The Economy of Developing Countries in the Context of Globalization: Global Supply Chain Management

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***Abstract*— Globalization has a great influence on the development of the independent state economies. Supply chain management (SCM) in the era of expanding global sourcing can play a critical role in diffusing corporate responsible practices throughout the emerging developing countries' economies. Thus, this paper aims to examine how responsible SCM can contribute to supplier performance, including environmental, social and operational performances through the improvement of relationship commitment in the Asian context. The research deals with the economic aspect of globalization and analyzes the indicators that most closely reflect the development of countries in the globalizing world economy — inward foreign direct investment, outward foreign direct investment, economic globalization index and the dependence of a country's GDP on foreign direct investment. It is assumed that foreign direct investment has a significant impact on the development of the country's economy. To check this hypothesis, the relationship between the growth of the gross domestic product of Asian countries and foreign direct investment is being investigated. The calculated correlation coefficient between the growth rates of the country's GDP and the growth rates of foreign direct investment did not show a relationship between these variables. Using the matrix to analyze Asian countries from the standpoint of inward foreign direct investment and the economic globalization index, it was determined that China and Singapore are the countries with high levels of inward FDI and high rates of economic globalization. The coefficient of economic globalization of such countries as Japan, Indonesia, Kazakhstan, Thailand, Malaysia, the Republic of Korea, India, Vietnam and Kyrgyzstan is above 50 out of 100. However, foreign direct investment in these countries is much lower than in China.**

***Keywords*—** *globalization, foreign direct investment, investment flows, economic globalization index, growth rate, global supply chain management.*

1. Introduction

Globalization leads to the structural change of the modern world. This affects the adjustment of national governmental systems; changes economic, political and spiritual development strategies; creates a continuous interdependence of the world [31,38]. The growing interdependence unites and standardizes the conditions and factors of individual countries development. It is a kind of indicator for determining the level of sustainable development of national states and, consequently, their potential to respond to the globalization challenges [25].

The economic aspect of globalization reflects the scale of cross-border trade, investment and income flows in relation to GDP, as well as the impact of restrictions on trade and capital operations [9, 19, 24]. Nowadays due to the industrialization, modernization, globalization and informatization, the countries of the world are paying more and more attention to the issues of developing a country's development strategy within the economic region [7,28], developing competitive advantages in international trade [22] and studying and developing priority economy sectors [40].

The effects of globalization and entrepreneurship on economic development in the selected group of developing economies (BRICS) have been studied [11]. Globalization and entrepreneurship, including the variables characterizing them, are significant and have a positive impact on a country's economic development.

The purpose of the research [12;22,29] is to develop options for the development of interregional economic interaction in the context of the Asian countries economy development. It is proved that it is necessary to take into account the development of interregional economic cooperation in the border areas on the basis of the rational use

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of its natural and socio-economic resources, cost accounting for the allocation of industrial infrastructure facilities, social infrastructure facilities, creation of conservation areas, etc.

In the context of globalization, it is foreign trade that is considered to be an economy stimulator. It is the main factor determining economic growth [5,8,15]. There are many factors that can affect enhancing trade between countries. The exchange rate is regarded as one of the main factors contributing to factoring. The recent global economic and financial crisis and exchange rate volatility in Eurasian countries have had a significant impact on exchange mechanisms and trade flows in the Central Asia countries [21,34]. It indicated the need for monetary cooperation in the region. It turned out that Central Asian currencies are significantly different from each other. In addition, the indicators of nominal and real deviation signal that trends differ in both scale and direction. Thus, these measurements can be used to strengthen a coherent exchange rate policy in Central Asia.

Technological entrepreneurship [30,33,41] is also considered as a driving force for the country's economic growth in the context of globalization. It is proved that there is a high correlation between technological entrepreneurship and economic growth. Technological entrepreneurship has made a significant contribution to the development of technical progress, foreign trade and state tax revenues.

