

# Post Pandemic Industrial Policy for Developing World

Bakhrom Abdukadirov

*A citizen of Uzbekistan, based in Tashkent city*

*Ph.D. candidate at the Institute South-South Cooperation and Development, Peking University*

---

## **Abstract**

*The coronavirus outbreak was an unexpected phenomenon for the entire world, brought considerable human suffering and major economic disruption, penetrated almost every country and became the biggest threat to developing countries' ambitious market transition.*

*The unexpected recession caused by the COVID-19 pandemic turned out to be deep compared to past global crises. Global production has experienced a reduction of about three times and twice as fast as during the global financial crisis.*

*Traditionally, pro-industry policies were associated with incentives for import substitution and an export-oriented development strategy. But pandemic circumstances force especially the developing world to think about infant industries, building product manufacturing capabilities and their inclusion in global value chains.*

*In this study, the author has attempted to recalibrate the role of industrial policy, fill and systemize the existing gap in the literature, propose theoretical and methodological tools for redesigning industrial policy through utilizing industrial reserves with a course towards integration in Global Value Chains for the developing world.*

**Keywords:** *Covid19 pandemic, Industrial Policy, Developing countries, New structural economics*

---

Date of Submission: 02-03-2022

Date of Acceptance: 16-03-2022

---

## **I. Introduction**

The global economic recovery continues despite the new wave of the pandemic. The gaps resulting from the spread of COVID-19 appear to be more persistent: it is expected that the current divergences in development will have a long-term impact on medium-term economic indicators of most countries in the world.

Taking into account that most developed countries will be able to get out of the pandemic crisis with minimal losses, compared with emerging markets and developing countries, the author in this research decided to focus on developing countries.

In modern conditions, one of the main problems facing the world community is the solution of the problems of increasing socio-economic stability, the adoption of anti-crisis measures to support the living standards of the population and business.

The IMF estimates that the global economy shrunk by 4.4% in 2020 and described the decline as the worst since the Great Depression of the 1930s.

During the speech of United Nations (UN) Secretary-General Antonio Guterres at the UN Conference on Trade and Development (UNCTAD) in Barbados in October 2021, a special place is given to the manufacturing sector and called on ministers to revive the scale of international trade and foreign direct investment flows for a sustainable recovery.

The industrialization of the economy is the main driving force of economic well-being, employment and social stability. It also largely reflects the potential of the economy to withstand various external risk factors, which is especially important in developing countries during the post-pandemic period.

## **II. Literature review of industrial policy and its evolution**

The theoretical literature proves that there is no definite consensus on what exactly constitutes industrial policy. It is widely believed that government intervention in the production structure of the economy in order to change it, which is characterized by the creation of favorable conditions for the development of specific industries, is considered industrial policy. According to this opinion, industrial policy represents "the efforts of the state to redirect the sectoral structure of production towards those industries that, in its opinion, offer more opportunities for accelerated growth than could be caused by a typical process of industrial evolution in accordance with comparative advantages" [1; pp. 251-307].

According to the definition of the World Bank, "industrial policy, unlike trade policy, is the government's efforts to change the sectoral structure to promote economic development based on productivity growth" [2; p. 36]. A similar definition is being promoted by Howard Pack: industrial policy is "a series of

government actions aimed at increasing productivity and the relative importance of its specific areas in the manufacturing sector" [3; pp. 47-67].

According to the South Korean economist Chang H.J., this policy is characterized as "... government activities that are aimed at developing or reducing various industries of the national economy in order to maintain global competitiveness." Using the example of his homeland, he argues that industrial policy should be responsible for creating comparative advantages in completely new industries and activities, and not follow static comparative advantages [4]. Thus, according to this scientist, industrial policy is designed to help countries identify and realize their dynamic comparative advantages.

At the same time, some studies suggest that industrial policy is characterized by any kind of deviations in government actions that differ from the mechanisms of the free market. According to the proponents of this interpretation of industrial policy, it represents any "intervention to distort the results of the market in the interests of the nation" [5]. Lall S. offers a slightly different interpretation. He believes that "industrial policy includes all actions taken to promote industrial development beyond the capabilities of the forces of the free market" [6]. Thus, it can be assumed that industrial policy is designed to minimize "market failures" (a set of negative phenomena that can occur in the absence of government intervention, i.e. in market conditions).

The aforementioned Chang H.J. also emphasizes that industrial policy is "a policy aimed at specific industries (and enterprises as their components) to achieve results that are perceived by the state to be effective for the economy as a whole" [4].

**The evolution of industrial policy has given rise to the following types of industrial policy** and theoretical literature identifies two main types of industrial policy depending on the level of state intervention in economic processes.

Industrial policy aimed at improving the business environment in the economy is called **functional**. In some sources, it is referred to as "soft" or "horizontal". The purpose of this policy is to establish an effective mechanism of cooperation between the state and business in such a way that they can jointly determine strategic development priorities, jointly solve coordination problems, experiment freely, avoid involvement in various private interests and, ultimately, increase the level of productivity in the economy [7; p. 48; 8;]. Functional industrial policy is less interventionist because it is aimed at creating favorable conditions for the economy as a whole. Such a policy is not inherently selective, it is usually not focused on supporting individual industries. An example could be measured to stimulate competition in the domestic market by conducting trade liberalization, increasing the investment attractiveness of the country, etc.

Another type of industrial policy often referred to as "**selective**", "rigid" or "vertical", involves direct government intervention in the economy through various tools and mechanisms in order to change its sectoral structure in favor of certain industries. Such a policy encourages the development of individual industries (types of activities, regions) by providing them with various tax and other benefits, while other industries are not provided with such support. The reasons for the selection of individual industries may be:

- the need to protect emerging sectors of the economy, which from the point of view of the state can serve as a locomotive of future development;
- the strategic importance of some industries from the point of view of natural resources (extractive industries), the technological component;
- the need to develop related sectors of the economy;
- ensuring (food, military) security of the country.

A striking example of a selective industrial policy can be measured to assist in the development of certain industries in China, S. Korea, Japan and the USA (military, energy), the enterprises after World War II, at that time relatively high tariff, excise and other barriers were established in the countries protecting a number of industries from foreign competition.

In this article, the author suggests a third "**mixed**" type of industrial policy, the essence of which is the simultaneous use of functional and selective types of industrial policy. In our opinion, the creation of free economic zones in developed countries can be an example of a mixed industrial policy, since in this case more favorable conditions are provided to enterprises located in these zones than to enterprises in the rest of the country (selectivity). On the other hand, the institutional, legislative, tax and other conditions in all these zones are practically the same (functionality).

It is appropriate to emphasize that if the "old" industrial policy is characterized by the use of "rigid" tools, the "mixed" form forms the basis of modern industrial policy (9).

Its instruments play an important role in the implementation of industrial policy. An instrument of industrial policy is a mechanism (toolkit) available to the state for its implementation. Despite the fact that the economic literature offers different options for the classification of industrial policy instruments (by type of industrial policy or by impact market), this paragraph discusses the classification recently proposed by Weiss, J. [10] (with author's additions based on other literature sources).

According to Weiss, J., industrial policy instruments should be classified into five impact markets: markets for goods and services, labor, capital, land and technology. The instruments are also divided into market and state ones. If market instruments are based on a price mechanism, then state instruments include those using which goods and services are provided primarily by the state, since it is unprofitable for the private sector to provide them. The main advantage of this classification is the difference in industrial policy instruments, based on their availability for use in countries with different income levels. This aspect is extremely important, because not all countries can use this or that instrument due to their high cost and limited budget funds. This section discusses industrial policy instruments in low- and middle-income countries.

The author in the table 1.1 presents the industrial policy instruments for low-income countries (usually up to \$1,000 per capita), developed on the basis of the classification of Weiss, J. [10] and supplemented by the works of Guadagno, F. [11], Felipe, J. [9], Warwick, K. [7] and others. The governments of low-income countries, as a rule, set the following goals [7]:

- export diversification (from primary goods to simple industrial goods);
- processing of natural resources in order to turn them into resource-intensive industrial goods;
- attracting FDI to establish technological, managerial and marketing links; - encouraging new startups.

