



Impact of the covid-19 pandemic on Indonesia's economy

Mohammad Jafar Hafsah*, *Department of Economic, Universitas Negeri Makassar, Makassar, Indonesia,*
mohammadjafarhafsah.unm@gmail.com

Abstract. The spread and increase in the number of COVID-19 cases occurring at a very fast time will have an impact on the decline of the Indonesian economy. This study aims to determine the impact of the Covid-19 pandemic on the economy in Indonesia. The method used in this study is a systematic review in which many previous journals used descriptive qualitative analysis related to the economic impact in Indonesia caused by the COVID-19 pandemic. Based on the research results, this research shows that the policies made by the government in handling COVID-19 can indirectly lead to a decline in economic growth in Indonesia. The impact on the economic sector due to the COVID-19 pandemic in Indonesia includes layoffs, the occurrence of Indonesian Manufacturing, decreased imports, increased prices (inflation) as well as losses in the tourism sector which led to a decrease in occupancy. Strategic fiscal and monetary steps are needed to provide a stimulus package for those affected and the Indonesian government to be more alert in dealing with the decline in economic growth in Indonesia resulting from the COVID-19 pandemic.

Keywords: COVID-19; economy; pandemic.

Received: 08.10.2020

Accepted: 14.11.2020

Published: 12.12.2020

INTRODUCTION

The current economic development, especially in entering the end of the first quarter of 2020, is a horror phenomenon for all human beings in the world. Why not, international scale organizations in the financial sector, namely the International Monetary Fund and the World Bank, predicted that by the end of the first quarter of 2020 the global economy will enter a recession that has been corrected very sharply (Liu, Yu, & Tchounwou, 2020). The COVID-19 pandemic is a fundamental challenge to the global socio-economic system. This crisis forced countries to re-examine social practices and production systems that were considered normal until the end of last year. In fact, because of this Coronavirus, most economists predict a global recession this year (Katz, Jung, & Callorda, 2020).

Global economic growth could decline to negative 2.8% or in other words, dragged down to 6% of global economic growth in the previous period. The two institutions previously projected that the global economy at the end of the first quarter of 2020 will grow at a growth percentage of 3% (Carrillo-Larco & Castillo-Car, 2020).

This horror phenomenon occurs due to the emergence of a new virus that has infected the world today, namely Coronaviruses (CoV). The International Organization for Health, namely the World Health Organization, states that Coronaviruses (Cov) can infect the respiratory tract in humans. The virus has the scientific name COVID-19. COVID-19 can have effects ranging from mild flu to very serious ones, equivalent to or even more severe than MERS-CoV and SARS-CoV (Kirigia & Muthuri, 2020).

The impact of the COVID-19 outbreak is not only detrimental to health. The covid 19 pandemic affects the health and economy of the community (Shaker et al., 2020). This virus has also affected the economies of countries around the world, including Indonesia. The global economy has experienced a decline, following the determination of the WHO which declared the Corona outbreak a pandemic affecting the world of business, tourism, trade, and investment. The COVID-19 pandemic has also had a terrible impact on investment, which makes people choose to be very careful in buying goods and even investing. Investors may tend not to invest due to changing market assumptions and unclear supply chains. The COVID-19 pandemic is affecting financial markets, reducing investors, and the economy (M. Ali, Alam, & Rizvi, 2020).

As a result of the Corona outbreak, the decline in the business world, an increase in the number of laid-off employees, and an increase in the number of unemployed data, the National Development Planning Agency (Bappenas) estimates that the Open Unemployment Rate (TPT) in 2020 will reach 8.1% to 9.2% and the unemployment rate is estimated increased by 4 to 5.5 million people (Ministry of Development & Planning (Bappenas), 2020).

The impact of COVID-19 on the tourism sector is also not free from threats. Data compiled from the Central Bureau of Statistics explained that in 2019 foreign tourists from China who came to Indonesia

touched the figure of 2.07 million travelers or 12.8% of the total number of foreign tourists throughout 2019. The COVID-19 pandemic has caused tourists to come to Indonesia to decline. Tourism supporting sectors, namely restaurants, hotels, and retailers, were also affected. Hotel profits have decreased by up to 40%, which has an impact on hotel operations and threatens its business continuity. This exploratory study examines the overall impact of COVID-19 on the hospitality industry, investment, product design, and digital transformation (Hao, Xiao, & Chon, 2020). The decline in foreign visitors also affects the income of restaurants or restaurants whose customers are more dominant than visitors from abroad (Block, 2020) and also has an impact on the transportation sector (Abu-Rayash & Dincer, 2020).

