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INTRODUCTION

The relevance of the research topic. In the 21st century, Asian countries have strengthened their presence in the world economy by taking one of the main roles in international capital movements. In 2020, FDI net outflow from the Asian region was $509.227 billion (accounting for 68.8% of the total global FDI net outflow), including $398.151 billion from Eastern Asia. In particular, the three Eastern Asian countries- Japan, China, and South Korea- have become the top 10 investing countries in the world. South Korea is dramatically expanding its influence on the global economy as an investing country: over the decade (in 2011-2020), its FDI net outflow increased by $2.832 billion.[1]

Meanwhile, high external dependence on a few countries has made the South Korean economy fragile to their decisions and problems. This suggests that South Korea should hastily change its policy to a certain extent to diversify foreign partnerships. In this context, the Moon Jae-in administration declared the New Northern Policy, expanding partnerships mainly with the Commonwealth of Independent States (CIS), in 2017 as one out of the 100 state affairs. The new Yoon Seok-yeol's administration, also, addressed the importance of establishing a cooperation network with various countries and regions, and developing South Korea-Russia relations.

In full swing since 2012, Russia has enforced the New Eastern Policy and implemented practical policy mechanisms to develop the Russian Far East by attracting foreign investments from neighboring East Asian countries. The main

[1] The UNCTAD: [Website], Investment statistics and trends [Electronic resource]. – URL: https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=96740 (date of access: 18.06.2022); The World Bank: [Website], World Bank Open Data [Electronic resource]. - URL: https://data.worldbank.org/ (date of access: 16.06.2022).

problems of the Russian Far East are reduced to the asymmetric development of industries and the structure of the industry that is not always optimal for this region. South Korea could potentially be one of the most important and stable investor countries in the Russian Far East. The structure of South Korean FDI to the Russian Far East in the distribution by industry particularly clearly demonstrates that South Korea is an important potential partner in terms of diversification of international investments for the balanced economic development of the regions of the Far East. The intensification of investment activities in the Russian Far East will bring multiple benefits for South Korea, for instance, expanding its presence in foreign markets, creating production and marketing opportunities for small and medium-sized enterprises (SMEs), and searching for promising industries using new technologies. In particular, investment in the energy and food sectors in the Russian Far East will secure natural resources and food supplies for South Korea. Given these numerous objective and long-term economic benefits, despite South Korea's accession to the G7 sanctions package, its economic policy remains focused on cooperation with Russia. It should be noted that in 2022 from January to September, South Korea's imports from Russia amounted to $11.637 billion and Russia was still the 11th largest import country of South Korea[2]. In addition, South Korea has now resumed trade initiatives with Russia, which had been paused for 3 years. As a results, on the 14th of November, 2022, a business agreement was signed between South Korean City “Donghae” and Russia on the launch of a regular shipping route to link between the Selyatino Agrohub (Moscow) and Donghae (South Korea) through the ports of Vladivostok, and creation of a joint-logistics

[2] KITA: [Website], Nation’s exports and imports [국가수출입] [Electronic resource]. – URL: https://stat.kita.net/stat/kts/ctr/CtrTotalImpExpList.screen (date of access: 01.11.2022).

complex.[3]

A radical change in the geopolitical situation in the world in 2022 does not cancel Russia's important role for South Korea, both economically and politically. Given regional proximity, complementarity of the two states in many sectors of the economy, it is impossible not to take into account Russia's influence on global processes.

Therefore, in the medium term, and even more so in the long term, South Korea will maintain its desire for economic cooperation with Russia, primarily in the development of the industrial complex of the regions of the Russian Far East. All this makes scientific research in this direction relevant and in demand.

The degree of the development of the research topic. The dissertation is based on the leading scientists who investigated cross-border capital flows - Buckley, P. J., Casson, M., Dunning, J. H., Hymer, S. H., Kindleberger, C. P., Lipsey, R., Porter, M. E., Rugman, A. M., Wilhelms, S. K., Kuznetsov, A.V., Volgina, N. A., and others.

When investigating motives of FDI outflows from South Korea, the author relies on studies by - Fedorovsky, A. N., Korgun, I., Kukla, M. P., Minakir, P. A., Suslina, S. S., Sutyrin, S., Toloraya, G., Zakharova, L., and others.

When exploring territorial factors of foreign economic activity in the Russian Far East, the author relies on studies by- Cuervo-Cazurra, A., Hisarciklilar, M., Izotov, D. A., Jakubiak M., Kayam, S. S., Ledyaeva, S., Moseykin, Y. N., and others.

The object of the research is the industrial complex of the Russian Far East and the mechanism for attracting FDI from South Korea for its development.

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[3] РИА Новости [Electronic resource]. URL- https://dzen.ru/a/Y3Hz4MYT93qWsr5_ (date of access: 14.11.2022).

The subject of the research is economic relations arising in the process of attracting FDI from South Korea for the development of the industry of the Russian Far East and boosting its trade with South Korea.

The goal of the study is to expand theoretical and methodological approaches to the study of attracting FDI from South Korea to the industrial complex in the Russian Far East.

To achieve this goal, this research focuses on the following objectives:

- To systematize theoretical approaches to the factors of foreign economic activity of industrial enterprises;
- To identify the main problems of the development of the industrial complex in the Russian Far East and assess the export potential of key regions;
- To determine the priority of industries of the Russian Far East for investment;
- To substantiate the impact of South Korean investments on the development of industrial enterprises of the Far East and increase the efficiency of their foreign economic activity;
- To clarify factors and conditions affecting the foreign economic activity of industrial enterprises.
- To reveal motives and factors to attract South Korean FDI in the Russian Far East;
- To develop practical policy instruments to enhance South Korean FDI in the Russian Far East.

The theoretical and methodological foundations of the dissertation research. The work uses principles of the leading theories of foreign economic activity, econometric models, strategic analytic tools, and other systematic scientific approaches.

The double diamond model, which is used by the author, is an extended model from Porter's original diamond model as incorporating both domestic and international dimensions to explain the case of Canada's international competitiveness in the US market by Rugman and D'Cruz. A generalized double diamond model adapted the diamond model by Moon, Rugman, and Verbeke, which allows, in general, to explain how small and open economies strengthen competencies in the global economy.

This dissertation obtained FDI statistics from three sources: the United Nations Conference on Trade and Development (UNCTAD), the Export-Import Bank of Korea, and the Central Bank of Russia. As the research covers in-depth analysis of national and regional levels, collecting datasets from a single source was unavailable. The author clarifies that this does not cause an issue in that the research objective is not necessary to compare datasets from 3 sources, as which are independently investigated.

Other information and statistical bases of the research are made up of reports and data from international, South Korean, and Russian organizations: the World Bank, International Monetary Fund (IMF), Korea Trade Promotion Corporation (KOTRA), Federal State Statistic Service of Russia, Central Bank of Russia, Federal customs service, as well as from other materials published on the internet.

The dissertation work was carried out within the framework of the Passport of the specialty of the Higher Attestation Commission of the Russian Federation 5.2.3. Regional and sectoral economics (industrial economics), item 2.9 "Foreign trade activity of industrial companies and enterprises", as well as specialty 5.2.5. World Economy, item 8 "International capital movement. International investments" and item 13. "Strategies for the participation of regional and corporate structures in international economic cooperation (global,

regional and national aspects)".

The scientific novelty of the dissertation consists in determining, scientifically substantiating and quantifying export potential of the industrial complex of the Russian Far East, identifying the priority territorial location and industries for potential South Korean FDI, taking into account their motives and influence on bilateral trade activities with the Russian Far East. In addition, the author has formulated practical proposals in the field of economic policy to intensify investment flows from South Korea to the Russian Far East.

The most important scientific results obtained personally by the author and representing a contribution to the development of research on the stated problems include:

According to 5.2.3. Regional and sectoral economy (industrial economy), item 2.9 "Foreign trade activities of industrial companies and enterprises":

1. Based on the analysis of well-known economic theories, the factors influencing the foreign economic activity of industrial enterprises are systematized: competitive advantages, the presence of various factors (resources), the similarity of consumer preferences or industry, institutional environment, and the level of internationalization. Above all, due to the significant internationalization of the modern economy, it was found in the dissertation that the level of internationalization should be taken into account more than other factors.

2. The main problems of the development of the industrial complex in the Russian Far East are identified and an assessment of the export potential of key regions is given. It is determined that the dominant position of the mining industry and the related unbalanced industry growth strongly inhibit the development of the Far Eastern industrial complex. The results of calculations of trade indices, which represent the share of the product in the total volume of exports of the Far

East and the share of the product of the Far East in Russian exports, allowed us to substantiate the conclusion that energy, mining, as well as agriculture, fishing and food production have a high export potential in key regions of the Russian Far East (namely, the Amur-Khingan, Belogorsk, Chukotka, Kamchatka, Komsomolsk, Kuriles, Nakhodka, Nikolaevsk, South Yakutia, Svobodny and Transbaikalia).

3. The priority for investment sectors of the Russian Far East has been identified. Despite the overwhelming share of the mining industry in the Russian Far East, it has been revealed that financial and insurance activities are the fastest growing industry in the Russian Far East and the most attractive industry for investment.

4. The impact of South Korean FDI in the Russian Far East on the promotion of foreign economic activity of industrial enterprises is substantiated on a basis of developed econometric models. Although, South Korean FDI in the Russian Far East significantly increases imports from South Korea to the Russian Far East, it does not affect exports from the Russian Far East, which contradicts the author's initial assumption of a positive correlation between the two variables.

According to 5.2.5. World economy, item 8 "International capital movement. International investments" and item 13. "Strategies for the participation of regional and corporate structures in international economic cooperation (global, regional and national aspects)":

5. Based on the extended application of the generalized "double diamond" model at the subnational level, it was determined that three subjects of the Russian Federation in the Far East (Sakhalin Oblast, Khabarovsk Krai, and Primorsky Krai) are the most attractive regions for foreign economic activities of industrial enterprises. Despite the generally accepted idea that the Russian Far East has low

market opportunities for business, it was revealed that the international variables of the generalized model associated with a high level of market openness play a crucial role in overcoming the identified values of the domestic variables of the developed model, which objectively makes the Russian Far East a potentially attractive for the foreign economic activities of industrial enterprises.

6. The factors of South Korean FDI in Russia are determined based on the developed econometric models. It allowed us to substantiate the conclusion that the market size is the primary factor stimulating the inflow of South Korean FDI to the Russian Federation; at the same time, a quantitative assessment of the relationship between the size of the market and the volume of FDI is given, and an indicator of the elasticity of South Korean FDI in terms of changes in the value of Russia's GDP is calculated. The conducted economic and mathematical modeling allowed us to substantiate the statement that despite the low involvement of South Korean investment in energy sectors and a high degree of risk-aversion, natural resources are more important factors than problems of economic stability and governance.

7. To solve the problems of South Korean FDI in the Russian Far East, the main areas of the application in the industrial complex of the Far Eastern region and practical measures (in the long term after the stabilization of the geopolitical situation) for their implementation have been identified.

In the field of investment: creating a joint-fund between the Export-Import Bank of Korea and the Far East and Arctic Development Fund (with the support of the KOTRA and the Russian Far East and Arctic development corporation) to facilitate South Korean SME’s entry into the Far Eastern market; implementing a government system of risk-sharing for participants of the national loan program, for instance, Minimum Revenue Guarantee (MRG), Minimum Cost Support (MCS), and government’s credit security; and, concluding an

investment framework and realizing co-financing strategies between the export-import Bank of Korea and multilateral development banks (MDB) (e.g., Asia Infrastructure Investment Bank) to discover and support energy infrastructure projects in the Russian Far East.

In the institutional sphere: constructing a permanent bilateral think tank, which is composed of scholars, institutes, enterprises, and government officials to conduct phased policies; promoting academic exchanges in various forms (for instance, a regular joint-conference, exchange program, dual professional development, etc.); and restructuring Korean-Russian Business Council by studying the practices of Japanese – Russian business cooperation with the aim of close cooperation with other higher governmental bodies of South Korea and Russia (e.g., the Ministry of foreign affairs, the Ministry of Trade, Industry and Energy, etc.) by holding a regular meeting and jointly establishing an investment promotion center, and expand business supporting activities by holding investment forums and exhibitions, to promote exchange, provide business consulting, and select business partners.

In the field of trade and logistics: constructing inter-governmental customs committees to ease the trade process between South Korea and the Russian Far East; and, establishing the inter-public-private council for the development of joint research and investment in the road infrastructure in the Russian Far East.

The theoretical and practical significance of the dissertation research lies in the systematization of theoretical and methodological approaches to the factors of foreign economic activities of industrial enterprises.

The export potential of the Russian Far Eastern industrial complex is provided based on the calculations of trade indices, which are the share of a product in the Far East's total exports and the Far East's product share of Russia's

exports.

The author expands the scope of application of a generalized double diamond model to the regional level analysis and identifies the territorial attractiveness of the Russian Far East for South Korean FDI from the viewpoint of this model.

Contemporary trends, patterns, and significance of FDI inflows from South Korea for the development of the industrial complex of the Russian Far East are investigated. Particular motives and factors of South Korean FDI in Russia are identified based on econometric analyses.

Based on identified factors throughout the dissertation work, the author recommends practical policy instruments to enhance South Korean FDI in the Russian Far East. The materials of the dissertation can be used in the development of educational materials on academic disciplines of Enterprise Economics, World Economy, International Business, International Economic Relations, and others.

The degree of reliability and approbation of the thesis results. The dissertation's main results and provisions are published in peer-reviewed journals and conference proceedings from the list of Scopus, Web of Science and BAK and were positively evaluated by the scientific community. On the topic of the thesis, the author published 17 scientific works, including 5 articles in a periodical indexed by the international database Scopus, 2 articles in the publication indexed by the international database Web of Science, and 5 articles in scientific journals included in the list of RUDN.

The dissertation's main findings were presented at the following conferences: the international scientific-practical conference for students, undergraduates, doctoral students "The modern world and young people: vision and dialectic of development" (Karaganda, Kazakhstan, 2019), II International Scientific Conference GCPMED 2019 "Global Challenges and Prospects of the

Modern Economic Development" (Samara, Russia, 2019), XVIII International Conference of Students and Young Scientists "Prospects of Fundamental Sciences Development" (Tomsk, Russia, 2020), and XXI Interuniversity Scientific Conference of young scientists "Actual problems of the global economy" (Moscow, Russia, 2019).

The structure and scope of the dissertation research are composed of an introduction, three chapters, nine sections, a conclusion, and a list of literature from 176 sources. The main text is presented in 174 pages, contains 38 tables, and 20 figures, and an appendix (7 tables).

CHAPTER1. THEORETICAL ASPECTS OF FOREIGN ECONOMIC ACTIVITY OF INDUSTRIAL ENTERPRISES

1.1 The place and role of foreign economic activity in the economy of enterprises

In the modern economy, international economic activity plays an incredibly important role in the economy of enterprises because it provides many markets for their goods and services, allows access to more resources, and enhances efficiency in value chains. Since the establishment of the World Trade Organization (WTO) in 2015, the place of trade in the world economy has consistently increased. Over the last 5 decades, global exports have tremendously increased by 58.5 times. In 2020, despite harsh restrictions on cross-border activities of industrial enterprises due to the COVID-19 pandemic, the share of exports in global GDP was still considerable, by 26.47% (Figure 1).

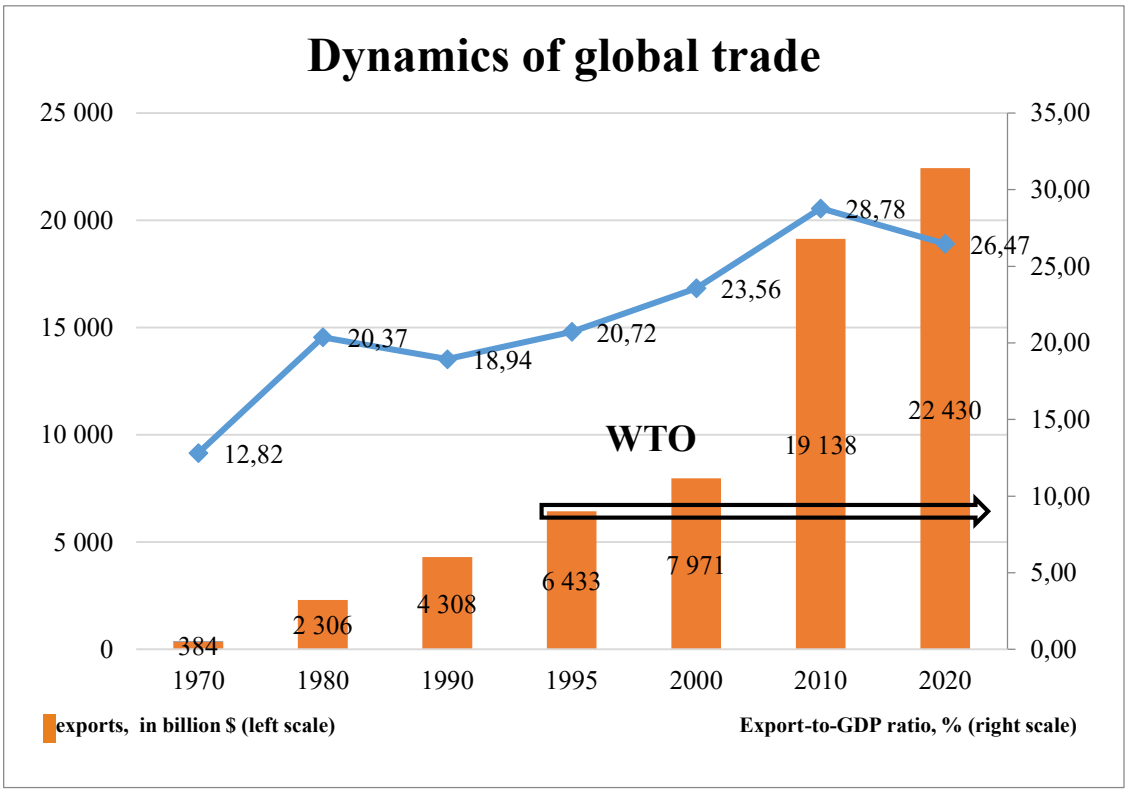

Figure 1. Dynamics of global trade (1970-2020)

Source: The World Bank: [Website], World Bank Open Data [Electronic resource]. – URL: https://data.worldbank.org/ (date of access: 16.06.2022).

Thanks to the vast advantage of international economic activity, more multinational enterprises (MNEs) are being developed in the 21st century. There are different views on what MNEs are depending on their standardized classifications. But, according to the United Nations (UN), MNE is defined, in a broad sense, as any company acting in more than one country by establishing foreign branches or affiliates[4]. One of the main indicators to estimate the development stage of MNEs is the volume of foreign direct investment (FDI). As described in Figure 2, global inward FDI stock has increased from $700 billion in 1980 to $41 trillion in 2020; and its ratio to global GDP reached 48.80% in 2020 from 6.19% in 1980. These accumulative values of FDI show how much the internationalization of MNEs has actively progressed over the past 40 decades. Although as an impact of COVID-19, global FDI inflow temporarily fell by 35% in 2020[5], these consistent and considerable accumulated values of FDI indicate that the pattern of FDI will be normalized to a pre-pandemic level in the mid- and long-term taking into account the continuation of the underlying MNEs' macroeconomic motives of direct investment.

[4] United Nations. Department of International Economic. Multinational corporations in world development// 1973, Vol. 190, New York: Praeger.

[5] The UNCTAD: [Website], Investment statistics and trends [Electronic resource]. – URL: https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=96740 (date of access: 18.06.2022).

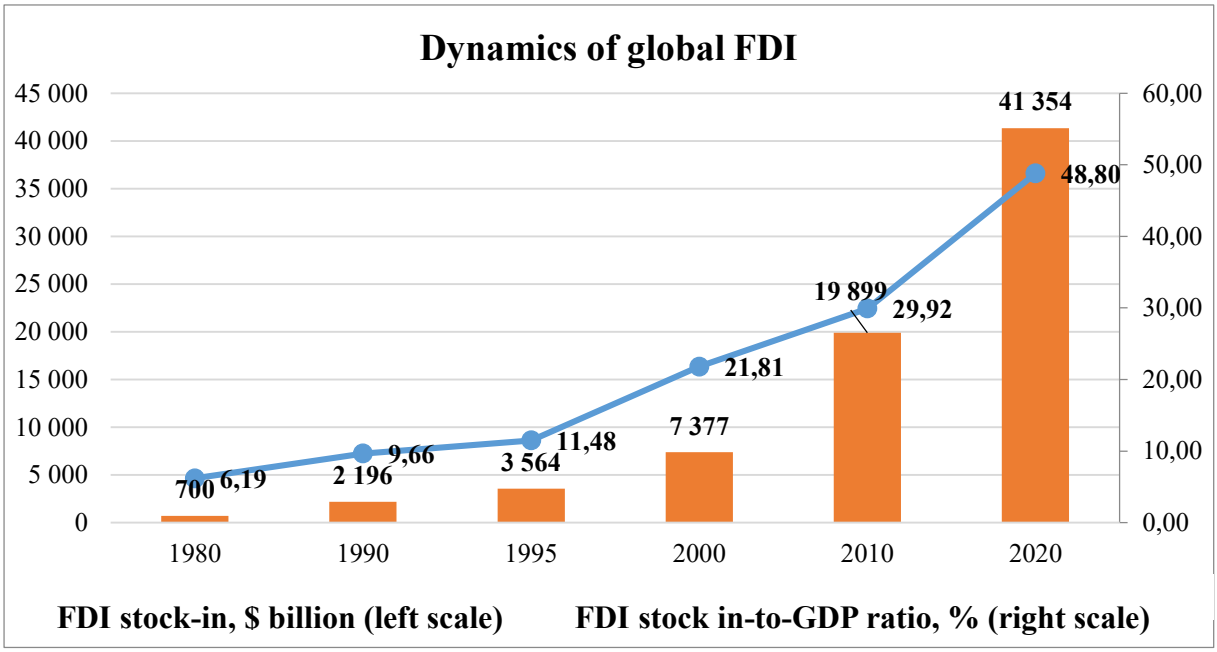

Figure 2. Dynamics of global FDI (1970-2020)

Source: The UNCTAD: [Website], Investment statistics and trends [Electronic resource]. – URL: https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=96740 (date of access: 18.06.2022); The World Bank: [Website], World Bank Open Data [Electronic resource]. – URL: https://data.worldbank.org/ (date of access: 16.06.2022).

Industrial enterprises can use diverse mixes of entry strategies to optimize profits and efficiencies in different foreign markets. As shown in Figure 3, entry strategies for international markets can be classified based on (a) the degree of ownership and control and (b) the extent of investment and risk. The easiest and the most initial international-expansion entry mode is exporting. Exporting simply means sending and selling products and services produced in one country to other countries without a foreign subsidiary. In 2020, the volume of worldwide exports amounted to $22.43 trillion, accounting for 26.5% of the global GDP[6].

[6] The World Bank: [Website], World Bank Open Data [Electronic resource]. - URL: https://data.worldbank.org/

The place and export potentials of a country or products and services can be measured by various trade indicators, for instance, as follows:

- country's share of world exports: x_{it}/x_{wt}, where x_{it} is total exports of country i, while x_{wt} is total global exports;
- share of a product in the country's total exports: x_{ij}/x_{it}, where x_{ij} is country i's exports of product j, while x_{it} is country i's total exports;
- share of each foreign market in total exports of a home country: x_{ik}/x_{it}, where x_{ik} is country i's exports to country k, while x_{it} is country i's total exports;
- Hirschman Herfindahl Index (HHI): HHI=$\sum_{i=1}^{n}(S_i)^2$, where S_i is the share of product i and n is the number of products in the total exports. HHI close to 0 indicates the most diversified, while that close to 1 is the least diversified in the export portfolio of a country;
- Revealed Comparative Advantage (RCA): $(x_{ij}/x_{it})/(x_{wj}/x_{wt})$, where x_{ij} is the country's exports of a product j and x_{wj} is the world's exports of a product j, while x_{it} and x_{wt} are total exports of a country i and the world. A value >1 refers to a country i's comparative advantage (export potential) in the product j, while a value<1 refers to a country i's comparative disadvantage in the product j.[7]

As the stage of internationalization becomes developed, and thereby, if companies want to enhance their degree of ownership and control, while agreeing

(date of access: 16.06.2022).

[7] The World Trade Integrated Solution: [Website], Trade indicators [Electronic resource]. -URL: https://wits.worldbank.org/wits/wits/witshelp/Content/Utilities/e1.trade_indicators.htm (date of access: 18.06.2022).

to take a higher level of potential risk, they can adopt more advanced entry mode strategies other than simple exporting.

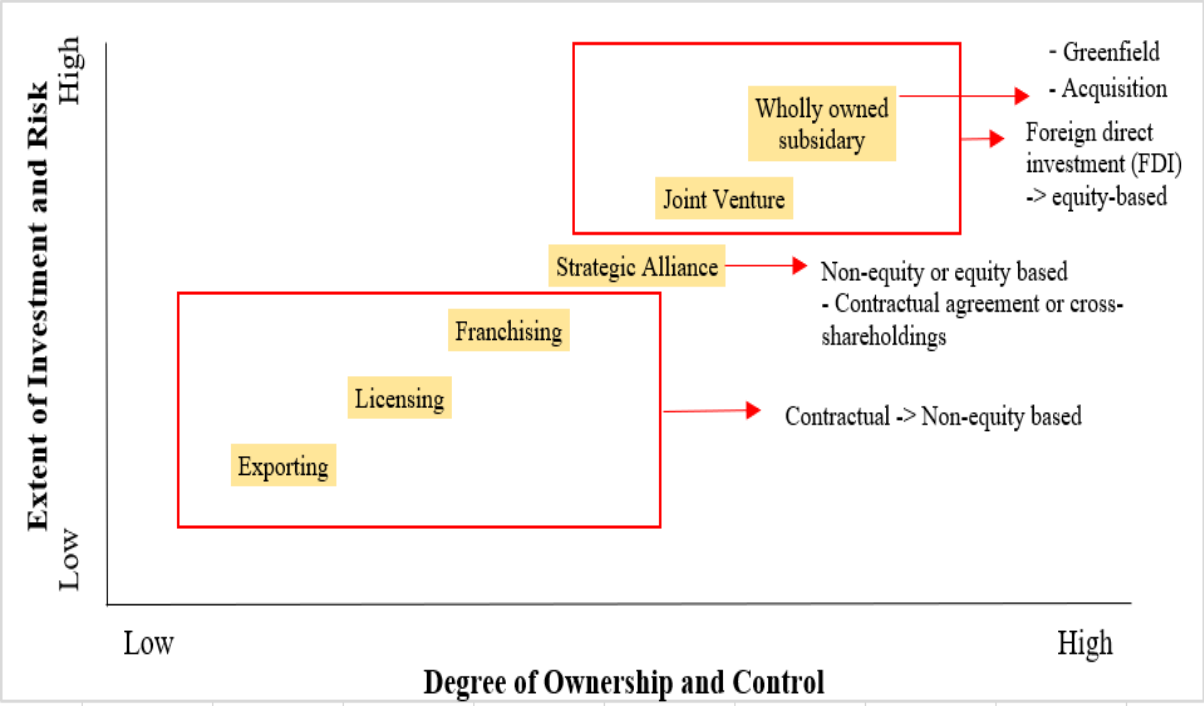

Figure 3. Entry strategies for international markets

Note: Joint venture (JV) in this figure is incorporated JV, not contractual-based JV.

Source: Root[8]

Licensing and franchising are entry modes to sell products, services, and intellectual properties to a foreign company for a fee based on a mutual contract. A contract of licensing applies only to trademarks of the first company (licensor), while that of franchising does to a brand, products, services, and the whole business activities (production, sales, marketing, distribution, training, etc.) operating the first company (franchisor). In franchising, the first company deeply engages in the business operations of the second company (franchisee), but not in licensing.[9]

[8] Root. F. T. Entry Strategies for International Markets// John Wiley & Sons, 1994.
[9] Brouthers, L. E., McNicol, J. P.International franchising and licensing// 2009, KOTABE, M.; HELSEN, K.

Companies may use a strategic alliance as an entry strategy, when they want to strengthen involvement with a foreign business, while retaining a relatively moderate level of risk. A strategic alliance is either informal or formal contractual agreement between two or more business entities (with a common goal) to share resources for a specific project, while maintaining the independence of each of them, and can be equity or non-equity based. In particular, a strategic alliance enables access to advanced technology for some companies, which cannot develop it on their own, or create it by pooling resources between companies, with cheaper costs and less risk.[10]

Meanwhile, foreign direct investment (FDI) is the most advanced international market entry mode by allowing the strategic integration of cross-border production and demand factors to increase firms' efficiencies. This allows firms to be highly engaged in a foreign market. The Organization for Economic Cooperation and Development (OECD) defines FDI as follows:

(a) *"Foreign direct investment reflects the objective of obtaining a lasting interest by a resident entity in one economy ("direct investor") in an entity resident in an economy other than that of the investor ("direct investment enterprise")"*;

(b) *"OECD recommends a direct investment enterprise be defined as an incorporated or unincorporated enterprise in which a foreign investor owns 10 per cent or more of the ordinary shares or voting power of an incorporated enterprise or the equivalent of an unincorporated enterprise."*[11]

FDI can be classified into different modes. In a joint venture (JV), two or more business entities share ownership and risk for establishing a single

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The Sage handbook of international marketing. London: Sage Publications, 183-197.

[10] Elmuti, D., Kathawala, Y. An overview of strategic alliances// Management decision, 2001, 39(3), 205-217.

[11] OECD Benchmark Definition of Foreign Direct Investment, 3rd edition.// Paris: OECD, 1996, [Electronic resource]. - URL: https://www.oecd.org/daf/inv/investment-policy/2090148.pdf (date of access: 24.06.2020).

enterprise and permanently operating it, or completing a one-time common project[12]. JVs have both incorporated and unincorporated (contractual basis) types[13], and the former type is direct investment. FDI can also be classified on whether establishing a new business entity or purchasing an existing business entity or facility: the former is a green-field investment, while the latter is a brown-field investment. Merge and acquisitions (M&As) are brown-field investment. Merge is creating a new business entity by unifying two or more existing business entities. The acquisition is purchasing an existing company and taking ownership of it.[14]

Due to the impact of the COVID-19 pandemic, the volume of green-field FDI projects contracted by 33% in 2020 relative to 2019. However, it soon recovered to its previous positive growth pattern. In 2021, the green-field FDI projects amounted to $659 billion (a 15% increase relative to that in 2020), including $13 billion in primary, $297 in manufacturing, and $350 in the service industry, and the number of it was 14,710 (an 11% increase relative to that in 2020), including 98 projects in primary, 5,688 projects in manufacturing and 8,924 projects in the service industry. The COVID-19 pandemic also impacted cross-border M&As. In 2020, the value of net cross-border M&As decreased by 6% relative to 2019, but its impact did not last long. In 2021, the value of net cross-border M&As amounted to $728 billion (a 53% increase relative to that in 2020), including $28 billion in primary, $239 billion in manufacturing, and $461 in the service industry, and the number of it was 8,846 (a 43% increase relative

[12] BCG: [Website], Getting more value from joint ventures [Electronic resource]. – URL: https://www.bcg.com/publications/2014/m-a-divestitures-more-value-joint-ventures (date of access: 18.06.2022).
[13] Opus Kinetic: [Website], Types of joint ventures: incorporated and incorporated [Electronic resource].- URL: https://www.opuskinetic.com/2019/12/types-of-joint-ventures-incorporated-and-unincorporated/ (date of access: 19.06.2022).
[14] Ragoussis, A. How Beneficial Are Foreign Acquisitions of Firms in Developing Countries? Evidence from Six Countries// 2020, Washington, DC: World Bank.

to that in 2020), including 639 cases in primary, 1,674 cases in manufacturing and 6,533 cases in the service industry.[15][16]

In addition, depending on the purpose of investment, MNEs can choose a type of FDI, which can be classified as follows:

- Horizontal FDI: In this, companies operate the same business activities in a host country as it the home country. Companies expect to avoid tariff barriers and increase profits in a foreign market through this type of investment.[17]
- Vertical FDI: This relocates some activities of value chains to a foreign market. Backward vertical FDI aims at using raw materials and production facilities of a host country. While forward vertical FDI is purposed of accessing a local market and consumers more closely by investing in distribution activities.[18][19]
- Conglomerate FDI: In this, companies' investment in a different industry. The investment in a host country is not related to a business in a home country. The main purpose of this type of investment is to find new business opportunities and growth engines in new areas.[20]
- Platform FDI: In this, companies invest in a host country to export the affiliates' outputs to a third country, and aim to benefit from a low-cost of a host country.[21]

Choosing the right entry mode among above mentioned multiple options

[15] UNCTAD World Investment report 2021// 2021, New York, United Nations
[16] UNCTAD World Investment report 2022// 2022, New York, United Nations
[17] Moosa, I. Foreign direct investment: theory, evidence and practice// 2002, Springer.
[18] Ibid.
[19] Markusen, J. Multinational Firms and the Theory of International Trade// 2002, Cambridge, MA: MIT Press.
[20] Boyce Wire: [Website], Foreign Direct Investment (FDI) Definition [Electronic resource]URL: https://boycewire.com/foreign-direct-investment-definition/ (date of access: 18.06.2022).
[21] Ekholm, K., Forslid, R., Markusen, J. R. Export-platform foreign direct investment.// Journal of the European Economic Association, 2007, 5(4), 776-795.

is a difficult task for companies. In this sense, Dunning introduced a theoretical frame of international expansion of companies, which is called the eclectic paradigm, for them to choose the optimal entry mode. This theory explains the internationalization of business based on why (ownership), how (internalization), and where (location) firms select for an international market expansion. This eclectic paradigm, also known as OLI theory, identifies three advantages of engaging in companies' internationalization:

- O (Ownership): a firm-specific superiority driven by monopolistic power, economies of scale, technology, managerial skills, patent, and know-how;
- L (Location): benefits to utilize production factors in host markets, FDI friendly-policies of host governments, and social amity of consumers in host countries;
- I (Internalization): reductions of unnecessary transaction costs incurred during the market exchange (due to imperfect competition) through downstream or upstream integration.[22]

Depending on the fulfillment of these OLI factors, firms can decide on a proper entry mode for their international market expansion, as shown in Figure 4. Firms expand their business to a foreign market through exporting, when they have the capacity to outperform a foreign rival; otherwise, they remain in a domestic market. The decision between exporting and franchising/licensing is rendered on whether there is location attractiveness of a foreign market for entering: if yes, firms choose the latter over the former entry mode. While Dunning emphasized the interrelatedness of these three OLI factors and stressed that FDI only occurs when these three conditions are all satisfied. If firms have

[22] Dunning, J. H. Toward an eclectic theory of international production: Some empirical tests// Journal of International Business Studies, 1980, issue 11.

motivations to internalize their business in a foreign country to get rid of risks and costs caused by an imperfect market structure, they will engage in direct investment.[23]

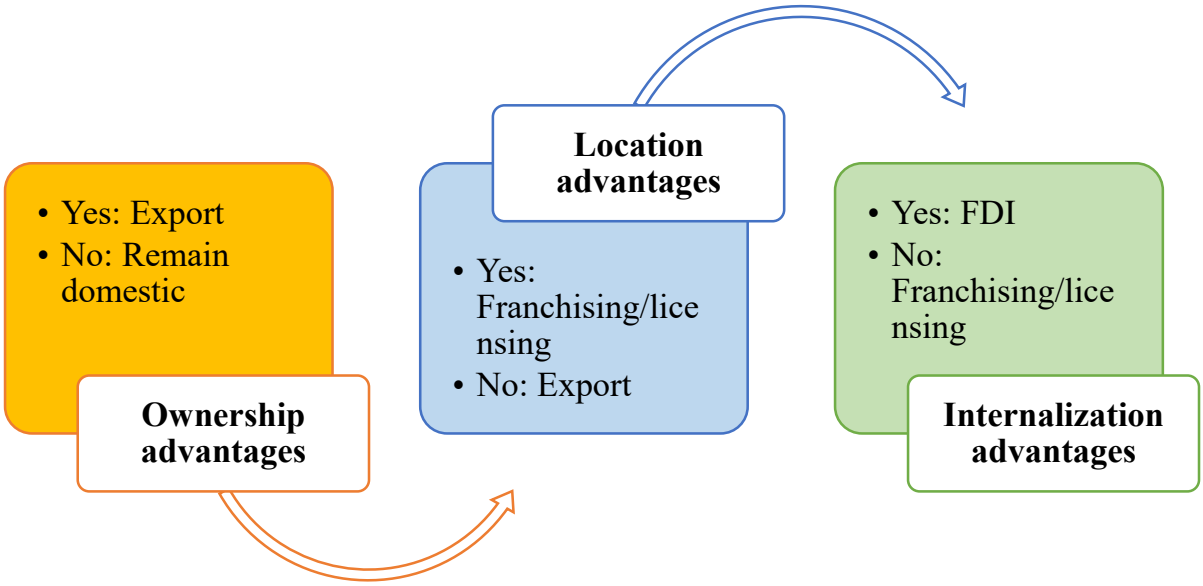

Figure 4- Dunning's OLI paradigm and a market entry mode

Source: Readapted from Business to you: [Website], OLI: Choosing the Right Entry-Mode Strategy [Electronic resource]. – URL: https://www.business-to-you.com/choosing-the-right-entry-mode-strategy/ (date of access: 16.06.2022).

