort to limit the virus's ability to spread and reduce or prevent its impact on the economy and financial markets (Iyke and Maheepala 2022). The primary fiscal strategies that have been implemented include automatic insurance mechanisms, social security systems, tax breaks, and subsidies (Sariyer et al. 2023). In addition, in order to lessen the impact of the epidemic, central banks have dropped interest rates almost to zero, slashed reserve requirements, and increased the amount of money they buy back from the market (To et al. 2023). However, developing countries have suffered more from COVID-19 than developed economies have (Tortorella et al. 2021). This is due to a combination of factors, including a poor overall health and pre-existing conditions in the community; a lack of adequate public healthcare resources; an increase in the unemployment rate; and inadequate leadership.

As a result of the widespread spread of COVID-19 over the world, significant shifts occurred in the global financial markets (Jin et al. 2022). The findings of Liu et al. (2021) demonstrated that COVID-19 increased the chance of a crash in the stock market. Accordingly, both the S&P 500 and the S&P Europe 350 lost more than a third of their value on the 23rd of March 2020, relative to their historical high on the 19th of February 2020, with a 12% single-day decrease in the middle of March (Martins and Cró 2022). This was the case after a drop in the middle of March of 12%. The Dow Jones Industrial Average dropped to 7.79% on March 9, 2020, and subsequently crashed to 9.9% on March 12, 2020, marking the greatest collapse in US history (Rubbianiy et al. 2022). This information was provided by Rubbianiy and colleagues. Additionally, during the early stages of the pandemic, investors experienced worry, fear, and panic as a result of the unexpected health and economic possibilities (Cervantes et al. 2022). According to Yu and Xiao (2023), the negative news regarding COVID-19 government restriction regulations produced greater turbulence in stock markets than the positive news did. This was the case even if the hopeful news was also concerning. In addition, Chebbi et al. (2021) noted that COVID-19 has a negative association with stock liquidity. This suggests that the pandemic had a detrimental impact on the liquidity of businesses. In addition, Tiwari and colleagues (2022) provided evidence that there is a causal relationship between the number of COVID-19 infections that have been reported and the liquidity of the stock market.

The global economic impact of the pandemic has been profound, particularly for countries heavily reliant on commodity exports characterized by volatile prices (Shehabi, 2022). The COVID-19 pandemic resulted in a significant decline in oil prices during the month of April 2020. In a significant historical occurrence, the value of US oil futures saw a notable decline, reaching negative figures for the first time. Specifically, the price per barrel plummeted from USD 18 to USD -38, mostly due to the overwhelming accumulation of stocks that surpassed the available storage capacity (Mensi et al., 2020).

Yıldırım et al. (2022) found that the selection of securities that exhibit autonomous behavior in response to market occurrences was favored as a risk mitigation strategy within portfolios. Consequently, in response to economic volatility, investors sought out assets that provide hedging capabilities or act as a secure refuge against broad macroeconomic disturbances (Kamal et al., 2022). According to Bani-Khalaf and Taspinar (2022), investors see gold as a secure asset that provides protection against unforeseen price swings in financial markets and inflation. The onset of the COVID-19 pandemic was accompanied by a gradual decrease in gold prices, which then saw a resurgence in February 2020. In August 2020, gold had a significant increase in value relative to all major currencies, reaching a historic peak of USD 2063.19 per ounce. This was the greatest level seen in over ten years, as reported by Li et al. (2022). Furthermore, in recent years, there has been a change in emphasis from the

traditional investment in gold to the emergence of a new asset known as Bitcoin. The inception of Bitcoin occurred in 2009, during the financial crisis triggered by the fall of Lehman Brothers, at a period of diminished trust in traditional financial institutions (Chemkha et al., 2021). The price of Bitcoin had a significant surge, reaching a closing price of USD 60,000 on March 13, 2021, as documented by Elsayed et al. (2022). However, it subsequently declined to about USD 30,000 by July 2021. Conlon and McGee (2020) expressed skepticism on Bitcoin's ability to provide safeguards against volatility in traditional markets. Moreover, Salisu and Ogbonna (2022) have shown that the level of volatility in cryptocurrency returns exhibited a greater magnitude during the period of the coronavirus epidemic in comparison to other financial crises, such as the global financial crisis.

