INTRODUCTION TO THE SPECIAL ISSUE ON “HOW DOES COVID-19 CHANGE THE WORLD ECONOMY?”

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1. BACKGROUND

Coronavirus (COVID-19), first reported in China in December 2019, has spread rapidly around the world. As of April 13, 2021, the cumulative number of infections and deaths due to COVID-19 worldwide was more than 136 million and 2.9 million, respectively.¹ To prevent the life-threatening consequences of COVID-19, and the potential for medical systems to be overwhelmed as a result of the pandemic, extremely restrictive measures—such as travel bans, city lockdowns, and closures of offices, factories, stores, schools, and other places—have been implemented in many countries. These measures have been effective in suppressing the spread of COVID-19 to a certain extent; however, they have had a significant negative impact on the economy. The output growth of the world in terms of real gross domestic product was −3.3% in 2020, declining from 2.8% in 2019.² This figure is greater than that recorded after the financial crisis of 2008, which was −0.1% in 2009. Although seems to be signs of economic recovery since the first lockdowns in April 2020, uncertainty remains because of the emergence of new variants of the virus, which have led to subsequent waves of new infection.

In addition to economic impacts, infection control and prevention measures have changed the behavioral patterns of firms and households. For example, firms are accelerating the adoption of teleworking, automating production processes, and reorganizing global value chains (GVCs). Education and training institutions have introduced distance learning/training. There has been a significant shift from in-store to online shopping.

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¹ Coronavirus Resource Center, Johns Hopkins University. https://coronavirus.jhu.edu/map.html (accessed April 13, 2021).

² IMF estimates.
Against this background, this special issue examines how COVID-19 and associated control and prevention measures have affected socioeconomic activities, particularly in developing countries. The analyses in this special issue are primarily limited to the first half of 2020 when the first lockdown measures were implemented, and thus, the changes after this period are not covered. However, as the waves of the pandemic continue and similar restrictive measures are implemented repeatedly, the results of the analyses in this special issue have ongoing usefulness.

2. SUMMARY AND MAJOR FINDINGS OF ARTICLES

This special issue comprises one theoretical and three empirical studies.

The first article (Sato 2021) is a theoretical investigation of the impacts of infectious diseases on the industrialization of developing countries. Sato constructs a model of a small open economy with increasing returns to scale technology in producing intermediate goods. Thus, the model has multiple equilibria, “industrialization equilibrium” and “nonindustrialization equilibrium.” To analyze the impacts of the COVID-19 pandemic on developing countries, the model introduces two aspects. First, it includes the nontradable final goods/services sector, which generates informal employment in developing countries. Because informal employment is considerably more vulnerable to shocks (e.g., the pandemic of infectious diseases) than formal employment, introducing the nontradable sector into the model allows examination of the effect of this pandemic on industrialization in developing countries. Second, the model endogenizes skill accumulation, which is expressed by the education cost that distinguishes skilled and unskilled labor, to analyze the effects of skilled labor supply constraint. Based on the model under these settings, Sato (2021) derives the following conclusions regarding the impact of COVID-19 on industrialization in developing countries.

First, the COVID-19 pandemic has a negative impact on the industrialization of developing countries. The manufacturing sectors of developing countries may become less competitive in the world market (comparative advantage reversal) because of labor supply constraints caused by restrictions on labor mobility (stay-at-home orders) and the deterioration of education systems (e.g., school closures, poor access for remote learning, public financial constraints, and a decrease in household income). The model predicts that the comparative advantage reversal will cause developing countries with weak manufacturing bases to experience long-lasting economic slumps, and the economy will be trapped in an undesirable nonindustrial equilibrium (non-industrialization trap).
Second, under some conditions, manufacturing automation introduced through international capital markets will improve an economy by expanding the intermediate goods sector through productivity enhancement in manufacturing and contraction of unproductive nontradable final goods/services sector. Therefore, manufacturing automation is expected to mitigate the negative impact of the pandemic. However, the welfare-enhancing effect of manufacturing automation depends on high labor liquidity in not only intersectoral mobility (horizontal mobility) but also in skill upgrading (vertical mobility). With low labor liquidity, automating manufacturing production will expand the nontradable final goods/services sector and increase the wage gap between skilled and unskilled labor. Consequently, the direction of the change in economic welfare is ambiguous. Therefore, policies to increase social mobility (that is, labor liquidity across sectors and skill acquisition) are more crucial as a result of the COVID-19 pandemic.

