

Assessing the Effects of COVID-19 on China's Economy and Foreign Trade Enterprises through a Sustainable Development Perspective

Ocena wpływu epidemii COVID-19 na chińską gospodarkę i przedsiębiorstwa handlu zagranicznego z perspektywy zrównoważonego rozwoju

Zimin Lin¹, Zi Ye², Xiaohua Hou³, Fangbiao Liu⁴,
Sarita Gajbhiye Meshram⁵, Chao Chen⁶

¹*Department of Planning and Finance, Zhejiang College of Security Technology,
Wenzhou 325000, China*

E-mail: 13906653993@163.com

²*Zhejiang Institute of Economics and Trade, Hangzhou 310018, China*

E-mail: yz@zjiet.edu.cn

³*Office of Budget and Finance, Zhejiang College of Security Technology,
Wenzhou 325016, China*

E-mail (Corresponding Author): houxh199778@163.com

⁴*Department of Planning and Finance, Wenzhou Medical University,
Wenzhou 325000, China*

E-mail (Corresponding Author): lfb1029905216@wmu.edu.cn

⁵*WRAM Research Lab Pvt. Ltd., Nagpur 440027, India*

E-mail: gajbhiyesarita@gmail.com

⁶*Shan Dong University of Finance and Economics, Finance and Taxation College, TaiAn,
271000, China*

E-mail: c2942069251@qq.com

Abstract

The COVID-19 epidemic has had a significant effect on China's economy and mainly on foreign trade enterprises. This virus has affected the social economy and business performance, becoming a primary test of governance aptitude and the national governance system. As a result, a neural network can be used to study and analyze the economic and social development during the COVID-19 epidemic. Good nonlinear forecasting can be achieved using neural network techniques since they overcome the limitations of traditional forecasting methods. Economic forecasts usually have great uncertainty and are affected by factors with complex relationships. However, using the B.P. network on economic forecasts can have a good forecasting effect. Economic analysis in the context of the new crown epidemic will provide more reference to future complex emergencies.

However, countermeasures have been established based on financial institutions, governments, and enterprises. These measures are formulated to cope with the challenges faced by foreign trade enterprises based on the scrutiny of international public emergencies. They include exploration of international cooperation, advancing the new open economy system, speeding up transformation and upgrading, and perfecting the public safety emergency system. Other measures include cooperatively promoting high-quality development of foreign trade enterprises, enabling internal capacities to improve management capabilities, and establishing an external environment based on environmental perfection of the rule of law and policy.

Key words: COVID-19 Epidemic, business, economic development, supply chain, quarantine and urbanization

Streszczenie

Epidemia COVID-19 wywarła znaczący wpływ na gospodarkę Chin, a przede wszystkim na przedsiębiorstwa handlu zagranicznego. Wirus wpłynął na gospodarkę społeczną i wyniki przedsiębiorstw, stając się głównym testem umiejętności rządu i krajowego systemu zarządzania. Do badania i analizy rozwoju gospodarczego i społecznego w czasie epidemii COVID-19 mogą zostać wykorzystane sieci neuronowe. Dobre prognozowanie nieliniowe można osiągnąć przy użyciu technik sieci neuronowych, ponieważ przewyższają one ograniczenia tradycyjnych metod prognozowania. Prognozy gospodarcze zwykle charakteryzują się dużą niepewnością i wpływają na nie czynniki o złożonych relacjach. Korzystając z sieci B.P. dotyczącej prognoz gospodarczych można osiągnąć dobry efekt prognostyczny. Analiza ekonomiczna w kontekście nowej epidemii zapewni więcej odniesień do przyszłych złożonych sytuacji kryzysowych.

Środki zaradcze zostały opracowane w oparciu o instytucje finansowe, rządy i przedsiębiorstwa. Środki te zostały wdrożone, aby sprostać wyzwaniom stojącym przed przedsiębiorstwami handlu zagranicznego w oparciu o analizę międzynarodowych sytuacji kryzysowych. Obejmują one eksplorację współpracy międzynarodowej, rozwój nowego systemu gospodarki otwartej, przyspieszenie transformacji i modernizacji oraz doskonalenie systemu wspierania bezpieczeństwa publicznego. Inne środki obejmują wspólne promowanie wysokiej jakości rozwoju przedsiębiorstw handlu zagranicznego, wspieranie wewnętrznych zdolności poprawy zarządzania oraz stworzenie środowiska zewnętrznego opartego na praworządności w zakresie przepisów prawa i reguł polityki.