The main obstacles to economic growth in Central Asian countries are internal and external geopolitical factors and deep-rooted institutional weaknesses, especially in the areas where economic management interacts with authoritarian political systems and imperfect legal institutions [4, 20]. Central Asia consists of culturally and ethnically diverse countries that in the past 25 years have chosen various political and economic routes. Kazakhstan and Kyrgyzstan in relative terms have achieved great success in market reforms. Turkmenistan and Uzbekistan have not completed the transition to a market economy yet. Tajikistan is an intermediate case. After a decade of growth based on hydrocarbon booms, Central Asian countries face growing problems associated with falling commodity prices, trade decline and lower migrant remittances. The Shanghai Cooperation Organization program can become an institutional platform for broad regional economic cooperation between the countries of Eurasia and the Asia-Pacific region [2]. In addition, the Asia-Pacific Trade Agreement is one of the major preferential trade agreements that combines the two main markets of India and China in the Asia-Pacific region [1]. The textile industry is one of the most important industries that requires trade liberalization to facilitate intraregional trade. In Agarwal, Kaur & De the question of how the share of export and import of the selected economies in APTA has changed is regarded [1].

Based on the open-source data analysis, factors that are positively and negatively associated with the use of cultural heritage in socio-economic development have been singled out [17,36,39]. An algorithm for managing cultural heritage objects to achieve sustainable socio-economic development is proposed [39]. The research Lee, Ham & Choi is aimed at determining the influence of open government information on a knowledge-based economy at the state level [26]. The obtained results suggest that the openness of government data has a positive effect on the formation of knowledge bases in the country and that the level of a country's knowledge base has a positive effect on the global competitiveness of the country.

In the framework of the country's development policy in recent years, four management approaches have dominated [32]: (1) expansion and development of infrastructure; (2) domestic investment attraction; (3) support of innovation and human capital development; (4) the cultivation of agglomeration and physical combination.

Thus, the purpose of this research is to analyze the indicators characterizing the globalization level of a country, as well as to determine their impact on the economic growth — inward foreign direct investment, outward foreign direct investment, economic globalization index, and the country's dependence on foreign direct investment.

2. Methods

The countries for the research were selected according to the following criteria: countries of different Asia regions should be represented; there should be representatives of fast-developing countries, developed and developing countries, the availability of open information about the country. The indicators of twenty-six Asia countries have been selected and analyzed.

Having studied the approaches to assessing the counrty's globalization level [14,19,24,35], we have identified the indicators assessing the economic component of the globalization process. Based on this, it is assumed that a key role in stimulating economic growth is played by foreign direct investment (Foreign Direct Investments - FDI), trade and established foreign trade rules.

Foreign direct investment has a more significant impact on the country's economy development than portfolio investment. Companies from more developed countries not only invest their money in assets in another country, but also directly participate in daily operations in another country. When international companies come, they can either shake up the existing industry, because they bring competition to domestic companies, or create completely new industries. Inward FDI can also strengthen the local economy by creating new jobs and increasing government tax revenues. This means that they not only bring money, but also knowledge, skills and technology. Therefore, it is important to determine the amount of foreign direct investment the reviewed countries received over the past ten years. Over the long term, inward FDI may have a positive side effect. Things like training of workers or physical infrastructure construction can benefit a company with foreign capital. But as workers change jobs and new uses for the infrastructure arise, the rest of the economy can also benefit.

According to the average foreign direct investment, all countries are divided into the following groups: the first group - a third of the countries that received the largest amount of foreign direct investment in 2007–2017, the second group - a third of the countries that received the average FDI for the same period and the third group - countries with the lowest FDI proportion.

Within each of the groups, FDI growth rates are determined, and a comparative analysis of inward FDI and outward FDI is conducted. Outward direct investment is a business strategy in which an internal company expands its operations in another country. Outward FDI gives a natural extension opportunity to firms if their internal markets become saturated and the best business opportunities are available abroad.