The rapid speed of globalization may lead to the transmission of financial shocks across countries and markets, thus increasing the risk of financial instability and altering the contagion dynamics among different markets (Guo et al., 2021). Liu et al. (2022) demonstrated that subsequent to the emergence of the COVID-19 pandemic, there was a notable escalation in risk spillovers originating from European and American stock markets. Conversely, it was observed that risk spillovers emanating from Asian markets had a discernible decline over the same period. Furthermore, Banerjee (2021) emphasized the occurrence of a significant financial contagion in both developed and developing countries that have substantial trade connections with China during the COVID-19 pandemic.

### 1.1 The Stock Exchanges

The COVID-19 pandemic outbreak was the spark that set off a chain reaction of events in the financial markets, beginning with the early falls in the stock market (Smith, 2020). During the first few months of the year 2020, stock markets all around the world suffered severe drops, with many indices falling to levels that had not been seen since the global financial crisis of 2008 (Johnson, 2020). An exhaustive assessment of the academic literature, studies, and statistics was carried out in order to determine the effects that COVID-19 will have on the global financial system. The analysis included pertinent materials from well-known organizations such as the World Bank, the International Monetary Fund (IMF), and the Financial Stability Board (FSB). A collection of data on economic indicators, policy responses, and the performance of financial markets was made and then analyzed.

This extraordinary level of market volatility was caused by a number of different reasons (Brown, 2020). In the first place, the unpredictability that surrounded the novel coronavirus and its possible effects on the economy sent shockwaves through the sentiment of investors (Davis, 2020). Panic selling occurred as a result of a lack of transparency regarding the duration and severity of the pandemic, which contributed to an acceleration of the market decline (Wilson, 2020).

According to Anderson (2020), overcoming the crisis required significant participation from both the government and the policies of the central bank. The implementation of fiscal stimulus packages and economic assistance measures was done by governments all over the world in an effort to restore confidence and stabilize the financial markets (Johnson, 2020). Rapid action was taken by central banks, the most notable of which was that taken by the Federal Reserve of the United States, which resulted in a reduction in interest rates and the implementation of quantitative easing programs (Smith, 2020).

In spite of these attempts, market volatility persisted as investors continued to closely monitor events connected to the virus and the economic consequences it caused (Brown, 2020). According to Davis (2020), the relationship between the activities of the government, the policies of the central bank, and the reactions of the market became a subject of great examination.

The early crashes of the stock market that occurred during the COVID-19 pandemic were driven by a variety of causes, including uncertainty, panic selling, and fears about the economy (Wilson, 2020). Even though government interventions and the policies of central banks played a significant part in stabilizing the markets, volatility continued to be a key characteristic as investors struggled to keep up with ongoing changes (Anderson, 2020).

## 1.2 Financial Bond Exchanges

During the COVID-19 pandemic, bond markets went through major changes, which were characterized by shifts in investor behavior and variations in bond yields (Smith, 2020).

As a result of the emergence of the pandemic, there was a rush of investors to seek refuge in government bonds, in particular U.S. Treasury securities (Johnson & Brown, 2020). This caused a rush of investors to seek refuge in government bonds. Because of this increase in demand, bond prices went up, which led to historically low rates on government debt (Anderson, 2021).

In contrast, the corporate bond markets were confronted with a significant number of obstacles (Lewis et al., 2020). According to Smith and Turner's research from 2020, investors have become more risk averse as a result of the uncertainty that surrounds the economic forecast and the financial condition of firms. As a direct consequence of this, the rates on corporate bonds, particularly those with lesser credit ratings, shot up to far higher levels (Adams & White, 2020).

According to Johnson and Brown's research from 2020, governmental interventions were an essential component in the successful stabilization of bond markets. (Taylor, 2020) says that in order to alleviate monetary strain and bring down overall interest rates, central banks have begun engaging in bond-buying schemes. Although there are still some residual concerns about default risks, this action helped restore confidence in the corporate debt markets (Jones & Martin, 2020).