The above review on a market entry mode in this section allows drawing the following positions and roles of foreign economic activity in the economy of enterprises as follows. It creates more market opportunities for companies, which hold competitive advantages. In reality, nowadays, a foreign market outweighs a domestic market for industrial enterprises. In 2021, the global 100 largest companies created 54% of their total assets and 58% of their total sales from foreign markets[24]. Companies can gain considerable additional economic value

[23] Australian Government Publishing Service, Evaluation of the Investment Promotion and Facilitation Program// March 1996, Canberra, Australia.
[24] UNCTAD World Investment report 2022// 2022, New York, United Nations

through internationalization than remain in a domestic market, and the creation of these values contributes to the expansion of the global economy as a whole (which was revealed as the share of trade and FDI stock to the global GDP in the above).

Foreign economic activities also drive companies to enhance efficiencies in business operations. By pooling resources together with foreign companies via strategic alliance or joint venture, industrial enterprises can easily enter into new markets with low costs and risks. In addition, FDI allows firms to create global value chains (GVCs), cut off unnecessary costs generated in the middle of crossing the border (e.g., tariff, freight costs), and increase production, logistics, and sales efficiencies through backward/forward vertical and horizontal integration. Also, the foreign economic activity allows firms to fully utilize location factors of foreign markets, which they are not abundantly endowed with in a domestic market.

1.2 Factors affecting the foreign economic activity of industrial enterprises

In the previous section, this study investigated the place, role, and type of various international market entry modes. In this section, factors affecting foreign economic activity will be explored based on prestigious theories of international business/trade and empirical studies, which were carried out applying these theories.

Competitive advantages

The early trade theories attribute either absolute or comparative advantages to a factor affecting the foreign economic activity of industrial

enterprises. In the 18th century, Adam Smith explained that countries with absolute advantages, and a superior capability for production, would trade with each other [25]. David Ricardo readapted Smith's concept and introduced comparative advantage (predominance in opportunity costs) as a factor for international trade [26]. Absolute or comparative advantages are consistently demonstrated as a driving force of industrial enterprises' international economic activities, under the name of ownership advantages. However, ownership advantages include not only predominance in production costs, but also various competitiveness at markets, for instance, brand, technology, production efficiency, etc.[27][28] While a knowledge-based view (KBV) also explains the purpose of strategic alliance is to obtain better knowledge or technology (competitive advantages)[29].

A different factor (resource) endowment

On the other hand, in the Heckscher-Ohlin (H-O) theory, a different factor endowment drives trade between countries. In detail, countries can benefit from trade when they are differently endowed: let's say, the USA is capital endowed, while China is labor endowed. A capital-endowed country (e.g., the USA) has a comparative advantage in producing capital-intensive goods, while a labor-endowed country (e.g., China) does that in producing labor-intensive goods. Thereby, it is beneficial for both countries to participate in trade to export goods, using factors intensively with which they are abundantly endowed.[30] A similar

[25] Smith, A. The Theory of International Trade. *Essays on Adam Smith*// 1975, *Clarendon Press: Oxford*, *472*.
[26] Ricardo, D. The theory of comparative advantage. *Principles of Political Economy and Taxation*// 1817.
[27] Williamson, P., Wan, F. Emerging market multinationals and the concept of ownership advantages// *International Journal of Emerging Markets*, 2018.
[28] Lundan, S. M. What are ownership advantages?// *Multinational Business Review*, 2010.
[29] Lammi, I. Strategic alliances and three theoretical perspectives a review of literature on alliances// *Unpublished Research Thesis School of Sustainable Development of Society, Mälardalen University*, 2012.
[30] Feenstra, Robert C. "The Heckscher–Ohlin Model"// *Advanced International Trade: Theory and Evidence*,

viewpoint of H-O theory can be found in the resource-based view (RBV) of strategic alliances. According to Barney, different resource endowments of firms, which are characterized by value, durability, rarity, and imitability, can be competitive advantages, because it is not easy to move between them.[31] And, firms strategically ally to complement their scarce resources.

A similar consumer preference or industry

However, the above classical theories explain only inter-industry exchanges. Contrary to what classical theorists demonstrate, in the modern economy, it is often found intra-industry exchanges. In country similarity theory, Steffan Linder introduced a concept of intra-industry trade. According to this theory, firms originally produce goods for domestic consumers and search for foreign markets, which have similarities with their domestic consumers. Thereby, international trade is much more active between countries with similar per capita income, consumer preferences, and industry.[32] The new trade theory of Paul Krugman is also in the same line with the country similarity theory in this sense. International trade brings diversity in goods and services, which makes them differentiated. Due to differentiation, even the same goods can be traded, and it demonstrates how intra-industry trade can be made.[33]

Institutional environment

Meanwhile, the institutional factor starts shedding light on international activities of MNEs according to the development of modern trade theories.

2004, Princeton: Princeton University Press.

[31] Lammi, I. Strategic alliances and three theoretical perspectives a review of literature on alliances. *Unpublished Research Thesis School of Sustainable Development of Society, Mälardalen University*// 2012

[32] Linder, S. B. *An essay on trade and transformation*// Stockholm: Almqvist & Wiksell, 1961

[33] Krugman, P. R. Increasing returns, monopolistic competition, and international trade// *Journal of international Economics*, 1979, *9*(4), 469-479.

Institutional FDI fitness theory articulated by Wilhems and Witter demonstrated the attraction, absorption, and retainment of FDI. The theory primarily aimed to clarify the reasons behind the skewed distribution of FDI among recipient countries based on the following four pillars from the most primary to the strongest institutions:

- Society and culture: The oldest, the most primary, but the most complicated above all the other kinds of institutions;
- Education: Human capital quality to communicate, interpret, and implement FDI operations;
- Market: Economic and financial aspects of institutions in terms of the level of physical (e.g., machinery) and financial (e.g., credit) capital;
- Government: The political, legislative, and regulative aspects of institutions.[34]

A specific order in impact factors does not mean a separate operation of the four institutional pillars. Instead, these factors are closely interrelated and thereby shape and influence one another.[35] In a study by Faruq, a positive correlation between a better home country's institutional environment and exporting quality is revealed as well[36]. The study by Bonnal also demonstrated that countries with better labor policies and institutional environments much more actively engage in trading[37].

Economic size and geographical distance

[34] Wilhelms, S.K., Witter, M.S.D. Foreign direct investment and its determinants in emerging economies// United States Agency for International Development, Bureau for Africa, Office of Sustainable Development, 1998.
[35] Ibid.
[36] Faruq, H. A. How institutions affect export quality// *Economic Systems*, 2011, *35*(4), 586-606.
[37] Bonnal, M. Export performance, labor standards and institutions: evidence from a dynamic panel data model// *Journal of Labor Research*, 2010, *31*(1), 53-66.

In addition, a gravity model based on Newton's gravity law in physics is used to predict trade flows between the two units in terms of economic mass and geographical distance. The basic equation of the gravity model is as follows:

$$M_{ij} = G \times \frac{Y_i \times Y_j}{D_{ij}}$$

where, M_{ij} refers to trade volumes, Y_i and Y_j refer to the economic size of a country i and j, D_{ij} is the geographical distance between a country i and j, and G is a constant. Later, the gravity model has been widely applied also to explain the FDI and demonstrated results that are in line with a gravity model of trade: presenting a positive coefficient of economic mass and a negative coefficient of geographical distance in a relation to FDI[38][39][40][41][42].

Location-specific factors

In terms of location advantages in the field of international business, Porter introduced a diamond model in his book "Competitive Advantage of Nations" to demonstrate the competitiveness of national economies in the global market. The diamond model is comprised of four endogenous and two exogenous factors in a domestic context. The four endogenous and two exogenous factors are:

- Factor conditions: Factor conditions are distinctly comprised of basic and

[38] Folfas, P. FDI between EU member states: gravity model and taxes// *Warsaw: Warsaw School of Economics–Institute of International Economics*, 2011, 1-16.
[39] Raudonen, S., Freytag, A. *Determinants of FDI inflows into the Baltic countries: Empirical evidence from a gravity model//* Jena Economic Research Papers, 2012, (No. 2012, 060).
[40] Wojciechowski, L. The Determinants of FDI Flows from the EU-15 to the Visegrad Group Countries: A Panel Gravity Model Approach// Entrepreneurial Business and Economics Review, 2013, 1(1), 7-22.
[41] Leibrecht, M., Riedl, A. Modeling FDI based on a spatially augmented gravity model: Evidence for Central and Eastern European Countries// The Journal of International Trade & Economic Development, 2014, 23(8), 1206-1237.
[42] Mishra, B. R., Jena, P. K. Bilateral FDI flows in four major Asian economies: a gravity model analysis// Journal of Economic Studies, 2019, 46(1), 71-89.

advanced factors. The basic factor refers to an abundance of the workforce, cheap labor costs, land, natural resources, and basic capital. The advanced factor is technologies, R&D expenditure, and high-skilled labor;

- Demand conditions: Demand conditions are explained in two dimensions, namely, quantitate size and qualitative sophistication. It is because knowledgeable buyers have precise needs and as such demand advanced products. This, in turn, spurs firms to create highly sophisticated products compared to competitors. For example, Swish's particular taste in a watch contributed to the development of the watch industry in Switzerland, while Japanese high knowledge of electronics led to the development of the electronics industries in Japan;
- Related and supporting industries: Related and supporting industries link value chains among firms and suppliers. Forward or backward integrations of firms increase efficiencies, as all managerial subsidiaries and suppliers are located nearby. It can be proxied by cluster and infrastructure;
- Firm strategy, structure, and rivalry: The fourth determinant of the diamond model is the way firms are created, organized, and managed in fair and active rivalry environments;
- Government and chance: An external factor located outside the diamond frame also influences national competitiveness.[43]

The level of internationalization

Porter's home-based diamond model showed a critical weakness in measuring the impacts of multinational activities on the global economy. It nicely explains large economies like the US and Japan. However, it does not fit well

[43] Porter, M. E. The competitive advantage of nations: with a new introduction// Free Pr, 1990.

with other smaller economies facilitating trade and foreign investments to overcome the location disadvantages of a home market. Therefore, in the follow-up study by Rugman and D'Cruz, the original home-based diamond model was developed into a double diamond model incorporating both domestic and international activities to reflect global and open economies, in particular Canada.[44]

The double diamond model (equal to the North American Diamond model) is framed based only on North American countries, in particular, Canada and the US. Thus, in the same line of research, the double diamond model is developed and expanded to a generalized double diamond model as it allows for an assessment of all small countries, for instance, South Korea and Singapore. Under the generalized double diamond model, the frame constitutes two different diamonds: the domestic, and international, as shown in Figure 5[4546]

[44] Rugman, A. M., D'Cruz, J. R. The double diamond model of international competitiveness: Canada's experience// Management International Review, 1993, 33(2), 17-39.
[45] Moon, H.C., Rugman, A.M., Verbeke, A. The generalized double diamond approach to international competitiveness. In Beyond the diamond// Emerald Group Publishing Limited, 1995, pp. 97-114.
[46] Moon, H. C., Rugman, A. M., Verbeke, A. A generalized double diamond approach to the global competitiveness of Korea and Singapore// International business review, 1998, 7(2), 135-150.

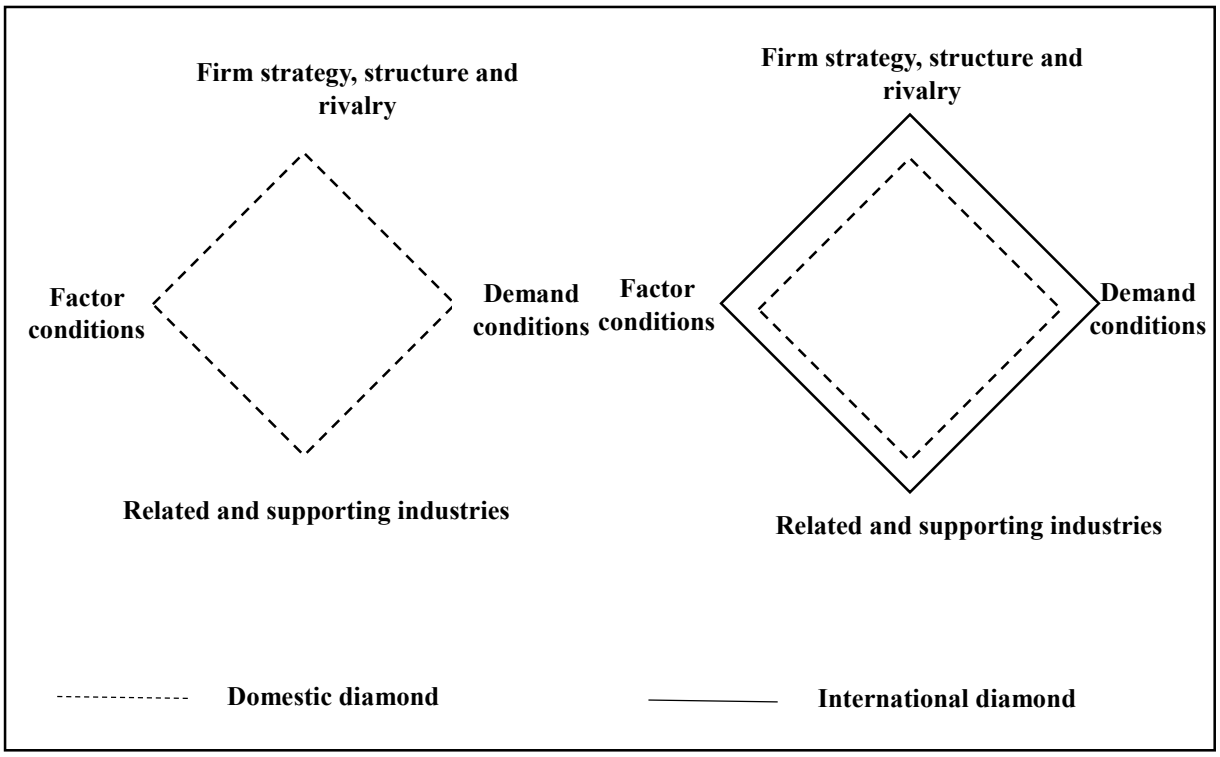

Figure 5. Diamond and generalized double diamond model

Source: Readapted from Moon, Rugman, and Verbeke[47].

We should interpret each component of the generalized double diamond model in a conjunction with the other three diamond components. And, the most critical point, that we should not overlook when applying the generalized double diamond model to the study, is the positive effects of international diamond indices on the economy by playing a role in overcoming a limited internal market. This is a distinct competency of the generalized double diamond model compared to Porter's home-based original diamond model. For a small economy, it is highly required to well utilize external markets to obtain regional competitiveness. Porter in his home-based diamond model viewed that: *"Singapore will remain a*

[47] Moon, H. C., Rugman, A. M., Verbeke, A. A generalized double diamond approach to the global competitiveness of Korea and Singapore// International business review, 1998, 7(2), 135-150.

factor-driven economy (p. 566) (as cited in Moon, Rugman, Verbeke[4849])". However, contrary to Porter's forecast, despite the small internal economy, Singapore became advanced based on multinational activities and government openness policies. Multinational activities (measured by international diamond indices, for instance, FDI, export dependency, good air transportation system, openness to foreign products, etc.) facilitated the Singaporean economy to utilize international markets to enhance their competencies[50]. Under the generalized double diamond model, the competitiveness of one economy can be created from both domestic and non-domestic territories.

In the modern economy, the level of internationalization of a country, industry, or company becomes a significant factor as well as economic, institutional, geographic, social, and technological factors to determine the foreign economic activities of MNEs. For instance, many studies explore the impact of economic integration on (intra- or inter-block) trade or FDI[5152535455]; and, also, for countries, which lack production factors (e.g., labor[56], natural resources[57], technology[58], infrastructure[59], etc.) utilize overseas markets by

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[48] Porter, M. E. The competitive advantage of nations: with a new introduction// Free Pr, 1990.

[49] Moon, H. C., Rugman, A. M., Verbeke, A. A generalized double diamond approach to the global competitiveness of Korea and Singapore// International business review, 1998, 7(2), 135-150.

[50] Ibid.

[51] Mayes, D. G.The effects of economic integration on trade// *JCMS: Journal of Common Market Studies*, 1978, *17*(1), 1-25.

[52] Behrens, K., Gaigné, C., Ottaviano, G. I., Thisse, J. F. Countries, regions and trade: On the welfare impacts of economic integration// *European Economic Review*, 2007, *51*(5), 1277-1301.

[53] Choe, J. I. An impact of economic integration through trade: on business cycles for 10 East Asian countries// *Journal of Asian Economics*, 2001, *12*(4), 569-586.

[54] Brenton, P., Di Mauro, F., Lücke, M. Economic integration and FDI: An empirical analysis of foreign investment in the EU and in Central and Eastern Europe// *Empirica*, 1999, *26*(2), 95-121.

[55] Motta, M., & Norman, G. Does economic integration cause foreign direct investment?// *International economic review*, 1996, 757-783.

[56] Salike, N. Role of human capital on regional distribution of FDI in China: New evidences. *China Economic Review*, 2016, *37*, 66-84.

[57] Kang, Y., Liu, Y. Natural resource-seeking intent and regulatory forces: Location choice of Chinese outward foreign direct investment in Asia// *Management Research Review*, 2016, *39*(10), 1313-1335.

[58] Meyer, K. E. What is "strategic asset seeking FDI"?.// *The Multinational Business Review*, 2015.

[59] Kayam, S.S., Yabrukov, A., Hisarciklilar, M. What causes the regional disparity of FDI in Russia? A spatial

building plants, sales offices or logistic channels and create global value chains (GVCs)[60]. To put it in other words, to estimate environments and factors of foreign economic activity of a country or a firm, nowadays, it is much more relevant to analyze it in an international context due to globalization. Production factors should not only include factors within the domestic territories but in foreign territories throughout its GVCs. Demand should account for both the domestic market and the size of exports. And, for a country, which is highly economically integrated with other international markets, its market, which MNEs can utilize like as a domestic market becomes even bigger, and it will act as an attracting factor for foreign investors. In addition, a country with poor inland infrastructure still can be alluring for foreign investment, if it is well equipped with other international channels like ports or airports, in that it can act as an international logistic hub.[61]

Hence, this study stresses the significance of a level of internationalization as a factor affecting the foreign activity of industrial enterprises other than factors pointed out by the previous studies considering particular characteristics of a highly globalized modern economy.

1.3 The role of foreign direct investment in the activation of foreign economic activity

FDI began to capture the attention of scholars from the 1950s, as the US capital surged into Western European countries for city reconstruction after the

analysis// Transition Studies Review, 2013, 20(1), 63-78.

[60] Adarov, A., Stehrer, R. Implications of foreign direct investment, capital formation and its structure for global value chains.// *The World Economy*, 2021, *44*(11), 3246-3299.

[61] Moon, H. C., Rugman, A. M., Verbeke, A. A generalized double diamond approach to the global competitiveness of Korea and Singapore// International business review, 1998, 7(2), 135-150.

Second World War. The proliferation of firms' cross-border production activities spurred scholars to articulate the peculiar roles of direct investment.[62] The early FDI theories and current empirical studies allow us to induce the roles of FDI for multinational enterprises to do international economic activities. Thereby, in this section, the peculiar roles of FDI in international business are discussed based on key findings revealed in modern FDI theories and empirical studies on motivations and factors of FDI.

There are theories to explain FDI as a means to utilize the strong capabilities of enterprises. Hymer pioneered the FDI theory based on an imperfect market. According to Hymer's theory, foreign firms are initially disadvantageous when competing with domestic firms in diverse aspects, namely culture, language, legal system, and consumer preferences. Thereby, foreign firms decide to establish international operations where they hold firm-specific advantages (e.g., technology, know-how, managerial skills, brand differentiation, economies of scale, and others), superior enough to create profits despite the disadvantageous position in the international market.[63] Kindleberger also explained the motivations of direct investment based on monopolistic power, an elaborated concept of a firm-specific factor. According to his theory, an excellent opportunity to create monopoly profits is a significant factor in spurring the direct investment of firms[64].

On the other hand, Knickerbocker articulated his theory based on an oligopolistic market. He stated that firms are led to direct investment to enhance international market access to utilize production factors in host countries, and to

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[62] Nayak, D., Choudhury, R.N. A selective review of foreign direct investment theories// ARTNeT Working Paper Series, 2014, No.143. p.2.

[63] Hymer, S. H. The international operation of national firms: a study of direct foreign investment// MIT Press, Cambridge, MA, United States, 1976.

[64] Kindleberger, C. P. American business abroad// Yale University Press, New Haven, CT, United States, 1969.

prevent losses from being underpriced in an oligopolistic market. To describe the third motivation in detail, in an oligopolistic market where there are limited numbers of firms, their actions are great enough to modify the price. Thereby, firms tend to follow rivals' movements in direct investment to avoid losing strategic advantages in price compared to that of rivals by securing an overseas production base. Further, he asserted that a higher level of price uncertainties spurs more direct investment, while a lower level leads to less direct investment.[65]

FDI can play a role in running a stable business for enterprises by allowing them to incorporate in countries with quality institutions. Political instability and restrictive government policies in their home markets can drive the movement of companies to foreign markets. Tcha demonstrated that a labor dispute in a domestic market, which led to increase a rapid increase in wages and enhance risks in production, motivated South Korean companies to relocate their production capital to Asian (labor-intensive industries) and North American countries (technology-intensive industries)[66].

Another type of study in transition economies defines location factors for inward FDI. It is worth noting that particular factors related to the stability and quality of governance of a country (for instance, privatization, liberalization, private political rights, a level of economic stability, institution, corruption, etc.)

[65] Knickerbocker, F. T. Oligopolistic reaction and multinational enterprise// Division of Research, Harvard University, Cambridge, MA, United States, 1973.

[66] Tcha, M. J. Labor disputes and direct foreign investment: The experience of Korea in transition// Economic Development and Cultural Change, 1998, 46(2), 305-327.

show the significance of the attraction of FDI in multiple studies[67][68][69][70][71][72][73].

FDI also enables enterprises to enhance profits and reduce costs. Buckley and Casson articulated internalization theory identifying the motivations of direct investment to reduce unnecessary transaction costs. The theory is constructed based on the following assumptions: (a) an imperfect market, (b) the firms' pursuit of profit maximization, (c) the occurrence of high transaction costs in intermediary products or technology during the market exchange due to market imperfection, (d) the internalization of foreign markets to bypass unnecessary external costs, and I the creation of multi-national corporations (MNCs).[74]

Aliber's "currency area theory" explains foreign investment based on the relative currency value of the host and investing country. He postulated that weaker currencies hold higher FDI-attractions because of the high market capitalization rate compared with that of stronger currencies. He also demonstrated the borrowing advantages of MNCs from strong currency areas with lower interest rates. Because portfolio investors in host countries are less stringent on foreign companies. The empirical test in his theory on the US, UK,

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[67] Carstensen, K., Toubal, F. Foreign direct investment in Central and Eastern European countries: a dynamic panel analysis. Journal of comparative economics, 2004, 32(1), 3-22.

[68] Cukrowski, J., Aksen, E. Demand Uncertainty, Perfect Competition and Foreign Direct Investment// Center for Social and Economic Research (CASE). 2002, Mimeo.

[69] Baniak, A., Cukrowski, J., Herczynski, A. J. On the determinants of foreign direct investment in transition economies// Problems of economic transition, 2005, 48(2), 6-28.

[70] Kostevc, Č., Redek, T., Sušjan, A. Foreign direct investment and institutional environment in transition economies// Transition Studies Review, 2007, 14(1), 40-54.

[71] Cuervo-Cazurra, A. Better the devil you don't know: Types of corruption and FDI in transition economies// Journal of International Management, 2008, 14(1), 12-27.

[72] Kudina A., & Jakubiak M. The Motives and Impediments to FDI in the CIS// In: Dabrowski M., Maliszewska M. (eds) EU Eastern Neighborhood, Springer, Berlin, Heidelberg, 2012, 71-82.

[73] Siddharthan, N. S., Pandit, B. L. Liberalisation and investment: behaviour of MNEs and large corporate firms in India// International Business Review, 1992, 7(5), 535-548.

[74] Buckley, P.J., Casson, M. The Future of the Multinational Enterprises// Macmillan, London, 1976.

and Canada showed consistent results following his initial hypothesis.[75] Follow-up empirical studies also demonstrated that local currency depreciations attract FDI inflows as foreign investors have strong purchasing powers[767778].

Another critical role of FDI is to expand markets and create sales opportunities. Companies invest in a foreign market to escape from a highly saturated and competitive domestic market[79]. The market-seeking motive of FDI is repeatedly pronounced in multiple studies[808182838485]. FDI creates a new chance for sales by allowing enterprises to utilize the demand and production factors of foreign markets, which they cannot hold at a home market. Vernon's product life cycle (PLC) theory explains capital movements from one country to another based on the different stages of product life, which are composed of emerging (stage 1), growth (stage 2), maturity (stage 3), and decline (stage 4). Depending

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[75] Aliber, R.Z. A theory of direct foreign investment, in C. P. Kindleberger (ed.), The International Corporation// MIT Press, Cambridge, MA, United States, 1970.

[76] Cushman, D. O. Real Exchange Rate Risk, Expectations, and the Level of Direct Investment// Review of Economics and Statistics, 1985, 67, 297–308.

[77] Blonigen, B. A. Firm-Specific Assets and the Link between Exchange Rates and Foreign Direct Investment// American Economic Review, 1997, 87, 447–65.

[78] Udomkerdmongkol, M., Morrissey, O., Görg, H. Exchange rates and outward foreign direct investment: US FDI in emerging economies// Review of Development Economics, 2009, 13(4), 754-764.

[79] Moon, H. C. The Effects of Outward Foreign Direct Investment on Korean Firms and Economy: A Comprehensive Approach of Integrating Diverse Motivations of Investment// International business review, 2007, 11(1), 115-139.

[80] Ledyaeva, S. Spatial econometric analysis of foreign direct investment determinants in Russian regions// The World Economy, 2009, Vol. 32(4), pp. 643-666.

[81] Kayam, S.S., Yabrukov, A., Hisarciklilar, M. What causes the regional disparity of FDI in Russia? A spatial analysis// Transition Studies Review, 2013, 20(1), 63-78.

[82] Vijayakumar, N., Sridharan, P., Rao, K. C. S. Determinants of FDI in BRICS Countries: A panel analysis// International Journal of Business Science & Applied Management (IJBSAM), 2010, 5(3), 1-13.

[83] Jadhav, P. Determinants of foreign direct investment in BRICS economies: Analysis of economic, institutional and political factor// Procedia-Social and Behavioral Sciences, 2012, 37, 5-14.

[84] Kudina A., & Jakubiak M. The Motives and Impediments to FDI in the CIS// In: Dabrowski M., Maliszewska M. (eds) EU Eastern Neighborhood, Springer, Berlin, Heidelberg, 2012, 71-82.

[85] Asongu, S., Akpan, U. S., Isihak, S. R. Determinants of foreign direct investment in fast-growing economies: evidence from the BRICS and MINT countries// Financial Innovation, 2018, 4(26).

on the stage of a product's life, firms decide whether to stay in a domestic market, export or invest in developed or developing countries. Particularly, in the last stage, as supply exceeds demand in existing markets, firms are pushed to perform their business in developing markets where there is more demand and which also enables them to produce goods with the least costs.[86]

In addition, multinational enterprises can access factors (e.g., labor, natural resources, technology, etc.), which are insufficient in their domestic market by investing abroad, and diversifying the compositions of their capital. In the past, a large number of multinational enterprises from labor-intensive industries set up manufacturing factories in China to utilize their labor force[8788]. Nowadays, Vietnam takes this role and receives considerable international investment, which aims at labor-seeking[8990]. While multiple studies demonstrate that one of the main factors to stimulate FDI inflow to Russia is natural resources[91929394].

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[86] Vernon, R. International investment and international trade in the product cycle// Quarterly Journal of Economics, 1966, Vol. 80(2), pp. 190-207.

[87] Kim, E., & Yu, S. An Analysis on the Determinants of Korea's FDI Location Choice in China// Journal of Korea Research Association of International Commerce, 2019, 19(1), 1-28.

[88] Gu, M. H. Determinants of Foreign Direct Investment of Korean Companies in BRICs// Journal of Korea Research Association of International Commerce, 2013, 13(2), 3-23.

[89] Oh, J. H., Mah, J. S. The patterns of Korea's foreign direct investment in Vietnam// Open Journal of Business and Management, 2017, 5(2), 253-271.

[90] Nguyen, C. H. Labor force and foreign direct investment: Empirical evidence from Vietnam// *The Journal of Asian Finance, Economics, and Business*, 2021, *8*(1), 103-112.

[91] Kayam, S.S., Yabrukov, A., Hisarciklilar, M. What causes the regional disparity of FDI in Russia? A spatial analysis// Transition Studies Review, 2013, 20(1), 63-78.

[92] Gonchar, K. & Marek, P. Natural-resource or market-seeking FDI in Russia? An empirical study of locational factors affecting the regional distribution of FDI entries// IWH Discussion Papers, 3. Halle: Halle Institute for Economic Research (IWH), 2013.

[93] Ledyaeva, S. Spatial econometric analysis of foreign direct investment determinants in Russian regions// The World Economy, 2009, Vol. 32(4), pp. 643-666.

[94] Lee, H. S., Chernikov, S. U., Nagy, S. Motivations and locational factors of FDI in CIS countries: Empirical evidence from South Korean FDI in Kazakhstan, Russia, and Uzbekistan. *Regional Statistics*, 2021, *11*(4), 79-100.

FDI also enables multinational companies to absorb high technology and knowledge and have international business competitiveness. A large number of South Korean companies, with a lack of ownership advantages, still adopt FDI as a means of learning-mechanisms to create ownership advantages[95]. South Korean conglomerates actively invest in developed countries, for instance LG's acquisition of Zenith (an American company), Samsung electronics' procurement of AST Research Inc's 40% share (an American company), etc., to obtain advanced technologies [9697] . As the economy reaches a certain level of development, China also actively participates in strategic asset-seeking FDI in advanced industries to enhance the international competitiveness of enterprises[9899100].

On the other hand, Dunning introduced a comprehensive typology explaining FDI by focusing on the four different investors' motives. Multinational enterprises expect to satisfy at least one of the below four motives for investing abroad:

- Market-seeking: To expand to foreign markets to exploit new markets (for example, to adapt to a local market to provide a service or product reflecting local preferences, to benefit from foreign government

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[95] Kang, I. S., Kim, J. H., Rhee, Y. S., Lee, J. W., Chose, J. W.. Characteristics of Foreign Direct Investment of Korean Firm// Korea Review of Applied Economics (KRAE), 1999, 1(2), 155-185.

[96] Moon, H. C. The Effects of Outward Foreign Direct Investment on Korean Firms and Economy: A Comprehensive Approach of Integrating Diverse Motivations of Investment// International business review, 2007, 11(1), 115-139.

[97] Rugman, A. M., Oh, C. H. Korea's multinationals in a regional world// Journal of World Business, 2008, 43(1), 5-15.

[98] Liu, J. J., Scott-Kennel, J. Asset-seeking investment by Chinese multinationals: Firm ownership, location, and entry mode. *Asia Pacific and Globalization Review*, 2011, *1*(1), 16-36.

[99] Wu, X., Ding, W. Chinese firms' internationalization paths by strategic asset-seeking outward foreign direct investment// In *PICMET'09-2009 Portland International Conference on Management of Engineering & Technology,* IEEE, 2009, August, 173-179.

[100] Yong, H., Hong, Z. Testing the Asset-seeking Hypothesis: through the Investments of Chinese and Indian Firms in Europe// *Journal of Economic Integration*, 2012, 564-583.

financial incentives such as subsidy and trade barrier, to overcome a limited domestic market size);

- Resource-seeking: To expand to foreign markets to exploit natural resources (for example, natural resources such as oil and gas);
- Efficiency-seeking: To expand to foreign markets to minimize production costs, whose difference is derived from different factor endowments between home and foreign markets (for example, economic system, institutional quality, tax rate);
- Asset-seeking: To expand to foreign markets to develop company competitiveness by acquiring foreign strategic assets (for example, technology, knowledge, patents, and skilled labor).[101]

In addition, FDI plays a critical role in the economic activities of a host country. FDI contributes to stimulating a host country's economy through job creation, although the magnitude and significance of the effects can be different depending on a country, region, industry, and so forth. The positive effects of FDI on the reduction of unemployment rates in a host country can be found in multiple cases. Previous studies revealed a significant job creation effect of FDI in many other countries and regions of Asia[102][103][104], Latin America[105], and Europe[106]). In

[101] Dunning, John H. Multinational Enterprises and the Global Economy// Addison Wesley Publishing Company, 1993.

[102] Karlsson, S., Lundin, N., Sjöholm, F., He, P. FDI and job creation in China (No. 723)// 2007, IFN Working Paper.

[103] Liu, L. FDI and Employment by Industry: A Co-Integration Study// Modern Economy, 2012, 3(1), 16-22.

[104] Ni, B., Kato, H., Liu, Y. Does It Matter Where You Invest? The Impact of FDI on Domestic Job Creation and Destruction. *The Impact of FDI on Domestic Job Creation and Destruction, January 24, 2021*.

[105] Vacaflores, D. E. Was Latin America Correct in Relying in Foreign Direct Investment to Improve Employment Rates? Applied Econometrics and International Development, 2011, 11(2), 101 - 122.

[106] Carp, L. The Impact of FDI on the labor market in Central and Eastern Europe during the international crisis. *Review of Applied Socio-Economic Research*, 2012, *3*(1), 43-54.

particular, Marchewka's study showed a huge portion of nationals employed in multinational enterprises in Poland: in 2017, 15% of private employees in Poland were hired by 42foreign enterprises, and 14% of that were in rural areas[107].

A diffusion of advanced technology and managerial skills is one of the advantages of foreign investment, although the level of technology absorption can be highly different depending on an innovation potential (how much is ready to conduct innovation activities), economic, social, and political factors of a host country. Cheung and Ping revealed a positive association of FDI with the number of domestic patent applications in China[108]. Fujimori and Sato demonstrated a positive effect of FDI on the development of production efficiency in Indian manufacturing industries[109]. Amann and Virmani clarify that outward (inward) FDI to (from) developed economies contribute to the TFP growth of developing economies based on the datasets of 18 emerging and 34 OECD countries[110]. Khachoo and Sharma's research, which adopted patent grants as a dependent variable to test the spillover effects of FDI on Indian manufacturing companies, reveals a positive association between FDI and innovation development[111]. Hoang et al., in their firm-level analysis, verify a positive relation of FDI to technology innovation in Vietnamese companies (that are located in Hanoi)[112]. The positive effects of inward FDI in terms of knowledge

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[107] Marchewka, A. The impact of foreign direct investment (FDI) on job creation in rural areas in Poland. Ekonomika i Organizacja Gospodarki Żywnościowej, 2019, 125, 45-57.

[108] Cheung, K. Y., Ping, L. Spillover effects of FDI on innovation in China: Evidence from the provincial data// China economic review, 2004, 15(1), 25-44.

[109] Fujimori, A., Sato, T. Productivity and technology diffusion in India: The spillover effects from foreign direct investment// Journal of Policy Modeling, 2015, 37(4), 630-651.

[110] Amann, E., Virmani, S. Foreign direct investment and reverse technology spillovers: The effect on total factor productivity. OECD Journal: Economic Studies, 2015, 2014:1, 129-153.

[111] Khachoo, Q., Sharma, R. FDI and innovation: An investigation into intra-and inter-industry effects// *Global Economic Review*, 2016, *45*(4), 311-330.

[112] Hoang, D. T., Do, A. D., Trinh, M. V. Spillover effects of FDI on technology innovation of vietnamese enterprises// The Journal of Asian Finance, Economics, and Business, 2021, 8(1), 655-663.

spillovers are also addressed in Vahter's study of Estonian manufacturing firms[113].

In addition, foreign capital can work as seed money for the economic development of developing countries, whose domestic capital is not enough to carry out massive development policies. The government of a host country also benefits from tax revenues[114]. By attracting competitive multinational companies to their domestic economy, developing countries can develop procedures of production and business operation, and human capital, to the level that meets international standards[115][116].

Meanwhile, the impact of outward FDI on international trade – whether they have a complementary or substitute relationship- has long been discussed. Contrary to a clear substitute relationship of other entry modes (strategic alliance, licensing, and franchising) with FDI due to their inherent characteristics, that between FDI and export is rather vague in that multinational enterprises can use both methods simultaneously.

The early study on this topic was conducted by Mundell. International trade is activated due to different factor endowments between countries (Heckscher-Ohlin-Samuelson assumptions). As FDI enables international capital movement, the difference in factors will be reduced between countries. Thereby, Mundell demonstrated that FDI will substitute export.[117] While Kojima contradicts Mundell's theory and proves the export-creating effects of FDI. International companies invest in a pro-disadvantage industry to utilize factors,

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[113] Vahter, P. Does FDI spur productivity, knowledge sourcing and innovation by incumbent firms? Evidence from manufacturing industry in Estonia// The World Economy, 2011, 34(8), 1308-1326.

[114] IMF: [Website], How Beneficial Is Foreign Direct Investment for Developing Countries? [Electronic resources]. - URL: https://www.imf.org/external/pubs/ft/fandd/2001/06/loungani.htm (date of access: 30.06.2022).

[115] Ibid.

[116] Caves, R.E. "Multinational Enterprise and Economic Analysis"// 1996, 2nd ed. Cambridge: Cambridge University Press.

[117] Mundell, R. A. International trade and factor mobility// The American Economic Review, 1957, 47(3), 321-335.

which they are poorly endowed with in a home country and the investment leads to enhance production capabilities of an FDI host country through spillover effects. In the meantime, investing companies can concentrate on producing goods, which they are already advantageous at. Thereby, FDI complements export.[118]

Although a plethora of empirical studies are carried out, there is empirical evidence for both substitute[119][120] and complementary[121][122][123][124][125] relationships, and thus debate on this topic continues. Interestingly, some studies demonstrate the existence of both relationships in one case. Liu, Xu, Wang, and Akamavi demonstrated that FDI has a different impact on exports between China and OECD countries depending on the stage of its maturity. In the early stage of development, FDI complements export. As the stage of FDI is developed, the ratio of export to FDI is reduced, and FDI substitutes export.[126] Oberhofer and Pfaffermayr, in their study on European companies, defined productivity as a factor in export or FDI decisions. A more productive company invests abroad, while a less productive company exports goods. This finding supports a substitution relationship between export and FDI, but companies still can use both

[118] Kojima, K. International trade and foreign investment: substitutes or complements. *Hitotsubashi journal of economics*, 1975, *16*(1), 1-12.

