Research Paper

The Impact of Coronavirus on Globalization: Evidence from Different Regions in Asia

Ehsan Rasoulinezhad[1], Sanaz Karimi Vala[2], Olga Gennadevna Orlova[3]

1. Assistant Professor of Russian, Central Asian and Caucasus Studies, University of Tehran, Tehran, Iran (Corresponding Author) (e.rasoulinezhad@ut.ac.ir)
2. PhD Student of Political Sciences & Regional Studies, Tomsk State University, Tomsk, Russian Federation (Karimivala@stud.tsu.ru)
3. Instructor of World Economy, Volgogorod State University, Volgogorod, Russian Federation (Volgosros@yandex.ru)

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Abstract

It is generally accepted that COVID-19 is one of the most serious challenges the countries have faced since the end of World War II. The coronavirus, as an external shock has reshaped economic structures and lowered integration among countries. The main purpose of this paper is to investigate the impacts of COVID-19 on the globalization level of countries, which were classified into five Asian regions based on the United Nations geoscheme. To this end, an econometric method of estimation is employed based on the quarterly data pertaining to the study's variables from 2010 to 2020. Results indicate that the pandemic has had a more severe negative impact on the globalization level of more developed countries in Asia, whereas it has had a smaller negative impact on less developed regions, such as those located in Central Asia. In this regard, Japan and China can be named as two economies in which the Coronavirus has had a greater negative impact on the level of globalization. It can be highlighted that the pandemic and its related consequences, such as protectionism (trade and capital de-liberalism) and travel restrictions are not considered as potential threats for all Asian countries. What constitutes a threat for various countries depends on the country's economic nature, political stability, economic size, and globalization nature. Therefore, for globalization recovery, no unique pattern could be applied to all Asian countries, each having to determine useful practical policies based on its economic mechanism and interactions with respect to both regional and global variables.

Keywords: Asian Regions, COVID-19, Generalized Method of Moments, Globalization, Panel Data.

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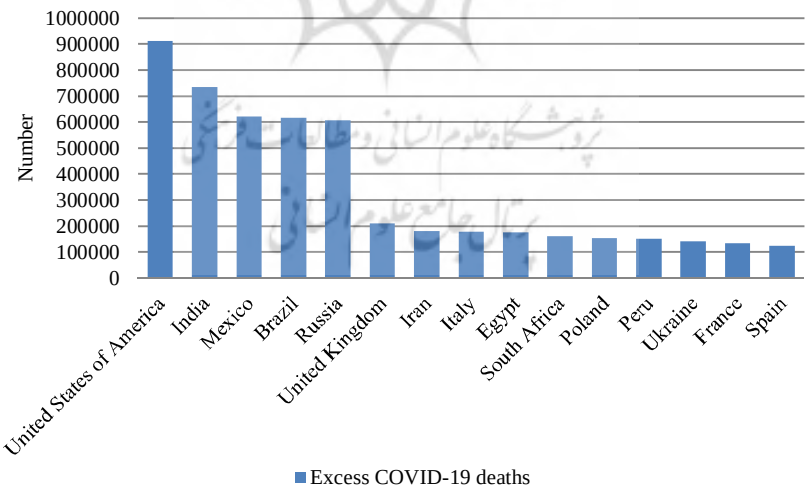
1. Introduction

The coronavirus pandemic has deeply affected the entire global economic system, while causing millions of deaths worldwide. According to the Wang (2021), all countries with different levels of development are facing the challenge of deaths resulted from COVID-19. Between May 2020 and May 2021, the top-ranked country, based on the highest numbers of COVID-19 deaths, was the United States of America with a developed health system (Pines, 2021), since the World War II (Girvan and Roy, 2020) followed by India, Brazil, and Russian Federation as the major members of BRICS (with acceptable economic resiliency against unprecedented shock (Danish, Baloch, Mahmood & Zhang, 2019; Ujunwa, Ujunwa & Okoyeuzu, 2021)). Figure 1 illustrates the top countries in which the challenges of COVID-19-related deaths has more significant.

