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## **THE INNOVATIVE COMPONENT OF THE WORLD INVESTMENT MARKET DEVELOPMENT**

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**Abstract.** *Systematic globalization of the world economy caused the necessity of transformation of the world investment market, the imperatives of which are represented by the intensification of financial arrangements, an advance increase of national investment markets, intensive transnationalism, asymmetry of investment activity of world countries, etc. Considerable significance of the innovative line of investment activity in the world countries has been determined through the correlation accounting between the volume of exports of high-technology products and the volume of clean portfolio investments based on the data for 130 countries. We identified 4 country groups: the 1st group is characterized by a strong correlation between the parameters, indicating the highest level of efficiency of portfolio investments in innovation sectors of economy growth; the 2nd group is described by the medium correlation between the parameters, which can result from significant diversification of the investment sources of the development of the economy; the 3rd group is characterized by a lack investment of high-technology industries of the economy, which is a gradual reorientation of countries from the manufacturing-based development strategy through engagement of foreign investments and the need to develop and finance science on other strategies of development, for which the financing of the economy innovation sectors requires lower volumes and is not of great priority; the 4th group is characterized by correction retraction*

*between the volumes of high-technology export and the volumes of clean portfolio investments, which can result from the offshore outsourcing of the economy of these countries.*

**Keywords:** *investment market, globalization, innovation sector, portfolio investments, international capital movement.*

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## **Introduction**

In the age of the world economy globalization, one observes a rapid increase in the correlation between the economies of particular countries in the area of both production and international capital movement in the form of foreign investments, increasing rapidly and leading to the transformation of the world investment market, in the course of development of which the need for the institutional environment development becomes more relevant as it provides the necessary support for high-power and clean market and ensures opportunities for free and efficient international capital movement.

The problem of the world countries' financial markets further development and the consolidation of their role within the global investment process has an integrated nature and requires a resolution of many questions in the course of further economic transformations. Herewith, the establishment of a favorable investment climate, the arrangement of an effective financial market model, the provision of conditions for the transformation of savings into investments, and the shift of investment capitals in a real sector of the economy should be viewed as specific components, which make it possible to break negative tendencies in the national economy development and allows the country to enter the trajectory of a steady-going growth, despite unfavorable external factors and world conjuncture.

The research objective is the extension of theoretic and methodological foundations of the study of the world investment market development under the conditions of global transformations.

## **Literature Review**

Global transformations lead to particular changes, which affect the life of the entire planet. These changes might have an objective character that is not dependent on the human activity or they can be caused by subjective targeted actions of specific participants of these transformations (Nur'ainy, R., & Adipati, N. M. (2018, October)).

Thus, the process of globalization is quite a controversial phenomenon in the global universe (Nurianto, R. S., & Fata'al Chuzai, A. (2019)).

To some extent, the meaning of the process is expressed in the framework, promoting the effectiveness of the world economy, economic, and social progress of the humanity (Dollar, D. (2017)).

At the same time, the forms of the frameworks' expressions might sometimes limit the interest of the population stratum of the countries worldwide and particular

countries, which do not have the membership in the "club" of states of “the Golden Billion” (Thede, S., & Gustafson, N. A. (2017)).

Under the conditions of the financialization of the world economy, the study of the international capital movement is of great interest. Indeed, with the development of society, the connection between the economies of particular countries increases both in the field of production and the capital movement in the form of foreign investments, increasing at an accelerating pace (Morris, M., & Staritz, C. (2017)).

At present, the industrial capital actively develops the world economic space through investments, representing its immanent capital flexibility, its ability to combine or consistently use various forms and methods of foreign economic-financial expansion, its ability to adapt to changing economic, socio-political, and legal conditions in different countries and groups of countries (Perraton, J., & Spreafico, M. R. (2019)).

Investments are the most important source of the resources for the development of the socio-economic system of the country. They determine the process of economic development in general, affects the deepest fundamentals of economic activity, its scales, structure, and efficiency, determine the state, perspectives, and the country’s economic competitiveness (Chen, P., Karabarounis, L., & Neiman, B. (2017)).

The investments, which have a different national origin, interlink and interact with each other (McSparren, J., Besada, H., & Saravade, V. (2017)).

They set international flows and transform into global investment resources that function within global investment space (Sondermann, D. (2018)).

The development of market relations, building a new ownership structure, the change of management system, the expansion of economic autonomy and other expressions of global transformations world economic systems require finding and applying new methods and approaches to regulating the economy (Lee, T. K., Cho, J. H., Kwon, D. S., & Sohn, S. Y. (2019)).