[119] Blonigen, B. A. In Search of Substitution between Foreign Production and Exports// Journal of International Economics, 2001, 53(1), 81-104.

[120] Bhasin, N., Paul, J. Exports and outward FDI: are they complements or substitutes? Evidence from Asia// Multinational Business Review, 2016, 24(1), 62-78.

[121] Pantulu, J., Poon, J. P. Foreign direct investment and international trade: evidence from the US and Japan// *Journal of Economic Geography*, 2003, *3*(3), 241-259.

[122] Liu, X., Wang, C., Wei, Y. Causal links between foreign direct investment and trade in China// China economic review, 2001, 12(2-3), 190-202.

[123] Marchant, M. A., Cornell, D. N., Koo, W. International trade and foreign direct investment: Substitutes or complements?// Journal of Agricultural and Applied Economics, 2002, 34(2), 289-302.

[124] Pfaffermayr, M. Foreign outward direct investment and exports in Austrian manufacturing: substitutes or complements?// *Weltwirtschaftliches Archiv*, 1996, *132*(3), 501-522.

[125] Limaye, K. C., Pednekar, A. P. Does FDI substitute exports of home country? A case of US FDI in select Asian economies// *Theoretical and Applied Economics*, 2019, *4*(621), 219-240.

[126] Liu, Z., Xu, Y., Wang, P., Akamavi, R. A pendulum gravity model of outward FDI and export. International Business Review, 2016, 25(6), 1356-1371.

strategies. The study found a complementary relationship exists in the most horizontally integrated companies.[127] Fillat-Castejón, Francois, and Wörz, in their study on service sectors, also demonstrated mixed results. Although, a complementary relationship was revealed for the whole services industries, a substitute relationship was exceptionally found in transport and construction services.[128]

To conclude, the relationship between FDI and trade is still uncertain. The summary of the previous empirical studies is presented in Table 1.

Table 1

The summary of previous empirical studies on the relationship between FDI and trade

Study	Methodology	Country/Year	Findings
Pfaffermayr (1996)	GMM estimations	Austria (1981-1991)	The complementary relationship between FDI and exports in Austrian manufacturing industries is substantiated.
Blonigen (2001)	SUR regression	Japan – the USA (1978–1991)	Both substitute and complementary relationships are revealed in exports of Japanese automobile parts to the US market; while a substitute relationship is revealed in exports of final consumer goods.
Liu, Wang, and Wei (2001)	Causality tests based on VAR	China (1984– 1998)	Imports cause inward FDI (positively) and in turn causes the growth of exports from China.
Marchant, Cornell, and Koo (2002)	Two stage least square	The USA – East Asian countries (1989-1998)	A complementary relationship between FDI and exports is confirmed.
Pantulu, and Poon (2003)	OLS	From Japan and the USA to 29 and 32 countries (1996-1999)	FDI creates trading (exports and imports).
Fillat-	Panel data	OECD	A complementary relationship was revealed

[127] Oberhofer, H., Pfaffermayr, M. FDI versus exports: Multiple host countries and empirical evidence// The World Economy, 2012, 35(3), 316-330.

[128] Fillat-Castejón, C., Francois, J. F., Wörz, J. M. Cross Border Trade and FDI in Services// 2009, wiiw Working Paper, No. 50, The Vienna Institute for International Economic Studies (wiiw), Vienna

Castejón, Francois, and Wörz (2009)	analysis (price and cross-price effects)	countries (1994-2004)	for the whole services industry, but a substitute relationship was exceptionally found in transport and construction services.
Oberhofer and Pfaffermayr (2012)	Bivariate probit estimation, marginal effect estimation	Companies located in 10 European countries (AMADEUS Top 250,000' database)	A more productive company invests abroad, while a less productive company exports goods, but companies still can use both strategies.
Bhasin, and Paul (2016)	VAR, cointegration, and causality tests based on VAR	10 Asian countries (1991-2012)	FDI and exports are substitute.
Liu et al. (2016)	A pendulum gravity model	China and OECD countries (1992-2009)	A different relationship between FDI and exports depending on the maturity of foreign investment.
Limaye, and Pednekar, (2019)	Causality tests based on VAR	The USA – Asian countries (1991-2017)	A positive effect of the US FDI in Japan on exports of the US to Japan is revealed.

Source: Composed by the author.

The above findings allow us to draw the roles of FDI for multinational enterprises to do international economic activities as follows:

- to allow multinational enterprises to fully utilize their capabilities and maximize profits (e.g., technology, know-how, managerial skills, brand differentiation, economies of scale, monopolistic power, and others);
- to provide a chance to run a business in a stable condition based on quality institutions (for multinational enterprises from economically and politically unstable domestic markets);
- to enhance profits and reduce costs (which are incurred due to an imperfect market structure);
- to create new sales opportunities for companies from a highly saturated

domestic market and for products that are in a different life cycle;

- to enable multinational companies to access factors, which are insufficient in a domestic market;
- to enable multinational companies to absorb high technology and knowledge and have international business competitiveness;
- to stimulate a host country's economy by creating jobs and spillovers of advanced technology and managerial skills, and developing production, operating, and human capital to the level that meets international standards.

In addition, this study further examined the relationship between FDI on trade- which has been a topic for discussion for a long time- to clarify whether it is a substitute or complementary. The impact of FDI on trade is still debatable in that both substitute and complementary effects are found in empirical studies. The results largely vary depending on a country, industry, the development stage of international business, firms' productivity, and so forth. Thereby, this study requires to carrying out its empirical study to identify the impact of South Korean FDI in the Russian Far East on bilateral-trade between them.

CHAPTER2. THE INDUSTRIAL COMPLEX OF THE FAR EAST AND THE POSSIBILITY OF ATTRACTING FOREIGN CAPITAL FROM SOUTH KOREA FOR ITS DEVELOPMENT

2.1 Analysis of the dynamics, structure, and export potential of the industrial complex of the Far East

On the 29th of December 2014, advanced special economic zones (ASEZs) were regulated by the Federal Law No. 473-FL. Currently, there are 22[129] ASEZs in the Russian Far East, which are being developed as an industrial complex[130][131]. ASEZs provide favorable tax incentives (see Table A1) as well as administrative and land and infrastructure preferences. The Far Eastern federal district is composed of 11 federal subjects as follows: Buryatia Republic, Sakha Republic, Zabaykalsky Krai, Kamchatka Krai, Primorsky Krai, Khabarovsk Krai, Amur Oblast, Magadan Oblast. Sakhalin Oblast, Jewish Autonomous Oblast, Chukotka Autonomous Okrug, and each federal subject has a different industrial structure depending on their natural endowments. The industrial specialization at each ASEZs has been determined based on the regional characteristics of these 11 Far Eastern federal subjects as shown in Table 2.

The total investments in 22 ASEZs in the Russian Far East amounted to 4.561 trillion rubles as of 04.10.2022. Currently, the most investments flew in ASEZs in the Primorsky Krai: in this region, there are 4 ASEZs that are specialized in agriculture, manufacturing, shipbuilding, logistics and gas (processing), and petrochemicals. The total amount of investments in these

[129] There are 23 ASEZs including Stolitsa Arktiki ASEZ, but as it is located at the Murmansk, and thus this study does not investigate it.

[130] Eastern Economic Forum: [Website], About ASEZ [Electronic resource]. - URL: https://forumvostok.ru/en/about/asez/ (date of access: 04.11.2020).

[131] Eastern Economic Forum: [Website], About free port [Electronic resource]. - URL: https://forumvostok.ru/en/about/free-port/ (date of access: 04.11.2020).

regions is 1.414 trillion rubles, including 398.68 (Bolshoy Kamen), 87.35 (Mikhaylovsky), 65.89 (Nadezhdinskaya), and 861.6 (Nakhodka) billion rubles.

Table 2.

The industrial complex in advanced special economic zones (ASEZs) in the Russian Far East

Region	ASEZs	Agriculture	(Added value) manufacturing	Gas (processing), petrochemicals	Gas, electricity, or water supply, wastewater treatment	Extraction of mineral resources, mining	Logistics	Mechanical engineering	Metalworking	Food/ (processing) fishing	Ship-building/renovation	Service	Recreation	Tourism	Timber	Investments (Billion rubles)
Amur	Belogorsk	✓								✓						5.39
	Priamurskaya		✓				✓									11.73
	Svobodny		✓	✓												1,789
Buryatia	Buryatia	✓												✓	✓	8.14
	Selenginsk	Not determined yet														N/A
Chukotka Autonomous	Chukotka					✓						✓				606.60
Jewish Autonomous	Amur-Khingan	✓					✓			✓						5.29
Kamchatka	Kamchatka						✓			✓			✓	✓		121.70
Khabarovsk	Komsomolsk							✓	✓	✓					✓	159.82
	Nikolaevsk					✓				✓	✓					2.74
	Khabarovsk	✓	✓		✓		✓									39.82
Primorsky	Bolshoy Kamen						✓				✓					398.68
	Mikhaylovsky	✓														87.35
	Nadezhdinskaya		✓				✓									65.89
	Nakhodka			✓												861.60
Sakhalin	Gorny Vozdukh												✓	✓		25.21
	Kuriles									✓				✓		11.81
	Yuzhnaya	✓														17.10
Yakutia	Yakutia	✓	✓				✓									14.22
	South Yakutia					✓										113.21
Zabaikalsky	Zabaikalye					✓				✓					✓	202.68
	Krasnokamensk	Not determined yet														13.42

Note: See also Table A2-4 for additional information.

Source: The Russian Far East and Arctic Development Corporation: [Website], Advanced Special Economic Zone [Electronic resource]. - URL: https://erdc.ru/en/about-tor/ (date of access: 04.10.2022).

In 2014, the Russian government introduced a new standard of industrial classification, which is called “all-Russian classifiers of types of economic activity version 2 (ОКВЭД 2 in Russian).” The Federal State Statistics Service of the Russian Federation has published industrial statistics at national and regional levels according to this new standard since 2016. The composition of the all-Russian classifier of types of economic activity version 2 is as follows:

(A) Agriculture, forestry, hunting, fishing, and fish farming;

(B) Mining;

(C) Manufacturing industries;

(D) Provision of electric energy, gas, and steam; air conditioning;

(E) Water supply; sanitation, waste collection and disposal, pollution elimination activities;

(F) Construction;

(G) Wholesale and retail trade; repair of motor vehicles and motorcycles;

(H) Transportation and storage;

(I) Activities of hotels and catering establishments;

(J) Information and communication activities;

(K) Financial and insurance activities;

(L) Real estate operations;

(M) Professional, scientific, and technical activities;

(N) Administrative activities and related additional services;

(O) Public administration and military security; social security;

(P) Education;

(Q) Activities in the field of health and social services;

(R) Activities in the field of culture, sports, leisure, and entertainment;

(S) Provision of other types of services;

(T) The activity of households as employers; undifferentiated activity of private households in the production of goods and services for their own consumption[132].

The major problem with the Far Eastern federal district is that its

[132] "(T) Activity of households as employers; undifferentiated activity of private households in the production of goods and services for their own consumption" is excluded in this analysis considering that its' GRP valued "0" for the whole study period.

industrial structure is distorted to a limited number of sectors. Figure 6 illustrates the industrial structure of the Russian Far East. (B) Mining is the largest industry and accounted for 24.11% of total industrial outputs in the Russian Far East[133]. (H) Transportation and storage and (G) Wholesale and retail trade; repair of motor vehicles and motorcycles, also largely contribute to the regional economy of the Russian Far East: its industrial outputs accounted for 11.83% and 10.91% of the total, respectively.

Meanwhile, the smallest industries in the Russian Far East, which accounted for less than 1% of the total regional industries, are as follows: (E) Water supply; sanitation, waste collection and disposal, pollution elimination activities (0.44%), (I) Activities of hotels and catering establishments (0.88%), (K) Financial and insurance activities (0.21%), (R) Activities in the field of culture, sports, leisure and entertainment (0.68%), and (S) Provision of other types of services (0.34%). And it causes problems of a migration outflow from some Far Eastern states, where the mining industry is not developed. In 2021, although the total migrants to the Russian Far East increased by 8,013 persons, 6 out of 11 federal subjects of the Russian Far East showed a decrease in migrants by 10,900 persons[134].

[133] The Far Eastern regions are blessed with rich natural resources: 98% of Russian diamonds, 80% of stannary, 90% of borax materials, 50% of gold, and 14% of tungsten are extracted there, and about 1/3 of all coal and hydro-engineering resources of the country are reserved there. Eastern Economic Forum: [Website], About the Far East [Electronic resource]. - URL: https://forumvostok.ru/en/about/ (date of access: 07.04.2020).

[134] Interregional Association of Economic Cooperation of the Subjects of the Russian Federation “Far East and Transbaikalia” [Electronic resource]. – URL: http://assoc.khv.gov.ru/news/5398 (date of access: 01.11.2022).

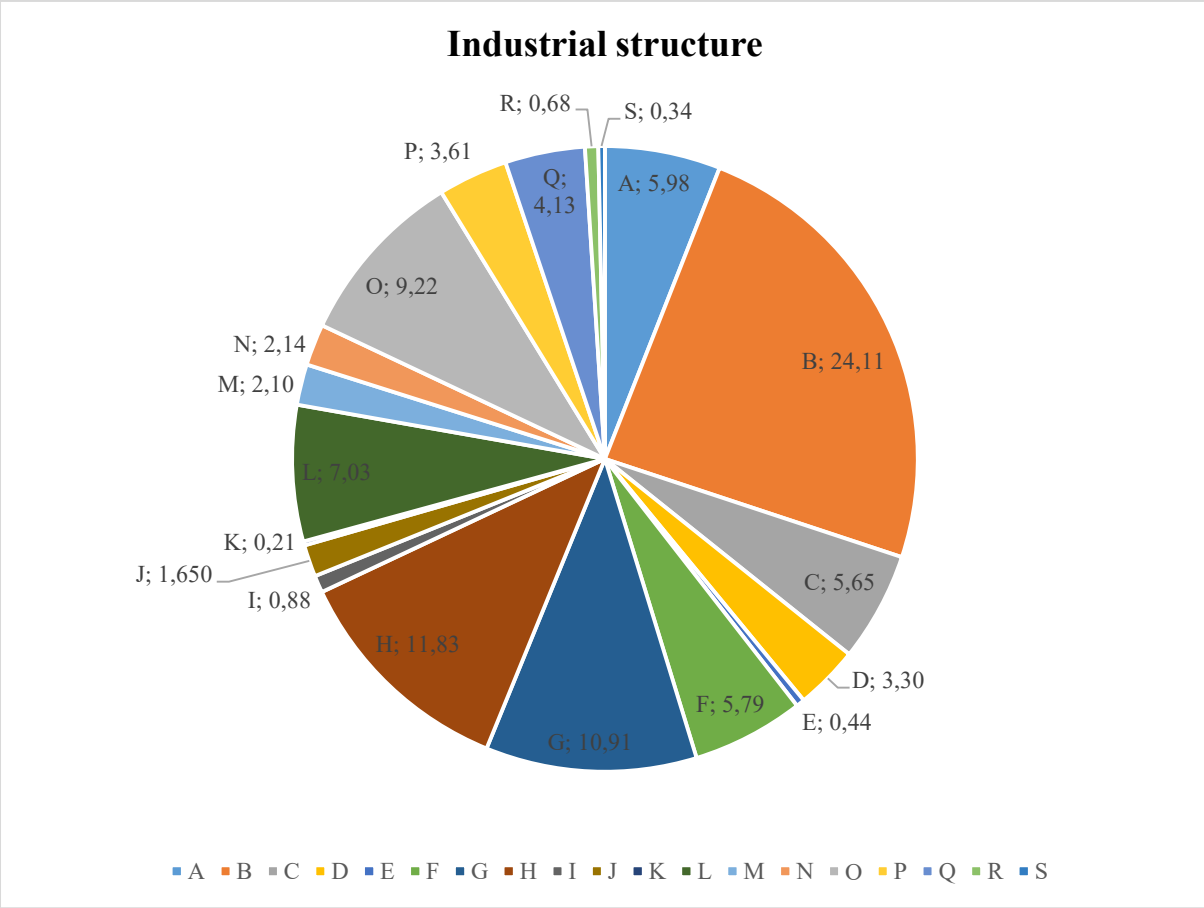


Figure 6. The GRP (constant prices=2016) ratio by industry in the Far Eastern federal district (2020)

Source: Author's calculations based on datasets of Федеральная служба государственной статистики: [Website], ВРП ОКВЭД 2 (с 2016 г.) [Electronic resource]. – https://rosstat.gov.ru/storage/mediabank/VRP_OKVED2.xlsx (date of access: 10.06.2022).

Table 3 explains the dynamics of the GRP by industry in the Far Eastern federal district for the period 2016-2020. In the last row, the compound annual growth rate (CAGR) is calculated during the period. The formula is as follows:

$$CAGR = \left[\left(\frac{\text{Ending year}}{\text{Beginning year}}\right)^{\frac{1}{n}} - 1\right] \times 100\% \quad (1)$$

Table 3

The GRP (constant prices=2016) by industry in the Far Eastern federal district (in billion rubles) (’16~’20)

Classification/ Industry	2016	2017	2018	2019	2020	CAGR (%) (’16~ ’20)
(A) Agriculture, forestry, hunting, fishing, and fish farming	267.36	258.13	279.12	283.75	284.19	1.54
(B) Mining	1,081.97	1,061.88	1,119.26	1,162.04	1,145.81	1.44
(C) Manufacturing industries	236.38	245.27	248.68	257.59	268.61	3.25
(D) Provision of electric energy, gas, and steam; air conditioning	167.71	162.06	167.19	158.08	156.77	-1.67
(E) Water supply; sanitation, waste collection and disposal, pollution elimination activities	24.90	24.38	24.45	25.56	20.90	-4.28
(F) Construction	290.95	286.08	281.19	303.54	275.30	-1.37
(G) Wholesale and retail trade; repair of motor vehicles and motorcycles	456.38	468.30	495.43	511.77	518.64	3.25
(H) Transportation and storage	518.68	532.30	533.66	556.42	562.28	2.04
(I) Activities of hotels and catering establishments	44.40	44.86	46.68	50.12	41.92	-1.43
(J) Information and communication activities	70.17	71.82	75.47	78.15	78.43	2.82
(K) Financial and insurance activities	8.03	9.15	8.71	6.43	9.96	5.53
(L) Real estate operations	294.13	297.15	312.24	321.77	334.16	3.24
(M) Professional, scientific and technical activities	85.63	82.87	77.31	97.10	100.00	3.96
(N) Administrative activities and related additional services	79.25	78.97	97.42	109.64	101.76	6.45
(O) Public administration and military security; social security	431.88	439.00	442.23	431.32	438.33	0.37
(P) Education	163.67	168.18	170.76	170.13	171.54	1.18
(Q) Activities in the field of health and social services	201.14	197.86	198.57	197.79	196.21	-0.62
(R) Activities in the field of culture, sports, leisure, and entertainment	42.27	42.14	41.56	41.92	32.48	-6.37
(S) Provision of other types of services	16.69	16.50	17.05	18.17	16.01	-1.03

Note: Round to two decimal places.

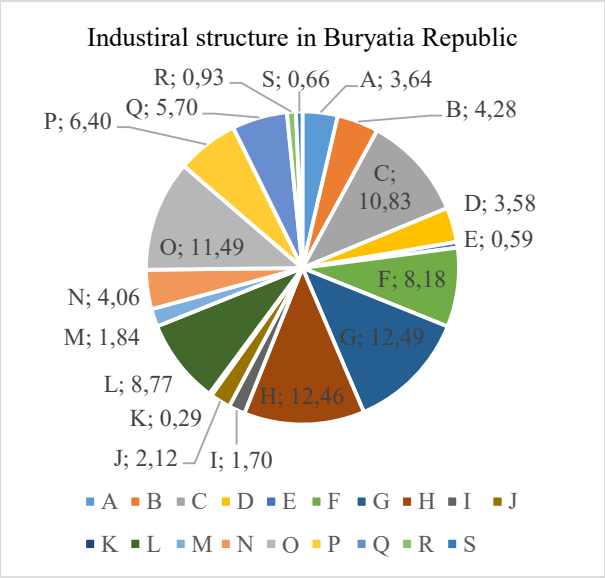
Source: Author’s calculations based on datasets of Федеральная служба государственной статистики: [Website], ВРП ОКВЭД 2 (с 2016 г.) [Electronic resource]. – https://rosstat.gov.ru/storage/mediabank/VRP_OKVED2.xlsx (date of access: 10.06.2022).

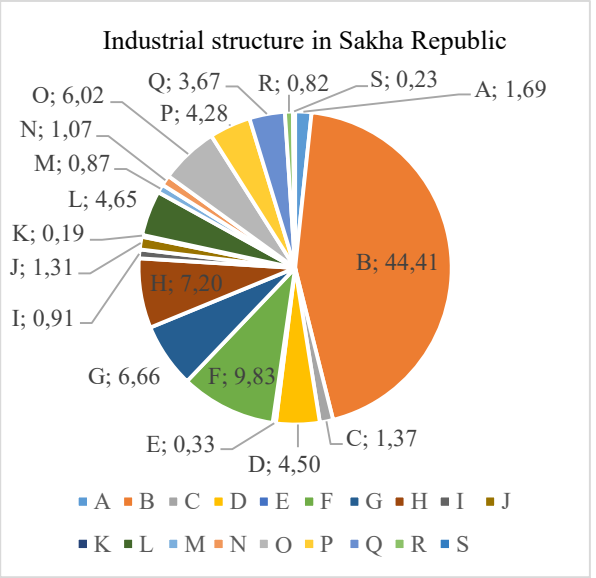
Another major problem of the Far Eastern federal district is its asymmetric development amongst industries. The industries showing the highest growth rate are as follows: (N) Administrative activities and related additional services

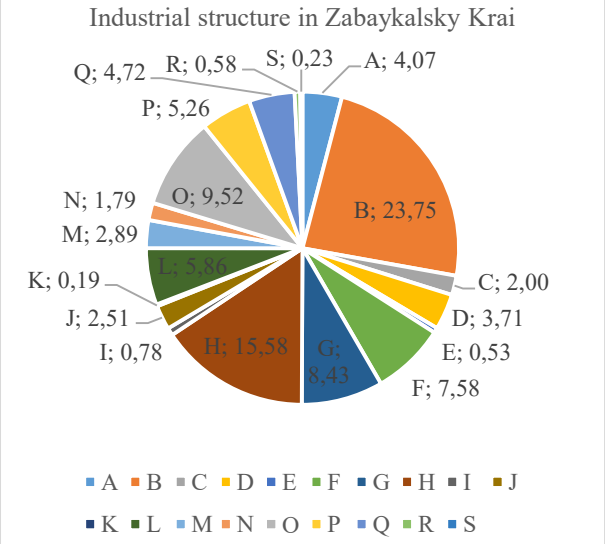
(6.45%), (K) Financial and insurance activities (5.53%), and (M) Professional, scientific and technical activities (3.96%).

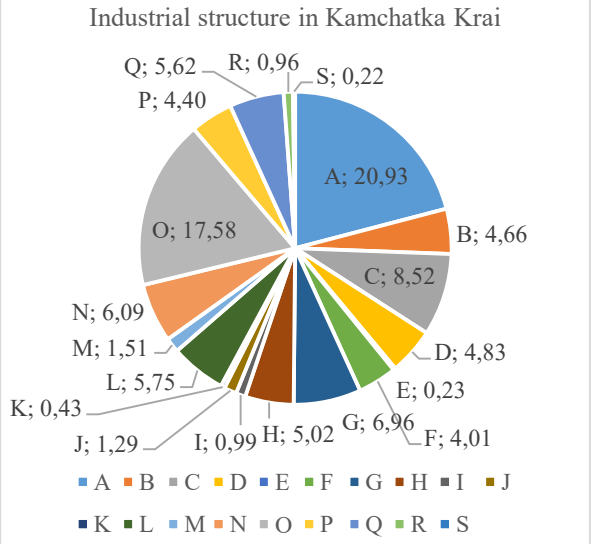
To discuss the top 5 industries in the Russian Far East, the industrial outputs from (B) Mining sector grew from 1.081 (2016) to 1.145 (2020) trillion rubles and its CAGR is 1.44%; that of (G) Wholesale and retail trade; repair of motor vehicles and motorcycles increased from 456.38 (2016) to 518.64 (2020) billion rubles and its CAGR is 3.25%; that of (H) Transportation and storage grew from 518.68 (2016) to 562.28 billion rubles (2020) and its CAGR is 2.04%; that of (L) Real estate operations grew from 294.13 (2016) to 334.16 (2020) billion rubles and its CAGR is 3.24%; and, that of (O) Public administration and military security; social security increased from 431.88 (2016) to 438.33 billion rubles (2020) and its CAGR is 0.37%. All of them showed a positive growth rate.

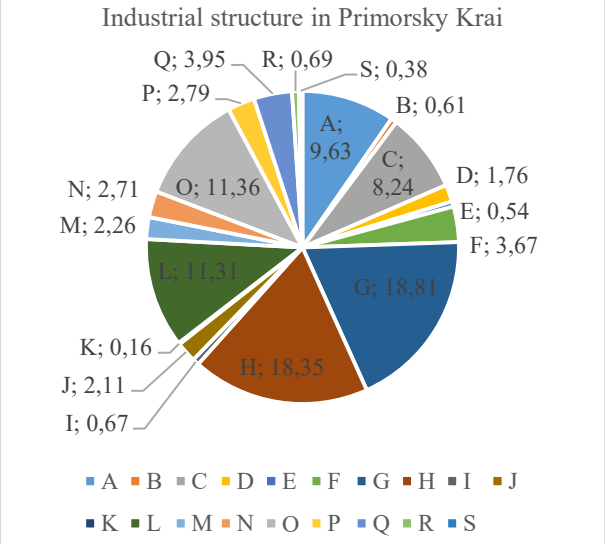
While outputs in multiple industries had decreased during 2016-2020: the output of (D) Provision of electric energy, gas, and steam; air conditioning decreased by 1.67%; that of (E) Water supply; sanitation, waste collection and disposal, pollution elimination activities decreased by 4.28%; that of (F) Construction contracted by 1.37%; that of (I) Activities of hotels and catering establishments contracted by 1.43%; that of (Q) Activities in the field of health and social services decreased by 0.62%; that of (R) Activities in the field of culture, sports, leisure, and entertainment decreased by 6.37%; and, that of (S) Provision of other types of services contracted by 1.03%.

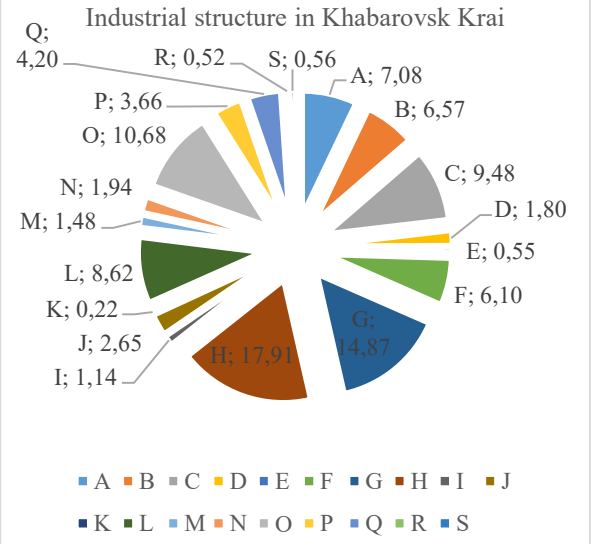

Industiral structure in Buryatia Republic
R; 0,93
S; 0,66
A; 3,64
B; 4,28
C; 10,83
D; 3,58
E; 0,59
F; 8,18
G; 12,49
H; 12,46
I; 1,70
J; 2,12
K; 0,29
L; 8,77
M; 1,84
N; 4,06
O; 11,49
P; 6,40
Q; 5,70
A B C D E F G H I J
K L M N O P Q R S

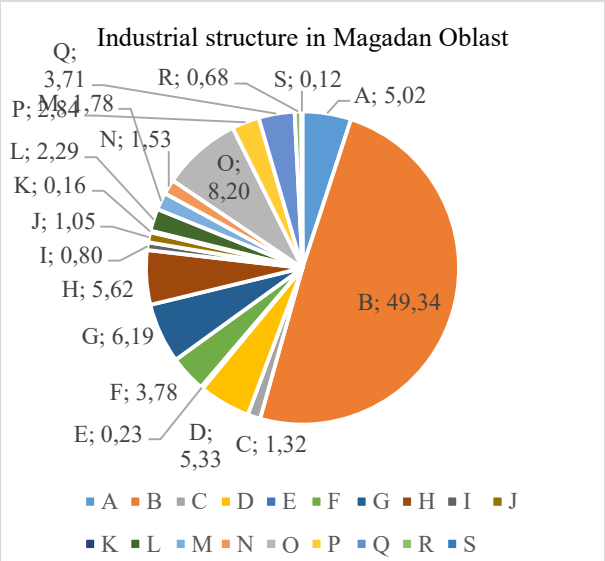

Industrial structure in Sakha Republic
Q; 3,67
R; 0,82
S; 0,23
A; 1,69
B; 44,41
C; 1,37
D; 4,50
E; 0,33
F; 9,83
G; 6,66
H; 7,20
I; 0,91
J; 1,31
K; 0,19
L; 4,65
M; 0,87
N; 1,07
O; 6,02
P; 4,28
A B C D E F G H I J
K L M N O P Q R S

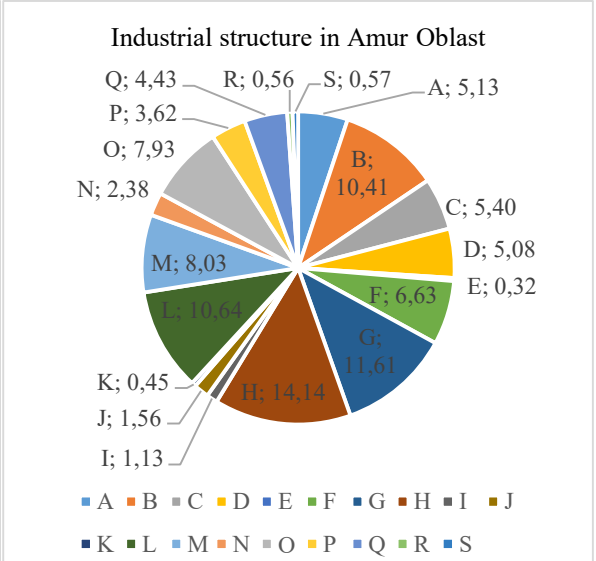

Industrial structure in Zabaykalsky Krai
Q; 4,72
R; 0,58
S; 0,23
A; 4,07
B; 23,75
C; 2,00
D; 3,71
E; 0,53
F; 7,58
G; 8,43
H; 15,58
I; 0,78
J; 2,51
K; 0,19
L; 5,86
M; 2,89
N; 1,79
O; 9,52
P; 5,26
A B C D E F G H I J
K L M N O P Q R S

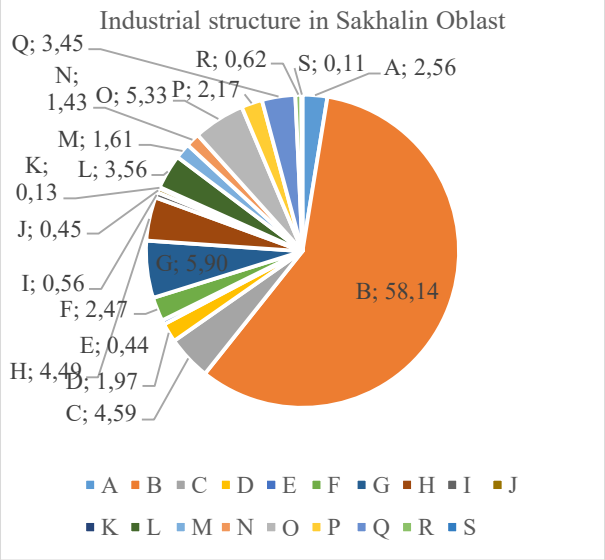

Industrial structure in Kamchatka Krai
Q; 5,62
R; 0,96
S; 0,22
A; 20,93
B; 4,66
C; 8,52
D; 4,83
E; 0,23
F; 4,01
G; 6,96
H; 5,02
I; 0,99
J; 1,29
K; 0,43
L; 5,75
M; 1,51
N; 6,09
O; 17,58
P; 4,40
A B C D E F G H I J
K L M N O P Q R S

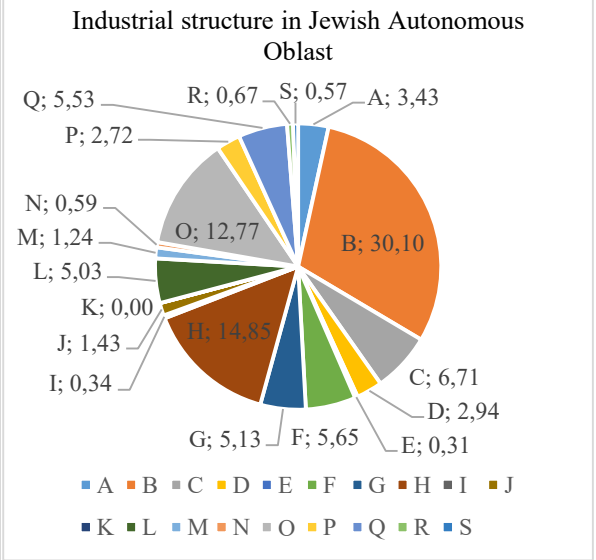

Industrial structure in Primorsky Krai
Q; 3,95
R; 0,69
S; 0,38
A; 9,63
B; 0,61
C; 8,24
D; 1,76
E; 0,54
F; 3,67
G; 18,81
H; 18,35
I; 0,67
J; 2,11
K; 0,16
L; 11,31
M; 2,26
N; 2,71
O; 11,36
P; 2,79
A B C D E F G H I J
K L M N O P Q R S


Industrial structure in Khabarovsk Krai
Q; 4,20
R; 0,52
S; 0,56
A; 7,08
B; 6,57
C; 9,48
D; 1,80
E; 0,55
F; 6,10
G; 14,87
H; 17,91
I; 1,14
J; 2,65
K; 0,22
L; 8,62
M; 1,48
N; 1,94
O; 10,68
P; 3,66
A B C D E F G H I J
K L M N O P Q R S


Industrial structure in Magadan Oblast
Q; 3,71
R; 0,68
S; 0,12
A; 5,02
P; 2,84
M; 1,78
N; 1,53
L; 2,29
O; 8,20
K; 0,16
J; 1,05
I; 0,80
H; 5,62
B; 49,34
G; 6,19
F; 3,78
E; 0,23
D; 5,33
C; 1,32
A B C D E F G H I J
K L M N O P Q R S


Industrial structure in Amur Oblast
Q; 4,43
R; 0,56
S; 0,57
A; 5,13
P; 3,62
O; 7,93
B; 10,41
N; 2,38
C; 5,40
D; 5,08
M; 8,03
E; 0,32
F; 6,63
L; 10,64
G; 11,61
K; 0,45
H; 14,14
J; 1,56
I; 1,13
A B C D E F G H I J
K L M N O P Q R S


Industrial structure in Sakhalin Oblast
Q; 3,45
R; 0,62
S; 0,11
A; 2,56
N; 1,43
O; 5,33
P; 2,17
M; 1,61
K; 0,13
L; 3,56
J; 0,45
G; 5,90
B; 58,14
I; 0,56
F; 2,47
E; 0,44
H; 4,49
D; 1,97
C; 4,59
A B C D E F G H I J
K L M N O P Q R S


Industrial structure in Jewish Autonomous Oblast
Q; 5,53
R; 0,67
S; 0,57
A; 3,43
P; 2,72
N; 0,59
M; 1,24
O; 12,77
B; 30,10
L; 5,03
K; 0,00
J; 1,43
H; 14,85
I; 0,34
C; 6,71
D; 2,94
G; 5,13
F; 5,65
E; 0,31
A B C D E F G H I J
K L M N O P Q R S

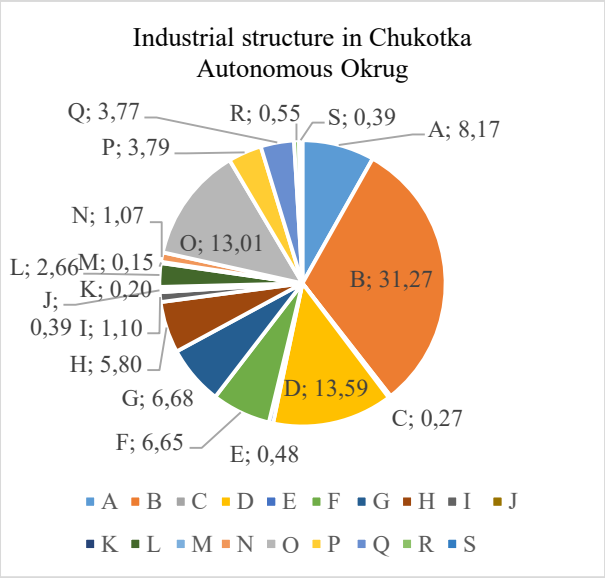
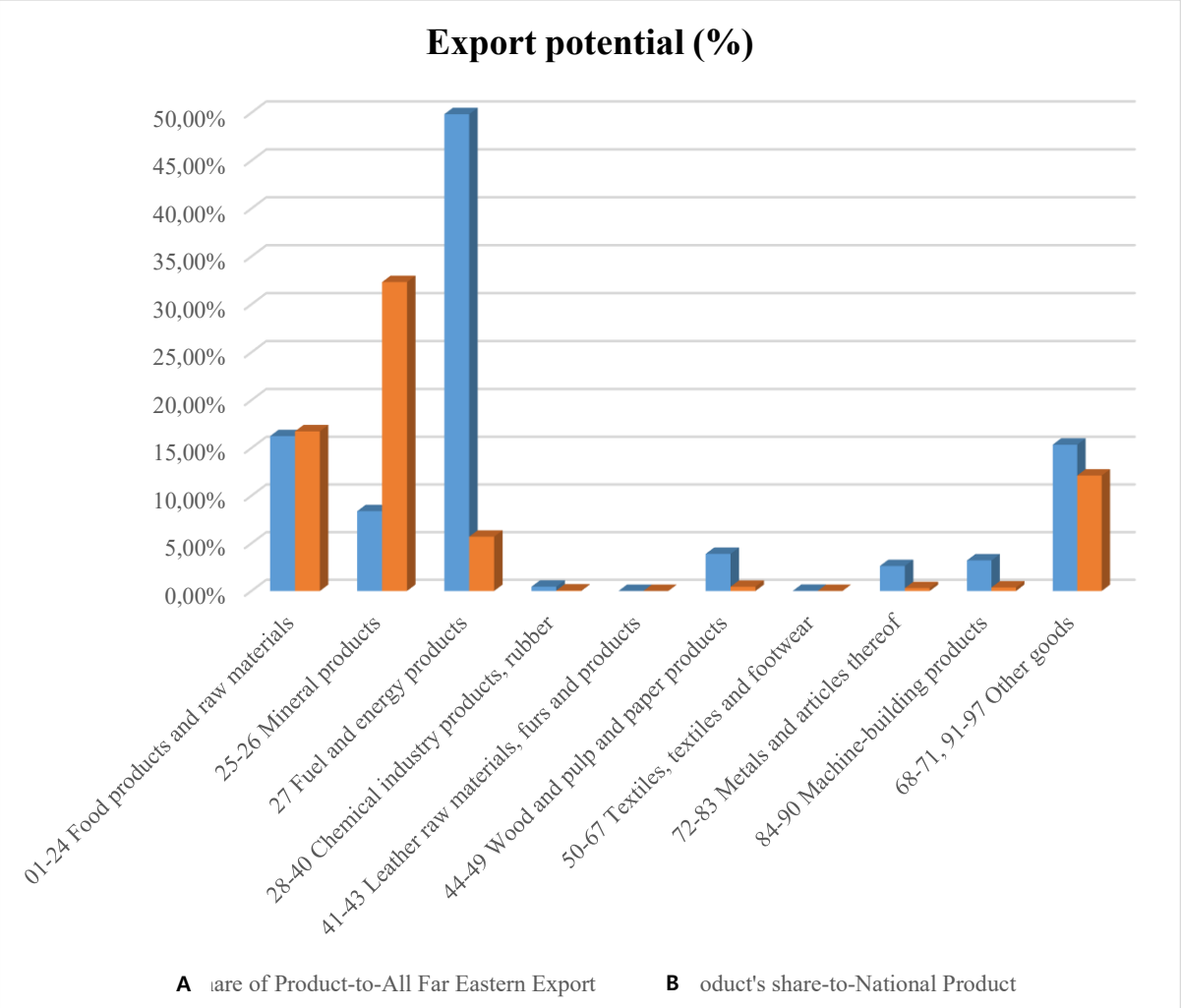


Figure 7. The GRP (constant prices=2016) ratio by industry in the 11 Far Eastern federal subjects (2020)

Source: Author's calculations based on datasets of Федеральная служба государственной статистики: [Website], ВРП ОКВЭД 2 (с 2016 г.) [Electronic resource]. – https://rosstat.gov.ru/storage/mediabank/VRP_OKVED2.xlsx (date of access: 10.06.2022).