To achieve these goals, tools based on intervention in market processes used in the market of goods and services are generally aimed at increasing the profitability of production activities. In East Asia and Latin America, the most commonly used instruments were import tariffs and export subsidies. Since there are currently some restrictions on the use of these instruments by the WTO (import tariffs should not be higher than the rates of related tariffs, and export subsidies are allowed only to low-income countries), in practice it is often proposed to use alternative instruments such as the return of import duties on exports (allowed to all WTO countries), the provision of benefits for foreign investors, etc. The policy of a competitive (undervalued) exchange rate is also a good alternative to export subsidies, which are often burdensome for the state budget of low-income countries. As for the state-institutional instruments in this market, we can name the public procurement policy (allowed by the WTO to low-income countries), which can be a good incentive for local suppliers. For information: public procurement reaches 16% of the GDP of the European Union, twice as much as health spending [12]. In addition, to reduce information asymmetry between local suppliers and potential buyers, the state can take on the role of an informant about export opportunities/markets, organize trade fairs and exhibitions. An excellent tool of industrial policy is also the promotion of cooperation between local and foreign enterprises. To do this, the state, through its investment/export support agencies, should provide technical assistance to local suppliers (very often small and medium-sized businesses) in the form of support for product quality improvement, certification, etc., in order to raise the quality of its products to the level of requirements of foreign enterprises.

Because in low-income countries, the problem of workers' professionalism not meeting the requirements of the manufacturing sector is very common, it is necessary to introduce appropriate tools in the labor market. The most suitable instruments of industrial policy based on intervention in market processes in this direction are tax credits for enterprises that train their personnel. If financial resources are available, sometimes such subsidies can be provided in the form of grants for staff training. Also, the state, in (financial and/or organizational) cooperation with representatives of the manufacturing sector, can create educational institutions (organize courses) in order to teach professional skills required in certain industries.

In the capital market, the allocation of targeted loans and subsidizing interest rates (instruments based on intervention in market processes), as well as loan guarantee schemes and the provision of loans by development banks (state-institutional instruments) were important tools in the process of industrialization of the new industrial countries of Asia of the "first wave".

One of the well-known instruments of industrial policy in developing countries, in terms of attracting foreign investors, was the creation of free economic and other zones. Encouraging cluster industrial development in this case is a key advantage, since the concentration of the necessary personnel, infrastructure conditions, supplier networks close to each other, the presence of a special business climate, production, technological and marketing knowledge in a specific geographical region have a peculiar effect for dynamic business development.

In turn, in middle-income countries (presumably from \$1,000 to \$12,000 per capita), the following goals are set [10; p. 5]:

- stimulating the development of medium- and high-tech goods;
- encouraging local adaptation to foreign technologies;
- modernization of local enterprises included in global value chains;
- development of international marketing links to promote products with a national brand;
- consideration of environmental policy in the conduct of industrial policy.

**Table 1.1. - Industrial policy instruments for low-income countries and middle-income countries**

Policy area	low-income countries		middle-income countries	
	Instruments			
	- based on interference in market processes	- state-institutional	- based on interference in market processes	- state-institutional
Market of goods and services	Import tariffs, <b>export subsidies up to a certain period</b> , schemes for the refund of import duties on exports, tax credits, benefits for investors (FDI) (tax holidays, tax exemption, etc.), <b>various rates of taxes levied on export income</b> , credit lines for exporters, competitive (undervalued) exchange rate policy	Public procurement policy, information on export markets / trade fairs, conducting marketing research and studying standards of foreign countries, dissemination of successful experience, consulting services, programs encouraging industrial cooperation of local and foreign enterprises, "one window" services for FDI, investment/export promotion agencies, economic diplomacy and special conditions for attracting prestigious investors, <b>requirements for the use of local components</b> (before joining the WTO) in exchange for support (public procurement), <b>establishment of export plans, competition policy, PPP development</b>	Import tariffs, schemes for the refund of import duties on exports, tax credits, benefits for investors (FDI) (tax holidays, tax exemption, etc.), credit lines for exporters, competitive exchange rate policy	Public procurement policy ( <b>including innovation</b> ), information on export markets / trade fairs, conducting marketing research and studying standards of foreign countries, dissemination of successful experience, consulting services, programs encouraging industrial cooperation of local and foreign enterprises, "one window" services for FDI, investment/export promotion agencies, economic diplomacy and special conditions for attracting prestigious investors
Labor market	Tax credits/salary subsidies, grants for staff training	Educational institutions that teach professional skills by industry (in cooperation with representatives of the manufacturing sector), professional retraining and advanced training courses, colleges, programs that stimulate trainings at enterprises in return for support, trainings for management personnel, training abroad at the expense of sponsorship funds	Tax credits/salary subsidies, grants for staff training	Educational institutions that teach professional skills by industry (in cooperation with representatives of the manufacturing sector), professional retraining and advanced training courses, colleges, programs that stimulate training at enterprises, trainings for management personnel, training abroad
Capital market	<b>Target loan</b> , subsidizing interest rates	Loan guarantee, lending by development banks	Subsidizing interest rates, <b>guaranteeing a loan</b>	<b>Financial regulation</b> , (primary, secondary) lending by development banks, <b>venture capital, risk-sharing instruments for private investments, co-financing, SME financing</b>
Land market	Subsidizing rent	Free economic zones, export processing zones, programs promoting the development of clusters, <b>industrial complexes</b> , infrastructure, legislative changes, business incubator and accelerator development programs	Subsidizing rent	Free economic zones, export processing zones, programs promoting the development of clusters, infrastructure, legislative changes, business incubator and accelerator development programs
Technology Market		Technology transfer support programs (through the creation of joint ventures), programs to expand the use of existing technologies, spreading successful experience	Subsidizing R&D, scientific and technical grants	<b>Public-private scientific consortium, state research institutes</b> , technology transfer support programs (through the creation of joint ventures), <b>science</b>

				<p><b>and technology development funds, industrial technology parks, programs to expand the use of existing technologies, programs to support "technogazels", international cooperation in the field of science and research, dissemination of successful experience, programs to support high-tech projects, green technologies, intellectual property protection, patent box</b></p>
--	--	--	--	--

Source: *Compiled by the author*

At first glance, industrial policy instruments in middle-income countries do not differ much from those recommended for use in low-income countries. But among them one can notice some expensive and more complex industrial policy instruments that such countries can afford. A distinctive feature of industrial policy instruments in this case is the focus of most of them on the development of more technological and knowledge-intensive sectors of the economy than the above-mentioned instruments in low-income countries.

More expensive and different industrial policy instruments in these countries are found in the capital and technology markets. This is due to the fact that as prosperity increases, countries become more able to use a wide range of tools, the weight, technological and financial power of the private sector increases, the need for state participation in coordination issues and the creation of appropriate infrastructure for the development of R&D increases.

Thus, as the financial market develops, the state provides venture capital for high-risk, but high-impact innovative projects. The same projects can be financed through development banks, which either assess the market situation themselves and select projects for lending (primary lending) or delegate this activity to commercial banks through which their lending goes (secondary lending). Primary financing is carried out in cases when commercial banks do not provide loans to the private sector due to high perceived risk, lack of collateral from the recipient or lack of long-term sources of financing for these loans.

In the technology market, two tools based on interference in market processes can be used: subsidizing R&D (loans with subsidized interest rates or tax refunds to enterprises investing in R&D to cover part of their expenses for these purposes) and scientific and technical grants (financial payments for the development of promising technological and innovative areas). These measures are usually applied to new projects and pioneer enterprises, from which huge returns and positive externalities for other follower enterprises can be expected later. Sometimes R&D subsidies are provided to several enterprises jointly engaged in certain innovative activities.

The state-institutional instruments of industrial policy in the technology market are direct financing of the activities of public-private scientific consortia, state research institutes, as well as programs to support technology transfer and expand the use of existing technologies. Commercialization of scientific achievements, cooperation with leading foreign experts in the field of R&D, promotion of technology transfer from FDI, mergers and acquisitions are well-known tools used by East Asian countries for their technological development.

### III. Assessment of new approaches of industrialization of economy

#### 3.1. Basic principles and institutional foundations for the implementation of industrial policy

Regarding the basic principles and institutional foundations of the implementation of industrial policy, a fairly extensive literature is devoted, the main of which are discussed below.

D. Rodrik [17] emphasizes the importance of the institutional component of industrial policy. In his opinion, industrial policy should be based not on the final results, which in this case are very difficult to predict, but rather on the processes and correct mechanisms for the implementation of industrialization. Industrialization in this case is considered as a process that coordinates the interaction of the state and the private sector in the selection of investment projects based on trial and error. Not every investment project envisaged by industrialization can be successful, and this is an objective phenomenon. The most important thing is to provide an operational analysis of projects and a mechanism for ending support or financing unsuccessful projects. The author identifies three elements of the institutional architecture: political leadership, coordinating council(s) and mechanisms of transparency and responsibility.