In order to determine the relationship between GDP growth and inward FDI, a correlation coefficient is determined between the country's GDP growth rates and the inward FDI growth rates.

3. Results

From 2007 to 2017, the largest inflow of investments was observed in the following countries: China, Hong Kong SAR, Singapore, India, Indonesia, Republic of Korea, Kazakhstan, Vietnam, Malaysia, and Japan (fig. 1). China has a consistently high level of inward FDI with a tendency to increase, and inward FDI level curves in Hong Kong SAR China and Singapore have been dramatically increasing since 2010.

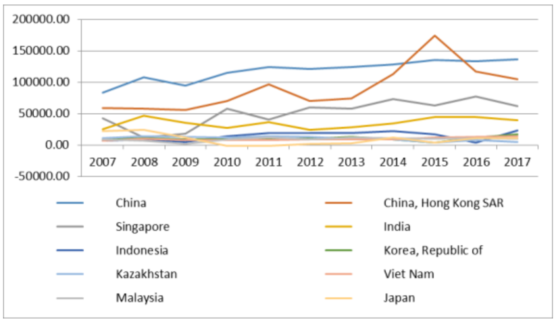

Figure 1. Inward FDI of the first group [37]

Inward FDI growth rates in Japan and Indonesia are intermittent. This indicates the instability of FDI infusions(Fig. 2). In Malaysia, after a significant spike in 2010, inward FDI growth rates alternate between positive and negative values.

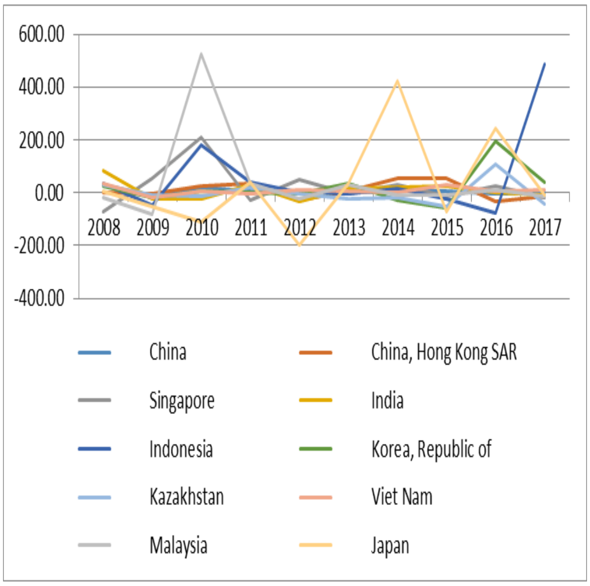

Figure 2. FDI growth rates of the first group of countries

An outward FDI degree of a country can prove that the country's economy is mature. In 2017 (Fig. 3) outward FDI of Japan and Korea exceeds inward FDI. In general, Japanese firms have been making large investments outside their domestic markets for a long time. Due to the faster growth rates the countries with an emerging market economy often get a large amount of outward FDI. As it has been the case in China over the past two decades. But even some emerging market countries have begun to invest abroad. In 2017 (Fig. 3), China, Hong Kong SAR China are engaged in large-scale foreign direct investment. In all other countries, inward FDI exceeds outward FDI. This indicates that the economy is underdeveloped.

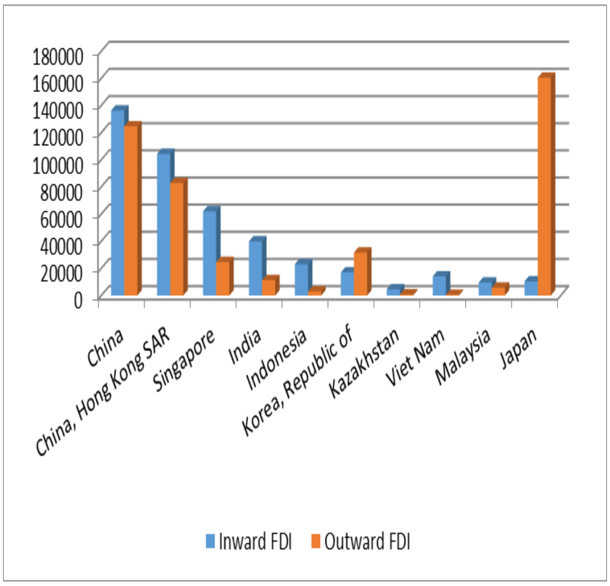

Figure 3. Inward and outward FDI comparison [37]