Thus, one can consider the following distinguishing features, forming the market approach to understanding the investments’ fundamentals:

first of all, it is the weaving of investments and generation of income that acts as a motivator for conduction of investment activity (Cho, S., & Kurtz, J. (2018));

secondly, it is the consideration of investments in the correlation of two aspects: resources (capital values) and input (expenses) (Capolupo, R. (2018));

thirdly, it is the investment analysis in the dynamics, which makes it possible create a union in the framework of the category “investments,” including from one side, the resources and input, and the return on investment from the other side as the motive for this union (Somer, M., & McCoy, J. (2019));

fourthly, it is the inclusion of the investment objects of any investments, providing economic or any other useful effect (Tsai, I. C. (2017)).

While determining the considerable contribution of the researchers in the development of economic study on the highlighted topic, it can be said that global determinants of the world investment market development as an immanent feature of the world economy functioning and the grounds of space asymmetries in the system

of the world economy are still an underinvestigated direction of modern economic science.

That is why, in spite of the depth of modern scientific research results on the questions, related to the complex generalization of starting conditions, reasons, and causes of asymmetry of the world investment market development, which determine a specific influence on the state of the world economy, the practice imperfection related to forming a prudent investment policy of the country, its investment attractiveness, and conditions for sovereign entry into the global investment space, indicates the need for further developments in this direction.

### **Methods**

The scientific provisions, conclusions, and recommendations are fully substantiated. They demonstrate the presence of a logical interrelation of the formulated tasks and obtained results, the reasoning of the theoretical conclusions, the use of a wide range of statistical material, and scientific research methods.

The instrumental and methodological apparatus of the dissertation rests on the dialectical method of cognition and the systematic approach to the study of the peculiarities of the world investment market development under the conditions of global transformations. In the course of the research, we used general scientific and special methods of scientific cognition, in particular: a combination of the abstract and concrete methods; the logical and historical methods (while studying the conditions of formation of the world investment market); a systematic analysis and synthesis (to justify the methodological approaches to the analysis of the peculiarities of the world investment market development); a comprehensive system analysis (to identify modern trends of development of the world investment market); a combined approach, including the use of multifactorial research methods (in the process of developing the conceptual bases for improving the investment attractiveness of the country).

Information and statistical research foundations are represented by creator-owned scientific results, monographic and other publications of the scientists, official statistic and analytical data of the international organizations (of the group of the World Bank, WTO, IMF, and UNCTAD), expert appraisals of ranking agencies, materials of the international information agencies, legislative and regulatory documents, and statistical data of the European Commission.

### **Results**

The liberalization of the world economic relations (the world financial market in particular), stabilization of an investment climate in the market economy countries (providing the conditions for the activity of TNC), liberalization of regimes (thanks to which, the modern management and marketing come in the recipient country together with technologies) contributed to the strengthening of world investment processes at the turn of the XX-XXI centuries. All those features have become part of the globalization of the world economy.

The influence of globalization on the development of the world market manifests itself in the following forms:

1. The unification of the investment process by the International organizations and a range of developed countries under the terms of nondiscrimination and competitiveness development.
2. Insurance and support of subjects of the world economy against national and regional crises, and their transformation in the global ones.
3. The institutionalization and influence of the international norms on the state regulation upon the investment area to provide global stability, economic steadiness, ecological safety of the countries.
4. The encouragement of state support for open investment markets through the provision of protection from political and commercial risks (through systems of the risks distribution and institutional care).

The globalization of the world economy resulted in the modification of the world investment resources market: the intensification of the credit mechanism, the change of terms, prices, and conditions for countries that wanted to get access to the international loan resources.

The modern process of the economy globalization changes the role of the state and makes it a direct participant of social production. Under the conditions of globalization, the investment market is getting more anonymous, which results in an increase in transaction expenses. The information has become one of the components of production. The established information systems enhanced the ability of capital to move quickly, which includes a potential possibility to destroy economic systems. The market fundamentalism has become a widespread phenomenon, and the international financial system itself became a factor of the crisis process; there was the capital, capable of making money of money the volume of which cannot be accounted for; one faced the issue when the capital was running away, which was associated with the creation of offshore zones; the flows of capital have changed as a result of attracting foreign currency in many countries, which feeds on the issue effect of countries issuing their currency. At the same time, not all movements of money denote the escape of financial resources. The damage to domestic production and its removal from investment resources is the formal trait.