The industrial structure of the 11 Far Eastern federal subjects is rather different (As shown in Figure 7). The industrial structure of Sakha Republic, Magadan Oblast, and Sakhalin Oblast is the most mining-oriented: their share-to-GRP of the mining industry is 44.41%, 49.34%, and 58.14%, respectively. Some federal subjects are specialized in the mining industry, but alongside other industries, for instance, Zabaykalsky Krai, Amur Oblast, Jewish Autonomous Oblast, and Chukotka Autonomous Okrug. For these federal subjects, mining is an important source to compose regional industrial outputs, but not as powerful as the previous three federal subjects. Unusually, the economy of some federal subjects is far from natural resource-based, for instance, Buryatia Republic, Kamchatka Krai, Primorsky Krai, and Khabarovsk Krai. The 3 largest industries in Buryatia Republic are (C) Manufacturing industries (10.8%), (G) Wholesale and retail trade; repair of motor vehicles and motorcycles (12.49%), and (H)

Transportation and storage (12.46%); that in Kamchatka Krai are (A) Agriculture, forestry, hunting, fishing, and fish farming (20.93%), (C) Manufacturing industries (8.52%) and (O) Public administration and military security; social security (17.58%); that in Primorsky Krai is (G) Wholesale and retail trade; repair of motor vehicles and motorcycles (18.81%), (H) Transportation and storage (18.35%) and (L) Real estate operations (11.31%); and, that in Khabarovsk Krai is (G) Wholesale and retail trade; repair of motor vehicles and motorcycles (14.87%), (H) Transportation and storage (17.91%) and (O) Public administration and military security; social security (10.68%).



	01-24	25-26	27	28-40	41-43	44-49	50-69	72-83	84-90	68-

										71,91-97[135]
A	16.247%	8.379%	49.842%	0.450%	0.001%	3.889%	0.017%	2.620%	3.207%	15.348%
B	16.751%	32.331%	5.699%	0.051%	0.000%	0.445%	0.002%	0.300%	0.367%	12.112%
Avg.	16.499%	20.355%	27.770%	0.251%	0.001%	2.167%	0.009%	1.460%	1.787%	13.730%

Figure 8. Export potential by a product in the Russian Far East (2021)

Source: Author's calculations based on datasets from the Far Eastern Customs Administration: [Website], Statistics [Electronic resource]. URL: http://dvtu.customs.gov.ru/ (date of access: 26.06.2022); The Federal Customs Service: [Website], Statistics [Electronic resource]. URL: http://customs.gov.ru/ (date of access: 26.06.2022).

This study further analyzes the export potential of industrial goods and services in the Russian Far East. To estimate export potential two indices are used: the first is a product-to-total Far Eastern export ratio (%); while the second is a product in the Russian Far East-to-a product in all Russia export ratio (%). After calculating each indicator, an average of them is obtained to clarify export potential. The results are shown in Figure 8. The industrial products which have the highest export potential are fuel and energy products (code: 27) and mineral products (code: 25-26): they obtained 27.77% and 20.355% from the total export potential indices, respectively. In addition, food products and raw materials (code: 01-24) also have a potential for exporting and they obtained 16.499% from the export potential evaluation. From the analysis, we can conclude that the gas (processing) and petrochemicals complex in Svobodny and Nakhodka; extraction of mineral resources and mining complex in Chukotka, Nikolaevsk, South Yakutia and Zabaikalye; agriculture complex in Belogorsk, Buryatia, Amur-

[135] 68- Articles made of stone, gypsum, cement, asbestos, mica or similar materials; 69- Ceramic products; 70- Glass and its products; 71- Pearls, precious or semi-precious stones, precious metals and articles made of them; jewelry; coins; 91- Watches of all kinds and their parts; 92- Musical instruments; their parts and accessories; 94- Furniture; bedding, printed furniture accessories; lamps and lighting equipment; prefabricated building structures; 95- Toys, games and sports equipment; their parts and accessories; 96- Various finished products; 97- Works of art, collectibles and antiques.

Khingan, Khabarovsk, Mikhaylovsky, Yuzhnaya and Yakutia; and, food (processing) and fishing complex in Belogorsk, Amur-Khingan, Kamchatka, Komsomolsk, Nikolaevsk, Kuriles and Zabaikalye have high export potentials.

Table 4

Top 10 trading partners of the Russian Far East in 2021

	Export	Mil. USD.	Share (%)	Import	Mil. USD.	Share (%)
1	South Korea	8,999.45168	32.36%	China	5,152.906314	50.92%
2	China	8,738.00285	31.42%	South Korea	1,325.733404	13.10%
3	Japan	4,011.34728	14.43%	Japan	1,258.745343	12.44%
4	Belgium	1,536.38767	5.53%	Kazakhstan	378.619427	3.74%
5	United Arab Emirates	1,069.5724	3.85%	United States	322.542448	3.19%
6	India	923.50148	3.32%	Germany	235.408211	2.33%
7	Kazakhstan	735.463003	2.64%	Hong Kong	161.355598	1.59%
8	Taiwan	600.571506	2.16%	Turkey	125.031579	1.24%
9	Israel	238.853749	0.86%	Vietnam	121.193776	1.20%
10	Philippines	206.361214	0.74%	Taiwan	116.849243	1.15%

Source: The Far Eastern Customs Administration: [Website], Statistics [Electronic resource]. URL: http://dvtu.customs.gov.ru/ (date of access: 26.06.2022)

Due to geographical proximity and sizable domestic economy, three Eastern Asian countries (namely, South Korea, China, and Japan) are the main trading partners of the Russian Far East (Table 4). The Russian Far East exports the most to South Korea, which amounted to $8.999 billion in 2021 and is followed by China ($8.738 billion) and Japan ($4.011 billion). While, the Russian Far East imports predominantly the most from China, which amounted to $5.153 billion and accounted for 50.92% of the total in 2021.

To conclude, the industrial structure of the Russian Far East is rather distorted to the mining industry, as it accounted for 24.11%. To overcome such an unbalanced industrial structure, the Russian government designated 22 ASEZs throughout 11 Far Eastern federal subjects, which aim to specialize in various

industrial complexes. To discuss the top 5 industries in the Russian Far East, the industrial outputs from (B) Mining, (G) Wholesale and retail trade; repair of motor vehicles and motorcycles, (H) Transportation and storage, Real estate operations, and (O) Public administration and military security; social security and industrial growth rates of all of them are positive (in terms of CAGR methodology).

However, an unbalanced industrial structure and asymmetric development among industries are revealed as chronic problems of the Far Eastern federal district. Meanwhile, the economy of some federal subjects is not mining-industry-oriented, for instance, Buryatia Republic, Kamchatka Krai, Primorsky Krai, and Khabarovsk Krai: these regions rather present balanced industrial structure compared to other federal subjects in the Russian Far East. It is also revealed that gas (processing) and petrochemicals complex in Svobodny and Nakhodka; extraction of mineral resources and mining complex in Chukotka, Nikolaevsk, South Yakutia and Zabaikalye; agriculture complex in Belogorsk, Buryatia, Amur-Khingan, Khabarovsk, Mikhaylovsky, Yuzhnaya and Yakutia; and, food (processing) and fishing complex in Belogorsk, Amur-Khingan, Kamchatka, Komsomolsk, Nikolaevsk, Kuriles and Zabaikalye have high export potentials.

2.2. Factors and conditions affecting the foreign economic activity of industrial enterprises in the Far East

Location factors and conditions are integral to stimulating international economic activities of industrial enterprises. Enterprises are necessary to analyze location-specific factors to strategically utilize them for maximizing profits and enhancing efficiencies from cross-border business activities. This section

evaluates and compares factors of international business in the 11 Far Eastern federal subjects by employing the generalized double diamond (which is expanded by Moon, Rugman, and Verbeke from Porter's diamond model for applications to small and open economies[136]). Based on calculations of diamond indices, among the 11 Far Eastern federal subjects, attractive territories for international business will be determined.

i. Factor conditions

Table 5 illustrates the four domestic and two international variables selected to measure factor conditions. As for domestic basic factor conditions, labor (in size and wage rate) and natural resources are chosen. The advanced factor conditions, integral to sustaining economic growth, are estimated by the expenditure ratio on technology innovation and the number of students in higher education programs. In terms of basic and advanced international factor conditions, inward and outward FDI stocks are selected, respectively, as Moon, Rugman, and Verbeke state: outward FDI is an activity to expand one's production base abroad, while inward FDI from advanced countries enables recipient countries to absorb modern technologies[137].

Table 5

Selected variables for factor conditions

Classification	Variable	
Domestic	Basic	Working age population (% of the total population), in 2020
		The average nominal monthly wage of organizations (in rubles), in December 2020
		Gross regional products (GRP) in the mining industry (in constant prices=2016, in billion

[136] Moon, H. C., Rugman, A. M., Verbeke, A. A generalized double diamond approach to the global competitiveness of Korea and Singapore// International business review, 1998, 7(2), 135-150.
[137] Ibid.

		rubles), in 2020
	Advanced	Expenditure on technology innovation of organizations (% of the total volume of goods shipped, works performed, services), in 2020
		The number of students in programs for bachelors, masters, and specialists (per 10,000 inhabitants), at the beginning of the academic year, 2020/2021
International	Basic	FDI stock (from the Russian Far East) (in million $), as of January 1, 2021
	Advanced	FDI stock (in the Russian Far East) (in million $), as of January 1, 2021

Source: Composed by the author.

Table 6 describes the working-age population of the 11 Far Eastern federal subjects as a percentage of the total population. The average working population ratio of the 11 Far Eastern federal subjects is 58.3%. The working population of the ratio of Sakha Republic, Kamchatka Krai, Magadan Oblast, and Chukotka Autonomous Okrug is above the average for the whole Far Eastern federal subjects. The working age population ratio is highest in Chukotka Autonomous Okrug (62.6%), but lowest in Buryatia Republic (55.5%).

Table 6

Working age population (% of the total population), in 2020

Buryatia Republic	55.5
Sakha Republic	58.5
Zabaykalsky Krai	57.1
Kamchatka Krai	60.7
Primorsky Krai	57.7
Khabarovsk Krai	58.1
Amur Oblast	57.3
Magadan Oblast	59.8
Sakhalin Oblast	57.1
Jewish Autonomous Oblast	56.7
Chukotka Autonomous Okrug	62.6

Source: Федеральная служба государственной статистики: [Website], Регионы России. Социально-экономические показатели – 2021 г. [Electronic

resource]. – URL: https://gks.ru/bgd/regl/b21_14p/Main.htm (date of access: 13.06.2022).

Table 7, presents the average nominal monthly wage of organizations of the 11 Far Eastern federal subjects in December 2020. The average monthly wage of the 11 federal subjects was 93,518 rubles. A large difference in the average wage between the 4 federal subjects (namely, Sakha Republic, Kamchatka Krai, Magadan Oblast, and Sakhalin Oblast) and the rest of the Far Eastern federal subjects are found: the average wage of Chukotka Autonomous Okrug was 168,991, while that of Buryatia Republic was 55,611 in December 2020.

Table 7

The average nominal monthly wage of organizations (in rubles) in December 2020

Buryatia Republic	55,611
Sakha Republic	110,449
Zabaykalsky Krai	68,313
Kamchatka Krai	109,642
Primorsky Krai	65,328
Khabarovsk Krai	66,481
Amur Oblast	72,191
Magadan Oblast	137,248
Sakhalin Oblast	113,283
Jewish Autonomous Oblast	61,165
Chukotka Autonomous Okrug	168,991

Source: Федеральная служба государственной статистики: [Website], Среднемесячная номинальная начисленная заработная плата работников по полному кругу организаций по субъектам Российской Федерации с 2013 года (по месяцам), рублей [Electronic resource]. – URL: https://rosstat.gov.ru/labor_market_employment_salaries (date of access: 13.06.2022).

Rich natural resource reserves are Russia’s national competitiveness. Table

8 describes GRP in the mining industry of the 11 Far Eastern federal subjects. The outputs from the mining industry show large disparities between Sakha Republic/ Sakhalin Oblast and the rest of the Far Eastern federal subjects. GRP in the mining industry of the Sakha Republic and Sakhalin Oblast accounts for 71% of the total in the Far East.

Table 8

GRP in the mining industry

(in constant prices=2016, in billion rubles), in 2020

Buryatia Republic	9.95
Sakha Republic	391.12
Zabaykalsky Krai	78.14
Kamchatka Krai	11.44
Primorsky Krai	5.76
Khabarovsk Krai	46.57
Amur Oblast	34.76
Magadan Oblast	98.42
Sakhalin Oblast	422.93
Jewish Autonomous Oblast	20.43
Chukotka Autonomous Okrug	26.29

Source: Федеральная служба государственной статистики: [Website], Национальные счета [Electronic resource]. – URL: https://rosstat.gov.ru/statistics/accounts (date of access: 10.06.2022).

Table 9 describes the expenditure ratio technology innovation of organizations of the 11 Far Eastern federal subjects. The average ratio of the 11 Far Eastern federal subjects is 1.8%. Only Buryatia Republic, Khabarovsk Krai, and Sakhalin Oblast show the expenditure ratio on technology innovation above the average ratio. Khabarovsk Krai had the highest ratio (7.7%), while Chukotka Autonomous Okrug had the lowest ratio (0.1%).

Table 9

Expenditure on technology innovation of organizations (% of the total volume of goods shipped, works performed, services), in 2020

Buryatia Republic	3.6
Sakha Republic	0.6
Zabaykalsky Krai	0.2
Kamchatka Krai	1.0
Primorsky Krai	0.7
Khabarovsk Krai	7.7
Amur Oblast	0.4
Magadan Oblast	0.2
Sakhalin Oblast	4.3
Jewish Autonomous Oblast	0.6
Chukotka Autonomous Okrug	0.1

Source: Федеральная служба государственной статистики: [Website], Регионы России. Социально-экономические показатели – 2021 г. [Electronic resource]. – URL: https://gks.ru/bgd/regl/b21_14p/Main.htm (date of access: 13.06.2022).

The highly educated population is human capital. Russia has the second highest rate of tertiary education attainment in the world (63%). More than six out of ten 25–34-year-olds in the Russian Federation had attained tertiary education, which is the second-highest proportion after South Korea and much higher than the average among OECD (44%) and G20 (38%) countries.[138] Table 10 indicates the number of students in bachelors', masters', and specialists' programs (per 10,000 inhabitants). Khabarovsk Krai is outstanding in terms of the educated population: the number of students in a high level of education programs (per 10,000 inhabitants) was 312.

[138] Education at a glance 2019, Russian Federation// OECD [Electronic resource]. – URL: https://www.oecd.org/education/education-at-a-glance/EAG2019_CN_RUS.pdf (date of access: 26.01.2021).

Table 10

The number of students in bachelors', masters', and specialists' programs (per 10,000 inhabitants), at the beginning of the academic year 2020/2021

Buryatia Republic	203
Sakha Republic	242
Zabaykalsky Krai	204
Kamchatka Krai	141
Primorsky Krai	230
Khabarovsk Krai	312
Amur Oblast	185
Magadan Oblast	185
Sakhalin Oblast	113
Jewish Autonomous Oblast	124
Chukotka Autonomous Okrug	28

Source: Федеральная служба государственной статистики: [Website], Регионы России. Социально-экономические показатели – 2021 г. [Electronic resource]. – URL: https://gks.ru/bgd/regl/b21_14p/Main.htm (date of access: 13.06.2022).

Table 11 describes FDI stock from Russia in the 11 Far Eastern federal subjects. Among the 11 federal subjects, Sakhalin Oblast accumulated the largest capital abroad: its outward FDI stock amounted to $4.601billion as of January 1, 2021. Zabaykalsky Krai, Primorsky Krai, and Khabarovsk Krai had invested more than $1 billion (in accumulative value) abroad. In the same period, FDI stock accumulated by Magadan Oblast was only $30 million, which is the smallest scale among the Far Eastern federal subjects.

Table 11

FDI stock from the Russia Far East (in million $), as of January 1, 2021

Buryatia Republic	66
Sakha Republic	415
Zabaykalsky Krai	1,253
Kamchatka Krai	255

Primorsky Krai	1,903
Khabarovsk Krai	1,138
Amur Oblast	188
Magadan Oblast	30
Sakhalin Oblast	4,601
Jewish Autonomous Oblast	94
Chukotka Autonomous Okrug	746

Source: Прямые инвестиции из Российской Федерации за рубеж: остатки по субъектам Российской Федерации по инструментам и странам-партнерам// Центральный банк Российской Федерации [Electronic source]. – URL: https://www.cbr.ru/vfs/statistics/credit_statistics/direct_investment/17-dir_inv.xlsx (date of access: 14.06.2022).

Table 12 describes FDI stock in the 11 Far Eastern federal subjects. The most foreign capital was directed to Sakhalin Oblast: its FDI stock amounted to $70.118 billion as of January 1, 2021, accounting for 87.7% of the total FDI stock in the 11 Russian Far Eastern federal subjects. In the Sakha Republic and Primorsky Krai, more than $2 billion in FDI stock are accumulated, respectively. In the same period, only $7 million in FDI are accumulated in Magadan Oblast.

Table 12

FDI stock in the Russian Far East (in million $), as of January 1, 2021

Buryatia Republic	309
Sakha Republic	2,418
Zabaykalsky Krai	1,807
Kamchatka Krai	182
Primorsky Krai	2,986
Khabarovsk Krai	691
Amur Oblast	784
Magadan Oblast	7
Sakhalin Oblast	70,118
Jewish Autonomous Oblast	198
Chukotka Autonomous Okrug	446

Source: Прямые инвестиции в Российскую Федерацию: остатки по

субъектам Российской Федерации по инструментам и странам-партнерам// Центральный банк Российской Федерации [Electronic resource]. – URL: https://www.cbr.ru/vfs/statistics/credit_statistics/direct_investment/13-dir_inv.xlsx (date of access: 14.06.2022).

ii. Demand conditions

As shown in Table 13, two domestic and one international diamond variables were selected to measure demand conditions, which are market size (GRP), population density (which can measure a potential to form markets), and export volumes (which is equal to the demand from abroad).

Table 13

Selected variables for demand conditions

Classification	Variable
Domestic	GRP (in current prices, billion rubles), in 2020
	Population density (a person per 1,000-hectare land area), in 2020
International	Export (in million dollars), in 2020

Source: Composed by the author.

Table 14, describes the GRP of the 11 Far Eastern federal subjects. Sakha Republic, Primorsky Krai, Khabarovsk Krai, and Sakhalin Oblast produce considerable outputs compared to the rest of the Far Eastern federal subjects. Outputs from these four federal subjects account for 67.9% of the regional total outputs in the Far East.

Table 14

GRP (in current prices, billion rubles), in 2020

Buryatia Republic	303.16
Sakha Republic	1,141.27
Zabaykalsky Krai	425.38
Kamchatka Krai	294.48
Primorsky Krai	1,099.94

Khabarovsk Krai	861.23
Amur Oblast	449.06
Magadan Oblast	284.07
Sakhalin Oblast	1,002.71
Jewish Autonomous Oblast	63.01
Chukotka Autonomous Okrug	119.99

Source: Федеральная служба государственной статистики: [Website], Национальные счета [Electronic resource]. – URL: https://rosstat.gov.ru/statistics/accounts (date of access: 10.06.2022).

Table 15 presents a person per 1,000-hactare land area of the 11 Far Eastern federal subjects. The most densely populated federal subject is Primorsky Krai. In this region, 114.04 people reside a per 1,000-hectare. The least densely populated federal subject is Chukotka Autonomous Okrug. In this region, 0.68 people reside at a per 1,000-hectare.

Table 15

Population density (a person per 1,000-hectare), in 2020

Buryatia Republic	28.06
Sakha Republic	3.18
Zabaykalsky Krai	24.38
Kamchatka Krai	6.72
Primorsky Krai	114.04
Khabarovsk Krai	16.52
Amur Oblast	21.61
Magadan Oblast	3.01
Sakhalin Oblast	55.68
Jewish Autonomous Oblast	43.29
Chukotka Autonomous Okrug	0.68

Source: Author's calculations (population in 2020 /total land areas as of January 1, 2021) based on the data from Федеральная служба государственной статистики: [Website], Регионы России. Социально-экономические показатели – 2021 г. [Electronic resource]. – URL: https://gks.ru/bgd/regl/b21_14p/Main.htm (date of access: 13.06.2022).

Table 16 describes export volumes of the 11 Far Eastern federal subjects. 47.1% of Far Eastern exports are from Sakhalin Oblast, which is one of the largest mining, oil, and gas fields in the Russian Federation. The export volumes of Sakhalin Oblast amounted to $11.324 billion. While, during the same period, the export volumes of the Jewish Autonomous Oblast amounted to only $198.29 million, accounting for 0.8% of the total export volumes in the Russian Far East.

Table 16

Export (in million dollars), in 2020

Buryatia Republic	1,163.07
Sakha Republic	3,427.78
Zabaykalsky Krai	1,074.24
Kamchatka Krai	823.21
Primorsky Krai	2,844.79
Khabarovsk Krai	1,805.36
Amur Oblast	647.15
Magadan Oblast	457.22
Sakhalin Oblast	11,323.73
Jewish Autonomous Oblast	198.29
Chukotka Autonomous Okrug	288.84

Source: Информация для ведения мониторинга социально-экономического положения субъектов Российской Федерации [Electronic resource]. – URL: https://rosstat.gov.ru/folder/11109/document/13259 (date of access: 14.06.2022).

iii. Related and supporting industries

How to manage doing business in such a vast land is a major concern for foreign firms in Russia to increase efficiencies in backward and forward value chains. In this regard, for a domestic variable of the third diamond index, this study investigates road density. Nowadays, business processes are transformed through digitalization to facilitate inter- and intra- communications of enterprises and deliver greater value to customers. In this sense, costs for the introduction

and use of digital technologies are analyzed to estimate a level of digitalization. The cross-border movement of goods and services is highly dependent on international transportation infrastructure. Thereby, the number of municipal designated to free ports, which indicate a logistic-hub in the Far East, is used for the international index. Considering the significance of cross-border communications between companies in home and host countries, broadband internet access in organizations is also selected as a variable (Table 17).

Table 17

Selected variables for related and supporting industries

Classification	Variable
Domestic	The density of paved public roads (tracks per 1,000 $\mathbf{km^2}$), in 2020
	Costs for the introduction and use of digital technologies (% of GRP), in 2020
International	The number of municipals designated to free ports, in 2020
	Use of broadband internet access in organizations (% of the total number of surveyed organizations), in 2020

Source: Composed by the author.

Table 18 presents the density of paved public roads (tracks per 1,000 km^2**)** of the 11 Far Eastern federal subjects. Primorsky Krai shows the highest road density in the Far East: it has 93 tracks of paved public road per 1,000 km^2. While the roads in Chukotka Autonomous Okrug are the least dense: it has 1.2 tracks of paved public road per 1,000 km^2, which is 1.3% of that in Primorsky Krai.

Table 18

The density of paved public roads (tracks per 1,000 $\mathbf{km^2}$), in 2020

Buryatia Republic	27
Sakha Republic	4.0
Zabaykalsky Krai	34

Kamchatka Krai	4.6
Primorsky Krai	93
Khabarovsk Krai	13
Amur Oblast	35
Magadan Oblast	5.6
Sakhalin Oblast	31
Jewish Autonomous Oblast	67
Chukotka Autonomous Okrug	1.2

Source: Федеральная служба государственной статистики: [Website], Регионы России. Социально-экономические показатели – 2021 г. [Electronic resource]. – URL: https://gks.ru/bgd/regl/b21_14p/Main.htm (date of access: 13.06.2022).

Table 19 presents the ratio of costs for the introduction and use of digital technologies of the 11 Far Eastern Federal subjects. Primorsky Krai spent the largest portion of its GRP on the digitalization: its ratio of costs for digitalization was 0.2133. In the same year, Sakhalin Oblast spent the least expenditure on GRP for digitalization: 0.0869% of its GRP was used as costs for the introduction and use of digital technologies.

Table 19

Costs for the introduction and use of digital technologies (% of GRP), in 2020

Buryatia Republic	0.1425
Sakha Republic	0.1778
Zabaykalsky Krai	0.1413
Kamchatka Krai	0.1563
Primorsky Krai	0.2133
Khabarovsk Krai	0.2211
Amur Oblast	0.1751
Magadan Oblast	0.1283
Sakhalin Oblast	0.0869
Jewish Autonomous Oblast	0.1124
Chukotka Autonomous Okrug	0.1301

Source: Федеральная служба государственной статистики: [Website],

Регионы России. Социально-экономические показатели – 2021 г. [Electronic resource]. – URL: https://gks.ru/bgd/regl/b21_14p/Main.htm (date of access: 13.06.2022).

Table 20 describes the number of municipal designated free ports in the 11 Far Eastern federal subjects. A free port is a logistic hub and facilitates a smooth distribution process of goods and services. At the current moment since 2020, there have been 22 municipals in the Far Eastern federal district has designated as free ports throughout 5 federal subjects. Out of that, 16 free ports are located in Primorsky Krai.

Table 20

The number of municipals designated to free ports, in 2020

Buryatia Republic	0	-
Sakha Republic	0	-
Zabaykalsky Krai	0	-
Kamchatka Krai	1	Petropavlovsk-Kamchatsky urban district
Primorsky Krai	16	Artemovsky urban district, Bolshoy Kamen urban district, Vladivostoksky urban district, Lazovsky District, Nadezhdinsky District, Nakhodkinsky urban district, Oktyarbsky District, Olginsky District, Partizansky urban district, Partizansky District, Pogranichny District, Spassk-Dalny urban district, Ussuriysky urban district, Khasansky District, Khankaisky District, Shkotovsky District
Khabarovsk Krai	2	Vaninsky District, Sovetsko-Gavansky District
Amur Oblast	0	-
Magadan Oblast	0	-
Sakhalin Oblast	2	Korsakovsky urban district, Uglegorsky District
Jewish Autonomous Oblast	0	-
Chukotka Autonomous Okrug	1	Pevek urban district

Source: The Russian Far East and Arctic Development Corporation: [Website],

Free Port Vladivostok [Electronic resource]. – URL: https://erdc.ru/en/about-spv/ (date of access: 13.06.2022).

Table 21 presents the share of organizations using broadband internet access in the 11 Far Eastern Federal subjects. Chukotka Autonomous Okrug has the most favorable conditions for internet access: 74.1% of organizations in this region use broadband internet. While the Buryatia Republic has the worst conditions for access to the internet: 54% of organizations in this region use broadband internet. But, in general, there are more organizations having access to broadband internet than that not having it in any federal subjects in the Far East.

Table 21

Use of broadband internet access in organizations (% of the total number of surveyed organizations), in 2020

Buryatia Republic	54.0
Sakha Republic	55.1
Zabaykalsky Krai	66.6
Kamchatka Krai	68.8
Primorsky Krai	60.4
Khabarovsk Krai	59.2
Amur Oblast	64.0
Magadan Oblast	68.7
Sakhalin Oblast	65.7
Jewish Autonomous Oblast	61.7
Chukotka Autonomous Okrug	74.1

Source: Федеральная служба государственной статистики: [Website], Регионы России. Социально-экономические показатели – 2021 г. [Electronic resource]. – URL: https://gks.ru/bgd/regl/b21_14p/Main.htm (date of access: 13.06.2022).

iv. Firm strategies, structure and rivalry

Firm strategies, structure, and rivalry are legal systems and social

characteristics on how to incorporate, organize, and manage companies to enhance active competition in a market. To estimate the level of competition in a domestic market, this study adopts the number of enterprises and organizations (per 1,000 persons). It is assumed that if there is a lower entry barrier, more firms will be created. For the international factor, a trade to GRP (%) is used as a proxy to estimate the level of trade openness. A more open market will attract more international competitors (Table 22).

Table 22

Selected variables for firm strategies, structure, and rivalry

Classification	Variable
Domestic	The number of enterprises and organizations (per 1,000 persons), in 2020
International	Trade openness (%), in 2020

Source: Composed by the author.

Table 23 describes the number of enterprises and organizations (per 1,000 persons) of the 11 Far Eastern federal subjects. According to this index, Kamchatka Krai is the most open market for new companies: in this region, there are 30.51 companies and organizations per 1,000 persons. While, Zabaykalsky Krai is the most closed market for new companies: in this region, there are 12.49 companies and organizations per 1,000 persons.

Table 23

The number of enterprises and organizations (per 1,000 persons), in 2020

Buryatia Republic	20.59
Sakha Republic	23.34
Zabaykalsky Krai	12.49
Kamchatka Krai	30.51
Primorsky Krai	28.76
Khabarovsk Krai	26.46
Amur Oblast	18.16
Magadan Oblast	29.40

Sakhalin Oblast	29.31
Jewish Autonomous Oblast	15.70
Chukotka Autonomous Okrug	22.71

Source: Author's calculations based on the data from Социально-экономические показатели – 2021 г. [Electronic resource]. – URL: https://gks.ru/bgd/regl/b21_14p/Main.htm (date of access: 13.06.2022).

Table 24 presents trade openness (%) of the 11 Far Eastern federal subjects. Sakhalin Oblast shows the predominant trade openness: trade volumes of this region accounted for 87.91% of their GRP. The trade openness of Primorsky Krai is also worthy to be noted: 51.99% of their GRP originated from trade. Trade ratios of the rest of the Far Eastern federal subjects ranged from 20-30%, while Amur Oblast and Magadan Oblast were the only exceptions: their trade ratio was 14.85% and 13.72%, respectively.

Table 24

Trade openness (%), in 2020

Buryatia Republic	29.31
Sakha Republic	22.27
Zabaykalsky Krai	25.76
Kamchatka Krai	25.75
Primorsky Krai	51.99
Khabarovsk Krai	21.64
Amur Oblast	14.85
Magadan Oblast	13.72
Sakhalin Oblast	87.91
Jewish Autonomous Oblast	23.72
Chukotka Autonomous Okrug	22.42

Note: An average exchange rate of the year 2020 (USD/RUB=72.10) has been applied for a conversion of GRP in rubles to dollars.

Source: Author's calculations based on the data from Информация для ведения мониторинга социально-экономического положения субъектов Российской Федерации [Electronic resource]. – URL:

https://rosstat.gov.ru/folder/11109/document/13259 (date of access: 14.06.2022). ; Федеральная служба государственной статистики: [Website], Национальные счета [Electronic resource]. – URL: https://rosstat.gov.ru/statistics/accounts (date of access: 10.06.2022).

Results

Table 25 presents the calculated total value of domestic (D) and international (I) indices per diamond component. To discuss a calculation method, when a factor with a higher value indicates a better business condition, the highest value out of the 11 federal subjects is fixed at the denominator, and the relative ratio to this is calculated for each federal subject. When a lower value indicates a better business condition (e.g., wage rate), the relative ratio is calculated by fixing the lowest value out of the 11 federal subjects at the numerator. Then, 100 is multiplied to represent this value in terms of percentage. A final total value for each diamond component (a. factor conditions, b. demand conditions, c. related and supporting industries and d. firm strategies, structure and rivalry) is equal to (the sum of their individual indices)/n.[139][140] The calculation is separately conducted in a domestic and international dimension. The average, maximum and minimum values are also provided.

Table 25

A total value of domestic (D) and international (I) indices (per a diamond component)

	Factor conditions		Demand conditions		Related and supporting industries		Firm strategies, structure and rivalry	
	(D)	(I)	(D)	(I)	(D)	(I)	(D)	(I)
Buryatia	60.6	0.9	25.6	10.3	46.7	36.4	67.5	33.3

[139] Moon, H. C., Rugman, A. M., & Verbeke, A. (1998). A generalized double diamond approach to the global competitiveness of Korea and Singapore. *International business review*, *7*(2), 135-150.

[140] Sardy, M., Fetscherin, M. A Double Diamond Comparison of the Automotive Industry of China, India, and South Korea// Competition Forum, 2009, 7(1), 6-16.

Republic								
Sakha Republic	64.3	6.2	51.4	30.3	42.4	37.2	76.5	25.3
Zabaykalsky Krai	51.8	14.9	29.3	9.5	50.2	44.9	40.9	29.3
Kamchatka Krai	41.7	2.9	15.8	7.3	37.8	49.5	100.0	29.3
Primorsky Krai	52.3	22.8	98.2	25.1	98.2	90.8	94.3	59.1
Khabarovsk Krai	77.5	12.9	45.0	15.9	57.0	46.2	86.7	24.6
Amur Oblast	48.3	2.6	29.1	5.7	58.4	43.2	59.5	16.9
Magadan Oblast	44.2	0.3	13.8	4.0	32.0	46.4	96.4	15.6
Sakhalin Oblast	66.5	100.0	68.3	100.0	36.3	50.6	96.1	100.0
Jewish Autonomous Oblast	46.8	1.2	21.7	1.8	61.4	41.6	51.5	27.0
Chukotka Autonomous Okrug	29.9	8.4	5.6	2.6	30.1	53.1	74.4	25.5
Average	53.1	15.7	36.7	19.3	50.1	49.1	76.7	35.1
Maximum	77.5	100.0	98.2	100.0	98.2	90.8	100.0	100.0
Minimum	29.9	0.3	5.6	1.8	30.1	36.4	40.9	15.6

Source: Own calculations based on Tables in Section 2.2.

Conclusions and implications

The above results of the generalized double diamond analysis are graphically represented in Figure 9 and Figure 10. Primorsky Krai presents the largest diamond in the domestic context based on the predominantly highest scores in demand conditions and related and supporting industries, which indicates that the region has the largest local consumption market and greatest conditions for enterprises to create efficient domestic supply chains. Primorsky Krai obtained high scores also in the international dimension of these two diamond components (2nd place after Sakhalin Oblast). Primorsky Krai's scores in factor conditions are rather moderate (5th place) and firm strategies, structure and rivalry are moderately high (4th place) in the Far East. However, the weakness in these two criteria of Primorsky Krai in its domestic territories is complemented by its high level of economic openness: Primorsky Krai obtained the second highest scores in factor conditions and firm strategies, structure and rivalry in the

international diamond model.