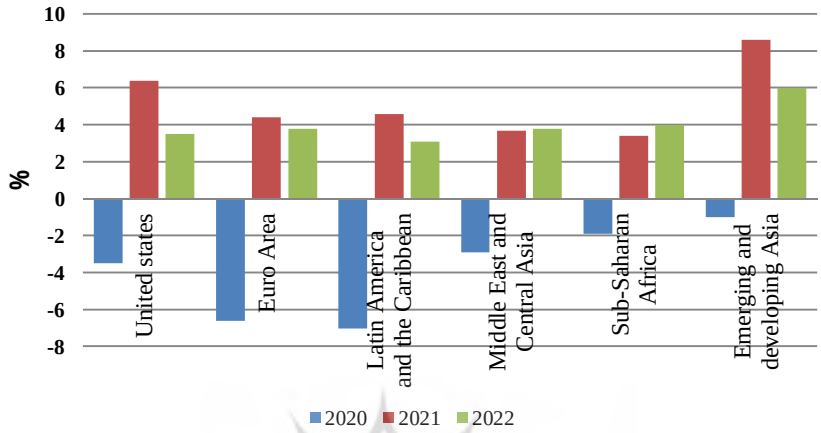
Figure 1. Top countries with the highest numbers of COVID-19 deaths, May 2020-May 2021



Source: Authors' compilation from IHME report by Wang (2021)

However, the loss of human lives due to the COVID-19 only reveals half of the picture of the current pandemic's impacts, which has had serious socio-economic short-term and long-term consequences, which have altered the life style and the political and economic priorities of a country, as well as its foreign relationships, divergence and convergence from and with different countries. Undoubtedly, the ongoing coronavirus pandemic has disrupted the global economy in terms of both supply and demand chains at a large-scale due to imposing certain restrictive measures, such as closing factories, reducing production, and limiting the mobility of work labor. Such measures have contributed to recession and relentless falls in foreign trade volumes in various heavily affected industries, including travel and tourism industries. Furthermore, according to a study by Maliszewska, Mattoo & Van Der Mensbrugghe (2020), major economic systems have lost considerable proportions of their gross domestic product (GDP), up to 3.9%, while developing countries have been hit the hardest (4% on average, but some of them had over 6.5%). Therefore, adopting protectionist actions by governments to offer support is not far-fetched. Relying on different policies, such as trade de-liberalism and increasing restrictions to free capital and trade flows are considered as essential strategies to provide economic growth recovery. According to World Economic Outlook published by IMF (2021), thanks to the anti-liberal policies of the governments, the short-run economic growth would have positive results for all regions. As shown in Figure 2, by the year 2022, the Euro Area, the Latin America and the Caribbean regions, the Middle East, and Central Asia will experience a growth of economy, nearly 3.5%, while emerging and developing Asian nations will reach a higher economic growth, approximately 6%, by this time.

Figure 2. Economic growth by regions, 2020-2022



Source: Authors' compilation from IMF report (2021)

Although these policies recover the economic systems of the world in the near future, they may also slow down the process of globalization and generate divergence among different countries. Shrestha et al. (2020) argue that since 2019, trade and travel rates, as the two major wings of globalization, have significantly dropped. In addition, according to Ibn-Mohammed et al. (2021) COVID-19 has reshaped the national interests of countries from national interest in convergence with the countries of the world to the national interest in divergence from the countries of the world. Conflicting with the opinion of negative impact caused by the pandemic on globalization (called as reverse globalization under the COVID-19), some scholars have defined the current pandemic as a unique opportunity to construct a better globalization and integration pattern. Morsy, Salami & Mukasa (2021) and Adu-Gyamfi et al. (2021) discuss the African food market integration under the COVID-19 and acknowledge COVID-19 as an

opportunity for the African nations that can be used in order to boost their integration and globalization. Similarly, Contractor (2022) mentioned that the implementation of both nationalism and protectionism cannot heavily retreat the globalization. Moreover, it was stated that in the near future, the world economy will experience higher levels of globalization and convergence.

The lack of similar ideas on the effect of the coronavirus on globalization has highlighted the need for conducting an academic study based on the analysis of the existing quantitative data in this regard. The main purpose of this paper is to explore the impacts of COVID-19 on globalization in Asian countries. To this end, we followed the main research question of "*How did the COVID-19 affect the process of globalization in Asian regions?* This paper contributes to the existing literature in different ways. Firstly, we could gather quarterly quantitative data in order to cover the period of COVID-19, and explore its coefficient of impact on the globalization variable. Secondly, our sample consists of the countries located in five different Asian regions defined by the UN geoscheme. Thirdly, our empirical findings are at country and panel levels, which could provide better conclusions and policies for scholars and policymakers in this field.

On the one hand, the main rationale for selecting Asian nations is that globalization is an essential strategy in Asia to gain benefits from global capital, knowledge, labor, and commodity flows. Furthermore, it is noteworthy that some new industrialized Asian economies (NIEs) such as Hong Kong, Taiwan, and Singapore are currently trying to find new global markets for their local productions. In addition, other Asian economies such as Iran, Iraq, and Afghanistan are seeking to follow globalization in order to make their local businesses less risky and more attractive for

foreign investors. On the other hand, most of the Asian nations have had to deal with a more adverse situation of COVID-19 due to their high population density, inadequate health facilities, low social welfare status, undeveloped economic infrastructure, low bandwidth to develop virtual businesses, and poor social protection systems. Therefore, the question raised about the impact of COVID-19 on globalization process is more important and practical for these Asian nations.