D. Rodrik [17] also adheres to the ten principles of industrial policy development:

- 1) stimulating only new activities (a new product on the market or a new technological process for an existing product);
- 2) availability of clear standards/criteria for determining successful and unsuccessful projects based on the level of performance;
- H) the existence of a mechanism to stop stimulating unsuccessful projects at early stages;
- 4) state stimulation not of the sector, but of activities aimed at eliminating market failures/insolvency (infrastructure investments, adaptation of foreign technology to local conditions, etc.);
- 5) the presence of a certain potential of positive side effects and demonstration effects in the stimulated projects;
- 6) implementation of industrial policy by bodies/agencies with certain experience and competence;
- 7) monitoring by executive bodies implementing industrial policy at a high level (i.e. assigned by the ministry or personal responsibility of the minister);
- 8) communication of bodies/agencies implementing industrial policy with the private sector;
- 9) existing errors (in the optimal case) when choosing unsuccessful projects. The goal is to minimize costs in case of making such mistakes;
- 10) the constant nature of updating the components of industrial policy.

Similar principles are also formed by Weiss, J. [10]. He recommends starting an industrial policy with the diagnosis of existing problems in development with the involvement of representatives of the private sector. At the same time, the state should in no case fall under the influence of lobbying groups, which can lead to embezzlement and embezzlement of budget funds under the pretext of industrial policy. Therefore, according to Weiss, industrial policy should be carried out taking into account such important principles as the limited time and volume of subsidies provided, a clear reservation of the purposes of their use, responsibility and accountability of the recipients of these subsidies (the output will provide appropriate volumes of employment, exports, innovations, etc.), transparency.

Cimoli, M., G. Dosi, J. Stiglitz (18) pay special attention to the creation of young industries and the continuous promotion of their development in the process of industrial policy. According to their point of view, the state's policy in this area should:

- (I) promote the development of private property;
- (II) create favorable conditions for attracting foreign investment;
- (iii) not to establish a special tax regime for individual industries, especially for large ones;
- (iv) to comply with the regime of intellectual property rights without restrictions;
- (V) to provide assistance to enterprises regardless of their size, since state assistance to exclusively large enterprises may lead to restrictions on the development of young industries.

In turn, Lee, K. [19; p. 244] notes three stages of the strategy of implementing industrial policy and building the technological capabilities of the country. The first stage characterizes the development of foreign technologies (in particular, the operation of imported equipment and the development of production technology) and know-how through licensing, the introduction of foreign direct investment or the use of research developments in production. At the second stage, employees of enterprises are trained through the conclusion of contracts for the joint implementation of technologies with foreign organizations and contracts of public-private consortia that create their own research training centers. At the third stage, promising technologies are being used, including public-private research centers and a single standard policy of providing subsidies for the initial provision of the market with the necessary volume of technological developments.

The industrialization of the economy is a systemic process and it also requires sound principles and a systematic approach. In this regard, for the transformation of industrial policy in the conditions of developing countries, each of proposed approaches and principles should be taken into account to some extent, taking into account also the experience of successfully industrialized Asian countries.

### **3.2. Assessment of new approaches of industrialization of economy**

The economists Y.Lin and S.Monga [13; pp. 264-290] recently proposed a method for identifying and facilitating industries to ensure economic growth in developing countries. The central thesis of this approach is that in those countries where industrial policy turned out to be a failure, governments relied on the development of such industries that contradicted the existing comparative advantages of these countries. In other words, they stimulated the development of those goods whose production did not reflect the comparative endowment of these countries with factors of production, in particular capital and labor. In order to build a correct and successful industrial policy, the authors of this approach have developed a list of necessary procedures for selecting industries and goods for development and further facilitation, which are detailed and applied with modifications (Paragraph 4) in the conditions of the Republic of Uzbekistan.

An alternative approach to determining growth reserves was proposed by R. Hausmann, D. Rodrik and A.Velasco [14; pp. 324-354]. They called their method Growth Diagnostics, the essence of which is to identify the main obstacles to economic development and develop appropriate measures to eliminate them. It is in this case, in their opinion, that the implemented industrialization reforms will give a great return.

The methodology of the decision-making approach can be described in the form of an ordinary tree. First of all, we need to ask the question: what prevents the country from developing at a high pace? Inadequate return on investment, inadequate appropriation of private benefits, or inadequate access to finance? For example, if the reason lies in the low return on investment, then the reason is hidden in insufficient investment in additional factors of production such as human capital or infrastructure. Or maybe there is poor access to imported technologies? If the reason is the inadequate appropriation of private benefits, then what caused it: high taxation? violation of property rights? non-compliance with the terms of the contract? or is there an imbalance of labor and capital? Or maybe externalities related to coordination? If this is a case of inadequate access to finance, is the problem in domestic or foreign financial markets? And so on. Then the answers to these questions are discussed and practical examples from the experience of specific countries are given. When compiling a list of necessary reforms, most often they try to solve all the problems in a row or start with "easy" reforms that are not important for the country. Therefore, the authors of this approach recommend choosing one or two main problems on the path of development and focusing on solving them.

It seems to us that constant monitoring of the country's place in international rankings on various indicators of socio-economic and technological development, as well as work on improving the country's rating and eliminating problems arising along the way are another good approach to reform, similar in concept to the method of growth diagnostics.

The following modern approach to industrialization in the context of export-oriented development was developed by economists A.Barabasi, B.Klinger, R.Hausmann and C.Hidalgo [15; 16]. They investigated the evolution of the complexity of the country's export structure and came to the conclusion that the more you switch to "neighboring" goods in the commodity space, the easier it is to develop. This conclusion is based on the fact that each industry requires specific conditions for development, such as knowledge and necessary experience, physical assets, intermediate goods, labor skills, infrastructure, property rights, regulatory requirements and others. If we develop new industries adjacent to established ones, then there will be fewer barriers to development and little effort will be required for the adaptation process.

Applying this approach to identify priority goods and industries for which developing countries have a comparative advantage, the export baskets of countries are analyzed in dynamics. As the analysis showed, developing countries have such an advantage in the production of agricultural products, raw materials, textile and leather goods and other low-productive industries, while promising areas, taking into account the existing potential of countries, mainly include the production of goods with a low degree of complexity.

### **3.3. Strategic directions of transformation of industrial policy in the post pandemic context**

Continuing the discussion on industrial policy, it should be noted that a separate place in it is occupied by strategies (models) of the industrialization of the economy. Traditional literature distinguishes two types of these strategies.

The strategy of import-substituting industrialization implies a strategy of stimulating local producers to produce products that replace imports by establishing high trade barriers to imported goods. Thus, such a strategy "creates artificial incentives (foreign trade and currency) for the development of certain branches of domestic industry in order to increase their competitiveness in the domestic market." It should be noted that the import substitution strategy is more associated with selective (rigid) industrial policy, because it involves direct state intervention in economic processes. The purpose of its implementation is to develop national production, save gold and foreign exchange reserves, prevent inflation, regulate the structure of the domestic market, improve the state of the country's balance of payments and prevent unemployment.

In fact, it initially gave good results in a number of countries in Asia and Latin America. Support was provided to labor-intensive industries, which corresponded to the structure of the factors of production of these countries. Impressive results were achieved especially by those countries that had a capacious domestic market with relatively high per capita incomes.

However, later, when these countries began to develop capital-intensive industries, some of them, who continued this strategy, faced a number of economic problems: economic growth slowed down, the budget deficit increased, inflation accelerated, and the standard of living of the population began to fall. Monopolization and narrowness of the domestic market, technological backwardness and high cost of export goods, ubiquitous corruption began to have a detrimental effect on their economy. In order to modernize the economy, many of these countries began to resort to external borrowing. The winners were those who were able to abandon the import substitution strategy in favor of an export-oriented strategy in time.

The strategy of export-oriented industrialization is based mainly on the country's use of its comparative advantages by increasing the openness of the economy and realizing export potential. And yet, this does not mean an absolutely free foreign trade regime, some industries can still be protected from imported products through the use of the most effective industrial policy instruments.

This strategy develops competition in the domestic market, increases the demand for innovation, improves the allocation of resources and the quality of products. Due to the fact that moderate customs tariffs

have been established for imported products, this leads to the development of national manufacturing industries, an increase in exports and the achievement of the goal of saving on scale. Consequently, employment, labor productivity and technological development are growing.

The countries of East Asia, which made a timely transition from the policy of import substitution to export orientation in the 1960s and 1980s of the last century, demonstrated fairly high rates of economic development. The reason is that they "used import substitution not as an independent mechanism of growth, but as a transitional policy of strengthening the national economy". At the same time, according to a number of scientists, an important factor in this process was properly constructed state intervention [20; pp. 116-125; 21]. For example, D. Rodrik argues that in conditions of a high level of investment in human capital and a relatively equal distribution of income in these countries, state intervention has led to increased investment and economic growth [22; pp. 53-101].