Sakhalin Oblast also presents strong competitiveness both in the domestic and international context, but especially in the latter. At a domestic diamond analysis, Sakhalin Oblast took 2nd place in factor and demand conditions and 3rd place in firm strategies, structure, and rivalry. While the regional condition is rather not ready to create efficient domestic value chains: it is the third worst federal subject in the Far East in related and support industries. However, Sakhalin Oblast has outstanding business conditions in the international context: it took 1st place in three diamond components, namely factor conditions, demand conditions and firm strategies, structure and rivalry. Also, the region's weakness in the third component of the domestic diamond model is complemented by that of the international diamond model: Sakhalin took 3rd place in related and support industries in the international context, and which indicates that its incomplete domestic supply chain can be overcame by its relatively competitive international value chain, which linking the region to external markets.

The size of the diamonds of Khabarovsk Krai is worthy to be noted as well considering relatively balanced scores in all criteria of domestic and international indices, although they are not outstandingly large compared to those of Primorsky Krai and Sakhalin Oblast. Khabarovsk Krai obtained the highest scores in domestic factors conditions. Other domestic and international variables of it ranked between 4-5 place. But, it shows weakness in the fourth international diamond (firm strategies, structure, and rivalry) component by taking 9th place from it.

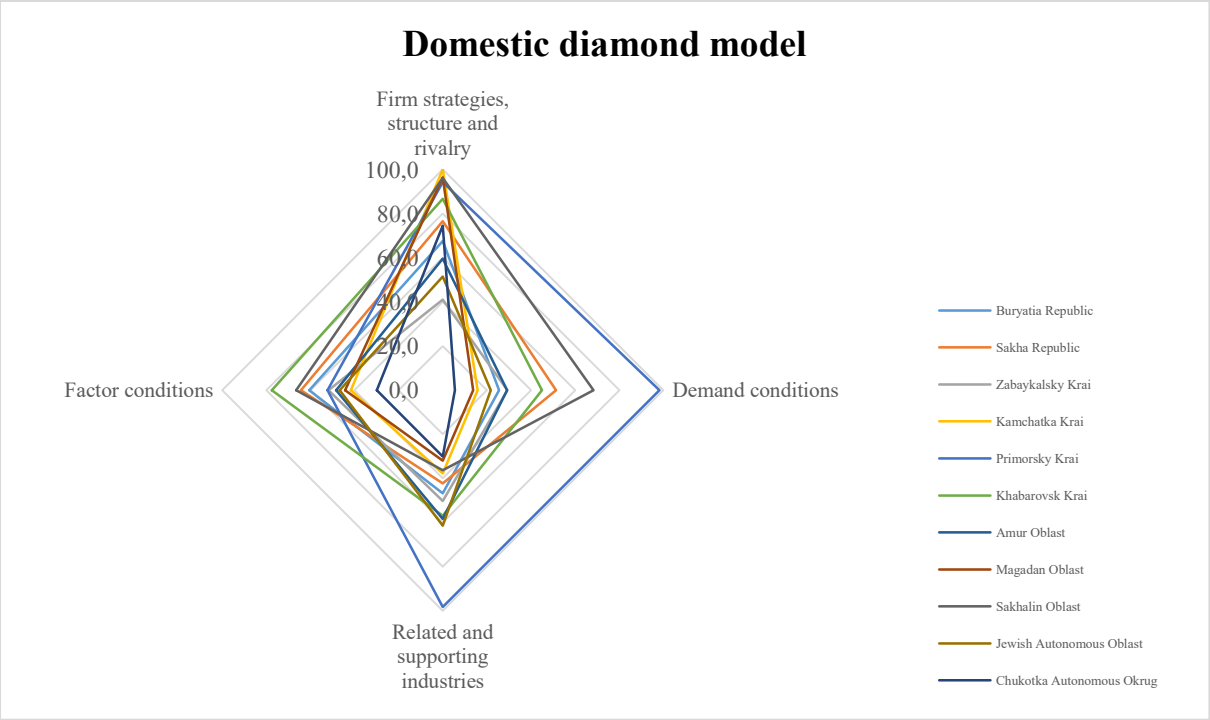


Figure 9. The domestic diamond model of the 11 Far Eastern federal subjects

Source: Composed by the author.

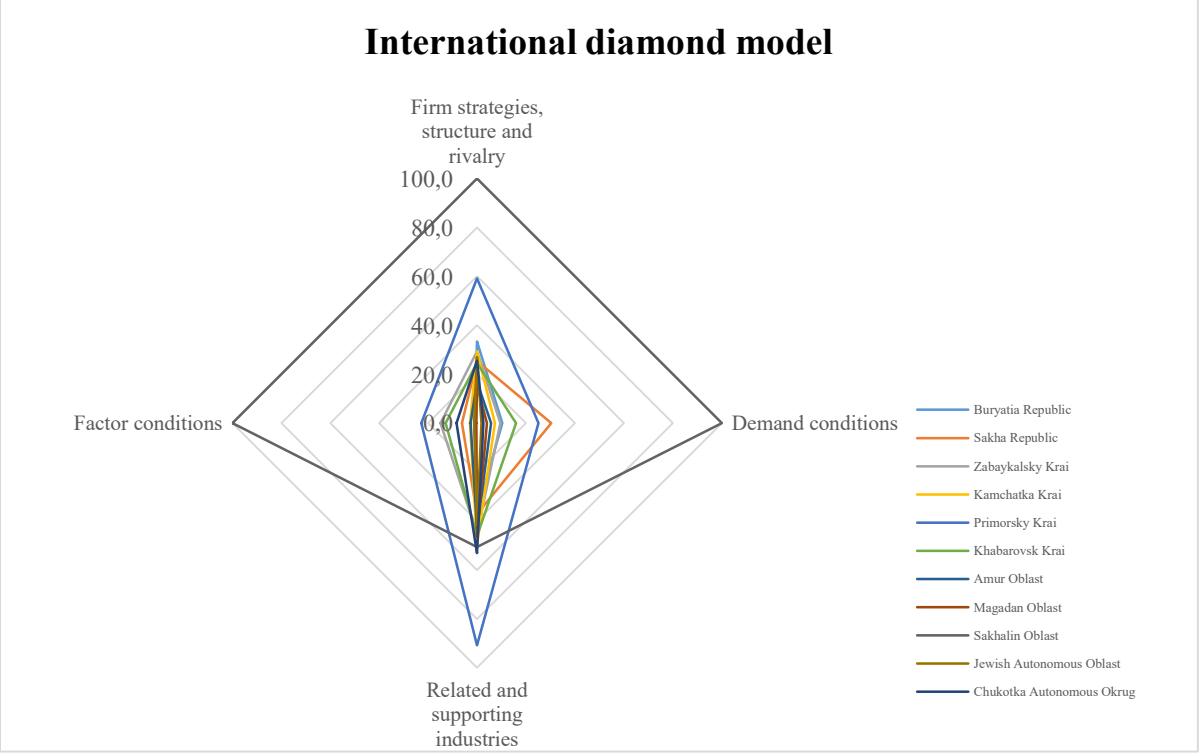


Figure 10. The international diamond model of the 11 Far Eastern federal

subjects

Source: Composed by the author.

To conclude the results of the generalized double diamond analysis, which purposed for estimating factors and conditions affecting the foreign economic activity of industrial enterprises in the 11 Far Eastern federal subject, it turned out that Primorsky Krai and Sakhalin Oblast are the best territories based on outstanding business conditions both in domestic and international contexts. A weakness in domestic business conditions is perfectly complemented by their high economic openness, which is measured in the international diamond model. Khabarovsk Krai also provides moderately attractive conditions for running an international business of industrial enterprises considering its balanced scores in domestic and international diamond variables. However, business conditions of the other 8 Far Eastern federal subjects are not favorable in that: either they do not have any superior factor positively affecting the international activities of industrial enterprises, or their diamond variables are seriously imbalanced, and thus do not meet a minimum territorial condition for running an international business.

2.3 Assessment of the attractiveness of the industrial complex of the Far East for investment from South Korea

Since its first direct investment in Indonesia (known as KODECO for mining development) in 1968, South Korea has become the 10th FDI home country in the world[141]. South Korean FDI gross outflows have been consistently evolving: South Korean FDI outflows have surged year by year, surpassing $10

[141] UNCTAD World Investment report 2022// 2022, New York, United Nations

billion in 2006, $20 billion in 2007, $30 billion in 2013, $40 billion in 2016, $50 billion in 2018, $60 billion in 2019, and $70 billion in 2021[142]. This positive trend of South Korean FDI outflows is likely to continue given that cross-border business activities play a decisive role in the further growth of economies like South Korea, as their MNEs' competitiveness is highly dependent on capabilities to utilize location advantages of other nations to overcome expensive domestic production costs and a highly saturated internal market.

Amid global economic turbulence, the South Korean economy consistently grew, and its per capita income exceeded $30,000 for the first time in 2017[143]. However, the nation's economic development is based on a few skewed partnerships (specifically with the USA and China) which make the economy highly vulnerable to external factors (e.g., the USA-China trade war, 2018), hindering the nation from building an independent and stable economy. South Korea should search for new economic growth opportunities based on expanded economic and diplomatic relations to become a leading country of its own. In this regard, in 2017, the South Korean government introduced the two pillars of new foreign policy, namely the New Northern Policy and New Southern Policy: the former aims at building partnerships with the Commonwealth of Independent States (CIS), Mongolia, and the three Northern provinces of China, and the latter aims at cooperating with Southeast Asian countries, and India. Between those two diplomatic policies, the New Northern Policy is the agenda that this study should focus on.

The New Northern Policy is not a fresh political idea: South Korea has consistently promoted northern policies for more than three decades. Since 1988,

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[142] The Export-Import Bank of Korea: [Website], Statistics of FDI [Electronic resource]. - URL: https://stats.koreaexim.go.kr (date of access: 26.06.2022).

[143] IMF: [Website], World Economic Outlook [Electronic resource]. - URL: https://www.imf.org/external/datamapper/datasets/WEO (date of access: 28.06.2022)

South Korea has given up its hostile policies toward communist nations to expand its political and economic horizons to the continent; and has established diplomatic relations with Eastern Europe, the former Soviet Union (FSU), and China. South Korea's northern diplomacy began with the Roh Tae-woo regime's Northern Policy in 1988. It has been maintained by the Kim Young-sam regime's Globalization Policy, the Kim Dae-jung regime's Sunshine Policy, the Roh Moo-hyun regime's Policy for Peace and Prosperity, the Lee Myung-bak regime's Resource Diplomacy, the Park Geun-hye regime's Eurasian Initiative, and Moon Jae-in regime's New Northern Policy (Table A 5).

However, South Korea's northern policies have yet to produce tangible results, as those policies' progress has been overly dependent on inter-Korean relations. Historically, administrations' attitudes toward North Korea have been simply divided into a hard-line or a sunshine policy. The South Korean governments have regarded northern policies as an extension of their North Korean policy. As such, the North Korean policy (constrained by inter-Korean relations) could not be independently and consistently promoted due to unstable relations with North Korea with each regime change, and as a result, the continuity of development and execution of northern policies could not be maintained.

In this respect, what distinguishes the New Northern Policy of Moon Jae-in's administration from the previous one is that it has begun to address the will to promote economic and political cooperation with Northern countries separately from North Korea. It can be postulated that this new policy is less affected by North Korean policy and is relatively free from ideology. The main objective of this policy is to promote economic interests. The New Northern Policy lays out differentiated strategies by classifying the Eurasian economy as the western (the western Russia, Ukraine, Belarus, and others), central (Central Asia, Mongolia),

and the eastern (eastern Russia, and the three northern provinces of China) regions. Still, the main emphasis of the policy is on eastern regions. The strategy for west Russia is narrow and future-oriented, considering that it focuses on science and technology cooperation for the 4th industrial revolution.

However, during past regimes, inter-Korean relations continued to deteriorate and even caused an extreme event of the closure of the Gaesung Industrial Complex. As a result, the northern policy, which was constrained by North Korea policy, existed on the surface but was not effective. This indicates that the New Northern Policy began with weak fundamentals of the northern policies. For this reason, the New Northern Policy was used as a means to establish fundamentals for realizing effective policies to cooperate with CIS countries rather than producing tangible fruits.

Also, the new Yoon Suk-yeol's regime from 2022 did not specify its unique northern policy yet but stressed the importance of developing a stable relation with Russian and CIS countries based on international norms (which is specified in national tasks #96 and # 97, respectively)[144].

On the other hand, the strategy for east Russia concentrates on diverse industries to achieve short-term and long-term goals. It has both economic and political undertones in that it institutionalizes trans-border multilateral cooperation between Northeast Asian countries through the triangular cooperation of South and North Korea and Russia, and also participation in China's "One Belt, One Road" initiative, to establish the Pan East Sea economic block.[145] To promote the development of a strong economic partnership,

[144] 120 national tasks [120대 국정과제]// Office of the 20th President [Electronic resource]. – URL: https://www.president.go.kr/ko/task_new.php (date of access: 14.10.2022).

[145]New Northern Policy Strategy and Key Tasks [신북방정책의 전략과 중점과제]// The Presidential Committee on Northern Economic Cooperation [Electronic resource]. – URL: https://www.bukbang.go.kr/board/file/bbs_0000000000000013/46/FILE_000000000000982/201903181506020

particularly with the Russian Far East, the South Korean government has operated South Korea- the Russian Far East and Siberia joint subcommittee, separately from South Korea- Russia joint committee since 2002[146].

Meanwhile, Russia, a resource-rich country, accomplished 7% economic growth based on high oil prices from 2000 to 2008. Still, due to the financial crisis in 2008, oil prices plummeted by 1/3 as global aggregate consumption decreased, resulting in a -7.9% growth rate for the Russian economy. Despite the stabilization of oil prices in 2009, Russia's overall GDP growth rate has consistently declined every year, which implies the end of quantitative economic development and the necessity of qualitative growth based on increased production efficiencies through R&D investments. Besides, complex factors, such as Western sanctions, the falling of oil prices and the value of the ruble, and the US shale gas revolution, spur Russia to search for new economic partners and new growth engines.

In this regard, Russia plans for the New Eastern Policy to develop regional economies, reduce its dependence on Europe, internationalize the national economy, and engage in multilateral security cooperation. In 2012, the government officially addressed the New Eastern Policy in "Measures to Implement the Russian Federation Foreign Policy"; and established the Ministry for the Development of the Far East. In 2013, the government adopted the state program "Socioeconomic Development of the Russian Far East and the Baikal Region." This policy's main objective is to develop the Far Eastern and Siberian

7535;jsessionid=RbM3vJRZ5SqtpJnVg2V+C8Th.node10 (date of access: 15.03.2021).

[146] Посольство Республики Корея в Российской Федерации: [Website], Первый российско-корейский форум межрегионального сотрудничества пройдет в 2018 году [Electronic resource]. – URL: https://overseas.mofa.go.kr/ru-ru/brd/m_7342/view.do?seq=761192&srchFr=&srchTo=&srchWord=&srchTp=&multi_itm_seq=0&itm_seq_1=0&itm_seq_2=0&company_cd=&company_nm= (date of access: 25.10.2021).

regions through cooperation with Asia-Pacific countries. Afterward they accelerated the Far Eastern development policy by relocating and establishing necessary administrative bodies (i.e., Far East Development Corporation, Far East Development Fund) and the implementation of practical policy mechanisms (i.e., Far Eastern Hectare, Advanced Special Economic Zones, Vladivostok Free Ports, Eastern Economic Forum).

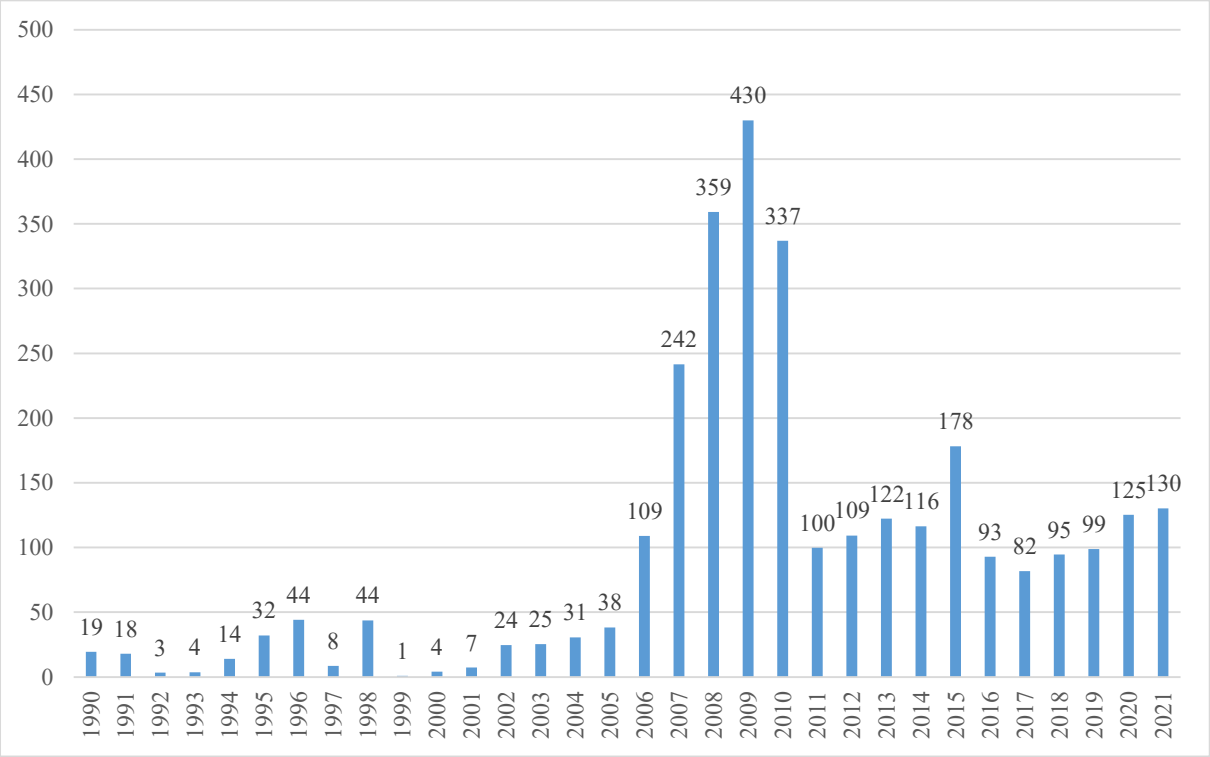

Figure 11. The yearly South Korean FDI gross outflows to Russia (1990-2019), million $

Source: The Export-Import Bank of Korea: [Website], Statistics of FDI [Electronic resource]. – URL: https://stats.koreaexim.go.kr (date of access: 26.06.2022).

South Korean FDI outflows have been directed to Russia since 1990. South Korean FDI outflows to Russia were modest during the period from 1990 to 2005, but they increased about by 2.85 times in 2006 relative to the previous year and peaked at $430 million in 2009. FDI outflows decreased by more than

one-third in 2011 and maintained an average of $110 million from 2011 to 2019. On the other hand, South Korean FDI in Russia had not been significantly affected by the COVID-19 pandemic. On the contrary to a sharp decrease in global FDI flows during the COVID-19 pandemic period, South Korean FDI flows to Russia increased from $99 million in 2019 to $125 million in 2020 and to $130 million in 2021 (the highest amount of FDI flows since 2016). The highest FDI inflows in the year 2021 confirmed that South Korean FDI in Russia has presented a strong consistent upward tendency since 2016. From here, we can expect a strong resilience of South Korean FDI in Russia during the post-pandemic era.

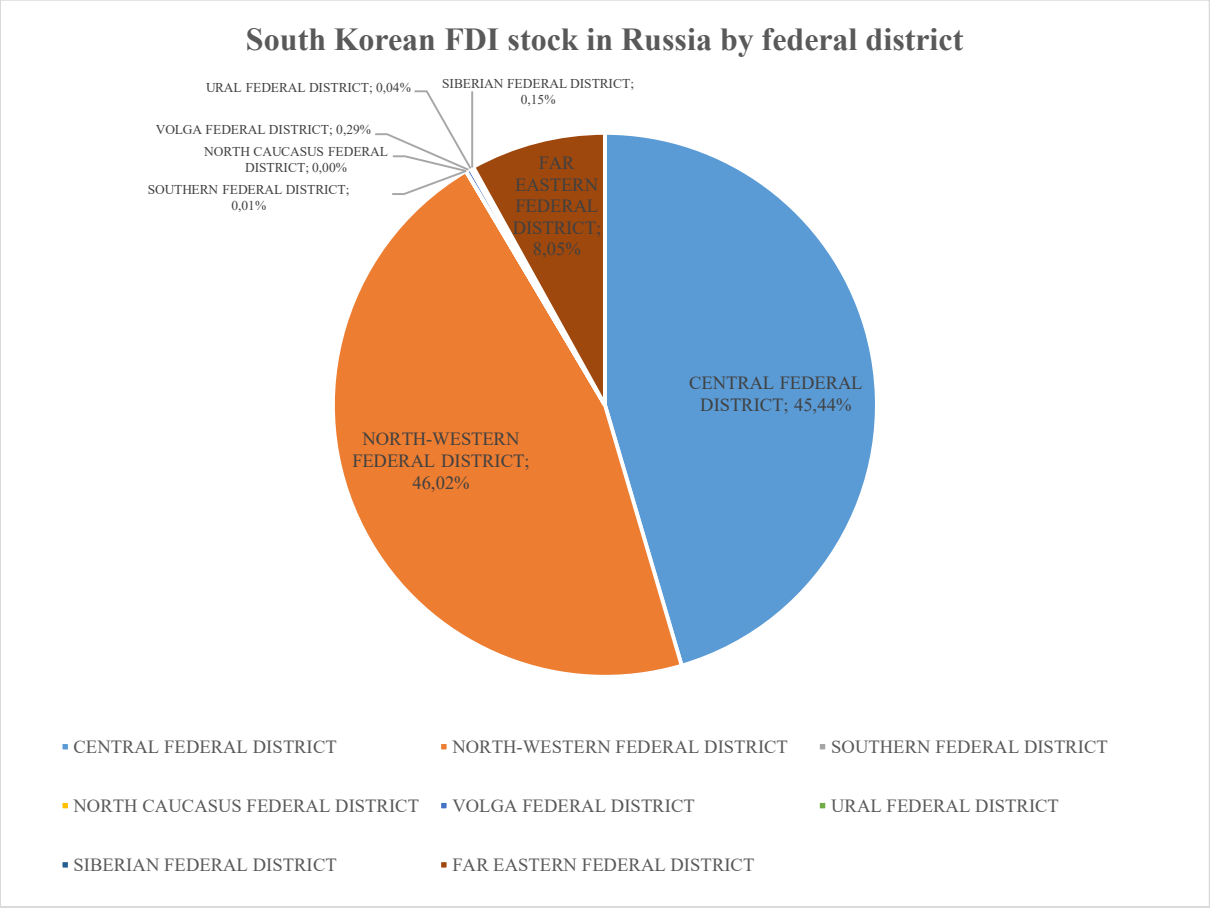

Figure 12. South Korean FDI stock in Russia by federal district (as of 01.01.2022)

Source: The Central bank of Russian Federation: [Website], External sector statistics, direct investment [Electronic resource]. URL: https://www.cbr.ru/eng/statistics/macro_itm/svs/ (date of access: 30.06.2022).

Despite a seemingly modest level of South Korean FDI in the Russian Far East, South Korea is one of the crucial and consistent authentic investors considering that the significant FDI stock in the Russian Far East (around 88%) was directed from off-shore countries, and in which there contains a high ratio of round-trip investments (capital previously exported from the country and returning to it in the form of FDI) (Table A6). South Korean FDI stock in Russia is mainly concentrated on three federal districts: the Central Federal District, North-Western Federal District, and Far Eastern Federal District. The Far Eastern Federal District is the 3rd destination for South Korean FDI in Russia. However, the large South Korean FDI stock in the Russian Far East is not because of Sakhalin (contradicting the feature shown in the world FDI in the Russian Far East, whose about 90% of FDI stock was directed to Sakhalin and heavily skewed to mining sectors).

As of the beginning of 2022 shows in Figure 13, the largest amount of South Korean FDI stock was accumulated in Primorsky Krai and Khabarovsk Krai, where there are attractive regional demand conditions in terms of market size and population relative to other federal subjects in the Far Eastern Federal District. Sakhalin Oblast is less significant to South Korean investors. From that, we can postulate that South Korean market-seeking FDI is greater than natural resource-seeking FDI in the Far Eastern Federal District. The sluggish South Korean investments in Sakhalin Oblast, despite the existence of grand-scale energy projects, can be explained by the limited number of world-class South Korean energy companies which operate both upstream and downstream industries. In detail, only five South Korean companies entered the global energy

ratings of the Standard & Poors (S&P Global Platts Top 250 Global Energy Company Rankings, 2019): SK Innovation (46th), KEPCO (124th), GS Holdings (127th, downstream industry), KOGAS (128th), and S-Oil (191st, holding company: Aramco in Saudi Arabia)[147]. But, there, we should consider that a holding company of S-Oil is Aramco (Saudi Arabia) and GS Holding's business is confined to the downstream industry. Energy exploration (upstream industry) requires a delicate preliminary investigation due to its high financial risk. However, as we can see the number of such comprehensive energy companies, handling work requiring a high level of technical expertise and enormous capital, is limited in South Korea.

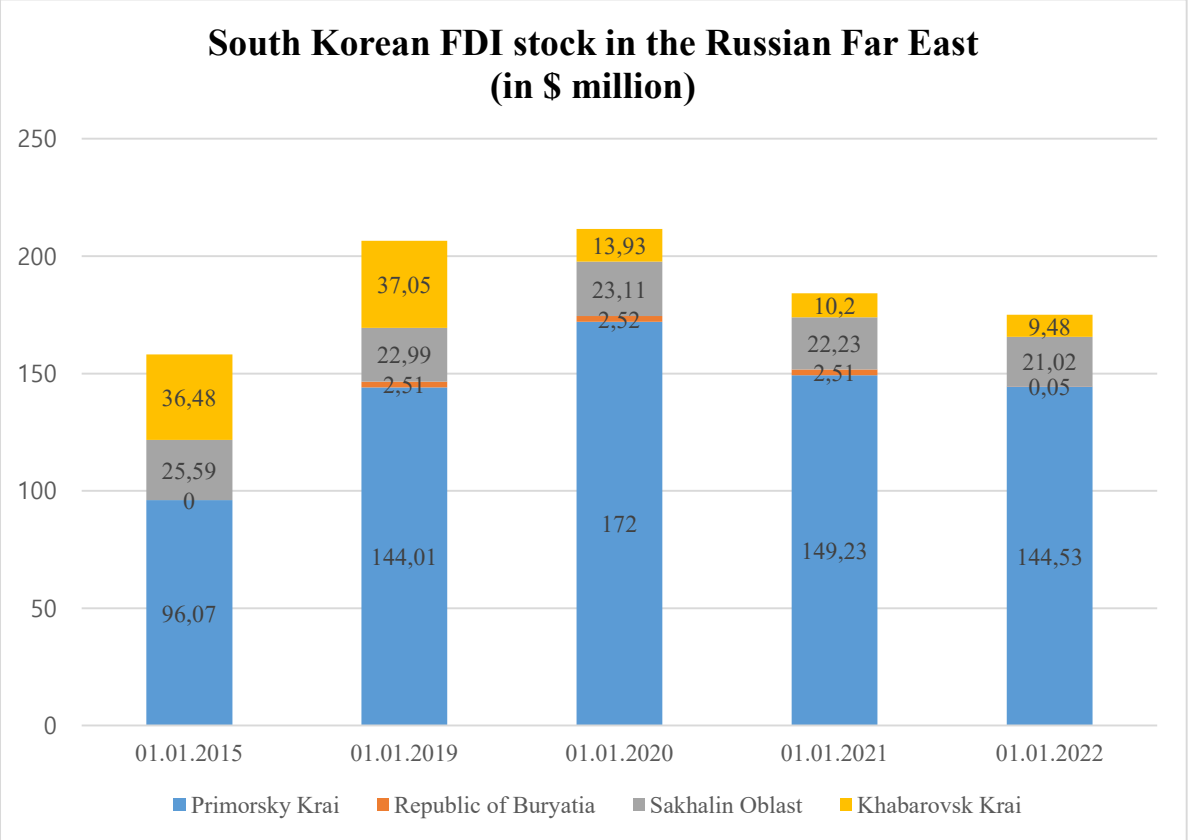

Figure 13. Dynamics of South Korean FDI stock in the Russian Far East

[147] S&P Global Platts: [Website], The S&P Global Platts Top 250 Global Energy Company Rankings [Electronic resource],-URL: https://www.spglobal.com/platts/top250/rankings/2019 (date of access: 25.05.2021).

Source: The Central bank of Russian Federation: [Website], External sector statistics, direct investment [Electronic resource]. URL: https://www.cbr.ru/eng/statistics/macro_itm/svs/ (date of access: 30.06.2022).

In addition, South Korean FDI stock in the 4 Far Eastern federal subjects sustained the consistent level during the COVID-19 pandemic period. It is worth noting that before the outbreak of the COVID-19 pandemic, South Korean FDI stock in the Primorsky Krai increased from $144.01 million (as of 01.01.2019) to $172 million (as of 01.01.2020). As the progress of the pandemic intensified, in the beginning, South Korean FDI stock was affected as it decreased from $172 million (as of 01.01.2020) to $149.23 million (as of 01.01.2021) and $144.53 (as of 01.01.2022). But it did not go below that of 01.01.2019, as the COVID-19 restrictions in Russia have been relieved including the border restrictions. On the other hand, we can witness a downward tendency of South Korean FDI in the Khabarovsky Krai. However, this decrease is not attributable to the pandemic in that it already had happened in the pre-pandemic period: a decrease of South Korean FDI stock in the Khabarovsky Krai can be seen between the period of 01.01.2019 – 01.01.2020. Although the downturn continued during the pandemic, the volume of decrease is not significant.

Of course, the impact of COVID-19 on the international capital movement is a phenomenon to be fully reckoned with considering that during the pandemic period, some companies (mainly in the tourism and transportation industry) left the Russian market either completely (e.g., CJ CGV – movie theater business- in Moscow[148]) or temporarily (e.g., Airline companies in the Russian Far East[149]).

[148] BuyRussia21: [Website], CJ CGV, which had a dream of becoming the No. 1 movie theater chain in Russia, gave up on that dream. [러시아 영화관 체인 1등 업체 꿈꾼 CJ CGV가 그 꿈을 접었다.] [Electronic resource]. - URL: http://www.buyrussia21.com/news/articleView.html?idxno=32527 (date of access: 19.02.2022). (In Korean).

[149] Interview (OKHO 8.30)// The South Korean Consulate in Vladivostok [Electronic resource]. -URL: https://overseas.mofa.go.kr/ru-vladivostok-

But, the rather light impact of COVID-19 is partially explained by that Russia released the border restriction against South Korea as a high priority: Russia has allowed the entry of South Koreans into their territories since the 27th of September, 2020 according to the government decree №2406-p. In addition, it is worth noting that those companies – which left the Russian market during the pandemic period- had shown patterns to return[150][151][152]. From the above statistical facts, in the long-term perspective, the negative impacts of COVID-19 on the South Korean FDI in the Russian Far East are hardly seen in that the existing companies maintain stable accumulative amounts of their investments, which indicates that they could halt their business temporarily due to COVID-19, but they will continue to operate their business in the Far Eastern regions once the quarantine measures are relieved in both countries.

In addition, in the long-term perspective, the author expects that the South Korean FDI in the Russian Far East will be enhanced considering the increasing inclination of the South Korean FDI in the Primorsky Krai – which is the main destination of the South Korean FDI among the Far Eastern federal subjects during the pre-pandemic period, and the de-globalization (or intensified economic cooperation among neighboring economies) trend in the post-pandemic period.

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ko/brd/m_7806/view.do?seq=1342258&srchFr=&srchTo=&srchWord=&srchTp=&multi_itm_seq=0&itm_seq_1=0&itm_seq_2=0&company_cd=&company_nm=&page=1 (date of access: 19.02.2022).

[150] Yonhapnews: [Website], T'way Air to resume flights to Vladivostok from the end of April [티웨이항공, 4월말부터 블라디보스토크 노선 운항 재개] [Electronic resource]. - URL: https://www.yna.co.kr/view/AKR20200219082000003 (date of access 19.02.2022). (In Korean).

[151] Korean air [Electronic resource]. - URL: https://www.koreanair.com/ru/ko/promotion/list/2201_svo-vvo-flight-schedule (date of access 19.02.22). (In Korean).

[152] BuyRussia21: [Website], Air Busan, first service between Incheon and Vladivostok on the 5th - Every other Saturday service. [에어부산, 5일 인천~블라디보스토크 첫 취항 - 격주 1회 토요일 운항] [Electronic resource]. - URL: http://www.buyrussia21.com/news/articleView.html?idxno=40663&fbclid=IwAR1V-yCABr1lO9TY1sq4URv5P2bZ1b5Ezt5jWe9qKd3CYovKbP7Iqs-D8-w (date of access: 19.02.2022). (In Korean).

In reality, Hyundai Heavy Industries is currently building seven tankers with the Zvezda shipyard, and Samsung Heavy Industries established their subsidiary in Russia to conduct a building project of ice-breakers with the Zvezda shipyard. In addition, about twenty South Korean companies mainly in the auto part and food processing industries are going to enter the upcoming South Korean industrial complex in Primorsky Krai. Alive discussions for expanding partnerships in new and rising investment areas (such as smart cities, smart farms, and renewable energies) are also taking place.[153]

Table 26 describes major South Korean companies in the Russian Far East by business sector and city. In regards to the business sector, this analysis shows that South Korean FDI is concentrated in service (financial, transportation, logistics, accommodation), trading, sales (electronic devices, food and beverage), and agriculture. It is also notable that Vladivostok in Primorsky Krai is the most preferred location. This indicates that South Korean investors are interested in market expansion when choosing investing places in the Far East. This pattern is rather similar to South Korean FDI in other regions of Russia.

Table 26

Major South Korean companies in the Russian Far East

Industry	Company	City	Business
Manufacturing	Hyundai Welding	Artyom	Welding production
	Solnechniykrug	Komsomolsk	Wood pellets
	KRW	Nadezhinskaya	Timber processing
	Breese PUMP LLC	Vladivostok	Marine pump production
	Roskor LLC	Artyom	Building materials
IT	City transportation	Vladivostok	Electronic payment

[153] Interview (OKHO 8.30)// The South Korean Consulate in Vladivostok [Electronic resource]. -URL: https://overseas.mofa.go.kr/ru-vladivostok-ko/brd/m_7806/view.do?seq=1342258&srchFr=&srchTo=&srchWord=&srchTp=&multi_itm_seq=0&itm_seq_1=0&itm_seq_2=0&company_cd=&company_nm=&page=1 (date of access: 19.02.2022).

	system		system
Trading	Posco Daewoo		Trading
	LS networks		
Air, marine, and land transportation (service)	Korean air		Incheon-Vladivostok
	Asiana air	Khabarovsk	Incheon-Khabarovsk; Incheon-Sakhalin
	Jeju air	Vladivostok	Incheon-Vladivostok
	Tway air		Daegue-Vladivostok
	Air Busan		Busan-Vladivostok
	DBS Ferry		The east sea-Vladivostok
	Urban Transport System LLC		Transportation card
Marine logistics	Hyundai merchant marine	Vladivostok/ Bolshoy Kamen/ Artyom	Marine logistics
	Sinokor merchant marine		
	Pantos		
Hotel and leisure	Lotte Hotel		The only 5-star hotel in Primorsky Krai
	Hotel Pride LLC		Hotel construction
	Cristal-Golf Club LLC		Golf course
Sales	Samsung electronics		Electronics devices
	LG electronics		
	Paldo		Food and beverage
	Lotte Chilsung		
	Upkait		
Trading	Dowsteel		Procurement of iron scraps to export to Korea
	Three C corporation		Trading
	Mir special vehicles		
Construction	Kyeryong construction	Khabarovsk	Apartment construction
Finance	Woori Bank	Vladivostok	Financial service
	IBK		
Fishing	Sajo		Pollack fishing
	Gorod 415 LLC	Kamchatka	Fish processing

	O-Yang	Nadezhinskaya	
Chemicals	Vostok Polikor LLC	Artyom	Life chemicals
Agriculture	Lotte international	Khorol	N/A
	Agross	Khorol, Hanka	
	Arro-Primorye	Ussuriysk	
	Eco hose	Grigorieva	
	Unigen	Khasan	
	Pohang federation of livestock cooperatives	Ussuriysk	
	Baridream		

Note: See also Table A7 for additional information.

Source: KOTRA: [Website], Move to the center of promising industries to advance into Far East Russia [극동러시아 진출 유망산업 중심 이동] [Electronic resource]. – URL: http://news.kotra.or.kr/user/globalBbs/kotranews/6/globalBbsDataView.do?setIdx=322&dataIdx=169308 (date of access: 14.04.2020); Status of ASEZs and FPVs [선도개발구역 및 블라디보스톡자유항 동향]// The South Korean Consulate in Vladivostok [Electronic resource]. – URL: http://overseas.mofa.go.kr/ru-vladivostok-ko/brd/m_7804/view.do?seq=2114849 (date of access: 15.04.2020).