Financial activity under the condition of globalization has features, which make it different from traditional forms of financial interaction between the countries, grounding on state sovereignty. Among them are:

- the global presence of international financial institutes;
- the international financial integration;
- the large-scale introduction of financial innovations;
- the enhancement of the financial competitiveness between the countries;
- the reduction of the state intervention into the activity within the domestic market;
- the expansion of the international market of Eurobonds and euro-equities;
- the development of multiple links between domestic and international segments and markets;



free capital movement from domestic to international financial market;  
the expansion of security accreditations of vendors and the borrowers from the risks caused by global financial integration.

The transformations of the international investment activity into the global investment process encourage the maturity of the world financial market, the rapid development of the securities market, the establishment of large centers of the capital concentration, the boundary-spanning of interstate economic boundaries, the means of information exchange, and the appearance of the informal financial markets. Under the influence of these factors, one can observe the emergence of specialized markets of securities, guarantees, capital construction projects, debt, etc., influencing the development of the global reproduction process and determine the global movement of investment resources: scales, geographical segmentation, forms of movement and introduction.

The modern stage is characterized by the formation of Industry 4.0. – the epoch of innovations, when the latest technologies significantly change sectors of the economy at a rapid pace.

One of the most tangible aspects of the fourth industrial revolution is the idea of “service-oriented design.” It can range from the users, using the factory default data for production of their particular products, up to companies, which deliver individual products to individual consumers.

At the same time, in the course of Industry 4.0. concept implementation, one should consider the key problems – standardization, labor organization, accessibility of technologies, and the corresponding financial support. Thus, to ensure smooth implementation of Industry 4.0., one should assume the following measures:

provide accessible services within the network infrastructure and support them with international standards and policy – both national and global;

to gradually replace old static, non-dynamic systems by the new ones, which operate in a real-time environment and focus on services;

to form new business-models;

engage employees at the very beginning of modernization processes, advance their qualifications, and technical development.

Institutional, space, and structural transformations of the economic environment promote the development of the investment processes in an innovative direction. The innovation activity of the countries with an open economy is determined by the targeting of global development and the desire to accumulate competitive advantages for long-term economic growth. The knowledge and information technologies form the environment for the establishment of post-industrial society and the corresponding production of knowledge-based products and services. This process is followed by the appearance of new managerial systems and promotes the expansion of the network forms of organizational interaction of economic patterns, including the Internet. The policy of support of the competitiveness of the countries, which set the goals of sustainable socio-economic development, is based on the systematic use of investment factors and sustainable spatial layout of innovative infrastructure.

The relationship between investment activity and scientific and technological progress has several aspects. The most important of them is the consideration of investments as a kind of catalyst for scientific research, which is especially important in the context of the transformation of science into a direct productive force of society. In this regard, one faces the need in the formation of the model of financing of economic growth, based on the innovations, creating the possibility of development of the real sector of the economy, based on the latest achievements of STP and formation of the optimal structure of social production.

As of now, investment activity plays the most important role in the provision of gradual and qualitative economic growth. With that knowledge in mind, we think it important for the country to have an ability to mobilize not only its internal but also external investment opportunities and resources.

Innovation activity is the engine of economic progress, the catalyst for economic growth and development. In the first place today, one can see the factor of growth of the efficiency of resources and business, based on R&D and innovations, which caused the formation of concepts of the innovative type of economic growth. This type of growth, most developed countries have already chosen, is based not on the production and consumption of material values, but on the creation and consumption of information products, i.e. high-technology products. This means that this type of growth has nothing in common with the problem of “expenses – output” and is determined by the volume of information consumption. Among the main sources of such economic growth are innovations and the accumulation of human capital.

Thus, investment in innovation activity can be considered as one of the most important factors for the economic growth of the country, the formation of an innovative economy. The set of measures, necessary for the formation of an innovation-type economy in the country can be attributed to three fundamental measures: a) increase of the amount of financing and investment of R&D, improvement of their mechanisms; b) active use on the practice of indirect methods of financial support of the innovative environment – tax breaks, customs preferences, targeted lending, leasing, state guarantees; c) formation of innovative clusters with their further point financing by the state and foreign investors.

In the context of global transformations of the world economy, there is a need to prioritize the measures, which are the basis for the development of innovative technologies. Thus, investment in innovations is a central priority and a major tool for the development of new technologies, which, in turn, is a catalyst for the activation of the activity in the world investment market.