The popularization of the successful experience of export-oriented industrialization of the economies of East Asian countries led to the fact that many countries began to adhere to this policy. In the 80-90s of the last century, Western neoliberals around the International Monetary Fund and the World Bank took advantage of this and offered countries a new paradigm, the Washington Consensus, embodying the transition to an open market economy of the Western model through the implementation in practice of certain of its principles. Some of these principles corresponded to the logic of the export-oriented development strategy in its purely liberal understanding. However, these universal measures did not take into account the peculiarities of each country and were presented as a panacea for economic backwardness and the only way to prosperous economic development. Most Latin American and CIS countries followed these recommendations and ended up trapped, which led to various economic consequences. Other countries chose a more prudent and gradual transition to market relations, which ultimately turned out to be a rational choice.

One way or another, today export-oriented industrialization still remains popular among developing countries. At the same time, modern processes of globalization, as well as new trends in international trade, indicate some limitations and shortcomings of this development strategy.

Firstly, as economists note, it is impossible for all countries of the world to simultaneously apply this strategy [23]. This is justified by the fact that the implementation of an export-oriented policy requires an appropriate demand for exported goods from the rest of the world, which is logically impossible to ensure in these conditions. After all, exporting is a zero-sum game.

Secondly, the simultaneous application of this policy by several large countries will lead to the fact that the prices of industrial goods, especially labor-intensive and low-tech, will fall rapidly due to increasing competition in foreign markets [24], which negatively affects economic growth in developing countries. This is confirmed by the growing share of countries such as China in world trade.

Thirdly, the global financial crisis of 2007-2008, the slow pace of post-crisis economic recovery, as well as the increased protectionist sentiment in many countries of the world show that if you particularly hope for the boundlessness of external demand, it is fraught with negative consequences for developing countries. The situation is sometimes aggravated by high tariff and non-tariff barriers in developed countries in relation to goods from developing countries. In this regard, many developing countries have begun to pay more attention to domestic consumption and issues of regional cooperation.

Fourth, excessive dependence on external demand also makes this strategy less attractive from the point of view of economic security.

Fifth, export promotion policies in developing countries rely mainly on the comparative advantages of these countries in the cheapness of labor. However, in conditions of fierce competition in foreign markets, those countries that adhere to this policy cannot always raise wages for labor, otherwise they will lose the market. This situation does not lead to a reduction in poverty, an increase in the standard of living and well-being of the population of the countries that the export-oriented policy is initially designed to provide. Therefore, under certain conditions, this strategy also cannot be considered long-term.

Along with these realities of today's world, other patterns in the processes of economic globalization potentially arise. The rapid development of the international division of labor has led to the fact that the production of the same product and related procedures have been carried out by several countries of the world. Due to this, the share of intermediate goods and components, as well as services, increases in the structure of world trade. The Internet and ICT have led to the emergence of new types of activities such as e-commerce, outsourcing and offshoring. Economic development has become more dependent on innovation and technological development, foreign direct investment and the activities of multinational corporations that generate them.

Against this background, foreign trade statistics have become less responsive to the requirements of today's world, where the share of transnational corporations is growing and the international division of labor based on value chains is developing. Absolute indicators of foreign trade began to lose their importance and instead of them, a system of statistics that takes into account added value in production is increasingly being updated.



In this regard, today "[the] foreground is not so much the increase in commodity exports, as the creation of conditions for the effective integration of national business into global reproduction processes, into transnational value-added chains.

And this, in our opinion, requires an adjustment of the export-oriented industrialization strategy, which takes into account modern world economic processes and the future development of the world economy and international economic relations. In this regard, there is a need to develop an export-oriented industrialization strategy with a course towards integration into global value chains.

The fact is that the trends of world economic development are increasingly moving towards deepening the international division of labor and the transnationalization of production. Enterprises of several countries that create international value chains participate in the production of one product, where each of them specializes at least at a separate stage of value addition. As a result, the share of intermediate goods and components in international trade is rapidly growing. In this regard, the issue of occupying a worthy place in these processes becomes relevant for developing countries, which requires the implementation of an appropriate industrial policy that would stimulate the profitable and timely inclusion of local enterprises in the Global value chains system.

A distinctive feature of export-oriented industrial policy with an emphasis on the Global Value Chain is that it focuses attention not on domestic, but on non-domestic industrial ties at the corporate level, which affect the country's position in global or regional value chains.

The strategy of export-oriented industrialization with a focus on the Global Value Chain aims to help domestic enterprises to take a more advantageous position within the chains. Such a strategy focuses on the interconnection of global and local enterprises forming chains, takes into account current trends in the interests, strength and potential of leading enterprises and supplier enterprises within the chains, and also takes measures to effectively integrate local enterprises into priority regional and global value chains [25; p. 338].

Statistical calculations indicate that 80% of world trade today is carried out through global value chains [26], in which transnational corporations play a leading role.

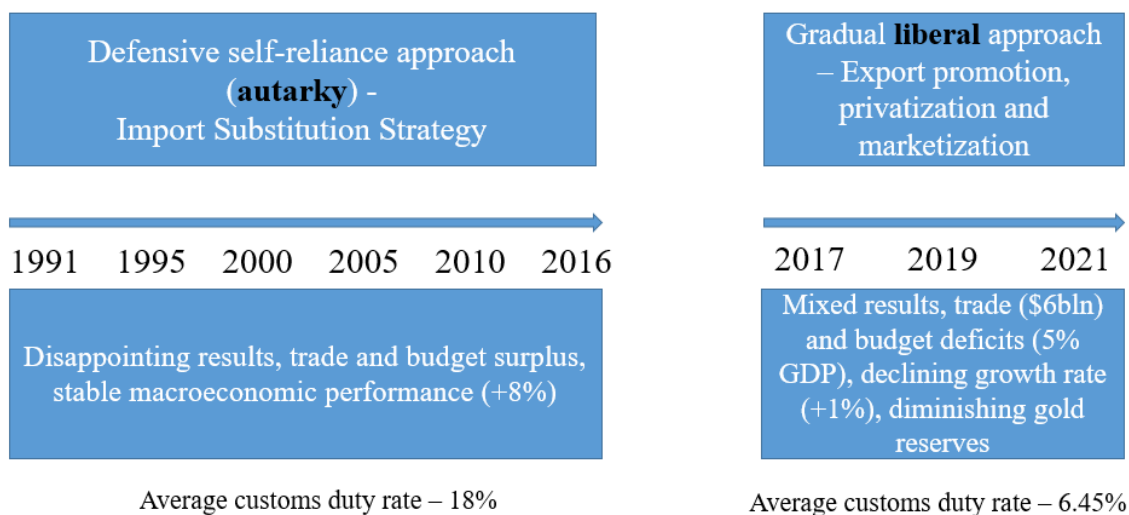
#### IV. Power of Growth Identification and Facilitation Framework

A review of the literature on industrialization has shown that there are several approaches in the world to determining sectoral priorities for increasing non-primary exports.

One of the most promising among them, which is relevant for developing world today, is the method of growth identification and facilitation framework of industries proposed by economists Yifu Lin and C. Mongo.

In the conditions of Uzbekistan, the issues of structural transformations aimed at increasing the export potential of processing industries, further improving the mechanisms of transition to an effective export-oriented industrial policy with a course towards integrating local enterprises in the global value chain, eliminating institutional and other barriers to the development of foreign trade are relevant, especially against the background of the intentions of the new leadership of the country to increase the share of industry in GDP from the current 33.5% to 40%, and to double GDP itself by 2030.

Figure 4.1 – Uzbekistani economic mirror



Source: Compiled by the author

The central thesis of this approach is that development (deepening of processing of raw materials and semi-finished products and diversification of production) should be stimulated those goods and industries whose production reflects the current comparative advantages (available raw materials, intellectual, financial base, etc.) in the country. Studies of industrialization in developing countries show that in those countries where industrial policy turned out to be a failure, governments relied on the development of industries that contradicted the existing comparative advantages of these countries. In order to build a correct and successful industrial policy, a list of necessary procedures for selecting industries with competitive advantages and requiring diversification of production and deepening of processing of raw materials and semi-finished products is used.

The first step of GIFF is to choose benchmark countries. They should be fast growing countries with similar factor endowments and with 100-300% higher per capita income, or 20 years ago had a similar per capita income. This step is necessary and important for Uzbekistan to learn historical lessons from those other countries. Therefore, we can set appropriate goals for Uzbekistan.