There is no clear recent evidence describing South Korean investment in Sakhalin Oblast- the third most frequent destination of South Korean FDI in the Russian Far East. But, based on the information shared by the South Korean consulate in Vladivostok in 2015, we can posit that there has been investment related to energy (LNG) exploration and coal mining development by South Korean companies, for instance, Daewoo E&C, Poonglim, and Korea Investment & Securities[154]. These energy-related investments did not go smoothly and are

[154] The South Korean Consulate in Vladivostok: [Website], Overview of Sakhalin (2015) [사할린주 개황

not representative of the average type of South Korean investment in the Russian Far East. In reality, South Korean investments in the Russian Far East are made predominantly at small and medium scales rather than large scale, regardless of whether they are big, medium, or small-sized companies back in South Korea, and some companies adopt an inactive form of FDI, namely a liaison office. This is a unique tendency of South Korea compared to China and Japan whose investments widely range from small to large scale. It is worthy of note that Japan and China have aggressively entered into natural resource extraction (e.g., Sakhalin Project 1&2, Power of Siberia), transportation construction (e.g., Primorye-1&2 Projects), manufacturing (e.g., Mazda Sollers), and other heavy and primary industries of the Russian Far East[155].

In addition, motives and factors of South Korean FDI in Russia are identified based on econometric models. The author constructed two types of econometric models as follows:

- Case 1) South Korean outward FDI in Kazakhstan, Russia, and Uzbekistan based on the panel data for the period 1993-2019 by employing ordinary least square (OLS), fixed effect, and random effect models;
- Case 2) South Korean outward FDI in Russia for the period 1993-2019 by employing OLS.

To test multiple effects (shown significance based on the developed model for South Korean FDI in Russia in Chapter 1) by overcoming 27 years of short

(2015년)] [Electronic resource]. - URL: http://overseas.mofa.go.kr/ru-vladivostok-ko/brd/m_7804/view.do?seq=1346895 (date of access: 06.02.2020).

[155] KOTRA: [Website], China and Japan active in development projects in the Far East [극동지역 개발 프로젝트에 적극적인 중국과 일본] [Electronic resource]. - URL: https://news.kotra.or.kr/user/globalBbs/kotranews/3/globalBbsDataView.do?setIdx=242&dataIdx=155043 (date of access: 15.03.2021).

time-series datasets, the Case 1 regression analyses are conducted based on Russia and as well as Kazakhstan, Uzbekistan, which are the only countries received South Korean FDI among transition economies in the regions of the former Soviet Union (FSU) countries and subject to South Korea's New Northern Policy. However, South Korean FDI has not been active in countries (which are subject to South Korea's New Northern Policy) and these countries of transition economies also have a short history. Thus, the inclusion of Kazakhstan and Uzbekistan in the model still did not fully resolve the issue of a small sample size, which is a limitation of this study and should be improved in the follow-up study.

Balanced panel data are constructed based on 81 observations from 1993-2019 for Kazakhstan, Russia, and Uzbekistan for the regression analysis. For the dependent variable, the natural logarithm of FDI inflows (current price, $ million) from South Korea to country *i* in year *t* is used[156]. Based on the above literature review and a developed South Korean FDI in Russia in Chapter 1, 6 explanatory variables are selected as follows: Ln(GDP) is chosen as a market factor; Ln(GGDP) and Exrate are chosen as efficiency factors; Ln(RESOU) is chosen as the natural resource factor; Ln(INFLA) is chosen as a transition economic factor. Ln(FREE) is chosen as a transition institutional factor (Table 27).

Table 27

Description of explanatory variables

Variables	Description	Data source
$\mathrm{Ln(GDP)_{it}}$	The natural logarithm of GDP (current price, $ billion) of the country i in year *t*	IMF[157]
$\mathrm{Ln(GGDP)_{it}}$	The natural logarithm of subtracting the value per capita GDP of the country *i* from that of	IMF[158]

[156] The Export-Import Bank of Korea: [Website], Statistics of FDI [Electronic resource]. - URL: https://stats.koreaexim.go.kr (date of access: 26.06.2022).
[157] IMF: [Website], World Economic Outlook [Electronic resource]. - URL: https://www.imf.org/external/datamapper/datasets/WEO (date of access: 28.06.2022)
[158] Ibid.

	South Korea (current price, $) in year *t*	
$\mathrm{Ln(FREE)_{it}}$	The natural logarithm of the sum of political rights and civil liberties ratings of the country *i* in year *t*	Freedom House[159]
$\mathrm{Ln(RESOU)_{it}}$	The natural logarithm of total natural resources rents (% of GDP) of the country *i* in year *t*	World Bank[160]
$\mathrm{Ln(INFLA)_{it}}$	The natural logarithm of the inflation rate (%) of the country *i* in year *t*	IMF[161]
$\mathrm{Exrate_{it}}$	Nominal exchange rate (local currency to USD) of the country *i* in year *t*	Penn World Table 10[162]

Source: Composed by the author.

Descriptive data for dependent and independent variables are presented in Table 28.

Table 28

Descriptive data

Variable	Mean	Max.	Min.	St. Dev.	Obs.
Ln(FDI)	3.100553	6.712880	-2.807346	1.989451	81
Ln(GDP)	4.696861	7.735620	1.639385	1.699511	81
Ln(GGDP)	9.546910	10.36791	8.751729	0.383791	81
Ln(FREE)	2.440818	2.639057	1.945910	0.173325	81
Ln(RESOU)	2.655495	3.541458	1.085636	0.560153	81
Ln(INFLA)	2.883676	7.415957	1.064711	1.405212	81
exrate	0.112004	2.876901	0.000113	0.446387	81

Source: Composed by the author.

The model specification is as follows:

$$Ln(FDI)_{it} = \beta_0 + \beta_1 Ln(GDP)_{it} + \beta_2 Ln(GGDP)_{it} + \beta_3 Ln(FREE)_{it} + \beta_4 Ln(RESOU)_{it} + \beta_5 Ln(INFLA)_{it} + \beta_6 Exrate_{it} + \varepsilon_{it} \quad (1)$$

[159] Freedom House: [Website], Comparative and historical data [Electronic resource]. – URL: https://freedomhouse.org/ (date of access: 28.06.2022).

[160] The World Bank: [Website], World Bank Open Data [Electronic resource]. – URL: https://data.worldbank.org/ (date of access: 16.06.2022).

[161] IMF: [Website], World Economic Outlook [Electronic resource]. - URL: https://www.imf.org/external/datamapper/datasets/WEO (date of access: 28.06.2022)

[162] Feenstra, R. C., Inklaar, R., Timmer, M. P. The next generation of the Penn World Table// American economic review, 2015, 105(10), 3150-82.

(i)$Ln(GDP)_{it}$, the natural logarithm of the GDP of country i in year t (current $ billion), is used as a proxy for market size. Conventionally, larger markets attract more FDI inflows in transition economies[163][164][165].

H0: $Ln(GDP)_{it}$ is positively associated with $LnFDI_{it}$.

(ii)$Ln(GGDP)_{it}$, the natural logarithm of subtracting the GDP per capita of country i from South Korean GDP per capita (current $) in year t, is used as a proxy for the difference in wages from South Korea. During 1993–2019, South Korean GDP per capita was always higher than that of the three CIS countries. Investments tend to flow to countries with low per capita GDP, where labor costs are cheaper than in the domestic market. A larger gap in GDP per capita from that of South Korea to a CIS country indicates higher labor-cost efficiency for South Korean investors in the CIS market.

H1: $Ln(GGDP)_{it}$ is positively associated with $LnFDI_{it}$.

(iii)$Ln(FREE)_{it}$, the natural logarithm of the sum of political rights ratings and civil liberties ratings of country i in year t, is used as a proxy for institutional quality. The quality of institutions does not always lead to FDI inflows in CIS countries[166].

H2: The coefficient sign of $Ln(FREE)_{it}$ is uncertain.

(iv)$Ln(RESOU)_{it}$, the natural logarithm of total natural resource rents (% of GDP) of country i in year t, is used as a proxy for natural resource endowments. The richness of natural resources is a critical locational advantage for attracting

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[163] Ledyaeva, S. Spatial econometric analysis of foreign direct investment determinants in Russian regions// *World Economy*, 2009, *32*(4), 643-666.

[164] Kudina, A., Jakubiak, M. 2012. The Motives and Impediments to FDI in the CIS// In *EU eastern neighborhood*, Springer, Berlin, Heidelberg, 2012, 71-82.

[165] Svyatoslavovich, M. O., Mikhailovich, D. I., Vladimirovna, C. K., Heiko, R. Determinants of FDI inflows: The case of Russian regions// Economy of region, 2016, *12*(4), 1244-1252.

[166] Ulzii-Ochir, N. The Determinants of FDI in Landlocked Developing Countries in Central Asia// In *Trade Logistics in Landlocked and Resource Cursed Asian Countries, 2019,* Palgrave Macmillan, Singapore, 95-121).

FDI in resource-rich CIS countries[167][168][169].

H3: $Ln(RESOU)_{it}$ is positively associated with $Ln(FDI)_{it}$.

(v) $Ln(INFLA)_{it}$, the natural logarithm of the inflation rate (annual percentage change in average consumer prices) of country i in year t, is used as a proxy for economic stability. High inflation increases macroeconomic instability and investment risks.

H4: $Ln(INFLA)_{it}$ is negatively associated with $Ln(FDI)_{it}$.

(vi) $exrate_{it}$, the nominal exchange rate (local currency to USD) of country i in year t, is used as a proxy for the purchasing power of investing countries. This study converted the original data (USD to local currency) to obtain stationary datasets. An appreciation of host countries' currency value decreases the purchasing power of investing countries. These production cost factors significantly determine efficiency-seeking South Korean FDI.

H5: $Exrate_{it}$ is negatively associated with $Ln(FDI)_{it}$.

(viii) β_0 stands for the constant; ε_{it}represents the error term.

Table 29 shows Pearson correlation results for the selected explanatory variables. The correlation coefficient > $|\pm 0.5|$ indicates the potential issue of multicollinearity in the estimation. Ln(FREE) and Ln(GGDP) (0.62), and Ln(INFLA) and exrate (0.56) show positive and moderate correlations. Those variables possibly cause multicollinearity in the linear function.

[167] Ledyaeva, S. Spatial econometric analysis of foreign direct investment determinants in Russian regions// *World Economy*, 2009, *32*(4), 643-666.

[168] Kayam, S. S., Yabrukov, A., Hisarciklilar, M. What causes the regional disparity of FDI in Russia? A spatial analysis// *Transition Studies Review*, 2013, *20*(1), 63-78.

[169] Gonchar, K., & Marek, P. *Natural-resource or market-seeking FDI in Russia? An empirical study of locational factors affecting the regional distribution of FDI entries//* (No. 3/2013). IWH Discussion Papers.

Table 29

Pearson correlation of explanatory variables in this study

(Observations: 81)

Correlation Probability	Ln(FDI)	Ln(GDP)	Ln(GGDP)	Ln(FREE)	Ln(RESOU)	Ln(INFLA)	Exrate
Ln(FDI)	1.000000						
Ln(GDP)	0.562162 (0.0000)	1.000000					
Ln(GGDP)	0.253577 (0.0224)	0.058654 (0.6030)	1.000000				
Ln(FREE)	0.070965 (0.5290)	-0.325787 (0.0030)	0.618579 (0.0000)	1.000000			
Ln(RESOU)	0.292851 (0.0080)	0.052482 (0.6417)	0.329452 (0.0027)	0.234056 (0.0355)	1.000000		
Ln(INFLA)	-0.305611 (0.0055)	-0.416035 (0.0001)	-0.460007 (0.0000)	-0.284817 (0.0100)	-0.463071 (0.0000)	1.000000	
Exrate	-0.144461 (0.1982)	-0.104941 (0.3511)	-0.319083 (0.0037)	-0.342269 (0.0018)	-0.255016 (0.0216)	0.558494 (0.0000)	1.000000

Note: P-values are given in brackets.

Source: Composed by the author.

To clarify the multicollinearity issue, I further carried out a Variance Inflation Factors (VIF) test in the linear function. Unlike the Pearson correlation test, VIF shows the correlation of a particular variable to the remaining explanatory variables. It tells how much larger the standard error increases than if that variable had 0 correlation to other predictor variables in the model. If VIF is equal to 1, there are no correlations between a particular variable to the remaining variables. In general, VIF >10 indicates multicollinearity[170]. As there is no variable with VIF >10 in our model, multicollinearity is not an issue in our estimation (Table 30).

[170] Menard S. Applied Logistic Regression Analysis// SAGE Publications, Inc, 2001, 2nd edition.

Table 30

The results of Variance Inflation Factors (VIF) test

	Ln(GDP)	Ln(GGDP)	Ln(FREE)	Ln(RESOU)	Ln(INFLA)	Exrate
Case 1	1.734859	1.986259	2.267362	1.336859	2.482730	1.546437
Case 2	3.253669	2.646505	6.714638	1.845248	6.881889	2.393002

Source: Composed by the author.

The established the econometric model (Case 1) based on 81 observations of Kazakhstan, Russia, and Uzbekistan from 1993-2019. Table 31 presents the results of the panel analysis. Pooled OLS, fixed effects, and random effects (random method=Wansbeek-Kapteyn) are conducted to find the best-fitting model.

To compare pooled OLS and fixed effects, I conducted an F-test. As the p-value of the F-test is $0 < 0.05$, I chose fixed effects over pooled OLS.

To compare fixed effects and random effects, I carried out a Hausman test. The null hypothesis of the Hausman test is that a random effects model is preferable to a fixed effects model; the alternative hypothesis is that a fixed effect model is preferable to a random effects model. From the test, the null hypothesis is accepted at the 5% significance level (Table 31).

Table 31

The results of regression analysis

Independent Variables	Case 1. Kazakhstan, Russia, Uzbekistan			Case 2. Russia
	(1) Pooled OLS	(2) FE	(3) RE	(4) OLS
Constant	-14.89745***	-0.258637	-1.398350	-2.931230
	(5.274338)	(5.770615)	(5.967830)	(7.227362)
LnGDP	0.856250***	2.137955***	2.048488***	1.927616***
	(0.132283)	(0.269526)	(0.261749)	(0.364850)
LnGGDP	0.288940	-1.331921**	-1.215875*	-0.453025
	(0.626786)	(0.623725)	(0.618114)	(0.832398)
LnFREE	3.112759**	0.559302	0.773456	-0.486915
	(1.482847)	(1.530695)	(1.521400)	(2.091607)

LnRESOU	0.993484***	1.092132***	1.083859***	-0.422492
	(0.352316)	(0.305427)	(0.305357)	(0.558953)
LnINFLA	0.344255*	0.624748***	0.607213***	0.159726
	(0.191390)	(0.178573)	(0.178077)	(0.326411)
Exrate	-0.096101	-0.300291	-0.283551	-0.412744
	(0.475500)	(0.414429)	(0.414228)	(0.467102)
Breusch-Pagan LM (p-value)	0.0683	0.4805	0.4403	-
Breusch-Pagan-Godfrey test (P-value)	-	-	-	0.4201
Observations	81	81	81	27
Effect	None	Country	Country	None
Adj. R^2	0.411135	0.562469	0.529598	0.686268
Test statistics: A. (1) Pooled OLS vs. (2) FE: F-test [F=13.798, p-value = 0.000] B. (2) FE vs. (3) RE: Hausman Test [chisq = 0.000, p-value = 1.000]				

Note: Standard errors are given in brackets; the coefficients marked with ***, ** and * are significant at the 1%, 5%, and 10% levels, respectively.

Source: Composed by the author.

Describing the results of (3) RE model (the best predictability) in detail, as expected, the result confirms the significance of LnGDP at the 1 % level (support of H0). This indicates market size is a key driving factor of the FDI. Besides, the LnGGDP coefficient is negative at the 10% significance level (rejection of H1). The gap in per capita income from that of South Korea stands for the wage and purchasing power of a local economy. If the labor efficiency-seeking motive is strong, the coefficient sign will be positive. While market-seeking is strong, the coefficient sign will be negative. In this regard, it can be postulated that the market-seeking motive overwhelms the labor efficiency-seeking motive for South Korean FDI. LnRESOU is defined as statistically significant at the 1% level (support of H3). It confirms that resource endowments motivate FDI.

However, the LnINFLA coefficient is significant and positive at the 1% level, which contradicts H4. It implies that economic instability does not negatively impact FDI attraction. According to Ulzii-Ochir's research on landlocked

developing countries in Central Asia, a high inflation rate and a weak decision-making process do not always defer FDI because investors are trying to seize opportunities in the middle of economic turbulence [171]. Another possible explanation is that inflation in the FSU countries can be considered as one of the signs of the opening of their economies. Therefore, it seems that inflation may somehow have been translated as a market opportunity.

On the other hand, the result also reveals some statistically insignificant variables. The exrate coefficient is insignificant and positive. The FDI is not associated with efficiency-seeking derived from the value of the local currency. Also, the LnFREE coefficient is insignificant and positive. Market-seeking behavior is likely predominant enough to offset any institutional constraints, which is elucidated by previous studies on BRICS countries[172].

The author derived the time-series data of South Korean outward FDI in Russia from Case 1. LnGDP indicates a positive coefficient at the 1% significance level from an OLS regression. GDP as the primary factor to attract South Korean FDI in Russia. The result confirms that a 1% increase in the Russian GDP leads to a 1.93 % increase in South Korean FDI. On the other hand, other explanatory variables are statistically insignificant in this model with the reduced observations. Thus, I can posit that market expansion is the primary motive of South Korean FDI in Russia. The regression result based on a limited time-series dataset is likely to show the statistical significance of only the most powerful explanatory variable despite the importance of the other variables in reality. Thus, the result from Case 2 should be supplemented by the results from Case 1.

[171] Ulzii-Ochir, N. The Determinants of FDI in Landlocked Developing Countries in Central Asia. In Trade Logistics in Landlocked and Resource Cursed Asian Countries// Palgrave Macmillan, Singapore, 2019, pp. 95-121.

[172] Jadhav, P. Determinants of foreign direct investment in BRICS economies: Analysis of economic, institutional and political factor// Procedia-Social and Behavioral Sciences, 2012, 37, 5-14.

Meanwhile, these econometric models and the conclusions formulated on its basis have objective limitations in terms of the array of analyzed data: the above models do not directly demonstrate South Korean FDI in the Russian Far East (which is the research topic) because of a lack of regressionable datasets of South Korean FDI in federal subjects in the Far Eastern District disallows to build the econometric model. Thereby, the econometric models have been built by considering the Russian Far East as a part of Russia and FSU and trying to induce motives of South Korean FDI in the Russian Far East.

This study admits that this is a limitation of the above models, and which should be resolved in the follow-up study as soon as the datasets of South Korean FDI in the federal subjects of the Far Eastern District are accumulated worthy of the conditions for the regression analysis. In this sense, the results of the models should be analyzed alongside facts and findings from the descriptive analysis and it should not be the only parameter to explain the motives of South Korean FDI in the Russian Far East. Nevertheless, the obtained scientific results complement the general economic analysis of the existing motives and determinants of South Korean FDI in the Russian Far East. However, this line of research should be continued in the future using an expanded array of statistical and factual information.

CHAPTER3. DIRECTIONS FOR THE PROMOTION OF EFFICIENCY OF FOREIGN ECONOMIC ACTIVITY OF INDUSTRIAL ENTERPRISES OF THE RUSSIAN FAR EAST BASED ON THE ATTRACTION OF SOUTH KOREAN CAPITAL

3.1 Priority areas of investment in the economy of the Far East: industry aspect

In this section, the most attractive industries for investment in the Russian Far East will be determined. For this, the author analyzes the growth potential of industries, which are classified according to the above all-Russian classifier of types of economic activity version 2, based on key industrial production indicators for the period 2017-2020. The growth rate of industrial outputs is one of the representative indicators, which enables estimating the industrial potential to attract investment.

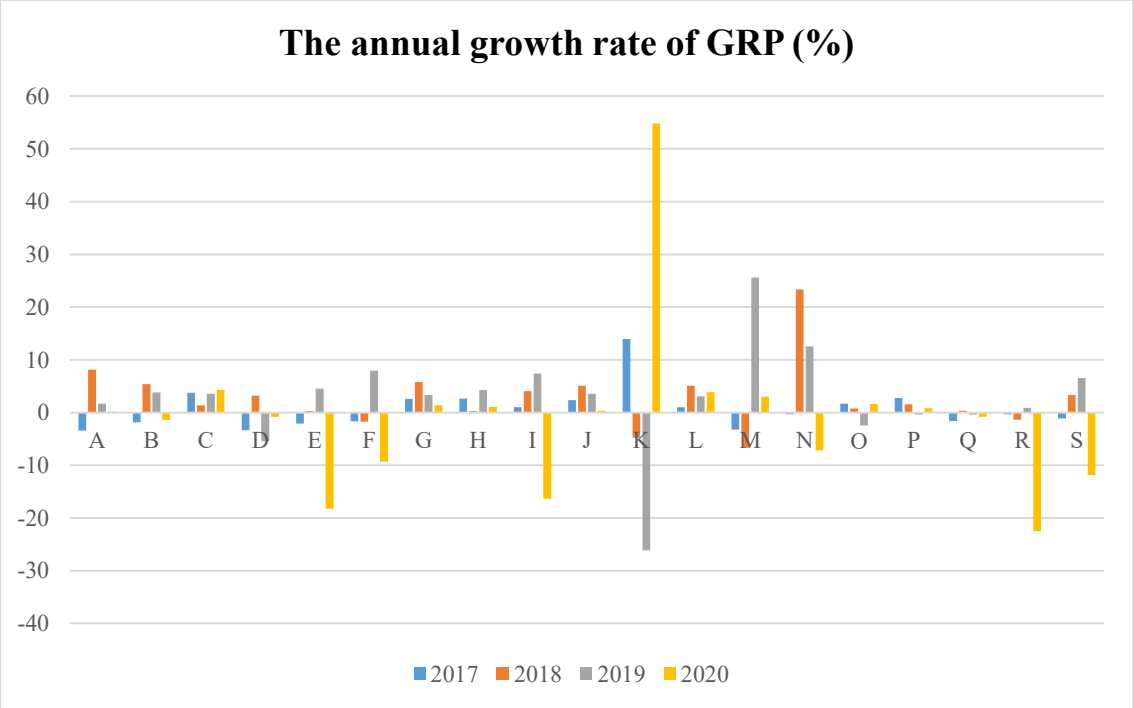


Figure 14. The annual growth rate of GRP (constant prices=2016) by industry in the Far Eastern Federal District (’17~’20)

Source: Author's calculations based on datasets of Федеральная служба государственной статистики: [Website], ВРП ОКВЭД 2 (с 2016 г.) [Electronic resource]. – https://rosstat.gov.ru/storage/mediabank/VRP_OKVED2.xlsx (date of access: 10.06.2022).

Figure 14 describes the annual growth rate of GRP for the period 2017-2020. Five industries, which are (C) Manufacturing industries, (G) Wholesale and retail trade; repair of motor vehicles and motorcycles, (H) Transportation and storage, (J) Information and communication activities, and (L) Real estate operations, consistently grew positively over 4 years.

Some industries went through a radical increase or decrease in growth rate. (K) Financial and insurance activities had the highest growth rate (13.9%) above all industries in 2017, but its growth rate sharply dropped to -4.7% in 2018 and -26.2% in 2019, and dramatically increased to 54.8%. In particular, multiple industries had a sharp decrease in growth rate in 2020 due to the pandemic: the growth rate of – (E) Water supply; sanitation, waste collection and disposal, and pollution elimination activities were -18.2%, (F) Construction was -9.3%, (I) Activities of hotels and catering establishments was -16.4%, (R) Activities in the field of culture, sports, leisure, and entertainment was -22.5% and (S) Provision of other types of services was -11.9%.

While, (M) Professional, scientific and technical activities (O) Public administration and military security; social security and (P) Education overcame a minus growth. The growth rate of (M) Professional, scientific and technical activities was -3.2% in 2017 and -6.7% in 2018, but its growth rate recovered to 25.6% in 2019 and 3.0% in 2020. The growth rate of (O) Public administration and military security was 1.6% in 2017 and 0.7% in 2018, but it dropped to -2.5% in 2019. Its growth rate recovered to 1.6% in 2020. The growth rate of (P) Education was 2.8% in 2017 and 1.5% in 2018, but it dropped to -0.4% in 2019.

Its growth rate recovered to 0.8% in 2020.

The industry size is an important indicator to estimate investment attractiveness in that it is highly related to production efficiency and business opportunities. To invest in a large industry, companies can obtain economies of scale, which possibly leads to a reduction in production costs, and explore various business opportunities to increase profits. As shown in Section 2.1, the industrial structure of the Far Eastern Federal District is heavily distorted to the mining industry. Also, as the gap in the share of GRP is critically large among industries, comparing the share of the GRP in absolute values is improper. Thereby, from an aspect of measuring the growth potential, the growth rate of the share in GRP is examined, instead.

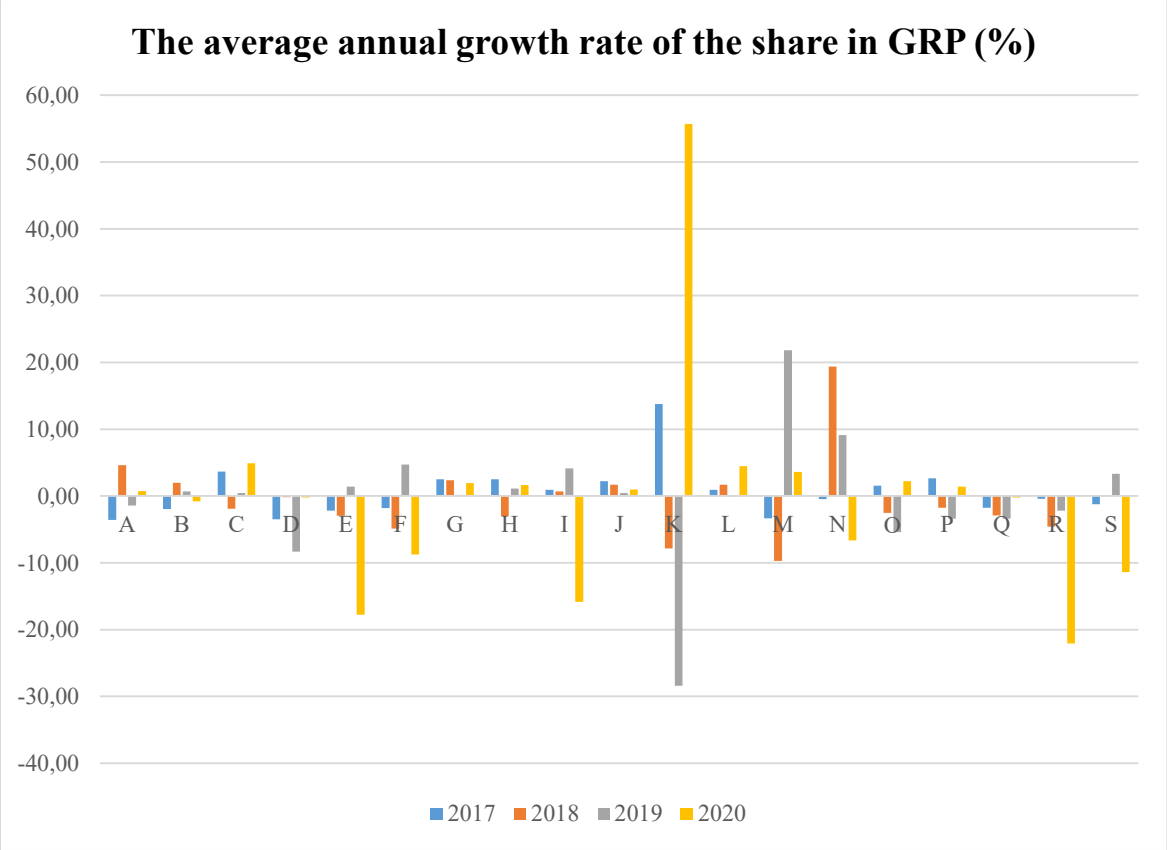


Figure 15. The average annual growth rate of the share in GRP by industry in the Far Eastern Federal District

Note: The missing bars indicate 0% in the growth rate in the corresponding year.
Source: Author's calculations based on datasets of Федеральная служба государственной статистики: [Website], ВРП ОКВЭД 2 (с 2016 г.) [Electronic resource]. – https://rosstat.gov.ru/storage/mediabank/VRP_OKVED2.xlsx (date of access: 10.06.2022).

Figure 15 presents the growth rate of the share of GRP by industry in the Far Eastern Federal District for the period 2017-2020. First of all, it is worthy noting that (G) Wholesale and retail trade; repair of motor vehicles and motorcycles, and (J) Information and communication activities increased their share in GRP over 4 years, consecutively. In spite of the predominance of (B) mining industry in the Far Eastern economy, its growth rate of the share in GRP diminished to -0.82% in 2020. The growth rate of the share in GRP repeats minus and plus values in most industries. (I) Activities of hotels and catering establishments, (R) Activities in the field of culture, sports, leisure and entertainment and (S) Provision of other types of services: their growth rate of the share in GRP was -15.87%, -22.06% and -11.37% in 2020, respectively. While, (D) Provision of electric energy, gas and steam; air conditioning and (R) Activities in the field of culture, sports, leisure and entertainment sustained a negative growth rate of the share in GRP over 4 years, which present the worst tendency among industries in the Far Eastern Federal District.

Based on the above datasets, the average annual growth rate (AAGR) of GRP and the share of GRP is calculated over 4 years. AAGR is to divide the growth rate of t, t+1, t+2, and t+3 by 4 (number of observations). The results are presented in Table 32.

Table 32

The industrial average annual growth rate (AAGR) (%) in the Far Eastern Federal District

Classification/Industry	AAGR of GRP ('17~'20)	AAGR of the share in GRP ('17~'20)
(A) Agriculture, forestry, hunting, fishing and fish farming	1.62	0.10
(B) Mining	1.49	-0.03
(C) Manufacturing industries	3.25	1.77
(D) Provision of electric energy, gas and steam; air conditioning	-1.62	-3.05
(E) Water supply; sanitation, waste collection and disposal, pollution elimination activities	-3.87	-5.38
(F) Construction	-1.18	-2.69
(G) Wholesale and retail trade; repair of motor vehicles and motorcycles	3.26	1.74
(H) Transportation and storage	2.05	0.57
(I) Activities of hotels and catering establishments	-0.98	-2.53
(J) Information and communication activities	2.84	1.32
(K) Financial and insurance activities	9.45	8.31
(L) Real estate operations	3.25	1.75
(M) Professional, scientific and technical activities	4.67	3.09
(N) Administrative activities and related additional services	7.09	5.35
(O) Public administration and military security; social security	0.39	-1.05
(P) Education	1.19	-0.27
(Q) Activities in the field of health and social services	-0.62	-2.06
(R) Activities in the field of culture, sports, leisure and entertainment	-5.83	-7.31
(S) Provision of other types of services	-0.78	-2.32

Source: Author's calculations based on datasets of Федеральная служба государственной статистики: [Website], ВРП ОКВЭД 2 (с 2016 г.) [Electronic resource]. – https://rosstat.gov.ru/storage/mediabank/VRP_OKVED2.xlsx (date of access: 10.06.2022).

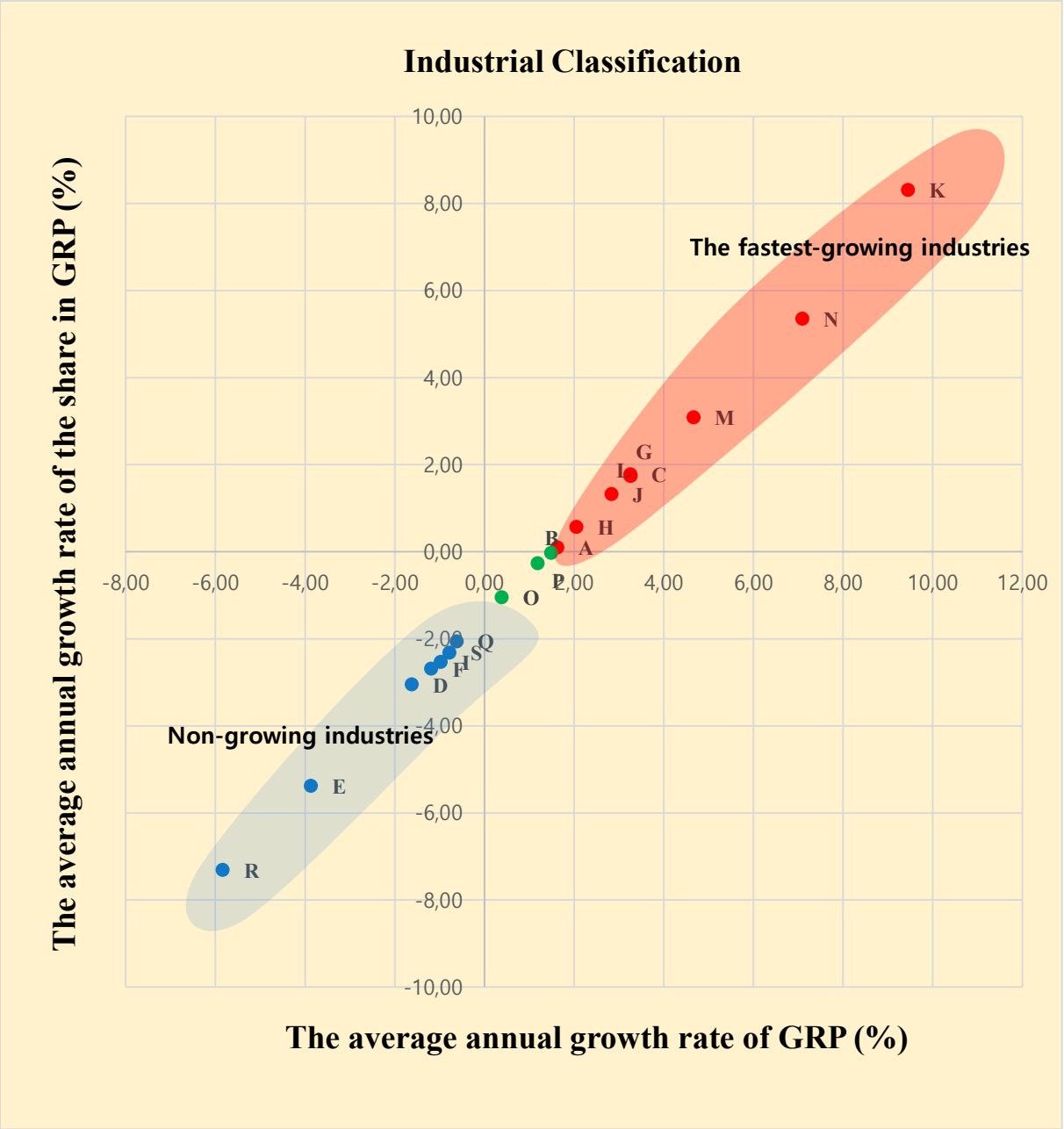


Figure 16. The matrix of the growth potential of industries in the Far Eastern Federal District

Source: Author's calculations based on datasets of Федеральная служба государственной статистики: [Website], ВРП ОКВЭД 2 (с 2016 г.) [Electronic resource]. – https://rosstat.gov.ru/storage/mediabank/VRP_OKVED2.xlsx (date of access: 10.06.2022).

The above values in Table 32 are applied in the matrix shown in Figure

16. Here, X-axis denotes the AAGR of GRP (%) and Y-axis denotes AAGR of the share in GRP (%). The red dots (located at the upper right side) in the matrix represent industries, which hold the highest growth potential. These industries have positive AAGR in both criteria. Industries belong to the 1st priority group (located in a zone shaded red) as follows: (A) Agriculture, forestry, hunting, fishing, and fish farming; (C) Manufacturing industries; (G) Wholesale and retail trade; repair of motor vehicles and motorcycles; (H) Transportation and storage; (J) Information and communication activities; (K) Financial and insurance activities; (L) Real estate operations; (M) Professional, scientific and technical activities; and (N) Administrative activities and related additional services. In particular, (K) Financial and insurance activities, (N) Administrative activities and related additional services, and (M) Professional, scientific and technical activities are the top 3 growing-industries over the recent 4 years in the Far Eastern federal district.

In addition, some industries have positive AAGR in growth rate, although their share in the whole economy decreased. Those industries are still worthy to consider investment, as the 2nd option. The 2nd group of industries (colored green) is: (B) Mining; (O) Public administration and military security; social security; and (P) Education.

The results also revealed industries, which are not recommendable for investment. Those industries had negative AAGR in both criteria (represented as blue dots and located on the left bottom side in the matrix). The non-growing industries are: D) Provision of electric energy, gas and steam; air conditioning; (E) Water supply; sanitation, waste collection and disposal, pollution elimination activities; (F) Construction; (I) Activities of hotels and catering establishments; (Q) Activities in the field of health and social services; (R) Activities in the field of culture, sports, leisure and entertainment; and (S) Provision of other types of

services. While the potential of (I) Activities of hotels and catering establishments is necessary to be re-evaluated after the end of the pandemic: the growth rate of both GRP and the share in the GRP of this industry had grown consistently for the period 2017-2019. However, due to the characteristics of this industry – which is highly dependent on tourists – its growth rate in both criteria sharply decreased to -16.4% and -15.87%. Considering its positive growth trends before the pandemic, it is inappropriate to simply ignore the growth potential of this industry, but the recovery trends after the pandemic should be further analyzed in the future.

On the other hand, this study contains a limitation. Due to the short history of the all-Russian classifier of types of economic activity version 2, the time series were only 4 years, whose period is too short to induce highly confident results. Once enough datasets are accumulated, the analysis should be further conducted based on longer time series. Nevertheless, still, the results of this analysis are useful to estimate the growth potential of industries in the Far Eastern Federal District based on a short-term tendency.