The following is the development of COVID-19 cases, using WHO and PHEOC data sources from the Ministry of Health. Local Transmission State. The list of countries infected with COVID-19 can be increased every day following the development of data and information obtained (WHO, 2020). Whereas in Indonesia there were 357,762 confirmed cases, with 12,431 deaths, while 281,592 recovered cases were found in 34 provinces (Indonesian Ministry of Health, 2020).

This was done because the world economy, especially Indonesia, is entering a horror phase that arises due to the COVID-19 pandemic, so researchers are interested in seeking deeper information regarding the impact of the COVID-19 pandemic on the Indonesian economy. This study aims to determine the impact of the COVID-19 pandemic on the Indonesian economy related to Indonesian government policies, economic impacts, and government measures in anticipating the economic impact of the pandemic to minimize a deeper economic recession due to the impact of the COVID-19 pandemic.

METHOD

The method used in this study is a systematic review in which many previous journals used descriptive qualitative analysis related to the economic impact in Indonesia caused by the COVID-19 pandemic. Systematic reviews based on journals use qualitative descriptive analysis. By describing the phenomena that occur due to COVID-19. This literature review paper is used to find out the various kinds of regulations or policies that have been applied in Indonesia in dealing with COVID-19 cases and to see the economic impact that has occurred in Indonesia.

In this study, researchers tried to describe COVID-19 which can be said to be a new phenomenon and is currently hitting the world community and especially the Indonesian people. Not only that, but researchers are also trying to explain how this pandemic can have implications not only on one aspect but has touched on economic aspects that can threaten the welfare of the people in Indonesia. The type of data used is mostly in the form of qualitative data in the form of explanations and descriptions obtained from various literature and reading sources related to the COVID-19 pandemic and its implications for the economy. Whereas data sources were obtained from secondary data in the form of notes, documents, journals such as the Impact of the Covid-19 Pandemic on the Indonesian Economy written by (Nasution, Erlina, & Muda, 2020) and journals written by (Yamal & Putri, 2020), books and archives obtained from the results of literature studies or document studies.

For discussion of the research, and analysis will be explained in-depth and the interpretation of the data presented in a straightforward and detailed manner to produce conclusions containing short answers to the formulation of the problem based on the data that has been collected. Whereas in this research, descriptive research aims to record, describe, interpret, and analyze the situations that are currently occurring.

RESULTS AND DISCUSSION

Indonesian Government Policy

Pandemics have historically provided a test on governments, examining their capacity to design and implement public policies so that they can cope with this pandemic (T. O. Ali, Hassan, & Hossain, 2021). Quick, precise, focused, and integrated steps are needed through accelerating the handling of COVID-19 and synergy between Ministries / Agencies and Local Governments. Based on this, the President issued Presidential Decree (Keppres) Number 7 of 2020 concerning the Task Force for the Acceleration of Handling Corona Virus Disease 2019 (COVID-19) (Ministry of Home Affairs of the Republic of Indonesia (Kemendagri RI, 2020).

The COVID-19 pandemic has prompted the Indonesian government to issue regulations/policies regarding its handling. The regulations/policies in question include 4 Presidential Decrees, 2 Presidential Regulations, 1 Government Regulation, 1 Presidential Instruction, and 1 Government Regulation instead of Law. Various kinds of policies, appeals, and even bans are formulated by the Government by involving

cross-ministries, institutions including local governments in formulating strategies to prevent the spread of COVID-19 transmission in the community.

Starting from, the policy issued by the Ministry of Foreign Affairs regarding restrictions on the crossing of people from and into the country. Then, the Government regarding the handling of COVID-19 also emphasized four important things that should be done at this time. Among them are physical distancing, contact tracing of positive cases that have been treated, community education regarding independent isolation, and hospital isolation (preparing a COVID-19 emergency hospital). Some of these policy steps were taken to reduce the level of spread of Covid-19, such as compliance with government policies, conducting self-isolation, and changing social behavior (Wright, Sonin, Driscoll, & Wilson, 2020).