Using the first criteria of GDP per capita, we get two lists of countries: one list of countries that have a per capita income 100% to 300% above Uzbekistan's; the other list of countries that have a similar per capita income twenty years ago as Uzbekistan's today. Removing slowly growing countries, which mean countries with annual average growth rates less than 6% in the past twenty years, we can find the following countries: China, Egypt, Equatorial Guinea, El Salvador, Kazakhstan, Suriname and Jordan.

Then we apply the second criterion of factor endowment coupled with the third criterion of a good manufacturing performance, measured by manufacturing value added (MVA) as a percentage of GDP.

China is good at labor-intensive manufacturing and have experienced fast economic growth in the past 20 years. Now wages in China is rising, which indicates opportunities for Uzbekistan to develop labor-intensive products with labor of lower wages and high education, where China is losing its comparative advantages.

Egypt has similar GDP as Uzbekistan's today. It is labor-intensive, with a population more than 90 million and high population density of more than 21 thousand persons per square kilometers. Also it is rich in oil and gas. The proven reserves of oil are 4.45 billion barrels (2013), natural gas is 2.2 trillion cubic meters, and natural gas production is 168 million cubic meters.

Kazakhstan stands out as a country with the greatest similarity with Uzbekistan because Kazakhstan is also a landlocked country with abundant resources like oil, gas and uranium. Kazakhstan has the largest and strongest performing economy in Central Asia. Supported by rising oil output and prices, Kazakhstan's economy grew at an average of 8% per year until 2013, before suffering a slowdown in 2014 and 2015. Besides, it was the first former Soviet Republic to repay all of its debt to the IMF, 7 years ahead of schedule. However, Kazakhstan's MVA stands at the level of about 10 lower 12 percent in the case of Uzbekistan.

On balance, we choose China, Kazakhstan, Egypt, Equatorial Guinea, Suriname, Russia, Jordan as the benchmarked countries. Among those benchmark countries, China is labor-intensive but resource-poor, whereas Kazakhstan, Suriname and Equatorial Guinea are rich in resources but poor in labor. Egypt is both labor-abundant and resource-rich in the rapid process of industrialization.

In order to simplify the analysis and make the results more comparable, we finally choose China, Egypt, Kazakhstan, Jordan and Russia as the benchmark countries.

After selecting the three benchmark countries, the next step is to identify tradable goods and services produced in these target countries, where Uzbekistan would have potential comparative advantages. A typical way of completing this task is to rank aggregate export shares over the past 20 years in the declining order of a given target country. Here we use a modified approach by comparing the top 10 exports of a given benchmark country almost every five years (i.e., in 1995, 2000, 2005, 2010, and 2012). By doing so, we can better identify which sectors are losing their comparative advantages in the case of China, Egypt, Kazakhstan, Jordan and Russia and which manufacturing sectors are emerging in the case of Uzbekistan.

In the case of Uzbekistan, several manufacturing sectors are emerging outperforming its traditional export of natural resources and raw agricultural products. Raw cotton used to its primary export accounting for more than 70 percent of total exports in 1995, but its export share has declined substantially to 2 percent in 2018. Similarly, the export share of gold has dropped from 13 percent in 1995 to 2.4 percent in 2012. Correspondingly, cars became Uzbekistan's top 10 exports for the first time in 2000, and its export share has consistently grown to 15 percent in 2012 ranking no. 2 among all exports. In addition, export shares of processed raw materials are also rising, such as processed copper and cotton yarn.

Take China for example, some labor-intensive subsectors have been gradually losing their comparative advantages. For instance, Table 8 shows that export shares of non-knit men's suits have declined from 1.72 percent in 1995 to 0.57 percent in 2015. Similarly, export shares of radio receivers have decreased from 2 percent in 1995 to 0.38 percent in 2015. In addition, several other labor-intensive sectors (such as leather footwear, non-knit women's suits, industrial printers, video displays, video recording equipment, and models and stuffed animals) witness declining export shares in global markets. These sectors may become the competitive edge of Uzbekistan in the near future.

As for Kazakhstan, Petroleum oils and oils obtained from bituminous minerals, crude account for 19 as to 60% of exports (only 17% in 1995). This is strongly related to the dissolution of the Soviet Union. Though its Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form; Copper ores and concentrates; Aluminum oxide (including artificial corundum); aluminum hydroxide, as well as Zinc ores and concentrates are decreasing significantly. This may give rise to Uzbekistan as its prosperous of Gold.

As for Jordan, some industries have gradually losing their comparative advantage Table 11 shows that export share of Vegetable oils, Cement, cleaning products, Sheep hides, Animals, Non-knit women’s suits, Non-knit men’s suits, jewelers, Gold, Insulated wire. So, these sectors may become the competitive edge of Uzbekistan in the near future.

As for Egypt, Oils petroleum, bituminous, distillates, except crude and Petroleum gases and other gaseous hydrocarbons account for nearly 50% that of the total exports combined. But in other aspects, T-shirts, singlets and other vests, knitted or crocheted, Cotton yarn, Unwrought aluminium, Potatoes, fresh or chilled, Rice and Other bars and rods of iron or non-alloy steel decreased significantly.

Table 4.2 – Sectors Uzbekistan could potentially enter

Benchmark country	Sector/Product	Reason
China	Non-knit men’s suits, radio receivers, leather footwear, non-knit women’s suits, industrial printers, video displays, video recording equipment, home appliances, agricultural products, and models and stuffed animal, furniture	Due to the increase in wages in China's labor-intensive sectors, these sectors are losing their comparative advantage
Egypt	T-shirts, singlets and other vests, knitted or crocheted, cotton yarn, unwrought aluminum, fresh or chilled fruits and vegetables, rice and other bars and rods of iron or non-alloy steel	Due to the lacking professional management and government roles in some specific subsectors of industries, these sectors are loosing their efficiency and productivity
Jordan	Vegetable oils, Cement, cleaning products, Sheep hides, Animals, Non-knit women’s suits, Non-knit men’s suits, jewelers, Gold, Insulated wire, vegetables and fruits.	
Kazakhstan	gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form; copper ores and concentrates; aluminum oxide (including artificial corundum); aluminum hydroxide, as well as zinc ores and concentrates	
Russia	Furniture, Textile, Leather products, Polymers and other downstream products of gas and oil.	

Assessment and selection of target goods, based on the existing potential of the country can be carried out using the methodology "Product Space" ("Space of goods"). Within the framework of this methodology, the structural transformation of the economy is analyzed on the basis of data on the export of goods (Uzbekistan, China, Egypt, Jordan, Kazakhstan, Russia). The choice of analysis on the basis of export data is quite justified, since in the context of globalization and the interconnection of national economies, goods are considered competitive if they are in demand not so much in the domestic market as in the market of foreign countries.

The potential available in Uzbekistan is mainly conducive to the production of goods with a low degree of complexity.

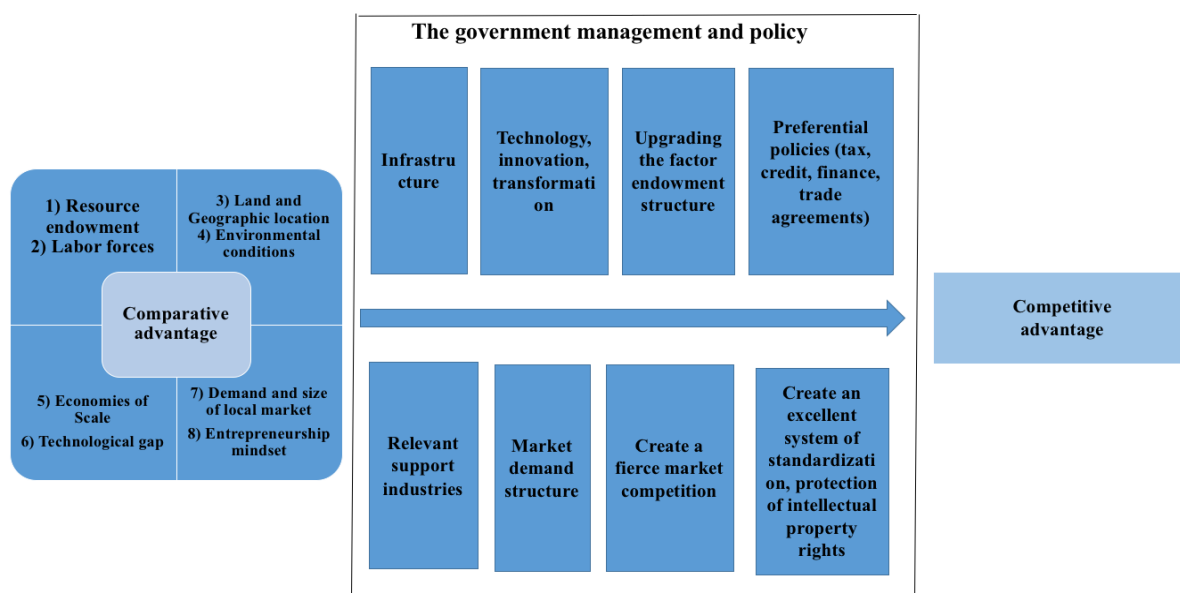
The results of the analysis of industry programs on the basis of “Product Space” through the GIFF model showed a high applied value of this process.