In the second group of countries, inward FDI was intermittent in Thailand and Taiwan Province of China (Fig. 4).

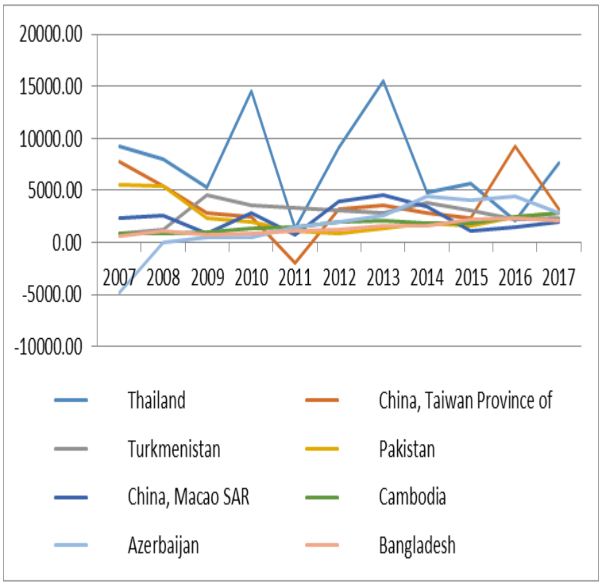

Figure 4. Inward FDI of the second group of countries [37]

The growth rates of inward FDI in all countries of the second group often take alternately positive and negative values. This indicates the instability of inward FDI infusions (Fig. 5).

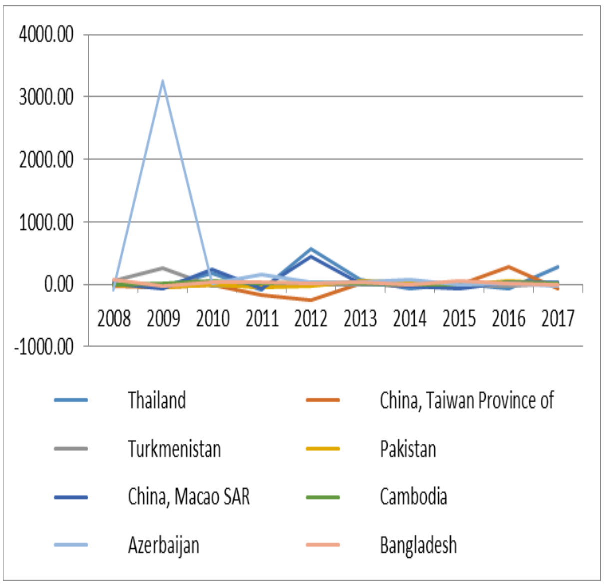

Figure 5. FDI Growth rates of the second group of countries

Comparison of inward FDI and outward FDI of the second group of countries (Fig. 6) showed that outward FDI of Thailand and Taiwan Province of China is twice higher than inward FDI, and in Azerbaijan they are almost at the same level. The rest of the countries in this group do not get outward FDI or it is at a very low level. This indicates immaturity and a developing type of economy.