Słowa kluczowe: epidemia COVID-19, biznes, rozwój gospodarczy, łańcuchy dostaw, kwarantanna, urbanizacja

1. Introduction

The unexpected outbreak of the COVID-19 epidemic at the start of 2019 caused severe challenges to China's economic development. Over the years, China has faced many emergencies, so it has accumulated a lot of experience in facing outbreaks. For instance, the SARS epidemic in 2003 greatly wrecked the Chinese economy. As a result, the Chinese government has gained much experience in reacting to catastrophes and crises. The arrival of the COVID-19 epidemic significantly affected business and the service industry since it coincided with the Spring Festival (Li & Bi, 2022). This new virus has been effectively controlled, and its spread worldwide has significantly reduced. China has promptly responded to the epidemic by enforcing more comprehensive prevention and control efforts and great experience, resulting in more effective outcomes. Moreover, many companies have resumed their production. China's economic orders from the outbreak show that most economic activities are returning to normal. Lately, numerous studies have been carried out concerning social and economic development. These advancements are assessed based on the unceasing changes in society. Various observations done by scholars portray that the magnitudes of abstract prosperity were more than double-subtle to destructive financial and economic growth. Relevant interpretations by the scholars were based on data from BRFSS information, Gallup global poll information, and Eurobarometer information constituting numerous years of business cycles (Pan, 2020). However, there are minimal studies that integrate the current developments. The association between financial growth and energy consumption in BRICS countries was analyzed within a multivariate board system. The one-way connection from financial growth to limitless and non-environmentally friendly power usage was disclosed by applying a board mistake revision system.

Furthermore, the association between economic development and electricity consumption significantly upgrades economic growth and minimizes energy consumption. It is, therefore, essential to develop an appropriate comprehensive methodological structure to explore the nature of China's relations from a wider angle. Based on the economic impact of the COVID-19 epidemic, it is anticipated to enhance smart medical care, fast development of innovative economies such as e-commerce, and technological advancements. As a result, significant new opportunities will be established to facilitate the restructuring of various industries. A BP neural network can be effectively used to make the details of B.P. techniques and principles known. The economic growth level data and the new crown epidemic can be analyzed using a standard B.P. algorithm.

The COVID-19 epidemic has negatively impacted human life and production, attracting great attention from researchers and governments worldwide. Many intellectuals and government sectors have focused on determining elements that induce the risk of a COVID-19 epidemic. Intellectuals have utilized extensive data information, mathematical models, and other relevant sources to research the pandemic impacts appropriately (Siyun, 2020). However, population mobility is the most renowned influencing element at this time. Therefore, researchers have employed various data information to investigate the effect of population movement on epidemic risk. These data include survey, traffic, and mobile phone displacement data. The COVID-19 epidemic has also greatly influenced the sustainable and stable development of the global economy. Nevertheless, the actual effect of the virus currently depends on how various countries worldwide have responded.

Additionally, many intellectuals have highlighted that the social and natural environment greatly impacts the risk of the COVID-19 epidemic. These elements of the social environment include the population age, transport system, government consciousness of prevention and control, medical level, population density, and urbanization

level. On the other hand, natural environmental factors include temperature and air pollution. Various studies have also proven that the frozen form is more favorable for the endurance of novel viruses. The virus spread has also significantly reduced in China due to appropriate measures implemented by the government to control domestic outbreaks (Liu, 2022). Some of the efficient measures enacted include isolation and border restrictions. However, cold chain logistics has created an extensive public concern since it has become a new method of spreading the virus. Therefore, it has also been considered the main factor affecting the risk of the COVID-19 epidemic. Currently, the prevention and control of the COVID-19 epidemic have entered a normalized stage in China. Nevertheless, a severe condition exists outside the prevention and control of the epidemic. This has resulted in an increase in the new epidemic due to the risk of import that causes high trade flows and cross-border movement of individuals. Many intellectuals have researched the best prevention and control policies and risk assessment. Furthermore, virus survival has been attributed to a cold environment; hence the transmission of the new crown pneumonia outbreak is mainly through imported frozen products (Zelinska et al., 2021). Refrigerated goods imported overseas have been China's primary source of imported epidemics. There has been a significant concern due to the rate of the imported epidemics generated by the imported cold chain. However, the risk of inbound personnel has been successfully managed due to the implementation of sound policies such as segregation control.