To study the innovation component of the world investment market, one should consider such parameters as the volume of venture capital investments in innovation technologies upon the ranking of global investments index, the amount of international investments in the knowledge-based research and development sectors (R&D); global trends of the world venture capital investments in innovations upon segments.

The general trend of a decrease in the volume of venture capital investments in innovative technologies, which began in 2016, kept on decreasing in 2017. The leaders of the ranking (Canada, Israel, and the USA) weakened their positions for 0.15, 0.37, and 0.31 volume units respectively (Table 1).

**Table 1. General venture capital investment volume in innovation, 2017\***

Country	Volume	Indicator
Canada	0,55	100
Israel	0,43	100
United States of America	0,39	100
France	0,31	100
Finland	0,28	89,93
Denmark	0,22	70,83
United Kingdom	0,21	67,39
Sweden	0,19	61,88
Iceland	0,19	59,04
Switzerland	0,18	57,20

\*Built by the author based on the data of the Global Innovation Index. URL: <https://www.globalinnovationindex.org/analysis-indicator>

In 2018, the figures of the top three leaders did not regain the values of 2015, while the volumes of the venture capital investments in innovations of Canada and Israel became the smallest ones during the period of 2014-2018 (Table 2).

**Table 2. General volume of venture capital investment in innovation, 2018\***

Country	Volume	Indicator
Canada	0,50	100
United States of America	0,40	100
Israel	0,30	100
France	0,30	100
United Kingdom	0,20	78,71
Lebanon	0,20	73,66
Finland	0,20	68,19
Sweden	0,20	63,33
Denmark	0,20	59,08
Netherlands	0,10	46,91

\* Built by the author based on the data of the Global Innovation Index. URL: <https://www.globalinnovationindex.org/analysis-indicator>

The indicators of Singapore, Japan, and Sweden, closing the top 20 countries housing the largest R&D corporate enterprise-investors, are relatively small. This issue is explained by the fact that the above-mentioned countries are one of the main recipients of investments in innovation.

Segmental division of the world venture capital investments by year is the indicator, characterizing the international investment market in relation to perspective directions in the research and development segments (R&D). This indicator demonstrates the percentage of investments in particular innovations by the sector, depending on the investments in other innovative directions and is expressed as a percentage.

A gradual investment bust in the area of media technologies, energetics, and computer equipment became the general tendency for the period of 2013-2018. The volume of investments in the mentioned directions in 2018 did not equalize with the best indicators, observed in 2013.

The volume of investments in other innovative technologies, such as commercial and recreation services were not steady throughout the period under the study, 2013-2018. The highest investment volumes in the given sectors were observed in 2015 (21% of the total investments in innovations). In 2018, one could observe a two-percent investment bust until the level of 17.6%.

Thus, computer software keeps on staying on leading positions among innovation technologies in the world market. It steadily gets the share of venture capital investments ranging from 35 to 47 percent. The power generation sector and media technologies are innovative directions, which keep on developing. In 2018, they had a total share of 12.6% of the world venture capital investment. A negative trend is observed in the area of investing the construction activity, related to computer equipment: in 2018, the venture capital investment of such projects decreased for a half, compared to relatively high indicators, observed in (to 6.3%).

To determine the innovations investment direction in the world countries we will calculate the correlation between such indicators as:

export of high-technological products, million US dollars, 2010-2016;

clean portfolio investments at current prices, million US dollars, 2010-2016.

The results of the conducted calculations are given in Table 3.

**Table 3. Results of the rolling correlation analysis\***

Country	Differential	Country	Differential	Country	Differential
Australia	0,376	Kazakhstan	0,686	RSA	0,314
Austria	0,694	Cameroon	0,105	Peru	0,222
Azerbaijan	0,553	Canada	0,653	Poland	0,515
Albania	-0,528	Qatar	-0,113	Portugal	0,393
Argentina	0,728	Kenya	-0,174	Russia	-0,336
Bangladesh	-0,371	Kirgizstan	0,229	Rwanda	-0,376
Barbados	0,512	China	0,341	Romania	0,796
Bahrain	-0,647	Cyprus	0,734	Samoa	0,269
Belgium	0,679	Columbia	-0,544	São Tomé and Príncipe	-0,964
Benin	0,141	Congo	0,028	Seychelles	0,044
Belarus	0,176	Korea	-0,349	Senegal	-0,427