The government has also implemented three steps that must be taken to reduce the rate of spread of the corona-19 virus, namely: (i) vaccination, (ii) increasing body immunity, and (iii) imposing lockdowns in each area (Rahman et al., 2020). Not only that, but the government also issued a policy to work, study and worship from home (Work from Home) to avoid crowds that it feared could increase the spread of the virus. Large-scale limitation measures and instructions on physical distancing from all aspects have an impact on reducing the spread of the coronavirus (Tiirinki et al., 2020).

The Ministry of Health issued a Circular on the use of masks and the provision of Hand Washing with Soap (CTPS). So far, taking into account several considerations, the President has not adopted a policy related to Lockdown, as has been done by several other countries. In return, the government responded to this public health emergency by issuing PP No.21 of 2020 concerning Large-Scale Social Restrictions (PSBB). While in another opinion, it is explained that seven steps need to be taken, namely: (1) not making contact with people around you, (2) implementing lockdown, (3) maintaining distance, (4) vertical isolation, (5) partial isolation, (6) the use of a face mask for every activity, and (7) and conduct thorough isolation (Silva et al., 2020).

Another policy that was carried out, namely at the beginning of March 2020, social distancing, physical distancing for the Indonesian people was implemented. After this policy came into effect, what happened was that the community did not comply properly because of the lack of awareness of the community in dealing with this case, so that this policy was deemed ineffective, such as there were still offices and even shopping centers that operated by involving the masses and continued. Also, people still have no fear of doing activities outside the home so that the spread of COVID-19 is still increasing. Even though the application of lockdowns by the government is also effective in the psychology of society, the environment, and the economy (Atalan, 2020).

Several factors have caused the spread of the Covid-19 virus to continue to increase, including: (1) the public has a dependence on information about Covid-19 to the government but has not implemented the policies implemented by the government optimally, (2) inadequate health services, and (3)) lack of community preparedness to cope with this pandemic (Kithiia, Wanyonyi, Maina, Jefwa, & Gamoyo, 2020) Also, weak governance in the health service facility system has exacerbated general public anxiety (Shammi, Bodrud, Towfiqul, & Rahman, 2020).

The government must be alert in taking strategic policies, if the government is not alert it will have an impact on the vulnerability of social disasters, and it will be very easy for other unwanted conflicts to occur. However, it cannot be denied that the policies and regulations that have been set by the government will have various impacts, one of which we will discuss in this paper is the economic impact.

Economic Impacts in Indonesia

The economies in the Asia Pacific region will experience a long decline due to the spread of this pandemic increasingly widespread in various parts of the world. COVID-19 pandemic has a significant effect on the occurrence of socio-economic inequality and human health (Martins et al., 2020). Furthermore, it was explained that the consequences of a pandemic have significant social, environmental, health, and economic implications (Arregoces, Rojano, & Restrepo, 2020).

Countries that are threatened on the brink of recession due to this pandemic include Australia, Hong Kong, Singapore, Japan, South Korea, and Thailand. In 2020, economic growth in China is predicted to decline to 4.8%, from 5.7% initially. The South Korean state has also experienced an impact on the economy. The economic growth of the State of Gingseng, which was originally projected to grow in the first quarter of 2.1%, will experience a decrease of around 0.4 percentage points. Economic growth Thailand and Taiwan are also expected to experience their lowest economic growth in nearly half a decade, reaching 0.2% and 1.3% in the current quarter. Meanwhile, the World Bank Director predicts that Indonesia's economy is expected to weaken below 5% in the first quarter of 2020 (Ministry of Finance of the Republic of Indonesia, 2020b).

Tiongkok is the country with the second-largest economy in the world. There was an economic slowdown in China as a result of the impact of COVID-19, last year economic growth in China was 6.1% to

around 3.8% this year. If things continue to worsen, economic growth in China could reach 0.1% and even reach a minus number. Credible research institutes in the world have predicted the negative impacts of the global economy that will grip the world. The world economy is predicted to reach -1.1% in 2020 by JP Morgan. Then, the world economy is predicted to reach -2.2% by the EIU, -1.9% predicted by Fitch EIU predicts minus 2.2%, Fitch, and -3% predicted by the IMF. These economic predictions are of great concern to people in the world (Ministry of Finance of the Republic of Indonesia, 2020a).

The government made a policy in overcoming the COVID-19 pandemic, with the enactment of the PSBB as stated in Government Regulation No. 21 of 2020. With the PSBB, all activities that were usually carried out were forced to stop. All activities in the industrial and office sectors were temporarily forced to stop operating. Also, the education sector, public services, all places of worship, shopping centers, restaurants, and tourist places experience the same thing.