In this paper, the research structure will be as follows: Section 2 attempts to provide a brief literature review on the relationship between the COVID-19 and globalization; section 3 discusses the data and model specification, section 4 argues the empirical findings of the study, and the last Section expresses the major concluding remarks as well as practical policy implications.

2. Literature Review

In this section, the literature review related to the impact of COVID-19 on the economic integration and globalization is briefly discussed. In a recent study, Komolov (2020) took a negative view that modern capitalism and de-globalization (which started 8 years ago) are declining due to imposing protectionist measures and various economic sanctions such as anti-dumping policies and import tariffs. Although this approach is in conflict with the WTO goals, certain members, such as the United States, Russia, and India, regularly engage in it in order to dominate and exploit developing or underdeveloped countries. He also argued that the confrontation at the regional level is currently increasing as a result of de-globalization. This claim is evidenced by the rise in far-right and nationalist parties in Europe, along with skepticism among the

members of the Eurasian Economic Union. Finally, using specific terms such as parasite and threat, the author added that capitalism is only in the service of developed countries to dominate the underdeveloped and developing ones, which will consequently lead to a long recession. In another study, Balsa-Barreiro et al. (2020) introduced the concept of hyper-connectivity as well as the explosive increase of interdependence in various political, commercial, financial, and social aspects. Additionally, they considered the concept of de-globalization as a result of weak network structures caused by migration shocks, polarization, and inequality. Furthermore, these hyper-connected networks ultimately cause unresolved conflicts and then lead to de-globalization. Accordingly, the authors also referred to the Brexit referendum (2016), the election of Donald Trump in the United States (2016) or Bolsonaro in Brazil (2018), the outcome of other minor elections across different countries in Europe and the Americas, and the regulations for building borders and for protecting the market as the accelerators of de-globalization. In conclusion, using the chaos theory, Balsa-Barrios et al. (2020) stated that on the ground of the complex system, the complexity of interpersonal relationships, and the expansion of societies, the vaster the relationships of a system, the greater the likelihood of error and harmful behaviors. Hence, globalization itself. along with the escalation of reciprocal relations, has created the de-globalization trend. In addition, by referring to the de-globalization trend and its effects on trade, capital, and labor flows as the results of certain factors such as the US-China strategic rivalry and the downturn of the WTO, Herrero (2020) asserted that the de-globalization has begun since 2000 (opposite to Komolov (2020)). He also explained that by assuming the events such as the escalation of the conflicts between the United States and China,

and the protectionist actions of the other countries with their hostile relationships, the future of globalization is comprehensible. Using the official data of more than 150 economic systems, Farzanegan, Feizi & Gholipour (2021) investigated the relationship between the COVID-19's case fatality rate and globalization progression. In this regard, the major results depicted that in a country with a developed socio-economic status, the globalization progress may be more heavily affected with the case fatality rate of COVID-19. In another study, similar to the study by Komolov (2020), by referring to the election of Donald Trump and the rise of nationalist rhetoric among world leaders, especially in China, India, and Russia, Medhora (2017), illustrated a serious change in the globalization trend. According to the author, the tourism and aviation industries have been knocked down the hardest by the recent pandemic. With respect to the rise of inequality and job losses, Iwuoha and Jude-Iwuoha (2020) attempted to explore the challenges of achieving the goals of sustainable development (SDGs) and globalization. They also acknowledged the necessity of reviewing the related policies in the health system and budget expenditures on education.

Unlike other studies, Sułkowski (2020) considered the positive aspect of COVID-19 and announced that this pandemic created important opportunities for online education and addressed deficiencies in infrastructures such as public health and transportation systems. McNamara and Newman (2020) claimed that there are two types of viewpoints on the post-COVID world. In this regard, for the first group, the COVID-19 is a crisis, changing the current world order, while the second group believes that the basic principles of the international order are likely to remain the same as before, largely driven by the emerging bipolar system