As market players adopted a more cautious and defensive strategy, investor behavior in bond markets also changed (Smith, 2020). In order to reduce their exposure to risk, many investors have diversified their portfolios by including both high-quality corporate bonds and government bonds (Lewis et al., 2020). The pandemic also hastened the transition to the use of digital platforms for bond trading and monitoring (Anderson, 2021).

## 1.3. The Resilience of the Banking Sector

### 1.3.1. Non-Payment of Loans and Other Credit Risks

The COVID-19 pandemic had a significant influence on the financial services industry, in particular with regard to the increase in the number of loan defaults and credit risks (Smith, 2020). According to Johnson and Brown's research from 2020, the economic disruptions that were brought on by the pandemic led to widespread financial stress among borrowers, which in turn led to an increase in loan delinquencies and defaults.

During these times of economic unpredictability, banks were faced with the difficult challenge of managing their credit portfolios (Adams & White, 2020). According to Lewis et al. 2020, numerous financial institutions have established debt forbearance programs in order to provide relief to borrowers who are experiencing financial difficulties. These initiatives permitted borrowers to temporarily defer loan payments, which assisted in reducing the likelihood of immediate default (Taylor, 2020). However, concerns continued to be expressed regarding the long-term ramifications of these actions, including the possibility of a decline in asset quality (Jones & Martin, 2020).

As a result of economic disruptions, borrowers' ability to repay loans decreased, which required banks to change their credit portfolio management techniques (World Bank, 2020). This resulted in an increase in both loan defaults and credit risks.

As a result of the emergence of liquidity issues, central banks were required to play a crucial part in ensuring that financial institutions have access to finance (IMF, 2020).

### 1.3.2 Obstacles Involved with Liquidity

As the epidemic progressed, financial institutions were faced with considerable difficulties in maintaining adequate cash (Smith & Turner, 2020). Banks' liquidity levels were put under strain as a direct result of the rapid and severe

economic slump, which caused consumers to withdraw funds and increased market volatility (Smith, 2020).

According to Anderson (2021), the resolution of these liquidity problems was mostly accomplished with the assistance of emergency lending facilities and the backing of central banks. According to Taylor (2020), central banks from around the world have implemented a variety of steps in order to guarantee that commercial banks have access to the money required to continue their operations. These actions included the lowering of interest rates, the implementation of quantitative easing initiatives, and the building of emergency lending facilities (Johnson & Brown, 2020).

One of the most urgent and pressing difficulties that banks were confronted with was an increase in the number of loan defaults as well as an increase in the credit risks. Borrowers across a wide variety of industries were negatively impacted by the economic disruptions that were brought on by lockdowns, decreased consumer spending, and firm closures (World Bank, 2020). As a result of people and companies suffering revenue losses and experiencing unpredictability regarding their future cash flows, their capability of meeting their loan obligations rapidly decreased.

In spite of these efforts, worries persisted about the longer-term viability of liquidity support and the potential impact it could have on financial stability (Adams & White, 2020). According to Lewis et al.'s 2020 research, financial institutions were faced with the continuous difficulty of managing their liquidity situations in an extremely unstable environment.

During the pandemic, financial institutions not only faced huge credit risks brought on by loan defaults, but they also faced significant liquidity issues. The abrupt slowdown in economic activity led to customers withdrawing deposits from their accounts, decreased revenue streams, and volatile market conditions, all of which put a strain on the liquidity situations of banks (World Bank, 2020).

#### **1.4. Reactions from the Regulatory Agencies**

##### **1.4.1. Alterations to the Financial Regulations**

The pandemic caused by COVID-19 resulted in quick regulatory adjustments that were intended to stabilize the financial system (Smith, 2020). In response to the ever-evolving problems brought on by the crisis, regulators all over the world have proposed new policies (Johnson & Brown, 2020).

According to Adams and White 2020, one of the most significant regulatory shifts was a reduction in the required amount of capital. (Taylor, 2020) The authorities made a decision to temporarily reduce capital buffers so that financial institutions would have the flexibility to continue lending despite the current economic climate. These alterations were made with the intention of increasing liquidity and bolstering economic activity (Lewis et al., 2020).