As a result, several schools and campuses were closed because students were closed, office activities, business premises, several activities, and economic sectors were temporarily closed. Likewise, places of worship, mosques, churches, and others have also been closed due to calls for worship at home. All this almost certainly will drive down demand and supply at the same time on the other. Furthermore, this situation will lead to a decline in the value of the investment, a weakening of the rupiah exchange rate (it was at 16,000 per dollar), the stock market will become inflamed, and even the value of exports will fall deeper than before. This in turn will have an impact on the wheels of the economy to jam, resulting in a slowdown in national economic growth.

8 business sectors will get the most shocks amid this difficult situation. Some of them are the tourism, transportation, finance, mining, construction, agriculture, MSMEs, and automotive sectors. COVID-19 has an impact on lockdown, social, economic, health care, disease, national health programs, low social-economic stratum (Gopalan & Misra, 2020). The impacts on the economic sector during the COVID-19 pandemic in Indonesia include:

- a. The occurrence of layoffs on a large scale. The result of the data obtained is that ≥ 1.5 million workers were laid off and laid off, where 90% of workers were laid off and 10% of workers were laid off.
- b. There was a decrease in Indonesia's PMI Manufacturing to reach 45.3% in March 2020.
- c. There was a decline in imports of 3.7% in the first quarter.
- d. Inflation has reached 2.96% year-on-year (YoY) which has been contributed from the price of gold and food commodities in March 2020.
- e. The occurrence of flight cancellations resulted in decreased revenue in the sector. The loss that was felt reached Rp. 207 billion. There were 12,703 flight cancellations at 15 airports in January-March 2020.
- f. At 6 thousand hotels, there has been a decrease in occupancy by up to 50%. This can lead to a loss of foreign exchange for tourism (Ministry of Manpower of the Republic of Indonesia, 2020).

The real form that can be seen from the impact of COVID-19 on the economy that can be seen at this time is the occurrence of layoffs. Many employees have been dismissed and various companies are even threatened with bankruptcy. A total of 114,340 companies have laid-off workers and laid-off workers with a total of 1,943,916 workers with a percentage of 77% from the formal sector and 23% from the informal sector (Ministry of Manpower of the Republic of Indonesia, 2020).

Other aspects affected include casual daily laborers, MSME actors, restaurant businesses, and other businesses that involve large numbers of people. This impact will automatically affect the decrease in purchasing power. A society whose money circulation will be very minimal in the midst of society and at the same time also a production of goods will be limited and cause a trade deficit. Currently, the economic shocks arising from this pandemic are continuing. Corona 19 affects production, disrupts supply chains, and unsettles financial markets (Ibn-Mohammed et al., 2020).

The economic impact of COVID-19 will halt the businesses of nearly 24 million people in East Asia and the Pacific. The World Bank also predicts that nearly 35 million people will remain in poverty. The World Bank predicts the number of people living in extreme poverty will increase to 922 million worldwide (World Bank, 2020). If a proper prevention strategy is not implemented in dealing with this pandemic, economic growth in Indonesia will be under pressure, as predicted by the Indonesian Minister of Finance. This economic growth will be depressed to reach a level of 2.5% -0%. Pandemics can affect labor availability, and the adoption of health protocols (Schwendicke, Krois, & Gomez, 2020).

The disruption of the economy in Indonesia, not on economic fundamentals. Vital economic aspects include supply, demand, and supply chain. If these three aspects have been disturbed, there will be an economic crisis in various layers of Indonesian society equally. This is due to a correlation between individual anxiety, financial difficulties, changes in stock market value to COVID-19 (Mann, Krueger, & Vohs, 2020).

The government is required to adopt an interest rate policy and discount airline ticket prices due to the continuous contraction of the exchange rate and oil prices. This is done so that people are interested in making tourist visits. During this pandemic panic, the stock exchange authorities were forced to decide to stop short-selling transactions, which were used to reduce the pressure experienced and high volatility in the country's stock market. COVID-19 causes world oil prices to fall and affects the value of stocks, exchange rates, and the gold market (Samadi, Owjimehr, & Nezhad Halafi, 2020).