(beyond state-centered) between the US and China. In addition, this group considers the COVID-19 as a transformational game, rather than a game involving winners and losers. The authors also criticized the nationalist approach, which ignores the political and economic systems that have been deeply intertwined by global economic networks. Eventually, they added that reconstructing global markets in the post-pandemic world cannot rely on old formulas, but instead, will demand reshaping the sustainable and durable markets. Moreover, the authors have modeled the COVID-19 shock as a barrier for the production and the temporary closure of labor units, which have consequently led to reduced production rates in the global value chain. Similarly, Kobrin (2020) argued that the policies made to control the outbreak of COVID-19 severely damaged the globalization process. Moreover, Sforza and Steininger (2020) revealed that world production linkages play a direct role in enhancing the effects of the COVID-19. They emphasized that the economic consequences of the COVID-19 shock, depending on the geographic distribution of industries and the degree of region's integration in the global production network, are diverse across different sectors, regions, and countries. Additionally, Wang and Sun (2021) argued that there is a debate about the future of world order in the post-COVID era amongst pessimistic, optimistic, and centrist groups. Correspondingly, optimists predicted the continuation of economic globalization as it used to be in the pre-COVID-19 era. Besides, given the severely damaged global economy during the current pandemic, the pessimists foresaw the replacement of globalization with localization. On the other side, the centrists occupied the middle ground and anticipated the U-shaped recovery in a way of slowing down globalization. This perspective was affirmed by the authors, who applied the term "slowbalization" in their studies.

Accordingly, by taking into account the historical perspective and financial crisis of 2008, the authors argued that based on the transformation of the US-China economic relationship into competition and even a trade war, globalization has been changed since 2008.

Globalization is not only limited to the free flow of goods and capital; it also contains ideas and creativity with the potential of changing people's lives. Thangavel, Pathak & Chandra (2021) assumed that countries become vulnerable if they are left alone, and that they can better cope with crises through various international cooperations. Furthermore, globalization creates an opportunity for the emergence of a new version of globalization, which brings security and prosperity to all countries. In a study by Contractor (2022), it was argued that in post-pandemic era, countries will need to improve their globalization level in order to recover their local industries and capital flows.

Considering the above-mentioned literature, it can be expressed that there has been no serious academic study on investigating the impacts of COVID-19 on the globalization of countries. Therefore, this literature gap will be filled in this study through a panel data approach for Asian countries by using the classification of the UN geoscheme, considering the Asian countries, and employing quarterly data for estimation. These contributions to the existing literature provide fresh and new insights for scholars and policymakers in Asia and other nations around the world.

3. Data Description and Model Specification

The quarterly data of variables employed in this paper were obtained from OECD, FRED St. Louis Fed Database (n.d.), IMF,

UNCTAD, UN Migration data, WHO Coronavirus Dashboard (2021), and local authorities website of sampled countries for Asian regions determined by the United Nations geoscheme for Asia[1] as Central Asia (including Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan), Eastern Asia (including China, Japan, Republic of Korea, and Hong Kong), South-Eastern Asia (including Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam), Southern Asia (including Afghanistan, Bangladesh, India, Iran, Nepal, Pakistan, and Sri Lanka), and Western Asia (including Armenia, Azerbaijan, Bahrain, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Turkey, and United Arab Emirates). To check the impact of the current pandemic on globalization, the dependent variable was assumed to be globalization index (with the proxy of share of trade of country i at time t to world trade flows at time t). In the present study, we could not use some common globalization indexes (e.g., see Dreher, 2006) due to the lack of existence of its quarterly data; explanatory variable of COVID-19 deaths; and the control variables of migration, FDI, and trade openness. Accordingly, these were determined in the study by Mussa (2000) who declared that human migration, trade in goods and services, and financial integration are three major factors affecting the global integration. Moreover, the inflation rate, as an important effective factor on globalization (Bianchi & Civelli, 2015) was considered in our empirical model. Table 1 represents the descriptive information of the variables of our model.

1 . UN Statistics Division. (n.d.).

Table 1. Variables of model

Variable	Symbol	Definition	Unit
Globalization	GLOB	Contribution of trade from country i at time t to global total trade flow $(\frac{Trade_{it}}{Total\ global\ trade_t})$	%
COVID-19 deaths	COVID	Number of confirmed deaths from the pandemic in country i at time t	Number
Migration	MIG	Flows of migrants from country i at time t to other countries	Number
Foreign direct investment	FDI	Foreign direct investment, net inflows to county i at time t	Current US$
Trade openness	TO	Share of total trade to GDP of country i at time t	%
Inflation rate	INF	General level price of goods and commodities	%

Source: Authors

To find out the relationship among the above-mentioned variables, the GMM (Generalized Method of Moments) was employed. Prior to proposing the estimations, it is necessary to check the existence of cross-sectional dependency and unit root among these variables. To this end, we employed four cross-sectional dependence tests, including the Lagrange Multiplier (LM) of Breusch and Pagan (1980), Scaled version of LM test of Pesaran (2004), CD test of Pesaran (2004), and the modified version of LM test proposed by Pesaran & Yamagata (2008). In addition, the panel unit root tests of IPS (Im, Pesaran & Shin, 2003), LLC (Levin, Lin & Chu, 2002), and CADF (the Cross-Sectional Augmented Dickey Fuller) (Pesaran, 2007) were used. It should be mentioned that as a robustness check, the Ordinary Least Squares (OLS) technique was employed to estimate the coefficients for country level in five Asian regions.