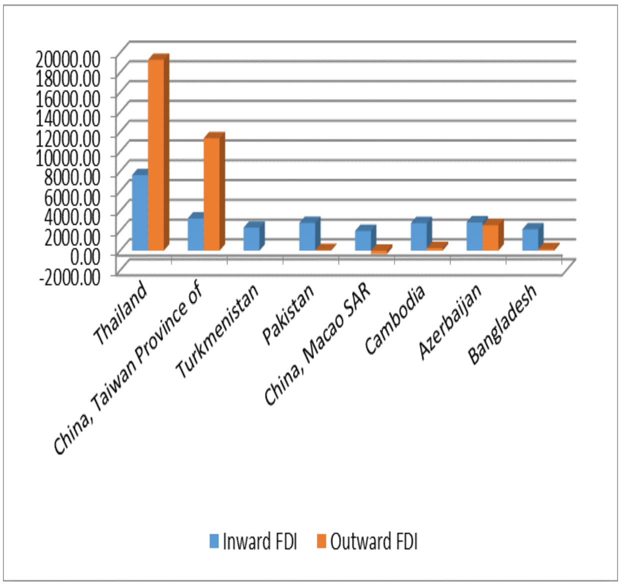

Figure 6. Comparison of inward and outward FDI of the second group of countries [37]

Among the countries of the third group, only in Mongolia inward FDI reached almost 5,000 million USD (Fig. 7). For the rest of the third group countries, the maximum inward FDI for the year does not exceed 1000 million USD.

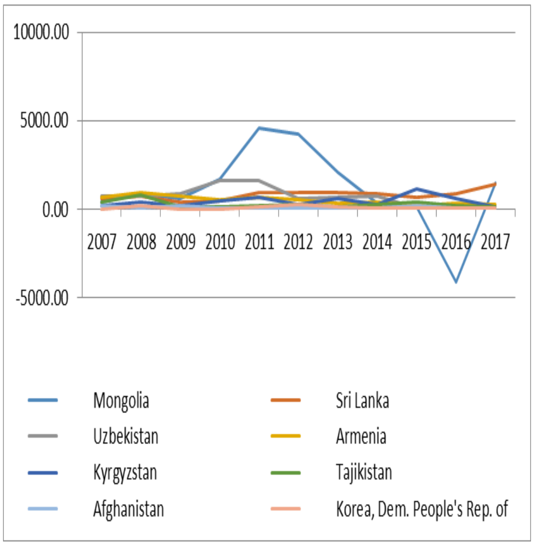

Figure 7. Inward FDI of the third group of countries [37]

Inward FDI growth rates are low and often negative (Fig. 8). The countries of the third group are countries with developing economies and internally concentrated policies. In 2017, inward FDI indicators of Mongolia and Sri Lanka are at 1,400 million USD, while outward FDI is at 50 and 70 million USD, respectively (Fig. 9).