3.2 Assessment of the impact of South Korean investments on the development of industrial enterprises and improving the efficiency of their foreign economic activity in the Far East

The eye-catching economic growth of the Four Asian Tigers, namely, China, South Korea, Taiwan, and Singapore, based on export-led strategies in the 1990's spurred other developing and transition countries to open their economies. As a result, Russia accelerated the process of incorporating itself into the world economy and joined the World Trade Organization (WTO) on 22 August 2012 as the 156th member state. Particularly, for the Russian Far East, where the internal market size is very small, the role of export is highly important. In reality, the

export dependence (measured by export-to-GRP ratio) of the Far Eastern federal district has been over that of all states (Table 33). In this sense, promoting exports and sustaining a favorable trade balance is highly significant for the economic growth of the Russian Far East.

Table 33

Export-to-GRP ratio (%)

	2017	2018	2019	2020
Russia	26.18%	31.23%	28.90%	25.88%
Far East	27.73%	32.69%	31.26%	28.66%

Source: Author's calculations based on the data from Федеральная служба государственной статистики: [Website], Национальные счета [Electronic resource]. – URL: https://rosstat.gov.ru/statistics/accounts (date of access: 10.06.2022); Информация для ведения мониторинга социально-экономического положения субъектов Российской Федерации [Electronic resource]. – URL: https://rosstat.gov.ru/folder/11109/document/13259 (date of access: 14.06.2022).

However, as revealed in Section 1.3, the relationship between trade and FDI is rather controversial: each case study demonstrates a different result depending on the country for research, economic zones, study period, and so forth. Hence, in this section, the impact of South Korean investments on bilateral export and import between South Korea and the 11 states in the Russian Far Eastern federal district is investigated.

- *Methodology, data description, and research hypothesis*

For the mathematical analysis, quarterly data ranging from 2017 Q2 – 2021 Q3 were constructed. The model specifications are as follows:

$$Ln(export)_{tq} = \beta_0 + \beta_1 Grw\_FDI_{tq} + \beta_2 Exrate_{tq} + \varepsilon_{tq} \quad (1)$$

$$Ln(import)_{tq} = \beta_0 + \beta_1 Grw\_FDI_{tq} + \beta_2 Exrate_{tq} + \varepsilon_{tq} \quad (2)$$

$$Grw\_export_{tq} = \beta_0 + \beta_1 Grw\_FDI_{tq} + \beta_2 Exrate_{tq} + \varepsilon_{tq} \quad (3)$$

$$Grw\_import_{tq} = \beta_0 + \beta_1 Grw\_FDI_{tq} + \beta_2 Exrate_{tq} + \varepsilon_{tq} \quad (4)$$

where, $Ln(export)_{tq}$ is a natural logarithm of export (in $ million, current prices) from the Russian Far East to South Korea in year t and quarter q. $Ln(import)_{tq}$ is a natural logarithm of import (in $ million, current prices) from South Korea to the Russian Far East in year t and quarter q. Grw_export_{tq} is the growth rate of the share of South Korean exports in the Russian Far East in year t and quarter q. Grw_import_{tq} is the growth rate of the share of South Korean imports in the Russian Far East in year t and quarter q. Grw_FDI_{tq} is the growth rate of South Korean FDI stock in the Russian Far East in year t and quarter q. To calculate the growth rate, FDI stock in nominal prices is transformed in real prices by applying a quarterly GDP deflator (nominal GDP ÷ real GDP×100, base year=2016). The formula to calculate (per capita) real FDI stock is as follows:

$$Real\ FDI\ = \frac{Nominal\ FDI}{GDP\ deflator} \times 100 \quad (5)$$

$Exrate_{tq}$, the exchange rate from the ruble to the dollar in year t and quarter q, is included as a control variable. A currency value is an important factor to influence trade volumes in that it is closely related to the price competitiveness of exporting and importing goods and services. ε_{it} is an error-term. An expected sign of Grw_FDI_{tq} in each model is presented in Table 34.

Table 34

An expected sign of regression analysis

Independent variable	
Ln(export), Grw_export	Ln(import), Grw_import

	Positive	Vague

Source: Composed by the author.

South Korean FDI in the Russian Far East has been made in the sectors where South Korea does not have strong natural endowments in their home country (e.g., grain agriculture, woods, etc.) (Section 2.3). Hence, there is a high possibility that investment is oriented to export back to their home country, which is insufficient with and needs such products. Thereby, the expected sign of Ln(export) is positive.

On the other hand, the Russian government strongly has spurred the industrial localization policies by providing various incentives for foreign companies to internalize their production process in Russia. However, it is uncertain whether South Korean companies actively cooperate with the new foreign policy of Russia in that most of their investments mainly aim at market expansion. Thus, the expected sign of Ln(import) is uncertain.

Table 35

Descriptive data

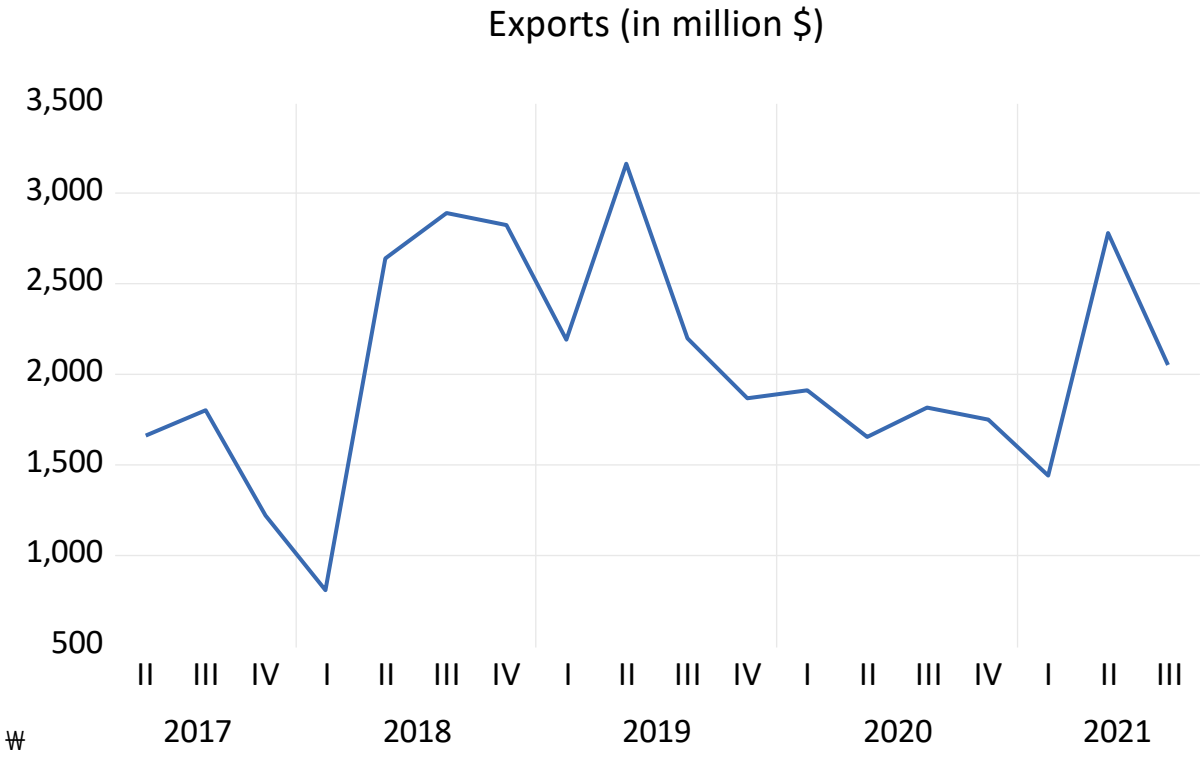
Variable	Mean	Max.	Min.	St. Dev.	Obs.
Ln(export)	7.569162	8.058848	6.688366	0.338956	18
Ln(import)	5.180382	6.356186	4.725394	0.426184	18
Grw_export	3.261556	115.5980	-34.84800	32.42017	18
Grw_import	17.02673	273.9836	-61.97716	72.15708	18
Grw_FDI	8.551011	136.4557	-16.43050	35.40478	18
Exrate[173]	0.015204	0.017584	0.013122	0.001465	18

Source: Composed by the author.

The descriptive data are presented in Table 35. There are 18 observations ranging from 2017 Q2 – 2021 Q3. The datasets of export and import are obtained from the Federal Statistics Service of the Russian Federation, while that of FDI

[173] The Central Bank of Russia: [Website], Foreign currency market [Electronic resource]. – URL: https://www.cbr.ru/eng/currency_base/ (date of access: 30.06.2022).

and exchange rates are extracted from the Central Bank of the Russian Federation.



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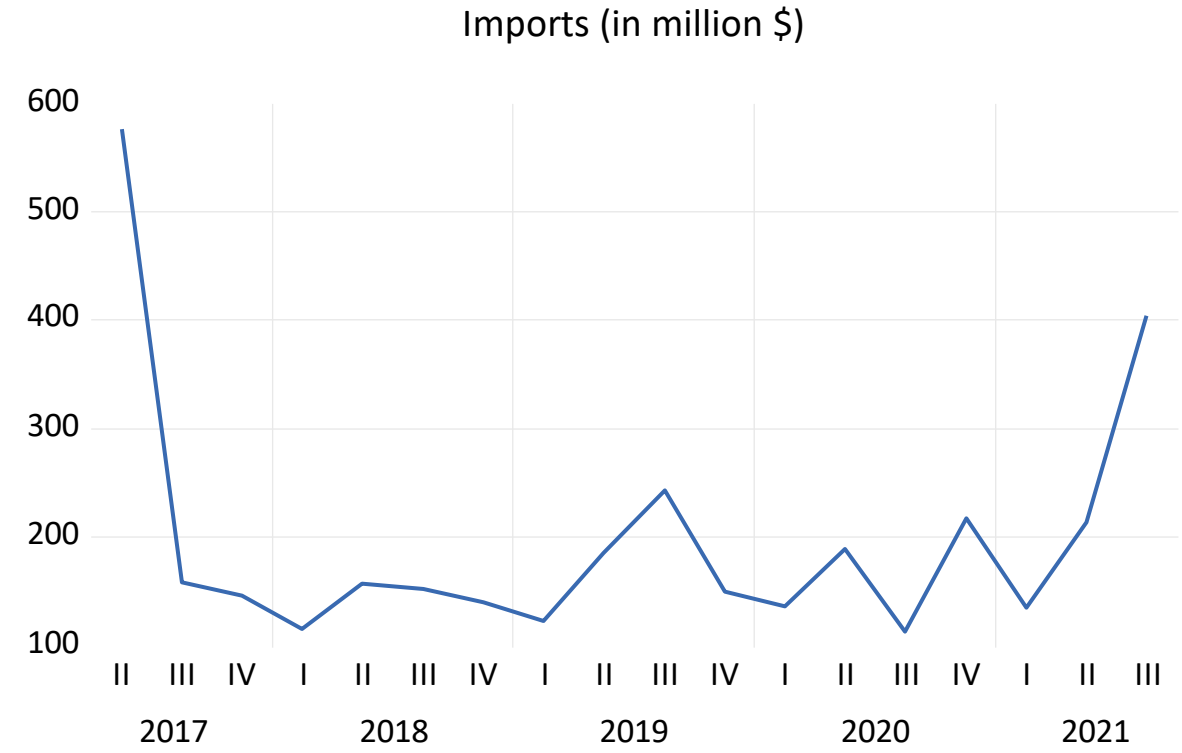
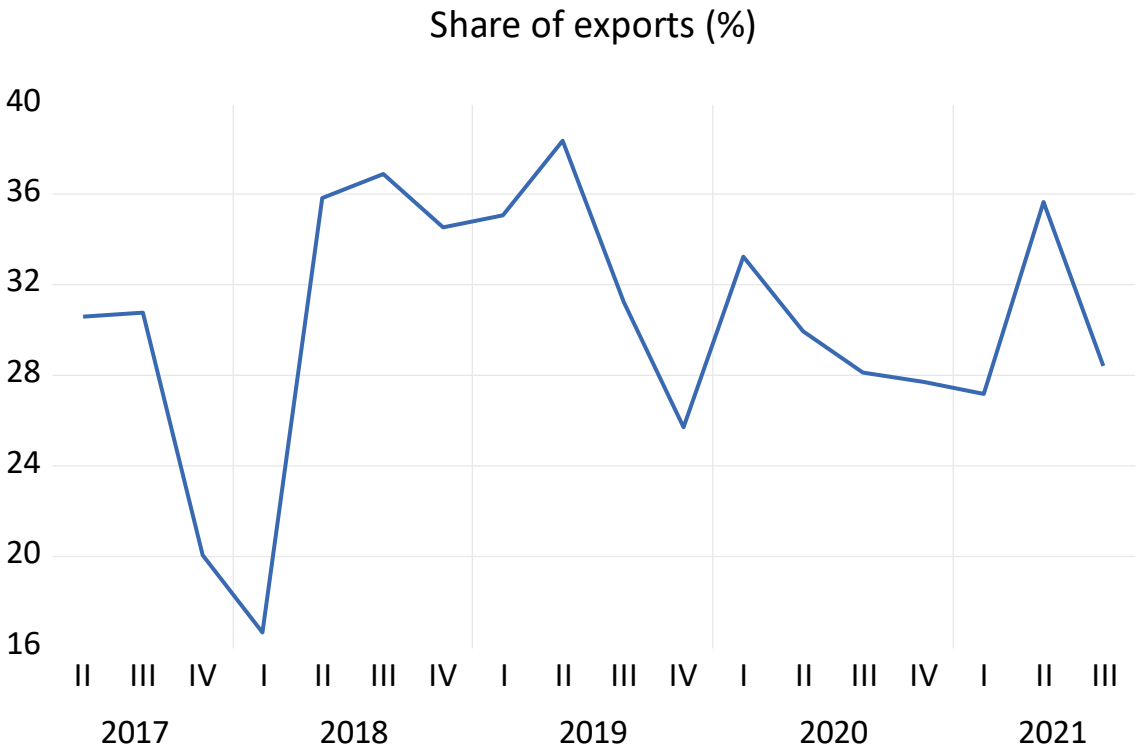
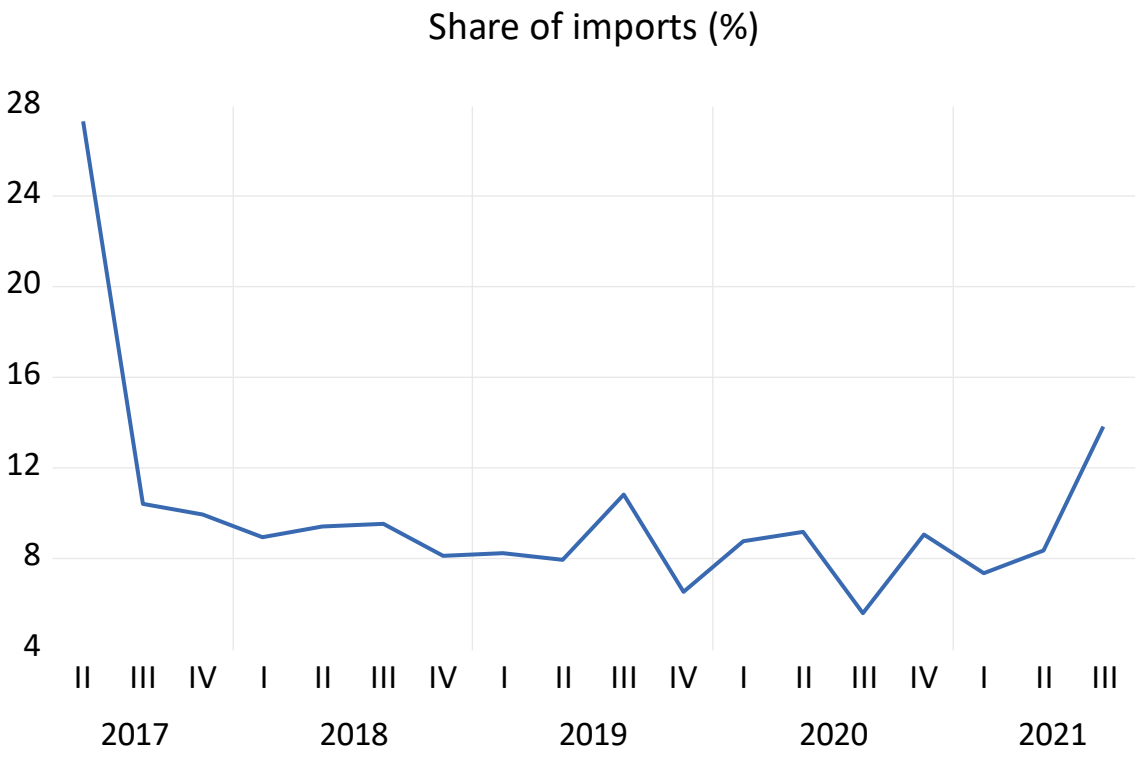



Share of exports (%)
40
36
32
28
24
20
16
II III IV I II III IV I II III IV I II III IV I II III
2017 2018 2019 2020 2021


Share of imports (%)
28
24
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12
8
4
II III IV I II III IV I II III IV I II III IV I II III
2017 2018 2019 2020 2021

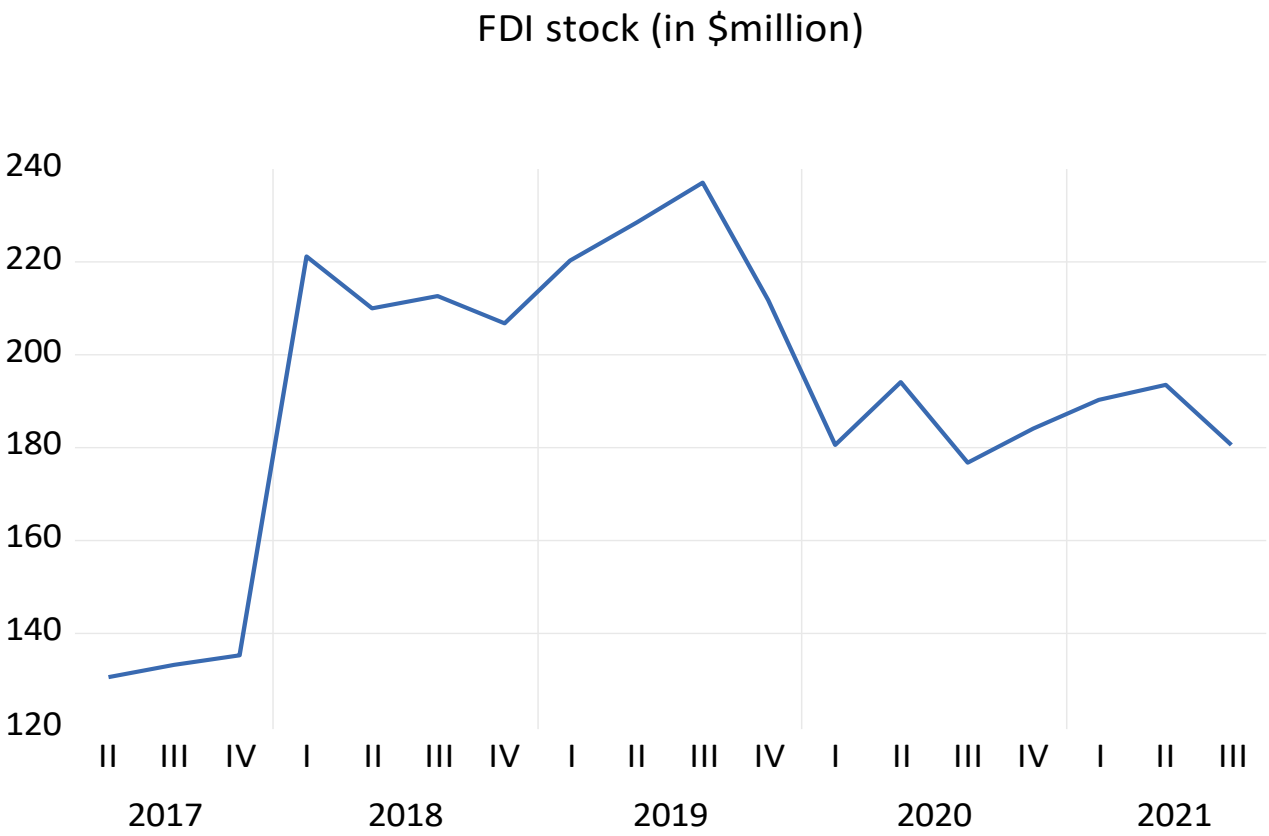


Figure 17. Dynamics of export, import and FDI during 2017 Q2 – 2021 Q3

Source: Reproduced from E-views.

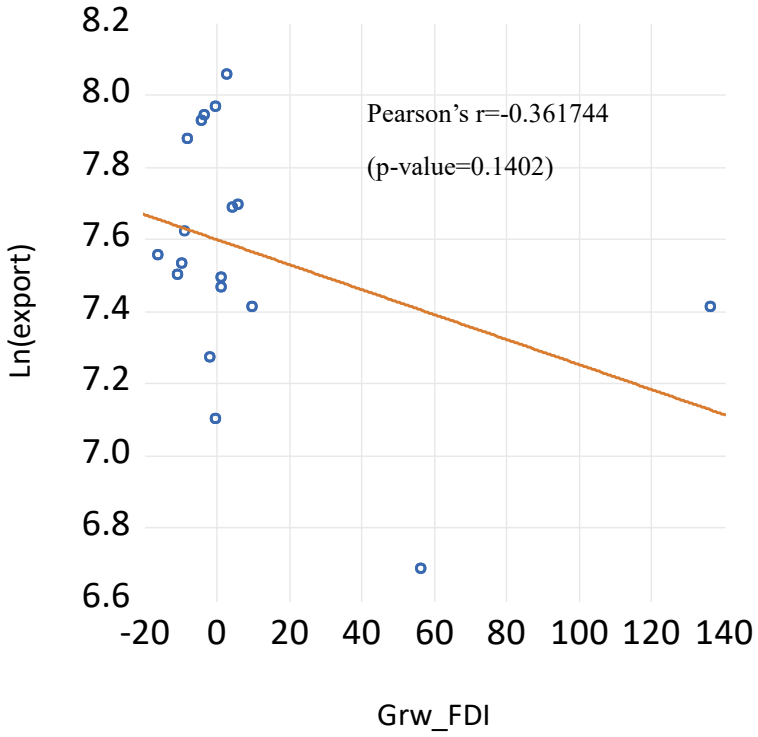
Figure 17 depicts the dynamics of exports and FDI from the Russian Far East to South Korea and imports from South Korea to the Russian Far East during 2017 Q2 – 2021 Q3. Exports peaked in 2019 Q2 (amounted $ 3.2 billion) and took downward trends afterward, but starkly increased in 2021 Q2. The bilateral imports are way smaller than exports. Imports dropped dramatically in 2017 Q3 from $576 million to $157.8 million and kept minimally fluctuating afterward, but took upwards trends from 2021 Q2. The share of South Korean exports and imports in the Russian Far East is rather fluctuating throughout the period. FDI stock starkly increased in 2018 Q1 and peaked in 2019 Q3. However, it dropped extremely at 2020 Q1.

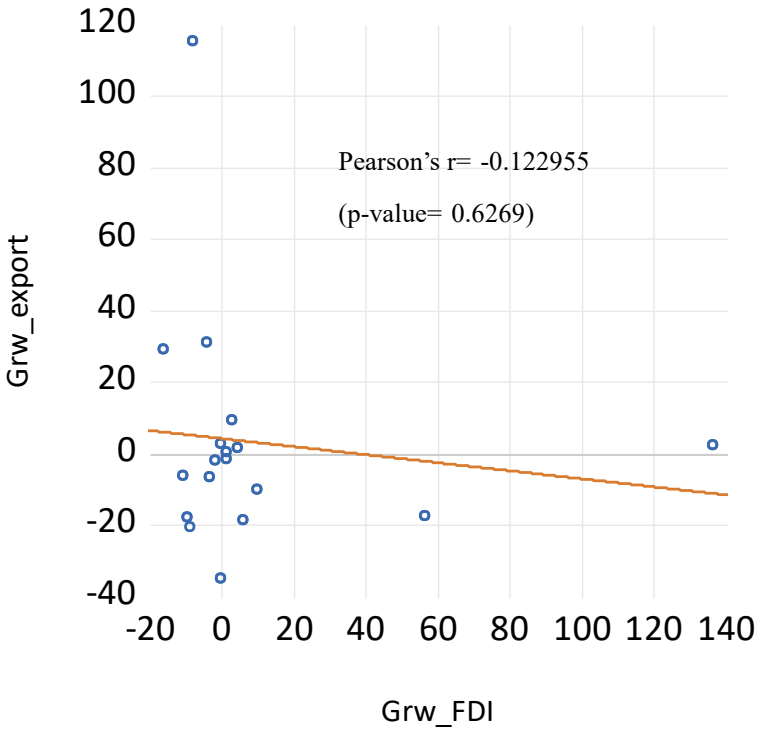
- *Pearson's correlation*

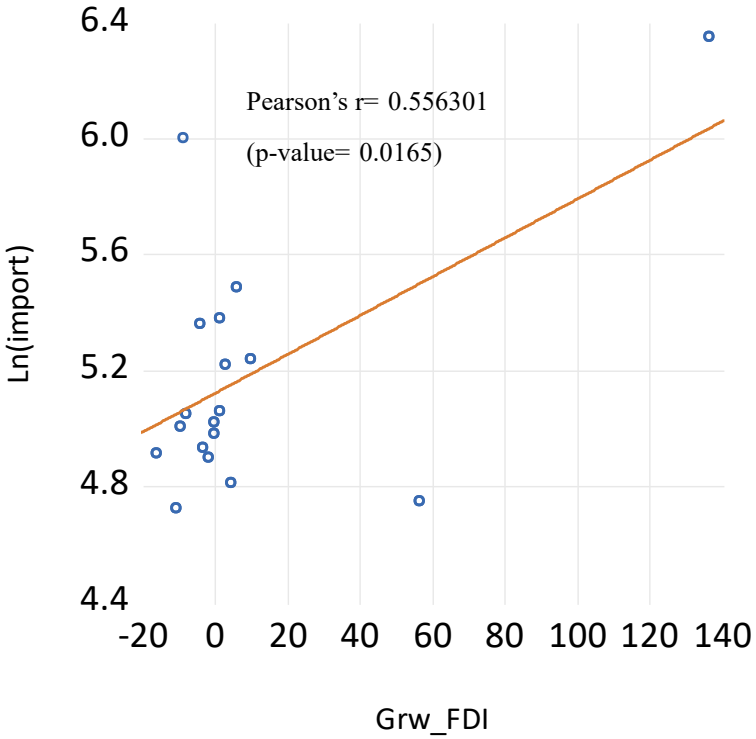
Figure 18 represents scatter plots and Pearson's correlation coefficients

with the p-value. The relationship between Ln(export) and Grw_FDI is weak and negative: Pearson's coefficient (r) of Ln(export) and Grw_FDI is -0.361744 without a statistical significance (p=0.1402); that of Grw_export and Grw_FDI is -0.122955 without a statistical significance (p=0.6269). This indicates that they inversely move, but their movement is not statistically significant.

Meanwhile, the relationship between Ln(import) and Grw_FDI is strong and positive: Pearson's coefficient (r) of Ln(import) and Grw_FDI is 0.556301at a 5% significance level; that of Grw_import and Grw_FDI is 0.785513 at a 1% significance level. This implies that they show co-movement in the same direction and their movement is statistically significant.




Pearson's r= -0.122955
(p-value= 0.6269)
Grw_export
Grw_FDI
120
100
80
60
40
20
0
-20
-40
-20 0 20 40 60 80 100 120 140


Pearson's r= 0.556301
(p-value= 0.0165)
Ln(import)
Grw_FDI
6.4
6.0
5.6
5.2
4.8
4.4
-20 0 20 40 60 80 100 120 140

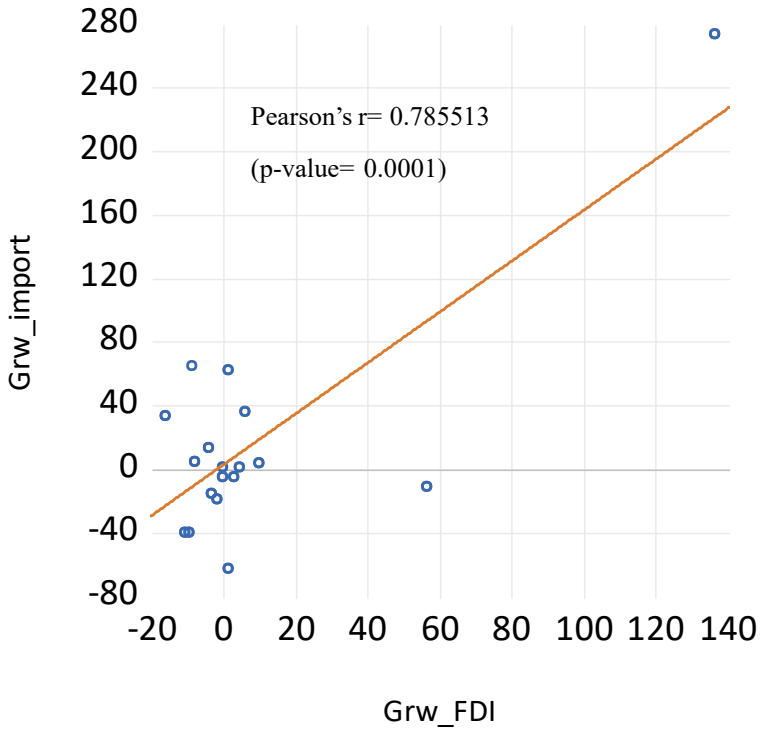


Figure 18. Scatter plots and Pearson's correlation coefficients

Source: Reproduced from E-views.

- *Results and discussions*

Regression analysis with OLS and robust estimators is further conducted. In particular, robust least square (M-estimation) is less sensitive to outliers and normality by employing the least median of squares method to deal with non-normally distributed variables[174][175]. The results are presented in Table 37.

Table 36

Regression results

	Ln(export)		Grw_export		Ln(import)		Grw_import	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust

[174] Massart, D. L., Kaufman, L., Rousseeuw, P. J., Leroy, A. Least median of squares: a robust method for outlier and model error detection in regression and calibration// Analytica Chimica Acta, 1986, 187, 171-179.

[175] Rousseeuw, P. J. Robust estimation and identifying outliers// *Handbook of statistical methods for engineers and scientists*, 1990, *16*, 16-1.

Grw_FDI	-0.002551	-0.002282	-0.164288	0.091695	0.009181***	0.009915***	1.962799***	1.997306***
	(0.002680)	(0.002773)	(0.275472)	(0.151035)	(0.002794)	(0.001884)	(0.340987)	(0.356948)
Exrate	-41.64623	36.79936	2359.420	-3658.828	-113.3733	-28.03321	-16515.61*	-15478.12*
	(64.78539)	(67.02981)	(6658.676)	(3650.798)	(67.52842)	(45.54900)	(8242.289)	(8628.088)
Constant	8.224169***	7.090831***	-31.20655	49.75412	6.825622***	5.513965***	251.3484*	235.8146*
	(0.976201)	(1.010020)	(100.3344)	(55.01103)	(1.017533)	(0.686342)	(124.1966)	(130.0099)
Breusch PaganGodfrey test (P-value)	0.2272	-	0.3100	-	0.6766	-	0.4410	-
Adj. R^2	0.041382	-0.081711	-0.106934	-0.085602	0.341198	0.067682	0.657615	0.182723
Obs.	18	18	18	18	18	18	18	18

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Grw_FDI is negatively correlated with Ln(export) and Grw_export. But, it does not have statistical significance. This indicates that South Korean FDI in the Russian Far East does not have a special association with their bilateral export (from Russian Far East to South Korea).

While Grw_FDI is positively correlated with Ln(import) and Grw_import at a 1% significance level. This indicates that South Korean FDI in the Russian Far East promotes their bilateral imports (from South Korean to Russian Far East). The same results were found in models with robust estimators.

- *Conclusions and policy implications*

In this section, the impact of South Korean FDI in the Russian Far East on the bilateral export and import between them is investigated. Pearson's correlation coefficients indicate a weak negative relationship between FDI stock and export (from the Russian Far East to South Korea) and a strong positive relationship between FDI stock and import (from South Korean to the Russian Far East).

This study established regression models with OLS and Robust estimators. The results present that South Korean FDI stock in the Russian Far East promotes imports to the Russian Far East from South Korea. On the other hand, it does not show any statistical significance between FDI and exports.

These results can be understood in this way. It is likely that South Korean

FDI in the Russian Far East is market-seeking investment. Instead of exporting manufactured goods and services back to South Korea, it seems that they were much more willing to sell them at the Far Eastern local markets. In addition, South Korean FDI seems much occupied by horizontal FDIs and even vertical FDIs are weak at production localization. Due to this, FDI leads to increased imports to the Russian Far Eastern market in a form of both finished goods, semi-finished goods, or components. At the current moment, South Korean FDI stock might be useful for the Russian Far East in that the region attracts foreign capital, which can be used as seed money for regional economic growth. Also, as revealed in Section 2.3, the even distribution of South Korean FDI in various sectors of the Russian Far East may contribute to the balanced development of the regional economy, which is heavily distorted to the energy sectors.

However, to enhance the win-win effects of South Korean FDI, first of all, how they invest in the Russian Far East should be reformed in a way much to localize their production process and create spillover effects on the local economies. In the Russian Far East, there are many natural endowments, which South Korea do not hold in their home market, for instance, gas, oil, fish, timber, grains, and so forth. These products are closely related to national energy and food securities, but South Korean FDI does not seem to utilize their investment to export such critical goods back to their home country. In reality, South Korea is the 2nd largest trading partner (after China) in the Russian Far East. South Korea's main products for import from the Russian Far East are natural resources (oil, gas, coal) and fish[176]. However, sectors for South Korean FDI in the Russian

[176] Consulate General of the Republic of Korea in Vladivostok: [Website], 2019 Korea-Russia Far East and Russia Far East Trade Trends [2019년 한-러 극동지역 및 러 극동지역 교역동향].-URL: https://overseas.mofa.go.kr/ru-vladivostok-ko/brd/m_7804/view.do?seq=2114850&srchFr=&srchTo=&srchWord=&srchTp=&multi_itm_seq=0&itm_seq_1=0&itm_seq_2=0&company_cd=&company_nm=&page=23 (date of access: 25.06.2022).

Far East do not closely relate to that their trade: South Korean FDI was rather weak in the energy sectors. In this sense, secondly, to create positive exporting effects from South Korean FDI in the Russian Far East, it seems necessary to enhance South Korean FDI in energy and other sectors, which South Korea poorly endowed back in their home country.

3.3 Practical tools to enhance the inflow of South Korean FDI to the industrial complex of the Russian Far East

South Korea has been a consistent main economic partner of the Russian Far East. South Korean government has operated South Korea- the Russian Far East and Siberia joint subcommittee, separately from South Korea- Russia joint committee since 2002. However, despite consistent investment flows from South Korea to the Russian Far East, institutional support has remained at the primary level, which is hampering the increase of South Korean FDI.

In this vein, this section focuses on discussing practical policy instruments to revitalize South Korean FDI in the Russian Far East in five tasks based on investment factors, derived from the analysis conducted throughout the dissertation (Table 38). The main actor of these policies is the South Korean government, but multiple policy instruments require inter-governmental and inter-public-private cooperation.

Table 38

Tasks to overcome (promote) deterrents (determinants) of South Korean FDI in the Russian Far East

Deterrents/Determinants	Tasks	Policy instruments
A lack of Northern policy continuity by various South Korean administrations	Cultivating South Korean specialists in the Russian economy to	- To permanent establishment of the Presidential Committee on Northern Economic Cooperation; - to formulate a human data base;

	develop policy through stages	- to establish a bi-lateral think tank; - to promote academic exchanges.
	Strengthening cooperation between public-private and inter-private sectors	- To restructure the Korean-Russian Business Council; - to construct a systemized database of South Korean companies in Russia
The high entry rate of South Korean SMEs in the Russian Far East	Formulating preferential measures to support small-medium sized South Korean enterprises	- To create SME funds; - to strengthen the capacity in discovering South Korean companies with potential in the Russian Far East; - to create an assistant team from the Russian side dedicated to South Korean investors; - to support start-up businesses in the Russian Far East; - to facilitate the South Korean industrial complex in Primorsky Krai for a large number of South Korean SMEs by utilizing North Korean labor in the Russian Far East
(a) Market-seeking as the primary objective of South Korean FDI in Russia (b) The low domestic demand factor of the Russian Far East	Improving distribution channels for market expansion to other regions and countries	- To improve the efficiency of the customs administrative systems (establishment of a joint custom committee and use of local currencies for trading transactions); - to enhance the efficiency of logistics services (a provision of inland freight costs subsidies for companies in FPVs and SEZs and establishment of a public-private council to develop joint research on and investment in the road infrastructure)
A necessity of big-scale investment projects (unaffordable only by private sectors)	Strengthening state financial supports	- To implement a governments' system to share investment risks (e.g., MRG, MCS and credit security); - to establish a co-financing platform with Korean financial institutions and MDBs; - to implement services to win a bid in an MDB project by matching a company to a potential project and assisting to prepare documents.

Source: Composed by the author.

Task1. Cultivating South Korean specialists in the Russian economy to develop policy through stages

Northern policies have been only conducted at a basic level. To practically develop the Russian Far East, the continuous policies through stages should be applied by regional economic specialists.

Following Presidential Decree No. 28254, the South Korean government created the Presidential Committee on Northern Economic Cooperation in 2017 to act as a control tower to discover, coordinate, evaluate and monitor policies[177]. As noted in Fig 7, the Presidential Committee on Northern Economic Cooperation is composed of a core (i.e., chairman, ex officio members (5), and civilian members (18)) and a periphery group (i.e., business council, research institute, and advisory council, local government advisory council, expert committee, special committee, and support group). The five ex officio members are senior officials under the administration. The 18 civilian members are experts in each field, and key personnel responsible for policy research in the forefront, requiring high-level professional knowledge and rich experience.