4. Empirical Results

In order to discover the relationship between COVID-19 and globalization in the five different Asian regions, the GMM technique was employed. The preliminary tests of the cross-sectional dependency and panel unit root tests were conducted as well. Tables 3-5 report the results of these two preliminary tests as follow:

Table 3. Results of four cross-sectional dependency tests

Asian region	Test	Value
Central Asia	Breusch Pagan LM test	94.392**
	Pesaran Scaled LM test	10.382*
	Pesaran CD test	7.695**
	Adjusted LM test	7.584*
Eastern Asia	Breusch Pagan LM test	70.230**
	Pesaran Scaled LM test	5.110**
	Pesaran CD test	6.410**
	Adjusted LM test	30.684*
South-Eastern Asia	Breusch Pagan LM test	90.594*
	Pesaran Scaled LM test	8.101***
	Pesaran CD test	6.399*
	Adjusted LM test	23.328*
Southern Asia	Breusch Pagan LM test	102.100**
	Pesaran Scaled LM test	10.293*
	Pesaran CD test	8.103**
	Adjusted LM test	7.955**
Western Asia	Breusch Pagan LM test	70.412*
	Pesaran Scaled LM test	10.191***
	Pesaran CD test	8.493*
	Adjusted LM test	8.111**

Note: *, ** and *** mean significance level of 5%, 10% and 1%, respectively.

Source: Authors' compilation

Table 4. Results of first-generation panel unit root tests

Asia region	Test	Variable					
		GLOB	**COVID**	**MIG**	**FDI**	**TO**	**INF**
Central Asia	IPS (level)	2.80	1.76	0.40	-2.30	1.19	3.17
	IPS (first difference)	-6.10*	-5.70*	-4.60**	-5.39*	-4.30*	-2.94*
	LLC (level)	-1.80	-2.69	-0.89	-1.50	3.32	-0.13
	LLC (first difference)	-2.30*	-6.00*	-2.84*	-4.79*	-4.01*	-0.64*
Eastern Asia	IPS (level)	2.79	1.58	0.39	-1.74	0.25	0.90
	IPS (first difference)	-6.40*	-6.28*	-5.09*	-6.11*	-4.48*	-1.65*
	LLC (level)	-1.48	2.14	-0.13	-1.45	-0.85	-1.83
	LLC (first difference)	-4.89*	-5.08*	-0.57**	-3.58*	-2.76*	-2.46*
South-Eastern Asia	IPS (level)	2.68	1.75	0.24	2.48	0.86	3.17
	IPS (first difference)	-6.24*	-5.46*	-4.58*	-6.33*	-1.54*	-2.90*
	LLC (level)	-1.83	-1.54	-2.79	-1.54	-1.43	-2.67
	LLC (first difference)	-2.68*	-2.88*	-6.09*	-4.97*	-0.24*	-6.09*
Southern Asia	IPS (level)	3.05	1.14	-2.28	0.35	1.60	2.75
	IPS (first difference)	-3.31*	-4.27*	-5.49*	-5.47*	-5.37*	-6.07*
	LLC (level)	-0.19	3.08	-1.36	-0.79	-2.38	-1.54
	LLC (first difference)	-0.74*	-4.76*	-4.22*	-2.64*	-5.95*	-2.49*
Western Asia	IPS (level)	0.65	0.34	-1.66	0.45	1.44	3.28
	IPS (first difference)	-2.06*	-4.29*	-6.03*	-5.19*	-6.59*	-2.88*
	LLC (level)	-1.51	2.18	-0.21	-1.60	-0.95	-3.17
	LLC (first difference)	-4.90*	-5.16*	-0.76**	-3.79*	-2.86*	-6.49*

Note: *, ** denote significance level of 5% and 10%, respectively.