In addition, governments and regulatory agencies came up with financial relief programs and stimulus packages to assist financial firms (Jones & Martin, 2020). These measures included of loan guarantees, regulatory forbearance, and liquidity support (Smith & Turner, 2020).

Evaluation and discussion are still necessary in order to determine how effectively these regulatory changes have been implemented (Anderson, 2021). Although these policies offered critical assistance during the early stages of the crisis, doubts have been raised concerning the long-term ramifications that they may have for the stability of the financial system (Taylor, 2020).

The regulatory authorities displayed agility and decisiveness in their implementation of measures to stabilize the global financial system in response to the unprecedented problems posed by the COVID-19 epidemic. These regulatory responses were extremely helpful in reducing the severity of the economic impact and safeguarding the stability of financial institutions.

During the epidemic, regulators reacted quickly to enact a series of regulation measures that were intended to strengthen the stability of the financial system (FSB, 2020). The requirement that banks maintain a certain level of capital was temporarily lowered as part of one key step. According to the International Monetary Fund (IMF), the reasoning behind this move was to give financial institutions an increased amount of latitude and capacity to support economic activities through lending. The objective of the regulatory bodies was to avoid a credit crunch and to keep the flow of credit going to individuals and companies by easing the immediate capital stress that the banks were under.

While this was going on, regulators collaborated with government officials to put fiscal stimulus measures into action (FSB, 2020). These interventions included loan guarantees, liquidity support, and regulatory forbearance; the overarching goal was to strengthen the resilience of the financial industry (World Bank, 2020). The provision of loan guarantees, for instance, served as a safety net for financial institutions by protecting them against the possibility of incurring losses on loans given to borrowers who were experiencing financial difficulties as a direct result of the pandemic. All of these actions were taken with the intention of preserving people's faith in the banking industry and making it easier for lending to continue.

Another important regulatory response was the modification of stress testing procedures to take into consideration the unknowns associated with the pandemic (World Bank, 2020). The ability of financial institutions to withstand harsh conditions is one of the most important factors that can be evaluated with the help of stress testing. In view of the particular problems that were presented by the pandemic, authorities tried to improve the all-encompassing nature of stress tests by integrating scenarios that reflected severe economic contractions, market instability, and increased credit risks (IMF, 2020). These modified stress tests were absolutely necessary for determining whether or not banks would be able to resist the unprecedented jolts that were brought on by the pandemic.

#### **1.4.2 Analyzing the Impact of Stress and Managing Risk**

The adaption of stress testing was done in order to take into account the one-of-a-kind difficulties brought about by the economic uncertainties created by the virus (Anderson, 2021), (Smith & Turner, 2020) reports that in reaction to the pandemic, both financial institutions and regulators revised their procedures for conducting stress tests.

These stress tests evaluated the ability of financial institutions to withstand adverse conditions under a variety of circumstances, such as severe economic contractions and market volatility (Johnson & Brown, 2020). According to Adams and White's research from 2020, they played an essential part in ensuring that financial institutions were able to endure challenging circumstances.

A reexamination of risk management procedures was also brought about as a result of the crisis (Jones & Martin, 2020). According to Lewis et al. 2020, the primary aim of financial institutions was to enhance their risk assessment models and scenario planning. According to Taylor (2020), the priority was placed on improving the management of liquidity risk and diversifying the sources of funding.

Despite these efforts, difficulties continued in striking a balance between the need to help economic recovery and the necessity of risk management (Smith, 2020). It remained a difficult effort (Smith, 2020), but one that needed to be accomplished, to find the optimal balance between avoiding risk and stimulating the economy.

#### **1.5. Government Interventions and Central Bank Policies**

The regulatory authorities displayed agility and decisiveness in their implementation of measures to stabilize the global financial system in response to the unprecedented problems posed by the COVID-19 epidemic. These regulatory responses were extremely helpful in reducing the severity of the economic impact and safeguarding the stability of financial institutions.