The second article (Hayakawa and Mukunoki 2021) empirically investigates the impacts of the COVID-19 pandemic on GVCs. The authors classify the negative impacts of the COVID-19 pandemic on GVCs in finished machinery products according to three effects. First, the “demand effect,” which is the decrease in the aggregate demand of importing countries because of the decline in income caused by reduction in working hours and job losses, as well as the lack of access to the retail market because of restricted mobility of people during lockdown measures. Second, the “output effect,” which is the decline in the output (and exports) in exporting countries because of the decline in labor participation caused by COVID-19 infections and reduction in productivity due to lockdown measures. Third, the “supply chain effect,” which is the negative effect on the trade of finished machinery products (downstream products) engendered by a negative supply shock in countries supplying machinery parts (upstream inputs).

By using trade data and COVID-19 cases and deaths from January to June 2020, Hayakawa and Mukunoki (2021) empirically examine these and find the following results.

The largest negative impacts on trade are found to be the supply chain effect followed by the output effect. This finding suggests that firms establishing GVCs across countries have been severely affected by the COVID-19 pandemic. This result implies that firms in supplying countries did not have sufficient inventory, and the supply of machinery inputs decreased because of the pandemic. However, there is no significant impact on trade in relation to the demand effect. This result may be attributed to the import demand for electronic machinery products (i.e., personal computers, mobile phones, cameras, and other devices) growing as a result of the rapid increase in online shopping and teleworking. Furthermore, the negative impact of the COVID-19 pandemic on exporting countries (output effect) is estimated to be relatively small in intra-Asian trade compared to that in
other regions. This observation implies that firms in Asian countries mitigated the shock by adjusting their inventories of finished machinery products.

The results indicate that the output and the supply chain effects (particularly the latter) are crucial in transmitting the negative impacts of the COVID-19 pandemic on trade, thereby implying that dealing with the negative supply chain effect is essential in alleviating the impacts of the COVID-19 pandemic on trade.

The third article (Keola and Hayakawa 2021) investigates the impacts of lockdown policies, implemented to prevent the spread of COVID-19, on economic and social activities. To measure the level of people’s socioeconomic activities, the authors examine nitrogen dioxide (NO2) emissions, which are discharged into the air primarily by burning fuels (e.g., from cars, trucks, buses, power plants, factories, air conditioners, and kitchen facilities at houses, restaurants, and offices). Using the NO2 data for 173 countries, Keola and Hayakawa (2021) examine the impacts of two lockdown policies, “workplace-closing policy” and “stay-at-home policy” from January 1 to July 31, 2020, and find that the effects differed across income levels and the observation periods.

The workplace-closing policy significantly decreased NO2 emissions in low-income countries during the policy and post-policy periods. The decline was observed primarily in countries in East Asia and the Pacific. However, in high-income countries, NO2 emissions in both periods increased. This may be attributed to residential areas being the main source of NO2 emissions in high-income countries, and thus, remote work or work-from-home policies increased energy consumption (thereby affecting NO2 emissions) more than working at the office. Moreover, the absolute impact of the workplace-closing policy was higher during the post-policy period than the policy period.

The stay-at-home policy further reduced NO2 emissions during the policy and post-policy periods; however, significant differences were noted across regions and income levels. Moreover, the result implies that the stay-at-home policy had a significant negative impact on the economy.

In addition to the aforementioned two major lockdown measures, the analyses indicate that the “school-closing policy” and the “transport-closing policy” negatively affected people’s activities.

The fourth article (Hoshikawa and Yoshimi 2021) examines the impacts of the COVID-19 pandemic on financial markets. The authors undertake analysis of South Korea because it is an interesting case; South Korea experienced capital flight and depreciation of currency during the COVID-19 pandemic although the government successfully controlled the infections in the country. Applying a vector autoregressive (VAR) model and generalized autoregressive heteroskedasticity (GARCH) model to daily financial data from January 2, 2019 to August 31, 2020, the authors examine how the stock market in South Korea and the exchange rate of the Korean won reacted to the pandemic.
The VAR model analyses reveal that stock market volatility increases with an increase in new infections; however, the reaction to the increase in new deaths is not so evident. This observation implies that investors react when they observe an increase in infections and complete the adjustments until they perceive an increase in new deaths, which appears a few days after the increase in infections. Furthermore, foreign investors’ stock holdings decrease in response to an increase in the number of infections. Additionally, the analysis implies that an increase in infections indirectly causes a significant depreciation of the Korean won through the increasing stock market volatility and decreasing foreign investors’ stock holdings (capital flight).

Hoshikawa and Yoshimi (2021) also use the GARCH model to investigate the short-term effect of the foreign exchange intervention by the central bank (the Bank of Korea) to stabilize the value of the Korean won given the shock of the COVID-19 pandemic. The result indicates that the Bank of Korea’s intervention had a significant effect on the exchange rate of the Korean won in the short run; however, the effect was limited, thereby indicating that the Korean won recovered only 1% against the market selling pressure.

The results of the analyses imply that policy measures, such as a short-selling ban by the government after the spread of COVID-19, may contribute to stabilizing the Korean won; however, foreign exchange intervention is not effective.

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