Source: Authors' compilation

Table 5. Results of second-generation panel unit root test

Asia region	Test	Variable					
		GLOB	COVID	MIG	FDI	TO	INF
Central Asia	CADF (level)	2.51	2.16	1.05	0.15	0.41	2.60
	CADF (first difference)	-1.60*	-4.17*	-4.16*	-3.94*	-3.40*	-2.49*
Eastern Asia	CADF (level)	1.35	2.43	2.56	0.31	2.16	1.08
	CADF (first difference)	-3.33*	-1.44*	-2.13*	-3.83*	-4.23*	-4.12*
South-Eastern Asia	CADF (level)	2.41	1.59	2.14	1.06	2.50	0.17
	CADF (first difference)	-1.58*	-4.39*	-2.98*	-4.13*	-1.58*	-4.79*
Southern Asia	CADF (level)	2.64	0.31	1.18	2.48	2.16	1.36
	CADF (first difference)	-2.13*	-3.37**	-4.54*	-1.64*	-4.15*	-3.54*
Western Asia	CADF (level)	2.48	2.11	1.19	0.21	0.40	2.58
	CADF (first difference)	-1.94*	-4.01*	-4.12*	-4.78*	-3.39*	-2.18*

Note: *, ** denote significance level of 5% and 10%, respectively.

Source: Authors' compilation

As reported in Table 3, the four tests of cross-sectional dependency proved the presence of cross-sectional dependency among Asian countries. Furthermore, the results of panel unit root tests, which are represented in Tables 4-5, indicate that the series are not stationary at level, while they become stationary with the first difference.

Considering the results of the aforementioned preliminary tests, we performed the panel co-integration test to explore whether there is a long-run relationship amongst these variables. To this end, two-panel co-integration test of Westerlund (2007) was employed. The results, reported in Table 6, stipulated that a long-run relationship exists amongst the variables in the five Asian regions under study. Therefore, we ran the estimation using the GMM technique.

Table 6. Results of panel co-integration test

Asia region	Test	Variable		
		value	Prob.	Robust p.
Central Asia	G_t	-3.70	0.00	0.00
	G_a	-4.60	0.00	0.00
	P_t	-2.81	0.20	0.02
	P_a	-1.89	0.02	0.00
Eastern Asia	G_t	-2.95	0.00	0.00
	G_a	-5.01	0.00	0.00
	P_t	-2.01	0.31	0.04
	P_a	-1.90	0.00	0.00
South-Eastern Asia	G_t	-2.69	0.00	0.00
	G_a	-4.23	0.01	0.00
	P_t	-2.90	0.14	0.01
	P_a	-2.19	0.03	0.01
Southern Asia	G_t	-3.67	0.00	0.00
	G_a	-4.25	0.05	.00
	P_t	-2.91	0.19	0.03
	P_a	-1.96	0.00	0.00
Western Asia	G_t	-4.14	0.00	0.00
	G_a	-4.65	0.01	0.03
	P_t	-2.96	0.00	0.00
	P_a	-1.65	0.01	0.03

Source: Authors' compilation

The findings illustrated in Table 7 for the GMM in the studied five Asian regions express that the COVID-19 lowered globalization in all regions. The magnitude of its effect was found to be larger for Eastern Asia, where the Asian developed countries, such as Japan and South Korea are placed. In other words, we can conclude that the pandemic caused more severe negative impacts on the globalization of more developed countries in Asia, whereas it had a smaller negative impact on less developed regions, such as Central Asia.

Table 7. GMM estimation results

Variable	Central Asia	Eastern Asia	South-Eastern Asia	Southern Asia	Western Asia
COVID	-0.02*	-0.15**	-0.10*	-0.08*	-0.04*
MIG	0.15**	0.42*	0.23*	0.18*	0.28**
FDI	0.04	0.64**	0.19*	0.42**	0.51**
TO	0.09**	0.39**	0.41*	0.28**	0.14**
INF	-0.01**	0.03**	-0.11**	-0.09**	-0.19*

Note: * and ** show significance at 5% and 10%, respectively.

With regards to migration, it was observed that this variable had a positive impact on the globalization level of Asian regions. This impact is larger for Eastern Asian and Western Asian regions. Another important point was that the effect of this variable was found to be more than the effect of COVID-19. Therefore, the policies made to ease migration flows from and to Asian countries would be useful in order to combat the negative consequences of the current pandemic on globalization. The coefficients of FDI for all five Asian regions were positive, except for the Central Asia region, where the coefficient was not statistically significant. In this regard, the main reasons may possibly be the lack of appropriate business climate and the absence of government support of foreign investors in the region. Correspondingly, these results are in line with the findings of Batsaikhan and Dabrowski (2017), who argued that Central Asia could not follow the reform path to a better economic climate after the collapse of the USSR (the Union of Soviet Socialist Republics). In addition, trade openness upturns the globalization in all five Asian regions. Hence, revitalization of trade liberalism after proposing the policy of protectionism during

the COVID-19 could be considered a fruitful policy for globalization recovery in Asia.