Bulgaria	-0,306	Costa Rica	-0,364	St Vincent and the Grenadines	-0,886
Bolivia	0,853	Cote d'Ivoire	0,152	Saint Kitts and Nevis	-0,066
Bosnia and Herzegovina	0,094	Kuwait	-0,424	Serbia	-0,601
Botswana	-0,542	Laos	-0,551	Singapore	0,372
Brazil	-0,345	Latvia	0,511	Slovakia	0,087
Burkina Faso	-0,475	Lesotho	0,879	Slovenia	-0,603
Burundi	0,061	Lithuania	-0,119	Sudan	-0,218
United Kingdom	0,219	Lebanon	0,455	Surinam	-0,115
Venezuela	0,109	Luxembourg	0,883	USA	0,586
Vietnam	-0,364	Mauritius	0,48	Sierra Leone	-0,305
Armenia	-0,087	Madagascar	-0,121	Thailand	0,52
Ghana	-0,264	Macao	-0,258	Tanzania	-0,371
Guinea	-0,456	Macedonia	0,091	Timor	0,23
Hong Kong	0,543	Malawi	0,04	Togo	-0,53
Greece	0,127	Mali	0,003	Trinidad and Tobago	-0,108
Georgia	0,353	Maldives	0,085	Tunisia	0,094
Denmark	0,351	Malta	0,321	Turkey	0,404
Ecuador	-0,246	Morocco	0,274	Uganda	0,374
Estonia	0,618	Mexico	0,553	Hungary	-0,216
Egypt	0,087	Moldova	0,814	Ukraine	0,399
Zambia	-0,074	Mongolia	-0,357	Uruguay	0,707
West Bank and Gaza	-0,332	New Zealand	0,455	Philippines	0,512
Zimbabwe	0,181	Namibia	0,095	Finland	0,809
Jordan	-0,291	Niger	-0,077	France	0,54
Israel	0,911	Nigeria	0,364	Croatia	-0,039
India	-0,205	Netherlands	0,62	Czech Republic	0,31
Indonesia	0,179	Nicaragua	0,219	Chile	0,06
Iraq	0,022	Germany	0,022	Montenegro	0,03
Ireland	0,2	Norway	0,573	Switzerland	-0,076
Iceland	0,48	Oman	-0,006	Sweden	0,557
Spain	0,834	Pakistan	0,713	Sri Lanka	0,393
Italy	0,33	Papua New Guinea	0,284	Jamaica	-0,279
				Japan	0,127

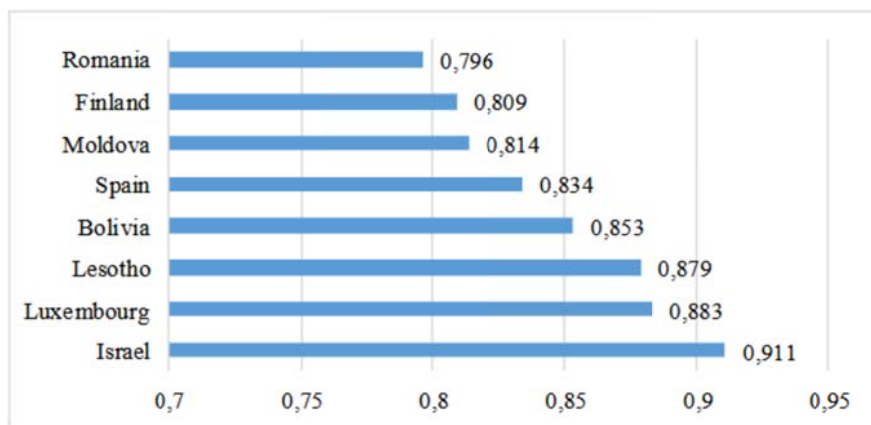
\* Calculated by the author

Let us analyze the received results in more detail.

According to the analysis report, one can determine the countries (8), which are characterized by strong correlation during the period of 2010-2016 between the volumes of high-technological export and volume of clean portfolio investments, Fig. 1.

As you see, Israel, Luxembourg, Lesotho, Bolivia, Spain, Moldova, Finland, and Romania have the highest level of efficiency of portfolio investments in the innovation sectors of economic development.

Such countries (22) as Latvia, Barbados, Philippines, Poland, Thailand, France, Hong Kong, Azerbaijan, Mexico, Sweden, Norway, the USA, Estonia, Netherlands, Canada, Belgium, Kazakhstan, Austria, Uruguay, Pakistan, Argentina, and Cyprus are characterized by the medium correlation between the volume of high-technology export and volume of clean portfolio investments, which can result from significant sources diversification of the innovation sectors of the economy growth.