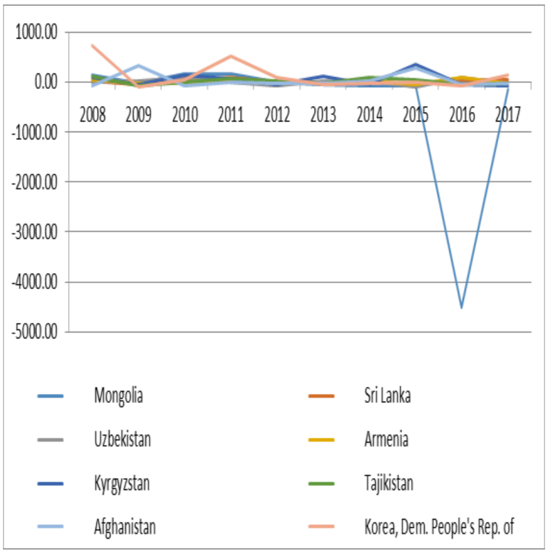

Figure 8. FDI growth rates of the third group of countries

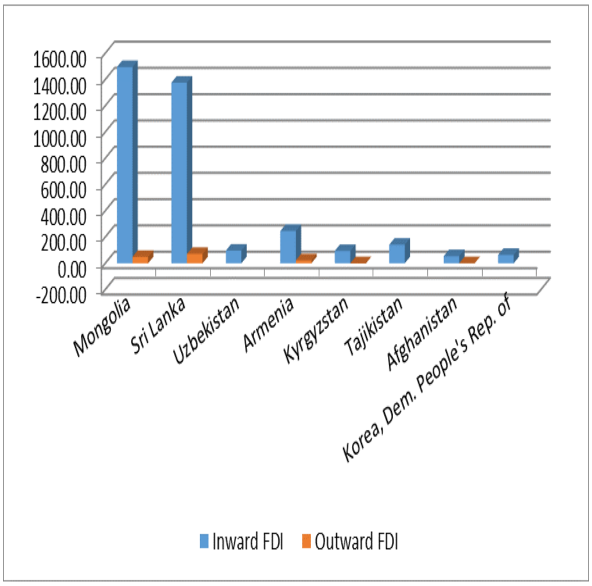

Figure 9. Comparison of inward and outward FDI of the third group of countries [37]

In our research, we used GDP statistics for the period of 2010–2017 (Gross domestic product, 2018) to determine the relationship between inward FDI growth rates and GDP growth rates [18]. As it can be seen from table 1, the correlation coefficient showed no interdependence between these indicators.

Table 1. Correlation coefficient between inward FDI growth rate and GDP growth rate.

Group 1	Correlation coefficient between IFDI growth rate and GDP growth rate	Group 2	Correlation coefficient between IFDI growth rate and GDP growth rate	Group 3	Correlation coefficient between IFDI growth rate and GDP growth rate
China	0,53	Thailand	0,48	Mongolia	0,43

China, HongKong SAR	0,51	China, TaiwanProvince of	-0,39	SriLanka	0,84
Singapore	-0,35	Turkmenistan	0,32	Uzbekistan	0,02
India	0,05	Pakistan	-0,76	Armenia	0,21
Indonesia	0,34	China, Macao SAR	0,22	Kyrgyzstan	-0,38
Korea, Republic of	-0,02	Cambodia	0,26	Tajikistan	0,27
Kazakhstan	-0,37	Azerbaijan	0,64	Afghanistan	-0,32
VietNam	-0,70	Bangladesh	-0,05	Korea, Dem. People's Rep. of	no information
Malaysia	0,34				
Japan	0,14				

Let us build quadrants to determine the position of the countries according to the inward FDI level and the Index value of Economic Globalization (Fig. 10). The countries with a high inward FDI level and a high Economic Globalization level are China and Singapore. They are in the upper right quadrant. There are no countries in the lower left quadrant, since if the inward FDI level is high, the economic globalization level cannot be low. The lower left quadrant is a country with a low economic globalization level and not very high investments. The upper left quadrant is the countries with a high economic globalization level, but small FDI.

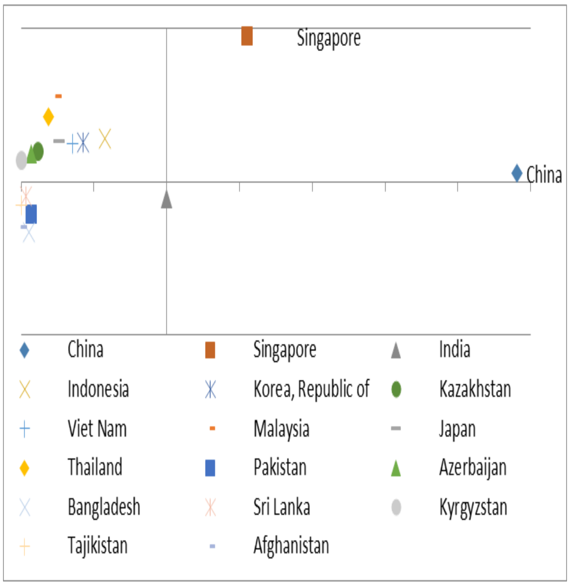

Figure 10. Asian countries from the perspective of IFDI and economic globalization index

4. Discussion

The hypothesis of the relationship between GDP growth and inward FDI has been checked in our research. A comparison is made between inward FDI and outward FDI. This makes it possible to assess how well the country's economy is developed. It is also possible to assess the country's position in terms of the ratio of FDI and the economic globalization index.