Other impacts can also be seen in the tourism sector, namely hotels, restaurants, and retail entrepreneurs. Hotels have decreased occupancy by up to 40%. Lonely tourists also have an impact on nearby restaurants or restaurants whose consumers are usually these tourists. The weak tourism sector also has an impact on the retail industry. The Indonesian economy has decreased by 5% due to this pandemic which one day may experience a decline again if this pandemic continues for a long time. Also, the stock price index has significantly weakened and several state-owned companies have suffered losses this year. It is estimated that economic growth in Indonesia could reach 2.5% if the COVID-19 pandemic will last a long time.

The regulations that have been issued by the government are the basis for the allocation, distribution, and stabilization policies that can be carried out. The first step is that the government is obliged to allocate qualified inputs and resources to its policy orientation, namely to new vulnerable groups affected by COVID-19, including business groups who need crowds, groups of casual daily workers, street vendors, workers affected by layoffs, farmers, and the poor. Also, with the appeal to "stay at home" to the community, it will significantly reduce people's income from their routines, very limited economic activity, and other influences that follow.

Government Steps in Anticipating the Economic Impact of the COVID-19 Pandemic

One of the most pressing issues at the moment is predicting the economic consequences of COVID-19 and designing policies to reduce the number of deaths and the increase in poverty caused by the pandemic (Zhao, 2020). COVID-19 has created a global health crisis where many people have suffered because of being infected with covid-19, causing a social and economic crisis (Mofur et al., 2020). The first step taken is to make a policy design related to economic impacts in the medium and long term (Norouzi, Rubens, Gerardo, & Enevoldsen, 2020).

The government has prepared several policies to mitigate the negative impact of COVID-19, especially on the economy. Among them is the issuance of the stimulus package volume 2. This stimulus package consists of fiscal, non-fiscal, and financial sector stimuli. Stimulus in the financial sector is carried out by providing relaxation of income tax (PPH) for industrial players such as manufacturing workers, imports, and certain related sectors. Then the non-fiscal stimulus includes reducing the limited export and import restrictions to ensure the availability of industrial raw materials. The financial stimulus is carried out through banking, one of which is to encourage economic growth, especially in the MSME sector. This stimulus was created to maintain the stabilization of the real sector so that it could run. Therefore this stimulus is focused on the production sector which is experiencing a business slowdown due to scarce raw materials (Ministry of Finance of the Republic of Indonesia, 2020a). The government has provided an economic stimulus in the form of assistance to small and medium enterprises (Aziz, Othman, Lugova, & Suleiman, 2020).

The government also issued additional spending and financing in the 2020 State Budget amounting to IDR 405.1 trillion. Specifically, to anticipate the negative impact of COVID-19 on the economy, the government has budgeted IDR 110 trillion of the total budget for additional social safety networks. Then the budget to support the industry in the form of tax incentives, import duties, and KUR stimulus amounting to IDR 70.1 trillion and IDR 150 trillion to support national economic recovery (Ministry of Finance of the Republic of Indonesia, 2020b).

Policy developments to reverse the impact of COVID-19 have led to the development of health protocols for stakeholders throughout the supply chain and financial support from the government (Karmaker et al., 2020). This is because COVID-19 has affected the global financial crisis (GFC) for all sectors (Choi, 2020). Also, there has been an economic shutdown which refers to the prohibition of employees from working at work but working from home, a reduction in employees at each company, and an increase in unemployment due to COVID-19 (Howard, 2021). Good population data can help the government to determine a policy that is right on target (Hart & Halden, 2020). In the future, there needs to be a special policy regarding community preparedness in facing various pandemics and the implementation of a health system and economic preparedness (Higginson et al., 2020).

The government also implements policies for economic business actors to keep running their businesses, restaurants, hotels, tourist attractions, malls opened, and several other types of businesses, but on condition that they adhere to strict health protocol rules. Also, the government provides stimulus assistance to farmers in the regions so that the farmers can survive during this pandemic.

CONCLUSION

COVID-19 is currently not only seen as a public health emergency but has a domino effect that spreads to humanitarian problems which can have an impact on social, economic aspects, and can even affect the fundamentals of the national economy in general. All kinds of restrictions on activities carried out to prevent transmission affect the economic slowdown. A drastic drop in public demand, followed by a production sector, is also hampered.

Various policies have been made by the Indonesian government in dealing with the COVID-19 pandemic that is rife. The existing policies have a positive impact directly but indirectly they can also have negative impacts, one of which can be seen at this time is the decline in economic growth in Indonesia. The impact on the economic sector in Indonesia as a result of this pandemic includes layoffs, the occurrence of PMI Manufacturing Indonesia, decreased imports, increased prices (inflation) as well as losses in the tourism sector which led to a decrease in occupancy.