2. Social Impact of the COVID-19 Epidemic

Throughout history, pandemics have produced numerous social changes that have impacted individuals worldwide. For instance, the Spanish flu of the 20th century and the black plague in the middle ages caused significant changes in human life. Since the COVID-19 epidemic is a respiratory disease, social distancing and lockdown strategies were the most effective means implemented by the affected countries in reducing the virus transmission (Dai et al., 2022). All individuals were encouraged to wear masks to minimize droplet transmission, and staying home was highly emphasized. Furthermore, the Olympic games were kept on hold to encourage social distancing and reduce virus transmission. However, staying at home for a long may aggravate prior illnesses such as anxiety, stress, and hypertension, resulting in depression and fatigue. It can also result in physical and verbal disputes, creating individual differences and causing violence and psychological challenges.

On the other hand, the COVID-19 epidemic has also positively impacted society. It lets people often contact distant family and friends and check their health and well-being. Individuals also had a chance to share stories and experiences with their loved ones; hence family and friendship bonds became strong. Furthermore, staying home motivates people to explore more creatively and nurture talents and hobbies. People also get ample time to access the internet and watch educative and entertaining videos. Through self-quarantine, individuals develop intimacy and empathy, especially with their family members, since they spend much time together at home. However, the epidemic resulted in high-stress levels since most people lost their jobs. Insufficient intake of antiseptics during quarantine also resulted in respiratory problems. Also, high sensitivity developed among individuals hence causing fewer interactions among people.

Various alterations were made in medical treatment facilities to control the spread of the COVID-19 epidemic. For instance, entire emergency dental procedures and oral and telephonic medicare were adopted. These processes minimized the depletion of personal protective equipment and protected both the patient and the medical personnel. However, many unsafe abortions were carried out due to the absence of reproductive and sexual health services for women. During the lockdown period, the purchasing styles considerably changed due to scarcity, especially food and vital household materials. As a result, most people from various countries practice unnecessary buying habits, causing inconveniences for others. Some countries, such as the United Kingdom, enforced new purchase limits and home delivery services that prioritized delivery for vulnerable or elderly customers (Tong et al., 2022). However, Islamic countries face challenges in practicing social distance due to their level of urbanization and social and religious standards.

Unfortunately, the pandemic has dramatically affected most countries' education system levels. Most schools were closed to minimize the spread of the virus, causing students to stay home. As a result, most students suffer post-traumatic stress due to family financial issues, lack of personal space at home, lack of independence and socialization, boredom, and poor life quality improvement. Negative psychological impacts also resulted, especially for young children and adolescents, due to fear of infection. However, advancing countries such as China implemented online learning due to the wide availability of the internet and computers (Xiang, 2022).

In contrast, students from underdeveloped countries suffered mental trauma since they felt deprived of their education rights. The virus created negative impacts whereby most individuals experienced financial worry, health anxiety, depression, and loneliness. Suicide rates were also very high due to economic hardships, quarantine, lack of food, and isolation.

During the epidemic, technology was very significant. Various states utilized technological platforms such as Whatsapp to update people on the details of the COVID-19 epidemic. Specialized programs were also launched in developed countries to connect citizens and potential healthcare assistance (Zeng et al., 2022). However, exces-

sive use of social media and video games during lockdown resulted in poor sleep quality, especially among children. Some illnesses also result from fatigue caused by excessive use of web conferences. Besides, in the event of pandemics, there is a minimal rate of criminal activities. However, commercial theft increased during the epidemic since most shops and markets were closed for an extended period due to the unavailability of workers. In addition, some practices enforced during the epidemic are getting altered, such as health testing at the airports, travel regulation, remote working, and usage of face masks.

3. Impact of the COVID-19 Epidemic on the Environment

The environment is the only sector that has experienced a positive impact from the COVID-19 epidemic. Due to the quarantine, the industries and transport sectors were closed. Hence global coal use and emissions were significantly reduced. Recent data from NASA shows that nitrogen dioxide emissions have been reduced by thirty percent in recent years. For example in China, the reduction of nitrogen dioxide increased the overall air quality, whereby some cities depicted over 100 air quality index (Fan & Cheng, 2022). The greenhouse gas emissions have also been reduced by approximately twenty percent due to movement restrictions and the lockdown's termination of industrial and transport activities. Minimizing greenhouse gases in the atmosphere is crucial since it reduces global warming by hindering global temperature rise. Approximately 90 percent of carbon dioxide emissions occur due to human activities such as burning fuels; hence, transport restrictions due to the lockdown reduced the combustion of fossil fuels through the motor exhaust.