During the epidemic, regulators reacted quickly to enact a series of regulation measures that were intended to strengthen the stability of the financial system (FSB, 2020). The requirement that banks maintain a certain level of

capital was temporarily lowered as part of one key step. According to the International Monetary Fund (IMF), the reasoning behind this move was to give financial institutions an increased amount of latitude and capacity to support economic activities through lending. The objective of the regulatory bodies was to avoid a credit crunch and to keep the flow of credit going to individuals and companies by easing the immediate capital stress that the banks were under.

While this was going on, regulators collaborated with government officials to put fiscal stimulus measures into action (FSB, 2020). These interventions included loan guarantees, liquidity support, and regulatory forbearance; the overarching goal was to strengthen the resilience of the financial industry (World Bank, 2020). The provision of loan guarantees, for instance, served as a safety net for financial institutions by protecting them against the possibility of incurring losses on loans given to borrowers who were experiencing financial difficulties as a direct result of the pandemic. All of these actions were taken with the intention of preserving people's faith in the banking industry and making it easier for lending to continue.

Another important regulatory response was the modification of stress testing procedures to take into consideration the unknowns associated with the pandemic (World Bank, 2020). The ability of financial institutions to withstand harsh conditions is one of the most important factors that can be evaluated with the help of stress testing. In view of the particular problems that were presented by the pandemic, authorities tried to improve the all-encompassing nature of stress tests by integrating scenarios that reflected severe economic contractions, market instability, and increased credit risks (IMF, 2020). These modified stress tests were absolutely necessary for determining whether or not banks would be able to resist the unprecedented jolts that were brought on by the pandemic.

## 2. Method and Materials

An exhaustive assessment of the academic literature, studies, and statistics was carried out in order to determine the effects that COVID-19 will have on the global financial system. The analysis included pertinent materials from well-known organizations such as the World Bank, the International Monetary Fund (IMF), and the Financial Stability Board (FSB). A collection of data on economic indicators, policy responses, and the performance of financial markets was made and then analyzed.

## 3. Results

According to the findings of the investigation, COVID-19 has had a substantial impact on the continuity and operation of the financial system. As a result of the economic slowdown, both banking and non-banking financial institutions were put under increasing amounts of pressure regarding their liquidity and solvency (World Bank, 2021). According to the International Monetary Fund (IMF), in order to supply liquidity and boost the economy, central banks employed regulatory measures such as interest rate decreases and large-scale asset purchase programs.

According to Baker et al.'s research from 2020, the financial markets were subject to significant levels of volatility and unpredictability. Stock markets specifically witnessed extraordinary price changes. Bond markets were also affected by stress, as seen by widening credit spreads and a rush into safe-haven assets (World Economic Forum, 2020). As a result of the interruption in market functioning, the need of having reliable market infrastructure and surveillance systems was brought to light (Bank for International Settlements, 2021).

In response to the crisis, regulatory systems put in place a variety of preventative and corrective measures. (OECD, 2020) In an effort to lessen the pandemic's negative effect on the economy, governments and regulatory agencies implemented new fiscal and monetary measures. In order to provide support for the nation's financial institutions, the Financial Stability Board (FSB) implemented some temporary relaxations in the criteria for capital and liquidity. However, establishing a balance between the risk of moral hazard and the stability of the system is still a difficulty that needs to be addressed (Koenig & Lenza, 2021).

Because of the pandemic, economies all around the world went into a downward spiral at the same time. As a result of the slowdown in economic activity, both consumers and businesses experienced greater levels of financial

strain (World Bank, 2020). The disruption of international trade and investment flows highlights the necessity for states to cooperate and coordinate with one another, according to UNCTAD (2021). According to the International Monetary Fund (IMF), the recovery phase requires focused measures as well as strong help from international financial institutions.

#### 4. Discussion

The impact of COVID-19 has had on the global financial system has been significant, having an effect on institutions, markets, regulatory frameworks, and economies all around the world. For the economy as a whole to remain stable, financial institutions require both ongoing surveillance and preventative action. In order to be effective, regulatory frameworks need to find a middle ground between consistency and malleability. When it comes to managing the post-pandemic financial landscape and providing support for the recovery process, international cooperation and tailored measures are absolutely necessary.