With regards to inflation rate, the coefficients were negative, except for Eastern Asia. The main reason for the positive impact of inflation rate on the globalization level of Eastern Asian countries may be conducting fundamental fiscal reforms in this region, which consequently resulted in the normal level of inflation rate in these countries, which may accelerate both economic production and industrial improvement. These findings are in line with those of Shimasawa and Sadahiro (2009) and Michelis and Iacoviello's (2016), who mentioned the positive impacts of rational inflation rate on economic power of different countries.

In the following step, to discover the way in which COVID-19 affects the globalization of Asian countries, we employed the Ordinary Least Squares (OLS) technique for country level in the five Asian regions under study. In should be mentioned that the coefficients of other explanatory variables were skipped due to the limitations of this research.

Table 8 represents the results of the OLS estimation for Central Asian countries. It is clear that the coefficient of COVID-19 in the case of Tajikistan was statistically insignificant, while the negative impact of the pandemic on globalization level in Central Asia was larger for Kazakhstan and Uzbekistan, as the largest economies in the region. It can be concluded that in the Central Asia region, the magnitude of negative consequence of COVID-19 on globalization mostly depends on the economic size of the country. In other words, the larger an economy, the greater the negative impact of the Coronavirus pandemic on its globalization level.

Table 8. Impact of COVID-19 on globalization for individual countries of Central Asia

Country	Coefficient	p. value
Kazakhstan	-0.16	0.04*
Kyrgyzstan	-0.09	0.08**
Tajikistan	-0.01	0.24
Turkmenistan	-0.05	0.00*
Uzbekistan	-0.11	0.06**

Note: * and ** show significance at 5% and 10%, respectively.

Source: Authors' compilation

The impacts of COVID-19 on the globalization level of countries in the Eastern Asia region are represented in Table 9. Based on the estimated coefficients in this study, Japan and China are the two economies in which the Coronavirus has had greater negative impacts on the globalization level. Concerning South Korea and Hong Kong, the results proved that a 1% increase in COVID-19 deaths may lead to a lower globalization speed in these countries, by nearly 0.25% and 0.19%, respectively.

Table 9. Impact of COVID-19 on globalization for individual countries of Eastern Asia

Country	Coefficient	p. value
China	-0.31	0.00*
Japan	-0.58	0.09**
South Korea	-0.25	0.01*
Hong Kong	-0.19	0.00*

Note: * and ** show significance at 5% and 10%, respectively.

Source: Authors' compilation

Furthermore, with regards to South-Eastern Asian countries, the findings in Table 10 illustrated that Singapore and Myanmar are the two economies in the region, which experienced a larger adverse impact of the disease on their globalization level, while the harsh consequences of COVID-19 on globalization was smaller for Cambodia and Thailand.

Table 10. Impact of COVID-19 on globalization for individual countries of South-Eastern Asia

Country	Coefficient	p-value
Cambodia	-0.18	0.00*
Indonesia	-0.21	0.01*
Malaysia	-0.20	0.00*
Myanmar	-0.28	0.06**
Philippines	-0.14	0.03*
Singapore	-0.34	0.00*
Thailand	-0.16	0.00*
Vietnam	-0.21	0.08**

Note: * and ** show significance at 5% and 10%, respectively.

Source: Authors' compilation

In case of Southern Asia, the estimated coefficients, which are reported in Table 11, indicate that the adverse effect of this pandemic on globalization is not statistically significant for Afghanistan and Iran. We may attribute the main reasons of this finding to the existence of local tensions in Afghanistan and the international political tensions of Iran and the Western countries (Anderson, 2019; Niknami, 2020), which have larger significant impacts on their globalization level compared to the pandemic. In

addition, a 1% increase in the COVID-19 deaths may lead to a decreased globalization speed in India and Pakistan by approximately 0.25% and 0.09%, respectively. In this region, again, the largest economy (India) suffers from more severe pandemic-related impacts on its globalization level.

Table 11. Impact of COVID-19 on globalization for individual countries of Southern Asia

Country	Coefficient	p-value
Afghanistan	-0.03	0.14
Bangladesh	-0.00	0.09**
India	-0.25	0.00*
Iran	-0.06	0.36
Nepal	-0.01	0.05*
Pakistan	-0.09	0.00*
Sri Lanka	-0.11	0.00*

Note: * and ** show significance at 5% and 10%, respectively.