In the United States, most urban counties portrayed a significant reduction in particulate matter due to the closing of non-essential businesses. Air pollution severely affects human health and the environment and is a complex mixture of ozone, sulphur dioxide, nitrogen dioxide, and particulate matter (Liu, 2022). India encounters high rates of premature death and new cases of childhood asthma associated with air pollution. Furthermore, industries and transportation are the primary sources of air pollution; hence their suspension during the lockdown facilitated improved air quality. The reduction of many vehicles on the road due to the pandemic caused a significant reduction in the air quality index. The study reports by intellectuals portray that quarantine and lockdown caused the particulate matter to reduce by thirty percent. It is also clear that the reduction of the particulate matter concentration was only probable through industries or automobiles and not from residential areas. Although residential areas also contribute to the emission of particulate matter, for instance, through outdoor cooking, the reduction of particulate matter concentration during the pandemic was only attributed to the reduction of automobiles.

However, despite the tremendous reduction in air pollutants such as nitrogen dioxide, sulphur dioxide, and particulate matter during the epidemic, ozone increased in various areas. This increase is attributed to household volatile organic compounds generated during the lockdown. Furthermore, reducing particulate matter increases solar radiation, favouring ozone formation. The presence of particulate matter in the surrounding can also be attributed to fireworks burning and was produced from biomass. It severely impacts human health and can result in asthma or chronic obstructive pulmonary disease. Also, long-term exposure to nitrogen dioxide can increase the mortality rate. Noise pollution is also an important factor that declined due to the suspension of road transport. As a result, a high reduction in noise and sound levels was evident, especially in urban areas, which are always noisy.

In addition, during the lockdown, water pollution portrayed incredible improvement in water quality. For example, mobility restrictions during the lockdown caused a reduction in water traffic in the lagoon of Venice. However, great affluence in water quality was observed in India, and a reduced concentration of suspended particulate matter was also evident in Lake Vembanad (Zhang & Wen, 2022). Various rivers also portrayed decreased nitrates, biological oxygen demand, and dissolved oxygen, making the water safe for drinking. Also, groundwater close to industrial areas had a reduction in the amount of sulphur, iron, lead, nitrates, fecal coliforms, and total coliforms. However, various measures are being taken to prevent the spread of the COVID-19 epidemic and harm to living organisms. For instance, disinfecting public urban areas by using mini-tankers, drones, and trucks to spray corrosive chlorine-releasing agents destroys human settlements and kills wildlife and living organisms in these areas.

4. Impact of the COVID-19 Epidemic on the Economy

The COVID-19 epidemic has resulted in reduced economic growth. Notably, China experienced a seven percent shrinkage in the national economic productivity in the first quarter of the pandemic. Being a highly developed country, this was China's worst economic performance in the last two decades. In addition, the job market was negatively affected since most people lost their jobs in the second quarter of the pandemic. Furthermore, some companies implemented sacking procedures to reduce the number of employees in their organization for decongestion purposes. For instance, airports, restaurants, builders, and many other employees were laid off during the pandemic. In addition, approximately 3700 uber drivers were laid off while the unemployment rate rose to 15 percent. In 2021, the United Nations Conference on Trade and Development projected a two trillion dollars deficit in global income (Zelinska et al., 2021). The recovery time for the economy in developed countries coping with

the epidemic was estimated to be three years. However, commercial sectors such as insurance and travel are projected to take longer for a complete economic restoration.

During the epidemic, the World Travel and Tourism Council stated that more than fifty million jobs were at risk since the tourism sector was experiencing an extreme decline. The major sectors affected by the pandemic were aviation, automobile and tourism, and travel. Furthermore, the United Nations World Travel Organization foretold 120 million job layoffs in international tourism and an eighty percent reduction of earnings from the tourism sector (Peng, 2022). The automobile industry was also greatly affected by the COVID-19 epidemic. Many employees from this industry were laid off, resulting in an economic decline. For instance, in the United Kingdom, more than six thousand personnel from the automobile sector were laid off. As a result, other jobs depending on the automobile industry were also affected, resulting in more layoffs and increasing the rate of unemployment. These layoffs also resulted in less production and many shortcomings in the automobile industry. For instance, Mercedes-Benz stopped making C-class, Volvo cars experienced a 14% revenue drop, and Toyota Motor reduced its global production capacity by 2% (Pan, 2020). However, the sale of light vehicles in South Korea increased by 41%.