REFERENCES

- Abu-Rayash, A., & Dincer, I. (2020). Analysis of Mobility Trends During the COVID-19 Coronavirus Pandemic: Exploring the Impacts on Global Aviation and Travel in Selected Cities. *Energy Research and Social Science*, 68(July), 101. <https://doi.org/10.1016/j.erss.2020.101693>
- 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*, 27, 100341. <https://doi.org/10.1016/j.jbef.2020.100341>
- Ali, T.O., Hassan, M., & Hossain, N. (2021). The Moral and Political Economy of the Pandemic in Bangladesh: Weak States and Strong Societies During Covid-19. *World Development*, 137(May 2020), 105. <https://doi.org/10.1016/j.worlddev.2020.105216>
- Arregoces, H.A., Rojano, R., & Restrepo, G. (2020). Impact of Lockdown on Particulate Matter Concentrations in Colombia During the COVID-19 Pandemic. *Science of the Total Environment*, 20(23), 142. <https://doi.org/10.1016/j.scitotenv.2020.142874>
- Atalan, A. (2020). Is the Lockdown Important to Prevent the COVID-9 Pandemic? Effects on Psychology, Environment and Economy-Perspective. *Annals of Medicine and Surgery*, 56(June), 38–42. <https://doi.org/10.1016/j.amsu.2020.06.010>
- Aziz, N.A., Othman, J., Lugova, H., & Suleiman, A. (2020). Malaysia's Approach in Handling COVID-19 Onslaught: Report on the Movement Control Order (MCO) and Targeted Screening to Reduce Community Infection Rate and Impact on Public Health and Economy. *Journal of Infection and Public Health*, 23(3). <https://doi.org/10.1016/j.jiph.2020.08.007>
- Block, D. (2020). Political Economy in Applied Linguistics Research. *In Language Teaching*, 50(34). Retrieved from <https://doi.org/10.1017/S0261444816000288>
- Carrillo-Larco, R.M., & Castillo-Car, M. (2020). Using Country-Level Variables to Classify Countries According to The Number of Confirmed COVID-19 Cases: An Unsupervised Machine Learning Approach. *Wellcome Open Research*, 3(4). Retrieved from <https://doi.org/10.12688/wellcomeopenres.15819.1>
- Choi, S.Y. (2020). Industry Volatility and Economic Uncertainty Due to the COVID-19 Pandemic: Evidence from Wavelet Coherence Analysis. *Finance Research Letters*, 12(7), 101. <https://doi.org/10.1016/j.frl.2020.101783>
- Gopalan, H.S., & Misra, A. (2020). COVID-19 Pandemic and Challenges for Socio-Economic Issues, Healthcare and National Health Programs in India. *Diabetes and Metabolic Syndrome: Clinical Research and Reviews*, 14(5), 757–759. <https://doi.org/10.1016/j.dsx.2020.05.041>
- Hao, F., Xiao, Q., & Chon, K. (2020). COVID-19 and China's Hotel Industry: Impacts, a Disaster Management Framework, and Post-Pandemic Agenda. *International Journal of Hospitality Management*, 90(August), 102636. <https://doi.org/10.1016/j.ijhm.2020.102636>
- Hart, O.E., & Halden, R.U. (2020). Computational Analysis of SARS-CoV-2/COVID-19 Surveillance by Wastewater-Based Epidemiology Locally and Globally: Feasibility, Economy, Opportunities and Challenges. *Science of the Total Environment*, 730(12), 138. <https://doi.org/10.1016/j.scitotenv.2020.138875>