Considering Uzbekistan's own production capacity, resource endowment and industrial level, and around to our research results, we believe that the following industries have an export competitive advantage in Uzbekistan in recent years.

In order to select the subsectors where Uzbekistan really has latent comparative advantages, we apply the pre-screening criteria. The purpose is to select those subsectors which have both the potential for growth and the feasibility for production. The potential for growth largely depends on market demands. Besides international markets, the actual demand in domestic markets is also of vital importance too.

At the same time, we discovered that the government facing challenges in converting its comparative advantages into competitive advantages. This is due to the implementation capacity of the institutions. With Figure 32 the authors show that the government should play an active role and handle some effort to transform comparative advantage into competitive advantage.

Figure 4.3 – From comparative advantage to competitive advantage



## V. A new post pandemic industrial policy for developing countries

Historical experience, modern processes of globalization of the world economy and the current situation with covid-19 point to some limitations and disadvantages of existing industrialization strategies. In this regard, today the issue of not so much increasing commodity exports becomes relevant, but developing human capital, facilitating infant industries, building product manufacturing capabilities, digitalization of economy, and creating conditions for the effective integration of local enterprises into global value chains of goods and services.

### 5.1. Human capital

Recently, the amount of literature has been increasing, which emphasizes the importance of the production and export of complex goods for further economic growth [27; 28; 16; 29; 30]. This group of studies found that in order to ensure the economic growth and prosperity of the country, the quantity of exported goods is less important compared to the complexity of the goods produced [31; 32]. Indeed, a higher degree of complexity of goods is associated with higher productivity, and those countries that rely on the production and export of such goods are superior to other countries.

It is not surprising that the production and export of complex goods, of course, requires an adequate level of human capital, which stimulates innovation. It is this capital based on innovation that leads to greater productivity, competitiveness and economic growth [33; 34]. For example, the work of R. Linn and T.Vanhanen [35] summarizes 11 studies in which cognitive abilities as a reliable indicator of human capital [36] is considered as an important antecedent of various indicators of innovation, such as academic publications, patents, technology exports, Nobel Prizes in literature, science and peace, etc. According to these results, the correlation of IQ turns out to be quite high, especially with academic publications (0.87), STEM, a measure of excellence in science and technology (0.74) and the so-called "intellectual autonomy", which shows the independence of thought [37; p. 717] (0.61). According to these conclusions, there is reason to believe that human capital is "a shoddy requirement for the creation and maintenance of effective institutions [and] the ultimate need for innovation, efficient use of resources and economic growth" [38; p. 421].

Indeed, research at the micro level shows that mentally capable people demonstrate higher productivity when performing complex tasks and responsibilities. "Intellectually capable people can cope better with difficult cognitive requirements, they make fewer mistakes, they are more innovative and generally more productive" [39; p. 110]. This can then lead to the production of more diversified and complex exports.

After all, the available literature suggests that intelligence leads to innovation through various channels.

Firstly, innovation, the act of introducing a new product (service) to the market [40], is often the result of a process that depends on formal and informal interaction and knowledge exchange (dissemination of knowledge) among various economic agents [41]. In light of this, it can be argued that social capital is an important causal element of innovation. For example, after analyzing the data of a survey conducted among 440 manufacturing enterprises in one of the regions of Canada, R. Landry, N. Amara and M.Lamari [42] show how

various forms of social capital contribute to increasing innovation within these enterprises, and some of its types, for example, cooperation in research, even determine the radicality of innovation. Research by Doh, S., & Acs, Z.J [43] confirms the need to create strong social relationships in a modern economy based on knowledge and contacts between people. Indeed, the importance of social capital for stimulating innovation can at least be characterized by reduced transaction costs (information costs, coordination costs, contracts and law enforcement costs, etc.) among firms and other economic agents [44]. Consequently, in countries with more intelligent populations, there is a higher intensity of innovation, which leads to long-term benefits [45; 46].

Secondly, a slightly different approach is proposed by the so-called "O-ring theory" (O-ring theory), originally proposed by M. Kremer [47]. This theory of economic development is based on complementary competencies, according to which individual workers (in our case, scientists and other types of innovators) with the same level of skills, as a rule, cooperate with each other, which leads to an increase in the level of productivity per capita in the country. This theory is best explained by examples. It is best for firms with the most advanced technologies to hire highly skilled workers, but those of them that use the middle class of technology should hire qualified workers corresponding to their technologies, and not highly qualified specialists. Similarly, it is more productive in different areas if agents with high IQ interact with each other. People with a lower level of intelligence will get more if they cooperate with more experienced people with a comparable IQ level. According to the theory of O-rings, this type of clustering, according to the IQ level, increases collective intelligence and leads to greater productivity. At the cross-country level, this theory explains why countries that have small differences in IQ levels may have significantly higher differences in income: this is the collective influence of IQ level in a particular country (due to clustering) which creates an appropriate level of performance [48; 49]. This is why the effect of IQ on overall productivity is higher in different countries than among individuals [50]. Therefore, the theory of O-rings should be considered as an important channel through which intelligence influences innovation.

Thirdly, another area of literature claims that the level of intelligence of the so-called "smart fractions"— - intellectual classes with the highest abilities in the country (top 1% or 5%) promote innovation [51; 52]. For example, using cross-country data from more than 110 countries, J. Djelad [53] points to these "intellectual elites" with IQ levels exceeding 140 as the main driver of the number of patent applications and GDP. He confirms that in countries with a larger share of intellectual fractions, more technological knowledge circulates and more innovations occur than in other countries [154; c, 711].

Combining all three channels, this study shows that intellectual classes include not only intelligent individuals (the theory of intellectual fractions), but also their clusters around firms (the theory of O-rings), where they rely on social interaction (the channel of social capital) to innovate and achieve greater productivity. Since the literature suggests that the probability of export is high among productive firms, and non-productive firms usually work for the domestic market [54; 55], then the proposed theoretical "mixture" can confirm empirically that the positive relationship between productivity and exports of firms is explained by their innovative solutions [56].

As a result of a recent study, J. Squally and K. Wilson [57] for the first time tested the hypothesis of a link between intelligence and innovation using data on US states. Based on this, the purpose of this work is to investigate to what extent this hypothesis is confirmed at the intercountry level on the basis of the theoretical channels discussed above. To test the stability of the results in this study, different sets of variables and a variety of statistical methods are used. The causal relationship between human capital and innovation was tested on a sample of 124 countries. The economic complexity index is used as a measure of innovation, since it represents materialized innovations and is their best indicator, taking into account some problems characteristic of traditional innovation indicators, such as the number of patent applications and R&D expenditures [58].

The analysis showed that human capital is positively associated with innovation, measured through the index of economic complexity. The results demonstrate that more intelligent countries export more complex and diverse products to the global market and are therefore more innovative.

## **5.2. Digitalization and service sectors**

The COVID-19 pandemic has brought unprecedented digital acceleration, changing the face of the economy and society.

At the beginning of the XXI century, the revolution in the transport and telecommunications spheres led to closer integration and interdependence between countries, which ensured the fragmentation of production operations. As a result, world trade has increased not only in finished industrial goods, but also in intermediate components and semi-finished products.

It is worth highlighting the parallel rapid development of international trade in services since the beginning of this century, in particular in the fields of information and communication technologies, where outsourcing of business processes, intellectual services and software has become a kind of international division of labor and has created a kind of value chains between countries. Countries such as India, the Philippines,

Ireland, China and others are actively integrating into these chains and are becoming the most attractive in providing outsourcing services.

Over the past three decades, the contribution of the service industry to global growth has been greater than the contribution of industry. At the same time, the share of developing countries in the growth of exports of services was higher compared to developed countries, and besides, their exports of services grew faster than exports of goods. This is due to the higher added value of high-tech and innovative types of services compared to traditional industrial and assembly production. At the same time, the development of the service industry has created more jobs in the world than industry and agriculture. The rapid development of the service sector in the world was ensured not only by traditional services, such as tourism, but also by new types of modern services - call centers.