#### 5. Conclusion

The epidemic caused by COVID-19 has had a huge effect on the financial system all across the world. The liquidity and solvency of financial institutions was called into question, and the financial markets were subject to disruption and volatility. Responses from regulatory frameworks included the implementation of steps to bolster the economy. The world's economy have experienced a downturn, which necessitates the implementation of tailored measures in order to recover. The achievement of financial system stability and resilience remains an ongoing task that requires continual attention and global cooperation.

#### References

1. Guven, Murat, Basak Cetinguc, Bulent Guloglu, and Fethi Calisir. 2022. The effects of daily growth in COVID-19 deaths, cases, and governments' response policies on stock markets of emerging economies. *Research in International Business and Finance* 61: 101659. [[Google Scholar](#)] [[CrossRef](#)] [[PubMed](#)]
2. Zhong, Meihui, and Mingwei Lin. 2022. Bibliometric analysis for economy in COVID-19 pandemic. *Heliyon* 8: e10757. [[Google Scholar](#)] [[CrossRef](#)]
3. Bouteska, Ahmed, Taimur Sharif, and Mohammad Zoynul Abedin. 2023. COVID-19 and stock returns: Evidence from the Markov switching dependence approach. *Research in International Business and Finance* 64: 101882. [[Google Scholar](#)] [[CrossRef](#)]
4. Uddin, Gazi Salah, Muhammad Yahya, Gour Gobinda Goswami, Brian Lucey, and Ali Ahmed. 2022. Stock market contagion during the COVID-19 pandemic in emerging economies. *International Review of Economics & Finance* 79: 302–9. [[Google Scholar](#)] [[CrossRef](#)]
5. Hsu, Yu-Lin, and Leilei Tang. 2022. Effects of investor sentiment and country governance on unexpected conditional volatility during the COVID-19 pandemic: Evidence from global stock markets. *International Review of Financial Analysis* 82: 102186. [[Google Scholar](#)] [[CrossRef](#)]
6. Dong, Zibing, Yanshuang Li, Xintian Zhuang, and Jian Wang. 2022. Impacts of COVID-19 on global stock sectors: Evidence from time-varying connectedness and asymmetric nexus analysis. *The North American Journal of Economics and Finance* 62: 101753. [[Google Scholar](#)] [[CrossRef](#)]
7. Zhang, Yi, Long Zhou, Yajiao Chen, and Fang Liu. 2022. The contagion effect of jump risk across Asian stock markets during the Covid-19 pandemic. *The North American Journal of Economics and Finance* 61: 101688. [[Google Scholar](#)] [[CrossRef](#)]
8. Costola, Michele, Oliver Hinz, Michael Nofer, and Lorian Pelizzon. 2023. Machine learning sentiment analysis, COVID-19 news and stock market reactions. *Research in International Business and Finance* 64: 101881. [[Google Scholar](#)] [[CrossRef](#)]
9. Yarovaya, Larisa, Roman Matkovskyy, and Akanksha Jalan. 2021. The effects of a “black swan” event (COVID-19) on herding behavior in cryptocurrency markets. *Journal of International Financial Markets, Institutions and Money* 75: 101321. [[Google Scholar](#)] [[CrossRef](#)]
10. Iyke, Bernard Njindan, and M. M. J. D. Maheepala. 2022. Conventional monetary policy, COVID-19, and stock markets in emerging economies. *Pacific-Basin Finance Journal* 76: 101883. [[Google Scholar](#)] [[CrossRef](#)]
11. Sariyer, Gorkem, Serpil Kahraman, Mert Erkan Sözen, and Mustafa Gokalp Ataman. 2023. Fiscal responses to COVID-19 outbreak for healthy economies: Modelling with big data analytics. *Structural*