- Higginson, S., Milovanovic, K., Gillespie, J., Matthews, A., Williams, C., Wall, L., ... Paolucci, F. (2020). COVID-19: The Need for an Australian Economic Pandemic Response Plan. *Health Policy and Technology*, 56(11). <https://doi.org/10.1016/j.hlpt.2020.08.017>
- Howard, M.C. (2021). Who Wants to Reopen the Economy During the COVID-19 Pandemic? The Daring and Uncaring. *Personality and Individual Differences*, 168(8), 110. <https://doi.org/10.1016/j.paid.2020.110335>
- Ibn-Mohammed, T., Mustapha, K.B., Godsell, J., Adamu, Z., Babatunde, K.A., Akintade, D.D., & Koh, S.C.L. (2020). A Critical Review of the Impacts of COVID-19 on the Global Economy and Ecosystems and Opportunities for Circular Economy Strategies. *Resources, Conservation and Recycling*, 164(May 2020), 105. <https://doi.org/10.1016/j.resconrec.2020.105169>
- Karmaker, C.L., Ahmed, T., Ahmed, S., Ali, S.M., Moktadir, M.A., & Kabir, G. (2020). Improving Supply Chain Sustainability in the Context of COVID-19 Pandemic in an Emerging Economy: Exploring Drivers Using an Integrated Model. *Sustainable Production and Consumption*, 12(7). <https://doi.org/10.1016/j.spc.2020.09.019>
- Katz, R., Jung, J., & Callorda, F. (2020). Can Digitization Mitigate the Economic Damage of a Pandemic? Evidence from SARS. *Telecommunications Policy*, 44(10), 102044. <https://doi.org/10.1016/j.telpol.2020.102044>
- Ministry of Home Affairs of the Republic of Indonesia (Kemendagri RI). (2020). *General Guidelines for Facing the Covid-19 Pandemic for Local Governments (Prevention, Control, Diagnosis and Management)*. https://www.kemendagri.go.id/documents/covid-19/BUKU_PEDOMAN_COVID19_KEMENDAGRI.pdf
- Ministry of Health RI. (2020). Current Situation of Coronavirus Disease (COVID-19) Development. <https://covid19.kemkes.go.id/situasi-infeksi-emerging/info-corona-virus/situasi-terkiniperkembangan-coronavirus-disease-covid-19-18-april-2020/>
- Ministry of Manpower of the Republic of Indonesia. (2020). *Impact of COVID-19 on Economy*. <https://kemnaker.go.id/>
- Ministry of Finance of the Republic of Indonesia. (2020a). *Safeguarding Indonesia's Economy Against the Negative Impacts of the COVID-19 Pandemic*. Jakarta: Ministry of Finance of the Republic of Indonesia.
- Ministry of Finance of the Republic of Indonesia. (2020b). *Government Issues PERPPU to Handle the Economic Impact of Covid-19*. <https://www.kemenkeu.go.id/publikasi/siaran-pers/siaran-pers-pemerintah-terbitkan-perppu-untuk-tangani-dampak-ekonomiakibat-covid-19/>
- Ministry of Development Planning, & (Bappenas), B.P.P.N. (2020). The COVID-19 Pandemic Affects RI's Unemployment Rate. <https://www.bappenas.go.id/id/>
- Kirigia, J.M., & Muthuri, R.D.K. (2020). The Fiscal Value of Human Lives Lost from Coronavirus Disease (COVID-19) in China. *BMC Research Notes*, 13(1). <https://doi.org/10.1186/s13104-020-05044-y>
- Kithiia, J., Wanyonyi, I., Maina, J., Jefwa, T., & Gamoyo, M. (2020). The Socio-Economic Impacts of Covid-19 Restrictions: Data from the Coastal City of Mombasa, Kenya. *Data in Brief*, 33, 106. <https://doi.org/10.1016/j.dib.2020.106317>
- Liu, W., Yu, X.G., & Tchounwou, P.B. (2020). Response to the COVID-19 Epidemic: The Chinese Experience and Implications for Other Countries. *International Journal of Environmental Research and Public Health*, 7(17). Retrieved from <https://doi.org/10.3390/ijerph17072304>
- Mann, F.D., Krueger, R.F., & Vohs, K.D. (2020). Personal Economic Anxiety in Response to COVID-19. *Personality and Individual Differences*, 167(7), 110. <https://doi.org/10.1016/j.paid.2020.110233>
- Martins, L.D., da Silva, I., Batista, W.V., Andrade, M. de F., Freitas, E.D. de, & Martins, J.A. (2020). How Socio-Economic and Atmospheric Variables Impact COVID-19 and Influenza Outbreaks in Tropical and Subtropical Regions of Brazil. *Environmental Research*, 191(34). <https://doi.org/10.1016/j.envres.2020.110184>
- Mofijur, M., Fattah, I.M.R., Alam, M.A., Islam, A.B.M.S., Ong, H.C., Rahman, S.M.A., & Mahlia, T.M.I. (2020). Impact Of Covid-19 On The Social, Economic, Environmental and Energy Domains: Lessons Learnt from a Global Pandemic. *Sustainable Production and Consumption*, 34(7). <https://doi.org/10.1016/j.spc.2020.10.016>
- Nasution, D.A.D., Erlina, E., & Muda, I. (2020). Dampak Pandemi COVID-19 terhadap Perekonomian Indonesia. *Jurnal Benefita*, 5(2), 212. <https://doi.org/10.22216/jbe.v5i2.5313>
- Norouzi, N., Rubens, Z. de, Gerardo, C., & Enevoldsen, P. (2020). When Pandemics Impact Economies and Climate Change: Exploring the Impacts of COVID-19 on Oil and Electricity Demand in China. *Energy Research and Social Science*, 68(3), 101. <https://doi.org/10.1016/j.erss.2020.101654>
- Rahman, M.A., Zaman, N., Asyhari, A.T., Al-Turjman, F., Alam Bhuiyan, M.Z., & Zolkipli, M.F. (2020). Data-Driven Dynamic Clustering Framework for Mitigating the Adverse Economic Impact of Covid-19