India is the undisputed leader in the global business services outsourcing industry. Despite the global slowdown in economic growth, in fiscal year 2012, this industry expected revenue of \$100 billion, including \$ 69 billion from exports. Already, 2.8 million people are directly provided with work in the country, and indirectly - 8.9 million at the expense of this industry alone. In addition, India's share in the global outsourcing market increased from 51% in 2009 to 58% in 2011. The revenues of this industry increased from 1.2 0/0 of the country's GDP in 1998 to 7.5% in 2012, while the share of the service sector in gross Indian exports increased from less than 4% to 25% over the same period [59].

Among the factors that contributed to the development of the service industry in India, one can name the favorable conditions created for inclusion in international service markets — high-quality telecommunications equipment and communication lines, including a broadband network for the Internet, such innovative state programs as the "Software Technology Parks Initiative", initiated in 1991, etc. The latter program created the ground for the development of startups in the field of ICT and began to produce highly qualified specialists in this direction through the system of educational institutions such as the Indian Institute of Technology. At the same time, the huge demand for such technologies in the domestic market of the country has become an additional powerful incentive for the development of the service sector.

Due to the emergence of the above trends in the global economy, developing countries, including Uzbekistan, have potential opportunities to participate in the Global Value Chain. Through these chains, domestic enterprises can obtain know-how in the field of modern management, valuable information on quality standards and technologies, study the demand structure of high-income countries, their consumer preferences, etc., thereby becoming more competitive in the global market. There are also a lot of positive externalities from such participation for the domestic economy, where new jobs will be created, production productivity will increase, technologies and skills will improve, the qualitative component of exports will diversify, which, in general, will further increase the attractiveness of the country before the eyes of foreign investors.

It should be particularly noted that along with the presence of a positive correlation between the complexity of the structure of services in exports and economic growth, entry into the export market of complicated types of services is not so strongly associated with the degree of economic "advancement" of the exporting country (calculated using GDP per capita) [60]. In this regard, there are good chances for developing world to develop this industry.

Moreover, a cross-country analysis of 50 developing countries shows that growth in the service sector was more correlated with a decrease in poverty than growth in the industrial sector [61]. And this suggests that specialization in outsourcing services will ensure inclusive and socially-oriented economic growth.

### **5.3. Global Value Supply Chains**

Digitalization and boom of service sectors also lead to global value supply chains.

An analysis of current trends in trade in goods and services within global production systems has shown that there are large development reserves for developing countries if their enterprises are advantageously included in these chains.

We propose to adopt the Law in the certain country on Industrial Policy, which should define the procedure for supporting industries and evaluating the effectiveness of such support and should reflect such aspects of industrial policy as goals, objectives and principles, participants and their powers, support tools, financial, information and consulting, personnel support of the policy, issues of stimulating foreign economic activity of business entities (including GVSC) support through public procurement, as well as regional and other institutional aspects (free economic and small industrial zones, industrial clusters etc), deadlines, responsibilities of participants and evaluation of effectiveness of policy.

Secondly, relatively low tariff and non-tariff barriers to trade, preferential access to large sales markets, improved business environment indicators implying low transaction costs for business, stability of macroeconomic development, efficiency of state institutions, speed and reliability of supply chains and overwork — all this is most important for the inclusion of domestic enterprises in the Global Value Chain.

Thirdly, currently in developing countries, quite a lot of attention is paid to the export of finished products with high added value. However, as the analysis shows, the focus on the export of finished goods

should be complemented by the export of intermediate parts, assemblies, components and spare parts, which should also be paid attention to for the development of international cooperation ties in the production of certain goods. And in this direction, the state needs to provide comprehensive support to enterprises producing intermediate components.

Fourth, due to the fact that some countries cannot take advantage of inclusion in the Global Supply Chain due to the small size of the market, the creation of regional integration associations there would help to somehow circumvent this disadvantage. Attracting FDI from transnational actors in this case would create conditions for exploiting the opportunities of an economy of scale.

Fifth, since the choice of multinational corporations of small and medium-sized enterprises as suppliers is often based on certain "soft" and "hard" features of the latter and the state should take the following steps to integrate local enterprises (mainly small businesses) into global value chains:

- organize trade fairs, conferences, forums, advisory centers or online platforms to overcome information asymmetry between multinational enterprises and local small businesses;
  - assist in strengthening the financial sustainability of local enterprises by financing supply chains and providing financial skills training to their personnel;
  - encourage cooperation and clustering among small businesses to increase their production capacity and know-how;
  - to help small businesses meet standards and obtain certificates, coordinate local and international standards, create state certification systems to reduce the burden on these enterprises in obtaining certificates;
  - provide training for employees of small businesses and provide them with technical assistance in the field of professional development and certification;
  - to make geographical location an advantage by ensuring macroeconomic stability, market openness and the rule of law;
  - to create technology centers and business incubators in the field of ICT in order to increase the level of business operations in the country;
  - promote cooperation and dialogue between universities, research institutions and the private sector, etc.
- Enterprises with foreign capital located in Special Economic Zones

#### **Final remarks.**

1. Historical experience and modern processes of globalization of the world economy point to some limitations and disadvantages of existing industrialization strategies. In this regard, the issue of increasing commodity exports is becoming relevant today, not so much as creating conditions for the effective integration of local enterprises into global value chains. And this requires an adjustment of the export-oriented industrialization strategy, which takes into account modern world economic processes and the future development of the world economy and international economic relations. In this regard, there is a need to develop an export-oriented strategy of industrialization with a course towards integration into global value chains.

2. Modern processes of globalization require the inclusion of enterprises of developing countries in regional and global value chains. At the same time, it is of great importance to improve their positions in these chains, which consists in maximizing added value and accumulating knowledge. The strengthening of competitive positions in such chains occurs due to the improvement of the process, products, chain, as well as functional improvement within the chain.

3. The fundamental difference between the industrial policy of the "old" and the "new model" is ensuring vertical specialization not only at the level of firms as it was mentioned earlier by most scholars, but also by individual countries. The goal of industrial policy in the new conditions will be not only to be included in vertically integrated production chains, but also to move up the ladder to conquer those niches in the Global Value Chain where high added value is created.

Thus, the new industrial policy will deal with the issues of the country's inclusion in the Global Value Chain, the management of trade procedures, attracting FDI and the implementation of exchange rate policies as instruments of import-substituting and export-oriented industrialization strategy in order to promote "national champions", large local companies, up the chain.

4. The analysis showed that human capital is positively associated with innovation, measured through the index of economic complexity. The results demonstrate that more intelligent countries export more complex and diverse products to the global market and are therefore more innovative.

5. Industrial policies should include measures to develop service sectors and integrate these sectors into global value chain. Countries such as India, the Philippines, Ireland, China and others are actively integrating into these chains and are becoming the most attractive in providing sourcing services. With the proper construction of industrial policy and the creation of the necessary favorable conditions, developing world can also take advantage of this situation by joining the chains of providing business services such as call centers, accounting, legal, medical, etc.

6. The world's best practices suggest attracting Foreign Direct Investment into Special Economic Zones to create joint ventures and using internal endowments along with foreign expertise in order to connect global supply chains is the most efficient way to accelerate industrialization.