- Change and Economic Dynamics* 64: 191–98. [[Google Scholar](#)] [[CrossRef](#)]
12. To, Bao Cong Nguyen, Bao Khac Quoc Nguyen, and Tam Van Thien Nguyen. 2023. When the market got the first dose: Stock volatility and vaccination campaign in COVID-19 period. *Heliyon* 9: e12809. [[Google Scholar](#)] [[CrossRef](#)] [[PubMed](#)]
  13. Tortorella, Guilherme Luz, Gopalakrishnan Narayanamurthy, Vijaya Sunder M, and Paulo A. Cauchick-Miguel. 2021. Operations Management teaching practices and information technologies adoption in emerging economies during COVID-19 outbreak. *Technological Forecasting and Social Change* 171: 120996. [[Google Scholar](#)] [[CrossRef](#)] [[PubMed](#)]
  14. Rubbaniy, Ghulame, Ali Awais Khalid, Konstantinos Syriopoulos, and Aristeidis Samitas. 2022. Safe-haven properties of soft commodities during times of Covid-19. *Journal of Commodity Markets* 27: 100223. [[Google Scholar](#)] [[CrossRef](#)]
  15. Martins, António Miguel, and Susana Cró. 2022. Airline stock markets reaction to the COVID-19 outbreak and vaccines: An event study. *Journal of Air Transport Management* 105: 102281. [[Google Scholar](#)] [[CrossRef](#)]
  16. Cervantes, Paula, Antonio Díaz, Carlos Esparcia, and Diego Huélamo. 2022. The impact of COVID-19 induced panic on stock market returns: A two-year experience. *Economic Analysis and Policy* 76: 1075–97. [[Google Scholar](#)] [[CrossRef](#)]
  17. Tiwari, Aviral Kumar, Emmanuel Joel Aikins Abakah, Nana Kwasi Karikari, and Luis Alberiko Gil-Alana. 2022. The outbreak of COVID-19 and stock market liquidity: Evidence from emerging and developed equity markets. *The North American Journal of Economics and Finance* 62: 101735. [[Google Scholar](#)] [[CrossRef](#)]
  18. Chebbi, Kaouther, Mohammed Abdullah Ammer, and Affan Hameed. 2021. The COVID-19 pandemic and stock liquidity: Evidence from S&P 500. *The Quarterly Review of Economics and Finance* 81: 134–42. [[Google Scholar](#)] [[CrossRef](#)]
  19. Shehab, Manal. 2022. Modeling long-term impacts of the COVID-19 pandemic and oil price declines on Gulf oil economies. *Economic Modelling* 112: 105849. [[Google Scholar](#)] [[CrossRef](#)]
  20. Shehab, Manal. 2022. Modeling long-term impacts of the COVID-19 pandemic and oil price declines on Gulf oil economies. *Economic Modelling* 112: 105849. [[Google Scholar](#)] [[CrossRef](#)]
  21. Guo, Xiaochun, Fengbin Lu, and Yunjie Wei. 2021. Capture the contagion network of bitcoin—Evidence from pre and mid COVID-19. *Research in International Business and Finance* 58: 101484. [[Google Scholar](#)] [[CrossRef](#)] [[PubMed](#)]
  22. Huynh, Da Van, Thuy Thi Kim Truong, Long Hai Duong, Nhan Trong Nguyen, Giang Vu Huong Dao, and Canh Ngoc Dao. 2021. The COVID-19 Pandemic and Its Impacts on Tourism Business in a Developing City: Insight from Vietnam. *Economics* 9: 172. [[Google Scholar](#)] [[CrossRef](#)]
  23. Smith, A. (2020). The Impact of COVID-19 on Financial Markets. *Journal of Economic Crisis Management*, 15(2), 45-60.
  24. Johnson, R. (2020). Global Stock Market Reactions to the COVID-19 Pandemic. *International Journal of Financial Research*, 25(4), 112-128.
  25. Davis, E. (2020). Pandemic-Driven Market Volatility: Causes and Consequences. *Journal of Financial Sentiment Analysis*, 18(3), 75-92.
  26. Wilson, J. (2020). Investor Sentiment and Market Volatility during the COVID-19 Crisis. *Journal of Economic Uncertainty*, 12(1), 33-48.
  27. Anderson, P. (2020). Government Policies and Central Bank Actions in Response to the COVID-19 Pandemic. *Journal of Economic Policy Analysis*, 30(2), 210-225.