Moreover, the aviation industry was also significantly impacted by the epidemic. Staff from regional, low-cost, and international airlines suffered job layoffs. The International Air Transport Association had budgeted a revenue loss of 252 billion dollars on 23rd March 2020 (Siyun, 2020). However, the pandemic affected the agriculture sector less than other sectors. Lockdown measures and social distance greatly affected the labour-intensive agricultural production systems. The demand crash from hotels and commercial enterprises during the pandemic resulted in a 20 percent price drop in the agricultural sector. Based on data from ship trailing before and after the lockdown, it is evident that the interference was not as extreme as expected in various countries. However, the countries that suffered greatly had strong trade links with China. The COVID-19 epidemic created a necessity for respirators and facemasks since it is a respiratory disease. Due to the high demand for masks and respirators in many countries, there was a supply shortage, resulting in extreme prices. Industries have sequentially altered their production process due to high demand.

Several companies reformed their production lines because of corporate social responsibility and changes in demand. For instance, Gucci reformed from luxury clothes to masks, Tesla altered from electric vehicles to ventilators, and Zara altered from apparel to surgical masks. Consumers play an essential role in the economy. At the pandemic's beginning, consumers were panic-buying household items such as groceries and toilet paper. However, the supply-demand chain was disrupted since suppliers were not ready to meet the demands. This resulted in restrictions on the maximum purchase in various states. During the lockdown, trade losses were higher; hence short but strict rules were suggested to reduce the total losses. The economic downcast will slow down the achievement of sustainable development goals. Also, investment institutions should find the ideal portfolio allocation to enhance investment toward sustainable development goals. The government funds short-term emergency packages and long-term green recovery policies. Government support plays a very significant role in achieving sustainable development goals.

In addition, governments can support their economies by preparing compensation packages and emergency plans. For instance, Germany issued total loans to small and large businesses and companies to protect their employees and prevent their companies from collapsing. In countries like Denmark, the government covered 75% of wage bills, assisting companies in striving against economic decline. The Bank of China and Japan also offered \$283 billion to maintain the bank movement, while the U.K. offered 330 billion Euros as an emergency loan to those in financial difficulties (Wang & Lin, 2022). On the other hand, globalization might suffer based on current trends. Working from home concept and remote working facilities such as digital seminar conferences expanded significantly due to lockdown measures. However, these measures were a challenge to populated cities such as China. Challenges associated with social distances arose, especially in industries, since it was hard to carry out contactless work.

5. Impact of the COVID-19 Epidemic on Sustainable Development

There are several United Nations Sustainable Development Goals (SDGs) that are particularly relevant to the study on the economic and social impacts of the COVID-19 epidemic on foreign trade enterprises, along with brief descriptions of how they relate:

Goal 1: No Poverty: The COVID-19 pandemic has exacerbated poverty levels worldwide, affecting vulnerable populations including workers in the informal economy and those reliant on foreign trade for livelihoods. Addressing the economic impacts of the epidemic on foreign trade enterprises can contribute to poverty alleviation efforts.

Goal 3: Good Health and Well-being: The COVID-19 epidemic has significant health implications, and addressing its economic impacts can indirectly contribute to promoting good health and well-being by ensuring access to healthcare and essential services for affected communities.

Goal 8: Decent Work and Economic Growth: Foreign trade enterprises play a crucial role in generating employment and fostering economic growth. Analyzing the effects of the epidemic on these enterprises and proposing measures to mitigate these effects can support the goal of promoting decent work and sustainable economic growth.

Goal 9: Industry, Innovation, and Infrastructure: The COVID-19 epidemic has prompted the need for innovation and adaptation within industries, including foreign trade enterprises. Exploring measures such as transformation and upgrading to cope with the challenges posed by the epidemic can contribute to progress towards this goal.

Goal 17: Partnerships for the Goals: International cooperation is essential in addressing global challenges such as the COVID-19 pandemic. Exploring measures to enhance cooperation among financial institutions, governments, and enterprises to support foreign trade enterprises aligns with the spirit of Goal 17.

By explicitly linking the study's findings and proposed measures to these SDGs, the research can demonstrate its relevance to the broader agenda of sustainable development, emphasizing the interconnectedness of economic, social, and environmental considerations in addressing global challenges.