- Lockdown Practices. *Sustainable Cities and Society*, 62(July). <https://doi.org/10.1016/j.scs.2020.102372>
- Samadi, A.H., Owjimehr, S., & Nezhad Halafi, Z. (2020). The Cross-Impact between Financial Markets, Covid-19 Pandemic, and Economic Sanctions: The Case of Iran. *Journal of Policy Modeling*, 7(2). <https://doi.org/10.1016/j.jpolmod.2020.08.001>
- Schwendicke, F., Krois, J., & Gomez, J. (2020). Impact of SARS-CoV2 (Covid-19) on Dental Practices: Economic Analysis. *Journal of Dentistry*, 99(3), 103. <https://doi.org/10.1016/j.jdent.2020.103387>
- Shaker, M.S., Mosnaim, G., Oppenheimer, J., Stukus, D., Abrams, E.M., & Greenhawt, M. (2020). Health and Economic Outcomes of Home Maintenance Allergen Immunotherapy in Select Patients with High Health Literacy during the COVID-19 Pandemic: A Cost-Effectiveness Analysis During Exceptional Times. *Journal of Allergy and Clinical Immunology: In Practice*, 8(7), 2310-2321.e4. <https://doi.org/10.1016/j.jaip.2020.05.007>
- Shammi, M., Bodrud, D.M., Towfiqul, I.A.R.M., & Rahman, M.M. (2020). COVID-19 Pandemic, Socioeconomic Crisis and Human Stress in Resource-Limited Settings: A Case from Bangladesh. *Heliyon*, 6(5). <https://doi.org/10.1016/j.heliyon.2020.e04063>
- Silva, P.C.L., Batista, P.V.C., Lima, H.S., Alves, M.A., Guimarães, F.G., & Silva, R.C.P. (2020). COVID-ABS: An Agent-Based Model of COVID-19 Epidemic to Simulate Health and Economic Effects of Social Distancing Interventions. *Chaos, Solitons and Fractals*, 139(45). <https://doi.org/10.1016/j.chaos.2020.110088>
- Tiirinki, H., Tynkkynen, L.K., Sovala, M., Atkins, S., Koivusalo, M., Rautiainen, P., Keskimäki, I. (2020). COVID-19 Pandemic in Finland – Preliminary Analysis on Health System Response and Economic Consequences. *Health Policy and Technology*, 3(4). <https://doi.org/10.1016/j.hlpt.2020.08.005>
- World Bank. (2020). *World Bank Group and COVID-19 (Coronavirus)*. Retrieved from <https://www.worldbank.org/en/who-weare/news/coronavirus-covid19>
- Wright, A.L., Sonin, K., Driscoll, J., & Wilson, J. (2020). Poverty and Economic Dislocation Reduce Compliance with COVID-19 Shelter-in-Place Protocols. *Journal of Economic Behavior & Organization*, 20(23). <https://doi.org/10.1016/j.jebo.2020.10.008>
- Yamal, F.R., & Putri, R.N. (2020). Dampak Pandemi Covid-19 Terhadap Ekonomi Indonesia. *Medcom,Id*, 4(2), 1. <https://doi.org/10.33087/ekonomis.v4i2.179>
- Zhao, B. (2020). COVID-19 Pandemic, Health Risks, and Economic Consequences: Evidence from China. *China Economic Review*, 64(11), 101. <https://doi.org/10.1016/j.chieco.2020.101561>