**Figure 1. The group of the countries with a strong correlation between the volumes of high-technological export and volumes of clean portfolio investments, 2010-2016.\***

*\*Developed by the author*

Among the 53 countries, which are characterized by the absence of correlation between the volumes of high-technology export and volumes of clean portfolio investments in 2010-2016, one should highlight not only the countries that are developing and have a lack of financing for high-technology industries but also Germany, Japan, the United Kingdom. The author thinks such results can be interpreted as a gradual reorientation of countries. The strategy of industrialization through the attraction of the foreign investments, which requires significant development of science and its financing, is gradually being replaced by other strategies of development, in which the financing of the economy's innovation sectors requires smaller volumes, and is not of great priority.

Among the countries (46) that are described by the inverse relationship between the volumes of high-technology export and volumes of clean portfolio investments during the period of 2010-2016, one should give special attention to São Tomé and Príncipe and Saint Vincent and the Grenadines. The volume of high-technology export in these countries has a stronger inverse relationship with the clean portfolio investments during the period of 2010-2016, which results from the offshore outsourcing of the economy of these countries.

Thus, considering the results of determining the innovation direction of investments in the world countries, we can make a conclusion that the determination of the innovation direction of investment activity in the world countries can be conducted through the calculation of the correlation between the volumes of export of high-technology products and the volume of clean portfolio investments at current prices. Our correlation analysis for the period of 2010-2016 for 130 countries allowed us to determine 4 groups of countries:

8 countries (including Israel and Finland) are characterized by a strong correlation between the parameters, which indicates about the highest level of efficiency of portfolio investments in innovation sectors of economic growth;

22 countries (including the USA and France) are described by the medium correlation between the parameters, which can result from significant diversification of the investment sources of the development of the economy;

53 countries (including Germany, Japan, and United Kingdom), are characterized by a lack investment of high-technology industries of the economy, which is a gradual reorientation of countries from the manufacturing-based development strategy through the engagement of foreign investments and the need to develop and finance science on other strategies of development, for which the financing of the economy innovation sectors requires lower volumes and is not of great priority;

46 countries (including São Tomé and Príncipe and Saint Vincent and the Grenadines) are characterized by the correction retraction between the volumes of high-technology export and the volumes of clean portfolio investments, which can result from the offshore outsourcing of the economy of these countries.

The world's practice of the innovation and investment financing actively uses venture capital financing, which is an efficient mechanism that makes it possible to implement progressive ideas, encourage business to transition on the innovative path of development, and improve the economic efficiency in general.

## **Discussion**

Thus, the analysis of foreign financing experience and the promotion of innovation processes in the economy demonstrate the leading part of the country. Herewith it does not necessarily include direct financing. India and China pay great attention to international cooperation to draw foreign capital for systematic development of various industries throughout centuries. Private enterprises and foreign investments quickly changed the economic systems of both countries. Thanks to the engagement of foreign technologies and know-how, they have become important exporters of high-technological products and services in the world market.

Thus, based on the conducted research, it is possible to identify the following global innovation and investment stimulation trends:

economically developed countries (USA, Europe) are actively using financial incentive measures, including the activities of financial institutions of development (banks for development, venture capital and investment funds), combining them with the economic support of economic entities (in particular, through the use of tax benefits);

countries with developing economies (India, China) are successfully utilizing non-financial development institutions (free economic zones, technological parks and technopolises, business incubators, and clusters), thereby promoting the conditions for the development of high-technological industries.

## Conclusion

The determination of the innovative direction of investment activity in the world countries was implemented through the evaluation of the correlation between the volumes of exports of high-technology products and the volumes of clean portfolio investments upon current prices for the period of 2010-2016 for 130 countries.

The held rolling correlation analysis made it possible to identify 4 groups of countries (including Israel and Finland), which are characterized by a strong correlation between the figures, indicating about the highest level of efficiency of portfolio investments in innovation sectors of economy development; 22 countries (including USA and France), which are described by the medium correlation between the parameters, which can result from significant diversification of the investment sources of the development of the economy; 53 countries (including Germany, Japan, and United Kingdom), are characterized by a lack investment of high-technology industries of the economy, which is a gradual reorientation of countries from the manufacturing-based development strategy through the engagement of foreign investments and the need to develop and finance science on other strategies of development, for which the financing of the economy innovation sectors requires lower volumes and is not of great priority; 46 countries (including São Tomé and Príncipe and Saint Vincent and the Grenadines), which are characterized by the correction retraction between the volumes of high-technology export and the volumes of clean portfolio investments, which can result from the offshore outsourcing of the economy of these countries.

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