6. New Opportunities Brought by the COVID-19 Epidemic

Every crisis always has a turning point, and the outbreak of the COVID-19 epidemic has impacted health, life, and smart cities in various ways. More opportunities for industrial restructuring will be provided, the rapid development of new water economies such as smart healthcare and e-commerce, and technological changes will be promoted. The new model triggered by the epidemic will promote industrial development in the course of green, intelligent, networked, digital, and coordinated development. Furthermore, it will assist in enhancing new economic growth points and high-quality economic growth and speed up the transformation of new and old power.

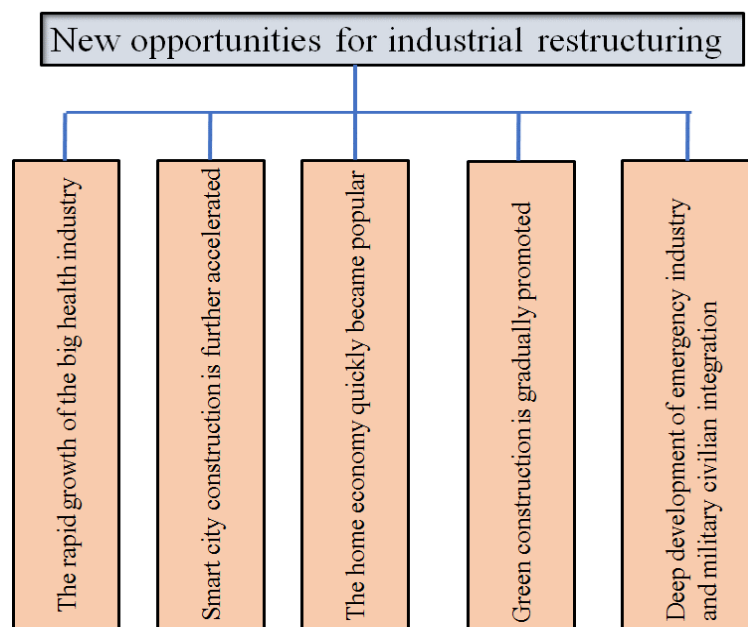


Figure 1. New opportunities for industrial restructuring, source: authors own work

Figure 1 shows five opportunities for industrial restructuring. First, the rapid growth of the health industry has occurred since the epidemic has increased demand for medical equipment and improved people's awareness of life and health. Secondly, the construction of smart cities has accelerated since the epidemic has altered people's activities from physical to online shopping. As a result, industries such as the new economy, modern logistics, and e-commerce have been developed. Thirdly, the home economy has gained popularity. Due to internet initiation, individuals have used the home internet to engage in professional work such as learning, e-education, and online entertainment (Xiang, 2022). China's government has dramatically supported the home economy since it is an appropriate measure to control and prevent the spread of the epidemic. The fast growth of the home economy will enhance the expansion of the platform, community, and internet celebrity economy.

Furthermore, the fourth opportunity involves the gradual development of green construction. Chinese construction will go abroad due to the high growth of energy-saving, intelligent, environmentally friendly, and prefabricated buildings. For instance, the rapid construction of Leishenshan and Huoshenshan hospitals in Wuhan proved to the world the strength and speed of Chinese architecture and the great potential of intelligent and green buildings (Chen & Bi, 2023). Finally, there has been tremendous development in the emergency industry and military-civilian integration. For instance, the handing over of Huoshenshan hospital in China to soldiers has enhanced the development of military-political integration due to the introduction of new associations and established living conditions for military-civilian unity. Moreover, China's People's Liberation Army has offered rigid emergency

support in chemical prevention, transportation, and medical treatment aspects to conquer the fight against the pandemic.

7. Challenges of Economic Development in the Context of the Epidemic

Due to the emergence of the epidemic, most countries have suffered from social insecurity. Efforts made by the government to counter terrorist attacks have intensified the number of refugees, famine, poverty, and unemployment rates. Various factors have also delayed the establishment of free trade areas. AFCFTA secretary general stated that all individuals in the African continent should pay maximum attention to the fight against the new crown disease (Zeng et al., 2022). The pandemic has dramatically affected Africa due to its limited capacity to produce health-related supplies.