### **Bibliography**

- [1]. Noland M., and Pack H. (2002). Industrial policies and growth: Lessons from International Experience. In: Economic Growth: Sources, Trends, and Cycles, Loayza N and Soto R, eds. Central Bank of Chile, Santiago. P. 251—307.
- [2]. The East Asian Miracle: Economic Growth and Public Policy. – Washington: World Bank, 1993, p.36.
- [3]. Pack, H (2000), Industrial policy: growth elixir or poison? The World Bank Research Observer, 15 (1), P. 47-67)
- [4]. Chang, H.J. (1994). The political Economy of Industrial Policy. St. Martin's Press. New York.
- [5]. The Global Competitiveness Report. World Economic Forum, 2002.
- [6]. Lall S. (1996) Learning from the Asian Tigers: Studies in Technology and Industrial Policy. MacMillan Press. London.
- [7]. Warwick, K. (2013). Beyond industrial policy. Emerging issues and new trends: OECD Science, Technology and Industry Policy Papers/Ken Warwick. OECD Library: website, (2), p.48.
- [8]. Harrison A. & A.Rodriguez-Clare. (2010). From hard to soft industrial policies in developing countries.
- [9]. Felipe, J. (Ed.) (2015). Development and modern industrial policy in practice: Issues and country experience. Edward Elgar Publishing. P.302.
- [10]. Weiss, J. (2015). Taxonomy of Industrial Policy. UNIDO Inclusive and Sustainable Industrial Development Working Paper Series (WP08/2015).
- [11]. Guadagno, F. Why Have so Few Countries Industrialized? Dissertation. Maastricht University, 2015
- [12]. Farla K., Guadagno F,m and Verspagen B. (2015) Industrial Policy in the European Union. In: Development and Modern Industrial Policy in Practice: Issues and Country Experiences, Felipe J, ed Edward Elgar Publishing. Cheltenham, UK.
- [13]. Lin, J.Y. and C. Monga (2011) Growth Identification and Facilitation: The Role of the State in the Dynamics of Structural Change. Development Policy Review, 29 (3): 264-290
- [14]. Hausmann, R., D. Rodrick & A. Velasco (2008). Growth Diagnostics, in: N. Serra and J.E. Stiglitz (eds.), The Washington Consensus Reconsidered: Towards a New Global Governance, New York, Oxford University Press, pp. 324-354.
- [15]. Hausmann, R. & B. Klinger (2006). Structural Transformation and Patterns of Comparative Advantage in the Product Space, Working Paper no. 128, Harvard University Center for International Development.
- [16]. Hidalgo, C.A., Klinger, B., Barabasi, A.L., & Hausmann, R. (2007). The product space conditions the development of nations. Science, 317 (5837), pp. 482-487.
- [17]. Rodrick, D. (2004). Industrial Policy for the Twenty-First Century. Prepared for Unido.
- [18]. Cimoli, M., G. Dosi, J. Stiglitz (2009). The Future of Industrial Policy in the New Millennium: Towards a Knowledge- Centered Development Agenda. — Conclusions to the book "The Political Economy of Capabilities Accumulation: the past and Future of Policies for Industrial Development". Ed. by M. Cimoli, G. Dosi, J. Stiglitz, OUP, 2009.
- [19]. Lee K. (2013). Capability failure and industrial policy to move beyond the middle-income trap: from trade-based to technology-based specialization //Industrial Policy Revolution 1.: The Role of Government Beyond Ideology. Basingstoke, UK: Palgrave. — C. 244.
- [20]. Nayyar D. (2013). Catch Up: Developing Countries in the World Economy, Oxford: Oxford University Press.
- [21]. Lall, E. (2001). Competitiveness, Technology and Skills. Cheltenham, United Kingdom, Edward Elgar.
- [22]. Rodrick, D. (1995). Getting Interventions Right: How South Korea and Taiwan Grew Rich. Economic Policy, 20. PP-53-101.
- [23]. Blecker, Robert A. The Diminishing Returns to Export-Led Growth. Occasional Paper, Council on Foreign Relations, 1999
- [24]. Trade and Development Report 2005: New Features of Global Interdependence. UNCTAD, 2004.
- [25]. Global value chains in a changing world / Edited by Deborah K. Elms and Patrick Low / Fund Global Institute, Nanyang Technological University, and World Trade Organization, 2013
- [26]. Global Value Chains and Development: Investment and Value Added Trade in the Global Economy, UNCTAD, 2013
- [27]. Lall, S., Weiss, J. & Zhang, J. (2006) The “Sophistication” of export: a new trade measure. World Development, 34(2), pp. 222-237.
- [28]. Hausmann, R., Hwang, J., & Rodrik, D. (2007) What you export matters. Journal of economic growth, 12(1), pp.1 -25.
- [29]. Jarreau, J., & Poncet, S. (2012). Export sophistication and economic growth: Evidence from China. Journal of development Economics, 97(2), pp. 281-292.
- [30]. Berg, A., Ostry, J.D., & Zettelmeyer, J. (2012). What makes growth sustained? Journal of Development Economics, 98(2), 149-166.
- [31]. Hausmann, R., Hwang, J., & Rodrik, D. (2007). What you export matters. Journal of economic 12(1), 1-25.
- [32]. Lederman, D. & Maloney, W. (2012). Does what you export matter?: In search of Empirical Guidance for Industrial Policies. World Bank Publications.
- [33]. Mincer, J. (1984). Human capital and economic growth. Economics of Education Review, 3(3), pp.195-205.
- [34]. Barro, R.J. (2001). Human capital and growth. The American Economic Review, 91(2), pp.12-17.
- [35]. Lynn, R. & Vanhanen, T. (2012) National IQs: A review of their educational, cognitive, economic, political, demographic, sociological, epidemiological, geographic and climatic correlates. Intelligence. 40(2), pp.226-234.
- [36]. Jones, G. & Schneider, W.J. (2006). Intelligence, human capital, and economic growth: A Bayesian averaging of classical estimates (BACE) approach. Journal of economic growth, 11(1), pp.71-93.
- [37]. Gelade, G.A (2008). IQ, cultural values, and the technological achievement of nations. Intelligence, 36(6), pp.711-718.
- [38]. Meisenberg, G., & Lynn, R. (2012). Intelligence: A measure of human capital in nations. The Journal of Social, Political, and Economic Studies, 36(4), p.412.
- [39]. Rindermann, H. (2012). Intellectual classes, technological progress and economic development: The rise of cognitive capitalism. Personality and Individual Differences, 53(2). pp.108-113.
- [40]. Acs, Z.J. & Audretsch, D.B. (1988). Innovation in large and small firms: an empirical analysis. The American economic review, pp.678-690.
- [41]. Doh, S., & Acs, Z.J. (2010). Innovation and social capital: a cross-country investigation. Industry and Innovation. 17(3), pp.241-262.
- [42]. Landry, R., Amara, N. & Lamari, M. (2002). Does social capital determine innovation? To what extent? Technological forecasting and social change, 69(7), pp.681-701.
- [43]. Doh, S., & Acs, Z. J. (2010). Innovation and social capital: a crosscountry investigation. Industry and Innovation, 17(3), 241-262.
- [44]. Maskell, P. (2000). Social capital, innovation, and competitiveness. In Social capital. Oxford University Press.
- [45]. Shamosh, N.A. & Gray, J.R. (2008). Delay discounting and intelligence: A meta-analysis. Intelligence, 36(4), pp.289-305.
- [46]. Salahodjaev, R. (2015). Intelligence and shadow economy: A cross-country empirical assessment. Intelligence, 49, pp.129-133.



- [47]. Kremer, M. (1993). The O-ring theory of economic development. *The Quarterly Journal of Economics*, pp.551-575.
- [48]. Jones, G. (2011). National IQ and national productivity: The hive mind across Asia. *Asian Development Review*, 28(1), pp.51-71.
- [49]. Jones, G. (2013). The O-ring sector and the Foolproof sector: An explanation for skill externalities. *Journal of Economic Behavior & Organization*, 85, pp.1-10.
- [50]. Burhan, N.A.S., Sidek, A.H. Kurniawan, Y, & Mohamad, M.R. (2015). Has globalization triggered collective impact of national intelligence on economic growth? *Intelligence*, 48, pp.152-161.
- [51]. Coyle, T. R., Rindermann, H., & Hancock, D. (2016). Cognitive Capitalism Economic Freedom Moderates the Effects of Intellectual and Average Classes on Economic Productivity. *Psychological Reports*, 0033294116659854.
- [52]. Rindermann, H. (2012). Intellectual classes, technological progress and economic development: The rise of cognitive capitalism. *Personality and Individual Differences*, 53(2), 108-113.
- [53]. Gelade, G. A. (2008). IQ, cultural values, and the technological achievement of nations. *Intelligence*, 36(6), 711-718.
- [54]. Wagner, J. (2007). Exports and productivity: A survey of the evidence from firm-level data. *The World Economy*, 30(1), pp.60-82.
- [55]. Pertl, L. & Polanec, S. (2007). Exports and productivity-comfortable evidence for 14 countries. *World Bank Publications*.
- [56]. Cassiman, B., Golovko, E. & Martinez-Ros, E. Innovation, exports and productivity. *International Journal of Industrial Organization*, 2010, vol. 28(4), pp.372-376.
- [57]. Squalli, J. & Wilson, K. (2014). Intelligence, creativity, and innovation. *Intelligence*, 46, pp.250-257.
- [58]. Sweet, C.M. & Maggio, D.S.E. (2015). Do stronger intellectual property rights increase innovation? *World Development*, 66, pp.665-677.
- [59]. [www.nasscom.org](http://www.nasscom.org)
- [60]. Mishra, S., Lundstrom, S., and Anand, R. (2011). "Service Export Sophistication and Economic Growth". Policy Research Working Paper 5606. Washington, DC, World Bank.
- [61]. *The Service Revolution in South Asia* / Edited by Ghani, E. New Delhi, India, Oxford University Press, 2010.

Bakhrom Abdukadirov. " Post Pandemic Industrial Policy for Developing World." *IOSR Journal of Economics and Finance (IOSR-JEF)*, 13(02), 2022, pp. 09-25.