Source: Authors' compilation

Finally, Table 12 represents the estimated coefficients of COVID-19 for the selected countries from Western Asia. The coefficients were negative and statistically significant for all those countries in this region. However, the impacts for giant energy-producers in GCC ([Persian] Gulf Cooperation Council), such as Saudi Arabia, Qatar, and Kuwait were estimated to be small. The reason for these small impacts may be the fact that for these countries, the instrument of globalization and interactions with other nations is energy. Therefore, the existence of COVID-19 is not considered as a serious threat for their globalization path. In

opposite, the two countries of Turkey and United Arab Emirates, where the income from tourism sector has major contributions to the country's GDP, experienced a larger impact of COVID-19 on their globalization. In other words, we can conclude that in this region, the magnitude of the COVID-19 impacts principally depends on the country's economic nature.

Table 12. Impact of COVID-19 on globalization for individual countries of Western Asia

Country	Coefficient	p-value
Armenia	-0.19	0.00*
Azerbaijan	-0.20	0.02*
Bahrain	-0.01	0.00*
Jordan	-0.00	0.06**
Kuwait	-0.01	0.01*
Lebanon	-0.19	0.00*
Oman	-0.06	0.01*
Qatar	-0.00	0.00*
Saudi Arabia	-0.01	0.03*
Turkey	-0.25	0.07**
United Arab Emirates	-0.23	0.00*

Note: * and ** show significance at 5% and 10%, respectively.

Source: Authors' compilation

5. Concluding Remarks and Policy Implications

Following the spread of COVID-19 around the world in late 2019, many scholars and policymakers investigated the effects of this pandemic on various countries' economy. One of the neglected aspects of the coronavirus is its impact on the process and speed of globalization in different countries. In this paper, we studied the relationship between the pandemic and globalization in certain

Asian countries using quarterly data, which belonged to the period from 2010 to 2020. The empirical results from the country level and total panels reveal that the magnitudes of the impact of COVID-19 on the globalization path of Asian countries differ in different countries in Asia. Likewise, according to Dumrongrittikul, Anderson and Vahid (2019), the major Asian emerging and developing countries, such as China, India, Indonesia, and Korea have experienced a severe negative impact caused by COVID-19 on their globalization path. Furthermore, Newly Industrialized Asian Economies (i.e., South Korea, Taiwan, Singapore, and Hong Kong) are among the Asian countries where the COVID-19 resulted in larger negative consequences on globalization progression. In addition, Asian economies like the UAE and Turkey, who mostly rely on their tourism incomes have experienced a significant negative impact caused by the pandemic on the globalization level. However, the impacts of the current pandemic on globalization were found to be statistically insignificant for the case of weak economies, such as Tajikistan, the cases that have faced unprecedented exogenous shocks, as in Iran and Afghanistan, and the cases where the definition of globalization is based on energy trade (i.e., energy producers in GCC). Therefore, it can be highlighted that this pandemic and its consequences, such as protectionism (trade and capital de-liberalism) and travel restrictions, are not potential threats for all Asian countries. This impact therefore highly depends on the economic nature, political stability, economic size, and globalization nature. As a result, for globalization recovery, there no unique pattern could be foreseen and applied in all Asian countries; each country should determine useful practical policies based on its economic mechanism and interactions with respect to regional and global variables.

As practical policy implications for this research, boosting various aspects of knowledge-based economy, such as electronic trade, digital finance, and remote tourism can be addressed as valuable policies for Asian nations, especially in those countries where tourism revenue plays an important role in government's budget. Furthermore, lowering the levels of protectionism and trade restrictions is important for Asian countries with large trade openness. Of note, more rapid vaccination efforts in Asian nations would consequently accelerate the reduction in protectionism of these countries. In addition, considering the concept of globality (the world as a single place) proposed by Axford (2013), strengthening regional agreements and cooperation among Asian nations may provide more interactions between countries, especially in the post- COVID era. With regards to this policy, improving the performance of Eurasian Economic Union, BRI (Belt and Road Initiative) of China (which is considered as a new connection between Asian nations), the Asia Pacific Trade Agreement (APTA), ASEAN, Indonesia-Australia Comprehensive Economic Partnership Agreement, and EFTA (European Free Trade Association) could help the countries to re-globalize their economy both during and after the pandemic. This trend of re-globalizing, named as "slowbalization" or "globalization with light speed" by scholars such as Kandil, Battaia & Hammami (2020) may save the mainstream of globalization during and at the end of the pandemic. In addition to the mentioned policies, an integrated strategic planning among Asian nations is highly recommended. This unified approach in planning may reallocate the production inputs and capital in the Asian regions, which could lead to the improvement of growth pillars in Asia and therefore decrease the negative consequences of the pandemic in the regions.

This paper intended to study the relationship between the COVID-19 and globalization in both developed and developing nations. However, the lack of data did not allow us to expand our results. Future studies should consider the effect of the two factors of development and income on the relationship between these two variables. In addition, comparing Asian nations with other regions in Europe and Africa is highly recommended in future studies.

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