Furthermore, high population density in urban areas can hasten the spread of the new crown disease due to difficulty in containment, complex slum surveillance, and enforcement of quarantine laws. The epidemic has also increased the significant debt burden in African countries. The economic performances of tourism operations and international trade have also declined, and the necessity of medical investment to fight the disease has arisen. As a result, the debt problem has worsened, whereby many countries have spent a significant percentage of their annual revenue on debt servicing.

Furthermore, the price of addressing healthcare supply in Africa is anticipated to rise to \$446 billion due to the spread of the disease. This amount is beyond the continent's reach and will stagnate these countries' economies. Most African countries have shortages of medical equipment, especially suction machines. The counterparts of this continent should upsurge the expenditure on social safety and emergency health care to control the epidemic effectively. Furthermore, the economy has a constricted economic space to respond to the pandemic. Tax revenues are insufficient due to corruption and the under-establishment of industries that strengthen national development. The new crown disease caused a significant reduction in economic activities, portraying a remarkable decrease in corporate taxes by 55%, exercise duties by 60%, and import duties by 20% (Wang & Lin, 2022). Also, the epidemic has created challenges for big tax-paying companies. For instance, many airlines have lost over \$8 million monthly due to route reductions and closures. Outstanding deficiencies in the continent prove that most African countries lack sufficient economic space to respond to the epidemic.

Supply chain disruptions are among the great effects of the COVID-19 epidemic. For instance, many manufacturers outside China have experienced decreased plant production. China also shut down many industries in affected areas hence causing close-term employment forecasts of migrant workers, affecting movement and supply chain disruptions. Furthermore, as the virus spreads around the world, resulting in a remarkable decrease in economic activities since most workers were unwilling to show up at work. The broadening of supply chain disruptions to intermediate suppliers outside China made it hard for U.S. companies to substitute products from various states for the omitted inputs from China (Siyun, 2020). These difficulties are faced by traditional industries such as car manufacturing and high-tech industries such as computers and smartphones. Due to supply chain interferences, U.S. companies cannot present their products to clients, resulting in reduced economic growth.

Moreover, there has been a decrease in stock prices and interest rates due to economic uncertainty caused by the epidemic. Inversions in the financial markets have caused higher short-term interest rates than long-term interest rates (Tong et al., 2022). This proves that financial markets are concerned about the long-term position of the economy. A high risk of recession is also evident through bond prices with various maturities. Furthermore, long-term interest rates have declined, such as mortgage rates that are significant to the economy. These factors have caused concern in stock markets since the future position of the economy seems doomed. Due to uncertainty, businesses may hold off on investments since they are unaware of what might happen to the supply chains and their local and international customers. Financial institutions and banks may also restrict credit since they may not be able to assess the short-term risks to specific borrowers. As a result, many businesses may find it hard to invest and grow due to low credit availability.

8. Conclusions & Recommendations

The Chinese government should implement appropriate measures that offer direct and immediate relief when it is needed most. For instance, low-interest loans should be enacted in areas where authorized quarantine is affected by the government. The minimal interest will assist small businesses to remain in business and avoid laying off employees. Also, the loans will cover profit losses in businesses and related costs, preventing cutting the employees' pay. In addition, the government can offer properly designed insurance programs to the most affected organizations and sectors in this regard. The state should also consult with major food retailers and suppliers to offer direct financial support and ensure the food supply is not a severe challenge. This will prevent panic buying of food since the government can effectively plan possible delivery interferences along the food supply network with food suppliers.

In addition, targeted relief should be offered to heavily affected sectors. This will significantly reduce supply chain interruptions, enhance minimum service levels, and evade the spread of credit events across the economy. Furthermore, the government should enforce paid leave and public health insurance among citizens. Furthermore, the new crown epidemic has greatly affected financial markets. As a result, swift actions should be taken to avoid too much risk-averse behavior and interruptions in the chain of payments. Furthermore, the Federal Reserve should utilize all facilities, such as emergency lending authorities, and implement accommodative financial policy bearing. Also, central banks should lower their interest rates, and warranting creative mechanisms such as quantitative expedition should be enacted.

Due to the epidemic's challenges, African countries should take appropriate measures to keep economic development back on track. Since China has excellent experience in the epidemic control and stabilization of supply and industrial chains, African countries should implement China-Africa cooperation to enhance economic development and minimize the epidemic's impacts. The cooperation should minimize economic decline by reinforcing significant actions such as trade facilitation, health and hygiene, capacity building, green development, peace and security, industrial promotion, and infrastructure connectivity. Furthermore, due to the impact of the virus, the China-Africa cooperation should enhance working together between the two governments to hasten the resumption of work and production, improve the production capacities of various enterprises and enhance regular operations. This cooperation will also enhance globalization and the accomplishment of a proper economic strategy.