The indicators that significantly affect macroeconomic stability have been identified on the basis of the analysis in studies [3,6,10]. These are foreign direct investment, the net share of portfolio investment, the growth rate of real GDP, the growth rate of the consumer price index, the growth rate of the producer price index, relative prices, export and import growth rates. GDP growth determines the overall economic situation in a particular country.

The most successful economic development models are demonstrated by rapidly developing countries and the Asia-Pacific region: South Korea, the Taiwan Province of China, Singapore, Malaysia, and Thailand [16,23,27]. The government is the main guarantee of economic and social construction in these countries. State and foreign investment and government policies for encouraging local and foreign businesses play a crucial role in the development of technological innovations in rapidly developing countries. In these countries, basic research is growing due to the development of knowledge-based industries, the role of research institutions, applied research and the value of educational institutions. The close cooperation between science and industry has led to the change in the structure and nature of the economy, which is increasingly dependent on new knowledge and ideas.

It is widely accepted that economic development is primarily associated with investments in capital, labor, entrepreneurship, science and technological innovation [27]. Rapidly developing countries play a special role in economic development. They are connected with modern global processes of the world economy. Thus, the priority task of the government is to increase the number of national economy sectors to ensure the greatest success. In connection with this issue, the Malaysian government has expanded the manufacturing sector and ensured the development of high-tech industry. The government actions have contributed to the GDP increase and the production of products for industrial export, as well as to the solution of employment issues [27].

The approach to comparing inward and outward foreign direct investment, by analyzing the growth rates of IFDI, made it possible to assess the situation in the Asian countries in the context of globalization. The classification of countries from the perspective of foreign direct investment and the economic globalization index allows creating development strategies depending on which quadrant the country is in. However, the calculated correlation coefficient between the country's GDP growth rates and the IFDI growth rates did not show a linear relationship between these indicators.

5. Conclusion

The regarded trends and consequences of economic globalization for Asian countries suggest that foreign direct investment has a particularly significant impact on the development of Asian economies. Since companies from more developed countries invest in assets in another country, participate in the production process management, contribute to staff training and education. Inward foreign direct investment also strengthens the local economy through the creation of new jobs and increased government tax revenues. Outward direct investment indicates that the country's economy is developed.

The analysis showed that the largest inflow of investments over the past decade was observed in the following countries: China, Hong Kong SAR China, Singapore, India, Indonesia, Republic of Korea, Kazakhstan, Vietnam, Malaysia, and Japan. Inward FDI growth rates in most Asian countries are developing intermittently. This indicates the instability of foreign direct investment infusions. Among the 26 countries studied, outward FDI in Japan, Korea, Thailand, and Taiwan exceeds inward FDI.

The calculation of the correlation coefficient between the country's GDP growth rates and the inward FDI growth rates did not show a linear relationship between these indicators. Therefore, we cannot say that the policies of countries stimulating infusions of foreign investment will unambiguously lead to the GDP and the economic well-being increase.

The position of Asian countries from the perspective of inward foreign direct investment and economic globalization index showed that China and Singapore are the countries with high inward FDI and high economic globalization levels. The economic globalization coefficient of Japan, Indonesia, Kazakhstan, Thailand, Malaysia, the Republic of Korea, India, Vietnam and Kyrgyzstan is above 50 out of 100. But foreign direct investment in these countries is much lower than in China.

The findings of this paper provide implications for supply chain members to integrate environmental and social issues into their SCM practices so as to foster stronger sustainability performance in the global supply chain. Thus, globalization introduces significant changes in the governmental process. Globalization presupposes that countries become interdependent due to the formation of the international integrated production system, the growth of world trade and foreign investment flows, the intensification of technological innovations, etc.

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