[177] Regulations on the establishment and operation of the Northern Economic Cooperation Committee [북방경제협력위원회의 설치 및 운영에 관한 규정] [Electronic resource]. – URL: https://www.law.go.kr/LSW/lsInfoP.do?lsiSeq=196933&viewCls=lsRvsDocInfoR# (date of access: 29.09.2020).

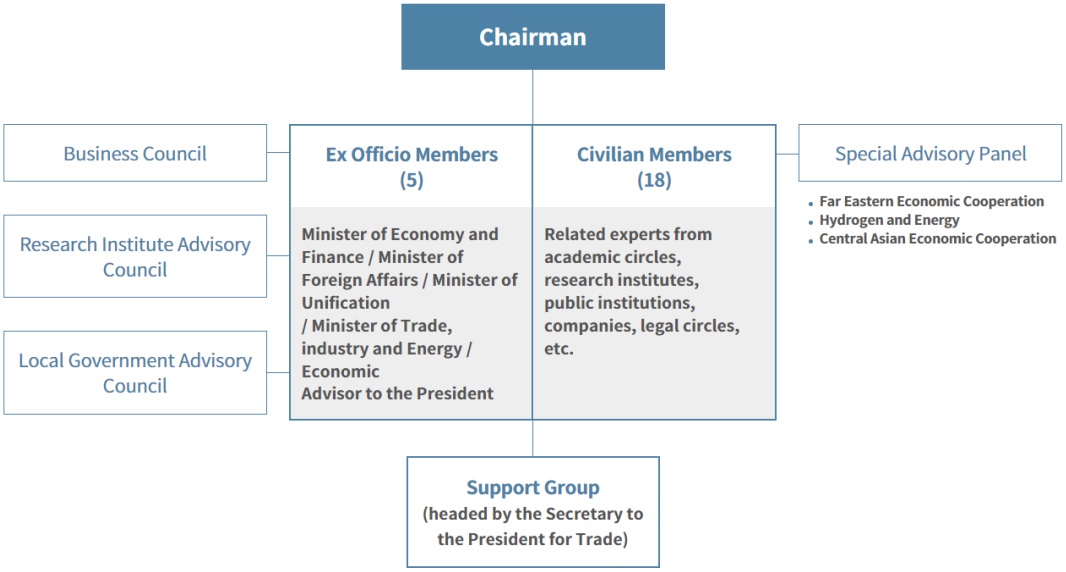


Figure 19. Organization chart of the Presidential Committee on Northern Economic Cooperation

Source: The Presidential Committee on Northern Economic Cooperation: [Website] Organization [Electronic resource]. – URL: http://bukbang.go.kr/bukbang_en/about_pr/organization/ (date of access 26.07.2022).

The 18 civilian members and experts committee are in charge of the think tank. However, many of the experts in the committee are generalists in a particular industry, and specialists in the Eurasian region are limited.[178] Only some of the civilian members obtained higher education in Russia or other Eurasian countries in the 1990's. However, considering that the time they studied is not too far after the dissolution of the Soviet Union, young experts, who have experience with Russia's rapidly changing economy, politics, and society in the 2000's, are necessary for sustainable enforcement of the Northern Policies.

In addition, the committee is a non-standing organization for five years

[178] The Presidential Committee on Northern Economic Cooperation: [Website], Committee introduction [Electronic resource]. – URL: http://bukbang.go.kr/bukbang/issue_news/0011/ (date of access 29.09.2020).

under the Presidential Decree, and the term of committee members is two years. This means that the organization disbanded on 24 August 2022, after repeating only low-level studies that are not commercially available.

1) In this light, it is necessary to decide the committee's permanent establishment to secure policy continuities in president Yoon Seok-yeol's current government.

2) Second, the government should cultivate young experts in the Russian economy based on the following policy instruments. In order to practically increase trade volumes and investments with South Korea for revitalizing Far Eastern local economy, continuous policies through stages should be applied by regional economic specialists.

The South Korean government should establish a human resource database of South Koreans who have obtained higher degrees from Eurasian countries and Russia and categorize them into regions and industries. We can easily see that the Central Asian economic experts research the Russian economy and vice-versa due to insufficient systemization of human resources. A specialization of each person (measured by a major in university, internship experiences, personal interests, etc.) should be also considered when formulating a human data base. A database would contribute to cultivating young experts who are highly specialized in a particular region (both at the national and sub-national levels) and industries. Besides, especially for doctoral students, the government should consider including them in government projects during their study period, which would enable them to contribute to the policy-making process.

3) A bi-lateral think tank, which is composed of scholars, institutes, enterprises, and government officials to introduce and conduct phased policies, should be established.

4) Academic exchanges in various forms, for instance, a regular joint-

conferences, exchange programs, dual degrees, etc. should be promoted.

Task 2. Strengthening the cooperation of public-private and inter-private sectors

The private sector is the real subject of direct investment. The promotion of inter-private and public-private cooperation promotes effective and sustainable policymaking and implementation. With this in mind, the Korean-Russian Business Council was launched (2017), and the Korea Chamber of Commerce and Industry (KCCI) and KOTRA were appointed as executive secretary. Herewith, I clarify that as a non-profit corporation under the Ministry of Trade, Industry, and Energy, there is an organization with the same name "the Korean-Russian Business Council" (established and registered in 2012), and performs similar tasks. Therefore, the Russian side has written the Korean-Russian Business Council (launched in 2017) as Корейско-российский деловой инвестицтионный совет instead of Корейско-российский деловой совет.

The Korean-Russian Business Council holds annual meetings to invite Russian government officials, companies, and economic and legal experts to provide up-to-date information on business exchanges between South Korea and Russia. As the Korean-Russian Business Council is rudimentary, it can right the ship by referring to Japan as a role model, because the Japanese private and public-private cooperation system in Russia is well established.

In Japan, Japan Business Federation (KEIDANREN) established the Japan-Russia (NIS) Economic Committee. The NIS holds a meeting jointly with their Russian partner, namely the Russian Union of Industrialists and Entrepreneurs (RSPP). The Japanese Ministry of Foreign Affairs and the Ministry of Economy, Trade, and Industry participated in the meeting. If it is held in Russia, relevant Russian ministries such as the Minister of Economy and Development also attend the meeting. After discussing the necessary support, problems, and

solutions from the companies' standpoint, the survey results are reported to key politicians in the Russian government. In addition, Japan's ROTOBO, the Korean-Russian Business Council's original model, supports Japanese enterprises doing business in Russia by holding investment forums and exhibitions, promoting exchange, providing business consulting, and business matching. They even have their think tank.[179]

At the same time, Japan and Russia co-run the Japan-Russian Trade and Investment Promotion Organization (composed of both countries' governments and private organizations). In Japan, the Ministry of Economy, Trade, and Industry, the Ministry of Foreign Affairs, ROTOBO, and the Japan External Trade Organization (JETRO) formed a headquarters. ROTOBO operates a secretariat in the Japan office, while the Japan Center and JETRO Moscow Office have local branches in Russia. Russia also created a headquarters of economic-related ministries with the Ministry of Economic Development as a leader.[180]

The following directions can be drawn for the Korean-Russian Business Council referring to the case of Japan:

1) The expansion of cooperation between South Korea and Russia. The Korean-Russian Business Council should plan for expanding the participation of Russian power brokers and convey the opinions gathered from South Korean companies to the key Russian politicians. For this, we can consider developing the Korean-Russian Business Council to a bilateral consultative group as referring the Japan-Russian Trade and Investment Promotion Organization.

2) The expansion between cooperation of governmental and private

[179] Japan Association for Trade with Russia & NIS// ROTOBO [Electronic resource]. - URL: http://www.rotobo.or.jp/main/english.pdf (date of access: 08.10.2020).

[180] Park, J., Jeong, M., Kang, B., Jeong, D., Kim, C., Jeh, S., Lukonin, S., Zaklyazminskaya, E. Study on the Improvement of Korea's New Northern Economic Cooperation Governance: Focusing on Russia// KIEP Policy Analysis, 2019, 19(12), 113-115.

organizations at different levels. The Japanese system presents organic connections amongst governmental and private sectors from high (ministries) to low levels and their tight connection to the Russian partners. Due to those sophisticated organic connections at the inter-governmental and inter-private-governmental levels, Japanese companies' requests are readily accepted by the Russian government. This leads to better business environments for those Japanese companies in Russia. In this regard, South Korea should develop a greater level of connection between governmental and private sectors. For this, the Korean-Russian business Council should hold a regular meeting and jointly establish an investment promotion center with governmental bodies of South Korea and Russia (e.g., the Ministry of foreign affairs, the Ministry of Trade, Industry and Energy, etc.)

3) To improve business environments, a system of South Korean companies in Russia to conduct a regular-basis survey should be constructed. The public and private sectors should hold regular business dialogues and survey to collect requests from South Korean investors. Outputs of dialogues and surveys should be input into a system according to a category of a task. For instance, suppose that there was a plethora of claims on the non-unification of HS codes on a certain product from a survey. Then this claim could be categorized as an issue of custom administration in the system. The progress of the claim clearance could be tightly monitored with a tracking system by marking notes and completion rates. In detail, the system should include information, such as whether the claim is forwarded to the appropriate authorities. In addition, the data collected from the system could also be used as a tool to investigate new potential FDI projects and practical policy mechanisms.

4) The Korean-Russian Business Council should expand business supporting activities by holding investment forums and exhibitions, promoting

exchange, providing business consulting, and business matching.

The improvement of activities of the Korean-Russian Business Council will lead to entry of multiple South Korean companies from various industries into the Russian Far East and contribute to diversifying regional industries.

Task 3. Formulating preferential measures to support small-medium sized South Korean enterprises

Due to the high variability in market conditions in Russia, SMEs, which can respond quickly and flexibly to market changes, are more suitable to adapt to the market than large companies with complex decision-making structures[181]. As noted in Section 2.3, a large portion of South Korean FDI in the Russian Far East is made by SMEs. In addition, for the development of the Russian Far East, it is important to attract SMEs in various industries to overcome unbalanced growth amongst industries (Section 2.1). Thereby, it is necessary to systematically establish support policies for SMEs within the following large frameworks:

1) To create a fund and business consultative group between the export-import bank of Korea and Far East and Arctic Development Fund of Russia to solely support SMEs entering the Russian Far East. In addition, KOTRA can create a business consultative group with the Russian Far East and Arctic development corporation.

2) To strengthen the capacity to discover South Korean companies with potential in the Russian Far East. In 2017, KOTRA opened a Korea investment center in the Russian Far East, providing a one-stop service to run a business. Since large companies sign MOUs with major consulting companies to conduct

[181] Maeil Business Newspaper: [Website], The first principle of entry into Russia... "Be a quick one rather than a strong one" [러시아 진출 제1원칙…"강한 者보다는 빠른 者 돼라"] [Electronic resource]. – URL: https://www.mk.co.kr/news/special-edition/view/2016/09/678312/ (date of access: 06.10.2020).

business, KOTRA's main service targets are SMEs. However, KOTRA specializes in supporting companies already interested in expanding into a specific foreign market (in our case, the Russian Far East). They should expand their range of work to voluntarily find South Korean enterprises, which have business potential in the Russian Far East, although they do not have an initial interest in market expansion to Russia. For this, they can cooperate with other related organizations such as KCCI, Korea SMEs and Startups Agency, RSPP, etc.

3) To formulate a special assistant team of the Russian side (which has a direct connection with KOTRA's investment center in the Russian Far East) only dedicated to South Korean investors. To deal with urgent requests from the private sector, it is necessary for KOTRA to carry out regular meetings with South Korean companies in the Russian Far East and to deliver those requests or queries directly to the Russian side. If there is a regional level (in this case the Far East) assistant team from the Russian side for South Korean companies, it will facilitate and speed up the whole problem-solving process in that many things can be discussed with the regional government body.

4) To support start-up businesses in the Russian Far East. South Korea's youth unemployment rate has increased by 28.3% over the past ten years since 2009, the 3rd after Greece and Italy among OECD countries[182]. It is on the political agenda to reduce the youth unemployment rate by creating jobs domestically and abroad. Considering the various tax incentives and free foreign labor movements (without quota), the Russian Far East is beneficial to start-up companies.

The South Korean government held a business idea contest, "The New Northern Youth Future Pioneer Group," under the slogan of discovering future growth and development engines between South Korea and Russia in 2018 (for

[182] OECD: [Website], Unemployment rate [Electronic resource]. – URL: https://data.oecd.org/unemp/unemployment-rate.htm (date of access: 06.10.2020).

the Russian Far East) and in 2020 (for the whole of Russia). The contest provides an opportunity for mentoring and visiting Russia for the team passing the document screening, and awarded $1,000 to a winning team[183]. This type of contest lacks the financial sponsorships to commercialize ideas. It is likely to end in a simple idea contest. The government should enact start-up contests providing initial settlement funds and accelerators for winning teams to actualize an idea (for instance, K-Start-up Grand Challenge[184]). In addition, a certain space in the science park should be provided for the team, and the business of the winning team should be fully supported.

5) To facilitate the South Korean industrial complex in Primorsky Krai for a large number of South Korean SMEs, while finding a potential to work with North Korean labor in the Russian Far East. The Gaesung industrial park (in North Korea) was a famous destination for South Korean SMEs' FDI. One of the main motives for their market entry at the Gaesung industrial park, which has shut down due to the inter-Korean political conflict since 2016, was the possible utilization of North Korean labor with reasonable wage rates, who use the same language and sharing diligent and hardworking South Korean characteristics. The South Korean SMEs, which will reside in the South Korean industrial complex in Primorsky Krai, need to find a potential to work with the North Korean workers. In addition, the Primorsky local government should promote necessary industrial projects with financial support (for instance, tax incentives, subsidies, and a fund) for their regional development for joint ventures with the South Korean companies in the industrial complex.

[183] New Northern Youth Future Pioneer Group [Electronic resource]. –URL: http://www.newnorthern.co.kr (date of access: 06.10.2020).
[184] K-STARTUP GRAND CHALLENGE: [Website], Benefits [Electronic resource]. – URL: https://www.k-startupgc.org/project/benefits.do (date of access: 06.10.2020).

Task 4. Improving distribution channels for market expansion to other regions and countries

As noted in Section 2.3, South Korean FDI in Russia is motivated by market-seeking more than any other desire. Poor conditions in domestic demand factors in the Russian Far East should be overcome to attract South Korean investment by facilitating international factors. South Korean investors do not have a choice but to expand to other regions of Russia and abroad for goods produced in the Russian Far East due to the small purchasing power of the regional buyers. It is expected that export-oriented South Korean FDI are highly attracted to the Russian Far East. In addition, the improvement of distribution channels will develop regional economy, attract more investments, and expand sales opportunities to west Russia and other Asian and European countries. In this vein, to facilitate the movement of goods between regions and countries, it is necessary to simplify the customs clearance process and improve the distribution infrastructure as follows:

1) To improve the efficiency of the customs administrative system of the Russian Far East. For customs clearance, it requires on average 3-4 documents in OECD countries, but a minimum of 10 documents in Russia, which even must be filled out in the Russian language. Even for the same product, the HS code and tariff rates are different for each regional customs office in Russia. The number of days it takes for customs clearance increases due to additional inspections for price evidence and weight information. The complex customs administrative system increases the time required for customs clearance in Russia, 25.4 hours (OECD average: 2.4 hours) to pass export documents and 38.6 hours (OECD average: 8.7 hours) to pass

import documents, easily surpassing that in OECD countries.[185]

In this vein, the Russian Far East should improve the efficiency of the customs administration system. In particular, the three northeastern provinces of China have large transaction units, attractive to South Korean companies in the Far East. Thereby, I suggest that the South Korean government should establish a committee with the Russian and Chinese governments to improve the customs administration in the Russian Far East (for instance, simplification of customs procedures by reducing the number of documents and inspections and automation of customs clearance process). They also may use local currencies (in this case, the Russian Ruble, Korean Won, and Chinese Yuan) as the transaction currency for trading instead of the dollar or euro. In the long-term, a regional integration with Regional Comprehensive Economic Partnership (RCEP) should be also considered to reduce trade barriers.

2) To enhance the efficiency of the logistics service of the Russian Far East.

The freight cost from the Russian Far East to other regions is significantly high in railway operation and trucking as follows:

- In terms of railway operation, fares rise as charges occur on freight-car usage and container rental in addition to railway usage. For example, a fare for the route from Busan port (via Far East port – Vladivostok or Bostocini) to Moscow by TSR is $3,500 per FEU, $400 higher than marine shipping (via Suez canal);
- In terms of container trucking, it costs 35-40% more than railway

[185] KMI Pending Research Summary Report No. 12-Analysis of logistics difficulties of Korean shippers and logistics companies entering the Far East and ways to improve them [KMI 현안연구 요약보고서 제12호 - 극동러 진출 우리 화주·물류 기업의 물류 애로사항 분석 및 개선방안] (p. 7)// Korea Maritime Institute [Electronic resource]. – URL: https://www.kmi.re.kr/web/board/download.do?rbsIdx=287&idx=37078&fidx=2 (date of access: 13.10.2020).

operations, despite its lower quality. As Russian inland temperatures fall below minus 40 degrees Celsius during winter, sometimes quality abnormalities occur with loaded products through repeated thawing and freezing. Eventually, to maintain a certain quality, it is necessary to modernize additional facilities and equipment to prevent quality deterioration, leading to an additional increase in logistics costs at an already high level.[186]

To resolve the above inland logistic issues in the Russian Far East, I suggest the following:

- First, subsidize inland freight costs for companies in FPVs, and ASEZs from the bilateral governmental fund. For instance, Mazda Sollers Manufacturing Rus LLC(MSMR) in Primorsky Krai receives a transportation (railway and trucking) subsidy from the Ministry of Industry and Trade Russia.
- Second, the two governments and private sectors (composed of, for instance, the Korean-Russian Business Council, Russian Union of Industrialists and Entrepreneurs, the export-import bank of Korea, and the Russian Far East and Arctic development corporation) should compose a public-private council to develop joint research on and investment in the road infrastructure to improve the Russian Far East's underdeveloped logistics service. They should clarify current logistics problems and discover potential investment projects together.

  However, the transportation industry has been designated as one of the 46 fields of strategic importance for national security and

[186] Ibid, p. 8.

national defense under the "Strategic Investment Act (enacted in 2008)" resulting in foreign investment restrictions. Foreign shipper companies need to enter the regional market to improve the quality and efficiency of logistics services in the Russian Far East.[187] To this end, Russia should ease regulations and lower entry barriers to the transportation industry on top of all.

Task 5. Strengthening government financing supports

Despite the necessity of investment in mining sectors due to national energy security, South Korean investment in it is low. Economic cooperation in the energy industry is also important for the development of the Russian Far East considering its economic dependency on it. It is necessary for the South Korean government to strengthen its financial support for large energy investment projects. To enhance South Korean investments in the energy infrastructure will lead to the attraction of large-scale capitals into the Far Eastern regional economy, promote economic growth and wealth of the region, and create spillover effects on related industries.

1) The government should implement a system to share investment risks. Russia is an attractive investment destination in terms of the government's investment support policy. But, at the same time, the investment accompanies high risks due to unstable exchange rates and the high dependency of the national economy on the energy industry. Since the Gaesung industrial park's shutdown in 2016 caused tremendous financial losses for private companies that went uncompensated by the government, South Korean investment in high-risk regions has been highly discouraged. In this vein, the government must introduce the

[187] Ibid, p. 9.

investment risk-sharing system, for instance, Minimum Revenue Guarantee (MRG), Minimum Cost Support (MCS), and the government's credit security[188].

2) It should improve the operation of a financing platform for discovering projects actively. To this end, I propose to establish a co-financing platform with Korean financial institutions and MDB to find infrastructure development projects in the Russian Far East.

Among of MDBs, Asia Infrastructure Investment Bank (AIIB) is the most likely candidate for a co-financing considering that:

- It focuses on economic development through infrastructure investment rather than poverty eradication;
- It states greater interest in Northeast Asian regional development, compared to World Bank (WB), Asian Development Bank (ADB), and European Bank for Reconstruction and Development (EBRD);
- Russian and South Korea have a significant influence on AIIB as the 3rd and 4th leading member states in ownership, holding a total 10.7% share ratio[189].
- In addition, building a consortium including competitive Chinese companies is a safe method to win a project contract considering that:
- China holds the most significant ownership in AIIB, 30.8% share ratio, far above the total of Russia and South Korea;
- South Korean companies have almost no participation rate in previous MDB projects.

3) Besides, South Korean companies show a low participation rate in

[188] Ibid.

[189] Asian Infrastructure Investment Bank: [Website], Members and Prospective Members of the Bank [Electronic resource]. – URL: https://www.aiib.org/en/about-aiib/governance/members-of-bank/index.html (date of access: 20.10.2020).

multilateral development bank (MDB) projects relative to their actual capabilities due to a lack of information and weak networking.

The South Korean government can also consider implementing services to win a bid in an MDB project by matching a company to a potential project and assisting to prepare documents.

CONCLUSION

In this dissertation work, the industrial complex of the Russian Far East and opportunities to attract direct investment from South Korea for its development were explored throughout 3 Chapters and 9 Sections. Based on analyses in this dissertation, the author can draw the following conclusions and policy implications.

Throughout Section 1.1 – 1.3, leading theories of foreign economic activity of industrial enterprises were reviewed. It was revealed that industrial enterprises can choose market entry modes by considering two criteria: a level of ownership/control and risk. Considering the share of exports, imports, and FDI to the global GDP and MNEs' profits from foreign subsidiaries, the significance of foreign economic activity is expected to grow in spite of various turbulences (e.g., war, pandemic, etc.) in the modern economy. Renowned theories of trade, strategic alliance, and FDI proposed factors affecting the foreign economic activity of multinational companies as follows: competitive advantages, a different factor (resource) endowment, a similarity of consumer preference or industry, institutional environment, economic size and geographic distance, location-specific factors and a level of internationalization. Above all, due to the globalization of the modern economy, this dissertation found that the significance of a level of internationalization should be much more stressed than other factors.

In Section 2.1, the dynamics, structure, and export potential of industrial complexes of the Russian Far East were identified. It was revealed that mining and transportation and storage are the largest, while water supply; sanitation, waste collection and disposal, pollution elimination activities, activities of hotels and catering establishments, financial and insurance activities, and activities in the field of culture, sports, leisure, and entertainment are the smallest industries

in the Russian Far East. The industrial structure of the 11 Far Eastern federal subjects is distinct. The industrial structure of Sakha Republic, Magadan Oblast, and Sakhalin Oblast is the most mining-oriented. Some federal subjects are specialized in the mining industry but alongside other industries, for instance, Zabaykalsky Krai, Amur Oblast, Jewish Autonomous Oblast, and Chukotka Autonomous Okrug. The economy of some federal subjects is far from natural resource based, for instance, Buryatia Republic, Kamchatka Krai, Primorsky Krai, and Khabarovsk Krai. This study further analyzes the export potential of industrial complexes in the Russian Far East. To estimate export potential two indices are used: the first is a product-to-total Far Eastern export ratio (%); while the second is a product in the Russian Far East-to-a product in all Russia export ratio (%). It is concluded that the gas (processing) and petrochemicals complex in Svobodny and Nakhodka; extraction of mineral resources and mining complex in Chukotka, Nikolaevsk, South Yakutia and Zabaikalye; metalworking complex in Komsomolsk; agriculture complex in Belogorsk, Buryatia, Amur-Khingan, Khabarovsk, Mikhaylovsky, Yuzhnaya and Yakutia; and, food (processing) and fishing complex in Belogorsk, Amur-Khingan, Kamchatka, Komsomolsk, Nikolaevsk, Kuriles and Zabaikalye have high export potentials. On the other hand, the unbalanced industrial structure and development among industries are pointed out as chronic problems of the Russian Far East.

Based on the generalized double diamond model analysis in Section 2.2, it was identified that international contexts of the generalized double diamond model allowed us to find the regional attractiveness of the Russian Far East for a regional basis of international market expansion for industrial enterprises. In particular, Primorsky Krai, Sakhalin Obalst, and Khabarovsk Krai are determined as the best states out of the 12 states in the Russian Far East for foreign economic activity of multinational enterprises.

From the descriptive and empirical analyses in Section 2.3, it was identified that South Korean FDI in Russia is motivated by market size, inflation rates, and natural resources, but de-motivated by the GDP per capita gap (South Korea – a host country). This implies that it is not economic stability and labor cost efficiencies but markets and new business opportunities that are the predominant factors in attracting South Korean FDI in Russia.

In Section 3.1, it was revealed that (A) Agriculture, forestry, hunting, fishing, and fish farming; (C) Manufacturing industries; (G) Wholesale and retail trade; repair of motor vehicles and motorcycles; (H) Transportation and storage; (J) Information and communication activities; (K) Financial and insurance activities; (L) Real estate operations; (M) Professional, scientific and technical activities; and (N) Administrative activities and related additional services were the most growing-industries over the recent 4 years in the Far Eastern federal district.

In section 3.2, the impact of South Korean FDI in the Russian Far East on their bilateral exports and imports was substantiated based on the developed econometric models. South Korean FDI in the Russian Far East significantly increases imports from South Korea to the Russian Far East, but that does not influence exports from the Russian Far East to South Korea.

From the research study throughout the whole sections, the following 5 deterrents (determinants) to hamper (promote) South Korean FDI in the Russian Far East were identified:

(1) A lack of Northern Policy continuity by various South Korean administrations;

(2) The high entry rate of SMEs South Korean companies in the Russian Far East;

(3) Market-seeking as the primary objective of South Korean FDI in

Russia;

(4) The low domestic demand factor of the Russian Far East;

(5) A necessity of big-scale investment projects that the South Korean government designated as the primary (unaffordable only by private sectors).

For the above 5 deterrents (determinants), the following practical policy instruments are offered:

Task 1) cultivating South Korean specialists in the Russian economy to implement the phased policy:

- The permanent establishment of the Presidential Committee on Northern Economic Cooperation; the creation of a human resource database of South Koreans obtaining higher degrees from Eurasian countries and Russia and categorizing them into regions and industries; provision of school to job programs for South Korean students with a degree from Russia; establishment of bi-lateral working groups (composed of both South Korean and Russian experts) to complete detailed short-term tasks (related to 1-3 years basis goals and strategic plans).

Task 2) strengthening cooperation between public-private and inter-private sectors by developing the structure of the Korean-Russian Business Council as follows:

- inclusion of important South Korean and Russian politicians; expansion of cooperation of governmental and private organizations at different levels (from ministries to private corporations); construction of the systemized database of South Korean companies in Russia.

Task 3) formulating preferential measures to support small-medium sized South Korean enterprises:

- creating an SME fund; strengthening the capacity to discover South

Korean companies with potential in the Russian Far East; formulating a special assistant team of the Russian side (which has a direct connection with KOTRA's investment center in the Russian Far East) only dedicated to South Korean investors; supporting start-up businesses in the Russian Far East (hosting a competition based on financial support and accelerators); facilitating South Korean industrial complex in Primorsky Krai for a large number of South Korean SMEs.

Task 4) improving distribution channels for market expansion to other regions and countries:

- improving the efficiency of the Russian Far East's customs administrative system by formulating inter-governmental custom committees; adopting local currencies for trading transactions and further considering a regional integration with RCEP; enhancing the efficacy of logistics services of the Russian Far East by providing a freight cost subsidy and joint research and investment in road infrastructure based on the inter-governmental-private council.

Task 5) strengthening state financial supports:

- restructuring loan management methods by operating a bi-lateral financing program with clear responsibility for any budget misuses and categorizing the fund by Russian regions and industries based on their significance; implementing a government risk-sharing system; expanding cooperation with multilateral development banks; implementing services to win a bid in an MDB project by matching a company to a potential project and assisting to prepare documents to increase the participation rate of South Korean companies in projects of MDBs.

Lastly, to add historically, the Russian Far East has been a space threatened by Chinese expansionism. Japanese FDI in the Far East is based on the assumption of the return of the Kuril Islands. In this respect, although South Korea has a relatively small economic influence on the global economy relative to China and Japan, cooperation with South Korea is certainly one option for Russia. South Korea-Russia cooperation helps to maintain the balance of power in the Far East amid those two world powers and peacefully to formulate with them the Pan-East Sea Economic Zone. In addition, investment in the Russian Far East will bring not only economic but also political advantages for South Korea in that the Far East can be used as a space for reconciliation and negotiation with North Korea.

Economic cooperation between South Korea and Russia has been promoted at a low level of import and export and has not created a remarkable win-win situation. Future economic cooperation between the two countries should contribute to the development of local industries in Russia, and South Korean companies should enjoy various localization benefits and market opportunities provided by the Russian government through active direct investment.

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APPENDIX

List of appendices:

Table A7: South Korean farming companies in Primorsky Krai

Table A 1

Tax incentives in ASEZs

Income tax	Within 5 tax periods starting from receipt of the first profit: 0% For the next 5 years: 12%
Property tax	For the first 3- 5 years: 0%
Corporate tax	For the first 5 years: 0% For the next 5 years: 0.5% ~ 2.2%
Unified social tax	7.6%
Mineral extraction tax	0%

Source: The Russian Far East and Arctic Development Corporation: [Website], Advanced Special Economic Zone [Electronic resource].- URL: https://erdc.ru/en/about-tor/ (date of access: 26.06.2022).

Table A 2

Main plans of the Far Eastern fishery clusters

Region	Plan	Content
Primorsky	Refrigerated warehouse	- Installation of a freezing warehouse, operated as the largest auction site for seafood products in Asia-Pacific, capable of storing 500,000 tons of seafood per year until 2017 in Nazimova Bay, Vladivostok.
	Pollack fillet processing factory	- Phase 1 (2017~2018): to process 20,000 tons of frozen pollock fillets and 45,000 tons of pollock blocks per year. - Phase 2 (2019~2020): to Improve processing capacity by more than 2 times to Phase 1.
	Frozen seafood processing factory	- Installation of a frozen seafood processing factory capable of processing 36,000 tons per year
	Seafood processing complex	- Installation of 50,000㎡ multi-purpose seafood processing complex (including aqua farm)

	Marine technology bio research complex	- Establishment of a research complex in Far Eastern Federal University with support from business incubators and venture funds (1 million rubles). - Plan to link with the production of pharmaceuticals using marine organisms
Sakhalin	- Salmon fishing and processing base	
Kuril	- Seafood processing factory	
Kamchatka	- Seafood fishing base - Coastal frozen seafood processing - An export gateway to Western Russia and Europe	

Source: KOTRA: [Website], Russian government announces master plan to create fishing cluster' in the Far East [러 정부, 극동지역 '수산물 클러스터' 조성 마스터플랜 발표] [Electronic resource]. – URL: http://news.kotra.or.kr/user/globalAllBbs/kotranews/album/2/globalBbsDataAllView.do?dataIdx=148501 (date of access: 01.09.2020).

Table A 3

Zvezda shipyard modernization plan by the end of 2024

Stage 1	Commissioning: the hull production shop, painting shop, and outfitting slipway to produce medium-range vessels and offshore facilities.
Stage 2	Commissioning of a dry dock and full-cycle production facilities to fabricate large range vessels and offshore facilities.
Stage 3	Commissioning of the production facilities for the construction of offshore facilities.

Source: Zvezda: [Website], ABOUT SSC "ZVEZDA" [Electronic resource]. – URL: https://sskzvezda.ru/index.php/en/about/about (date of access: 27.01.2021).

Table A 4

Port development projects in the Russian Far East

Port	Content
Posyet	- Technical retooling to increase the flow capacity of the seaport. - Project capacity: 4 million tons per year.
Vostochny	- Reconstruction of the following hydraulic structures: berth No. 34, berth No. 35, approach canal to berths No. 31-35, water area to berth No. 34, and water area to berth No. 35. - Project capacity: 0.8 million tons per year.
	- 3rd stage construction of a coal terminal. - Project capacity: 17.25 million tons per year.
	- Construction of the petrochemical terminal in Vostok Gulf, Yelizarov Cape. - Project capacity: 17.25 million tons per year.
Zarubino	- Construction of transshipment terminals. - Project capacity: 42.4 million tons per year.
Muchke	- Construction of the specialized coal transshipment terminal. - Project capacity: 24 million tons per year.
Petropavlovsk-Kamchatskiy	- Reconstruction of federal property facilities (strengthening of seismic resistance). - Project capacity: 0.68 million tons per year.
Vanino	- Construction of a port complex for the transshipment of alumina (import). - Project capacity: 3 million tons per year.

Source: Rosmorport: [Website], Investment Projects List [Electronic resource]. – URL: https://www.rosmorport.com/investors/innovations/investlist/ (date of access: 10.09.2020).

Table A 5

The history of Northern policies under a different government regime in South Korea

President (incumbency)	**Policy**	**Key features**
Roh Tae-woo (‘88~’93)	Northern Policy	- Established diplomatic relations with the Soviet Union and China;

		- North and South Korea join the UN.
Kim Young-sam (‘93~’98)	Globalization Policy	- South Korea joins the OECD; - Containment policy toward North Korea and worsening relations with Russia; - The rejection of South Korea’s “Three-Step Unification Plan for the Construction of the Korean Community” by North Korea.
Kim Dae-jung (‘98~’03)	Sunshine Policy	- Economic support to North Korea (e.g., allowance of Mt. Geumgang tourism, the reunion of separated families, creation of Gaesung Industrial Complex) and strengthening relations with Russia; - The 1st inter-Korean summit.
Roh Moo-hyun (‘03~’08)	The Policy for Peace and Prosperity	- Succession and development of the Sunshine policy (e.g., operation of Gaesung Industrial Complex, South-North railway connection); - The first overseas trip to Central Asia (Uzbekistan and Kazakhstan) in 2004 by a sitting president; - The 2nd inter-Korean summit.
Lee Myung-bak (‘08~’13)	Resource Diplomacy	- Promotion of South Korea and Russia’s Silk Road cooperation in railroads, gas (including a potential North Korean pipeline), and agriculture, but the absence of visible results; - Deterioration of inter-Korean relations due to hard-line policy.
Park Geun-hye (‘13~’17)	Eurasia Initiative	- A plan to make Eurasia: one continent (to build Eurasian transportation, energy, and commerce networks), the continent of creation (to innovate economic structure and to create new culture), and the continent of peace (to reduce security threat); - Eurasia Friendship Express from Vladivostok to Berlin to commemorate the 70th liberation day (a one-time event); - Deterioration of inter-Korean relations due to the South Korean government’s decision to withdraw from the Gaesung Industrial Complex;
Moon Jae-in (‘17~Present)	New Northern Policy	- Launch of the Northern Economic Cooperation Committee by the President; - Promotion of the South Korea-Russia and South Korea-Eurasian Economic Union (EAEU) Free Trade Agreements (FTAs); - President’s state visit to Russia (the 2nd time in history); - The 3rd inter-Korean summit.

Source: Composed by the author based on:
Ilyoweekly: [Website], The keynote of the previous government's northern policy… How has that flow been going on? [역대 정부의 북방정책 기조…그

흐름은 어떻게 진행되어 왔나?] [Electronic resource]. – URL: http://ilyoweekly.co.kr/news/newsview.php?ncode=179569754663277 (date of access: 17.06.2020). Koreans. KZ: [Website], Prospects for cooperation between Korea and Central Asian countries [한국과 중앙아시아 국가와의 협력 전망] [Electronic resource]. - URL: https://koreans.kz/news/640-.html (date of access: 17.06.2020). Korea.KR: [Website], The New Northern Policy [신북방정책] [Electronic resource]. - URL: http://www.korea.kr/special/policyCurationView.do?newsId=148865644 (date of access: 17.06.2020). Yonhapnews: [Website], President Moon visits Russia on the 21st... Summit meeting with President Putin [문 대통령, 21일 러시아 국빈 방문…푸틴과 정상회담]- URL: https://www.yna.co.kr/view/MYH20180608015500038 (date of access: 17.06.2020).

Table A 6

The share of FDI stock in the Russian Far East by partner countries

Country	01.01.2015	01.01.2022
Far Eastern Federal District	100%	100%
Bermuda	34.76%	63.06%
Bahamas	50.13%	22.14%
Cyprus	5.11%	3.17%
South Korea	0.38%	0.18%
Netherlands	0.00%	1.31%
United Kingdom	0.67%	0.00%
Japan	0.12%	0.22%
China	0.17%	0.86%
Hong Kong	0.05%	0.11%
Etc.	0.82%	0.20%
Undefined	7.79%	8.74%

Source: The Central bank of Russian Federation: [Website], External sector statistics, direct investment [Electronic resource]. URL: https://www.cbr.ru/eng/statistics/macro_itm/svs/ (date of access: 30.06.2022).

Table A 7

South Korean farming companies in Primorsky Krai

Company name	Year of entry	Secured area (ha)	Kind of crops
Agro Sangseng	2008	16,000	Wheat, soy, rice, and others
Univera	2009	2,094	Soy, oat
Bari's Dream	2009	60	Soy, buckwheat, barley, oat
Farm Story	2009	11,894	Soy, corn, oat
Lotte International	2009	22,500	Soy, corn, oat
Arro-Primorye	2009	3,586	Wheat, soy, barley, oat
Pioneer Vostoka	2013	240	Lettuce, Napa cabbage
Pohang National Livestock Cooperative Federation	2013	3	Oat, bulky feed
Lukkaboteu	2018	552	Lettuce, Zucca, onion

Note: Information on 9 out of 10 companies is available.

Source: KOTRA: [Website], Korean farming enterprise in Primorsky Krai, Go to the field [연해주 진출 우리 영농기업 현장을 가다] [Electronic resource]. – URL: http://news.kotra.or.kr/user/globalBbs/kotranews/7/globalBbsDataView.do?setIdx=245&dataIdx=185608 (date of access: 03.12.2020).