In conclusion, regulators and the government should closely monitor financial markets and prepare for liquidity in markets, drops in credit supply, credit events, and market stress. In addition, financial regulators should monitor the impact of the pandemic on broader financial stability. Furthermore, since most employees may not have health insurance, the government should implement paid sick leave policy. Through paid sick leave and unemployment insurance systems, the government can help employers cover the associated costs of their employees in the event of a major health crisis. This will enable employees to recover and care for sick family members without losing their job and profiting from the firms where they are employed. Also, providing financial assistance to individuals improves consumption and encourages businesses to invest more. Financial aid also helps vulnerable individuals to afford necessities during a calamity. Therefore, consumption and business investment are the cornerstones of a complete economic recovery.

Funding

This work is supported by the 2023 Hangzhou Philosophy and Social Sciences Planning Project Base Project (2023JD51), and 2023 Zhejiang Province Chinese vocational education project (ZJCV2023A15).

References

1. CHEN B., BI C., 2023, The sustainable development of the tourism industry in Fujian Province under the impact of the COVID-19, *Technium Social Sciences Journal*, 40: 317-322.
2. DAI H., ZHANG M., XU Q., NONG Y., 2022, The Current State of Development of The Real Estate Sector in The Context of The New Crown Epidemic and The Direction of Subsequent Development: Based on Big Data, *Frontiers in Business, Economics and Management*, 5(3): 281-283.
3. FAN R., CHENG H., 2022, Research on the Development Opportunities and Restrictive Factors of Tourism Industry in Yunnan Ethnic Areas in the Post-epidemic Era, *7th International Conference on Social Sciences and Economic Development (ICSSSED 2022)*: 795-799, Atlantis Press.
4. LI W., BI C., 2022, Research on sustainable development of tourist attractions in Chongqing under the background of epidemic normalization. A case study of Wulong 5A Karst travelling site, *Technium Social Sciences Journal*, 38: 529-536.
5. LIU Q., 2022, The Impact of the New Crown Epidemic on Traditional Tourism, *2nd International Conference on Enterprise Management and Economic Development (ICEMED 2022)*: 698-702, Atlantis Press.
6. MA M., TANG J., *Can Tourism Environmental System Resilience Promote Sustainable Development? Case of China*.
7. PAN T., 2020, Study on the impact of new crown epidemic situation on China's foreign trade enterprises and the countermeasures, *International Conference on Big Data, Artificial Intelligence and Internet of Things Engineering (ICBAIE)*: 388-392, IEEE.
8. PENG W., 2022, China's Economic Trend and Development Ideas Under the Impact of the Epidemic, *Proceedings of the 5th International Conference on Economic Management and Green Development*: 73-82, Springer Nature Singapore.
9. SIYUN H., 2020, Analysis of the strategy for the transformation of Wuhan fast food business from offline to online Thinking based on the impact of the new crown epidemic, *Proceedings of the 2020 3rd International Conference on E-Business, Information Management and Computer Science*: 370-375.
10. TONG X., GU L., YOU M., 2022, The impact of fiscal policy on the sustainable development of China's photovoltaic industry, *Frontiers in Environmental Science*, 837.
11. WANG H., LIN M., 2022, Political Will and the Impact Assessment of the New Crown Epidemic on Economic and Social Development and Countermeasures, *Journal of Environmental and Public Health*.
12. XIANG M., 2022, Using the PESTEL Model to Analyze the Impact of the Normalized Epidemic on Enshi's Tourism Industry, *Tourism Management and Technology Economy*, 5(2): 119-126.

13. ZELINSKA H., ANDRUSIV U., GALTASOWA O., DMYTRECHENKO M., 2021, Management of social risks and their impact on the spheres of human life in the conditions of sustainable development of Ukraine, *Problemy Ekorozwoju/Problems of Sustainable Development*, 16(2): 116-124.
14. ZHANG W., WEN L., 2022, An Examination of the Variables Affecting the Growth of the Tourist Sector in Guizhou Province, *Sustainability*, 14(18): 11297.
15. ZENG Y., WANG G., RUI H., 2022, Opportunities, Challenges and Paths for Green Development, *Financial Engineering and Risk Management*, 5(6): 64-74.