

INDUSTRIAL DEVELOPMENT AND STRUCTURAL POLICY IN THE REPUBLIC OF UZBEKISTAN

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Abstract

This paper investigates major points of the industrial structure, development and policy of industrial systems in Uzbekistan. Moreover, it explores the use of state target programs as a main factor of modern industrial policy, and assesses its further implementation for reindustrialization of Uzbekistan's economy, which aims to achieve economic security. The paper is finalized by a set of recommendations for development of industrial policy and industrial systems' management. On this case, research has pinpointed on the industrial development and structural policy in the Republic of Uzbekistan from both theoretical and methodological aspects. Finally, the author concludes with the outcomes and shortcomings of the industrial development in the case of Uzbekistan.

Keywords Industry, structure, development, policy, systems, Uzbekistan

1. Introduction

During the years of independence, the Republic of Uzbekistan has made great strides in socio-economic development. Even in the context of the global financial and economic crisis of 2008-2009, the national economy of Uzbekistan was one of the highest in the world in terms of growth. Since 2010, Uzbekistan's annual GDP growth rate has been at least 8%. At the heart of these positive results, recognized by experts of the world community, is the huge potential of socio-economic development of the country and targeted reforms based on the "Uzbek model" of transition to a market economy. The industry is a base of material production which contributes to generation of GDP. This contribution varied from 25% to 40% depends on a country. In the second half of 1990s' and the beginning of 2000s' the share of industry in GDP was increased in countries like Japan, India, China, Brazil, South-African Republic, etc. In Uzbekistan the share of industry in GDP increased from 17.6% in 1990 [1] to 24.2% in 2013 [2]. The industry creates the demand for different products, including means of production. Satisfaction in these products depends on degree of industry development. The range of independent or related sectors included enterprises and production associations in certain area create the industrial system. In former times the definition of branches and branch structures characterized the composition of branches, qualitative and quantitative relations. This in turn reflected the country's level of industrial development.

The modern industrial system characterized not only by business sectors, industrial enterprises and economic activities, but also includes the set of infrastructural elements which create the basis for industrial development. These elements include scientific laboratories and special scientific-research departments of corporations, which ensure high standards of scientific-research and experimental-design (SRED). During the last two decades two radical changes in industrial system were happened: (i) reconstruction of branch structure with the change of share of different sectors in creation of total production of industry; (ii) increasing of significance of SRED with the change of value added to enhance the share of science intensive results.

2. Theoretical background

Reforms conducted in Uzbekistan aimed to economize resources, to increase the productivity and elasticity of industrial systems, to automatize the production, to introduce the modern techniques and technologies. These targets were achieved due to redistribution of available resources in industry and ton due to resources available in other sectors of economy. Incidentally, exactly these changes in industry caused the high level of production computerization in developed countries. Thus, the main aim of industrial development is the implementation of "unmanned" and "nonwaste" technologies and production with optimal use of resources and minimal damage for environment.

The best practices in achieving these aims could be found in engineering industry and metal-working industry. The share of this sector in Uzbekistan's industry in 2013 was 18.8% [2]. This sector combines the maximum significant volume of scientific and technical results as well as creates new means of production.

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3. Main part

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- theoretical justification of industrial policy in frame of economic reforms
- selection of models and instruments of industrial policy
- practical implementation of policy and assessment of obtained results with view to effectiveness of industrial structure and its influence on economic growth.

The first stage concerns the methodological approaches for industrial policy and characterizes by dissensions among famous economic schools. In this case the following approaches could be discussed:

- neoknesian policy for supporting aggregate demand, GDP and per capita income allows to provide investments to industry through the low rates and enough level of savings which impossible to support in case of low income;
- monetarists policy of grip in necessary to suppress of high rate of inflation and to stimulate investors by aggregate demand change and by decreasing of discount rate;
- "supply economy" aimed to motivate for increase of savings and for encouragement of investment through tax policy reforming;
- "business cycle policy" which is combining all above mentioned instruments for counteract against cycle crisis;
- "new classic macro economy" (based on rational expectations theory) recognized "Lucas critique"

and hence rejected deliberated policy of stabilization, which proposes active supporting of entrepreneurship and "spontaneous order".

Nothing from above mentioned approaches could not be apply in conditions of Uzbekistan due to developing socio-economic environment and too difficult objectives and aims of reforming economics. The set of macro economic effects needed which are depend not only on supply and demand, but also on kind of industrial sector influencing on economic structure. The transit potential of the Republic of Uzbekistan within Central Asia has a favorable economic and geographical location and plays a very important role in the mutual integration of subregional countries. At the same time, our republic has natural resources that create great opportunities for the formation and development of a diversified national economy. First of all, the mineral resource potential of our country deserves special attention. A total of 2,700 deposits of about 120 types of minerals have been discovered in Uzbekistan. In particular, Uzbekistan ranks 4th in the world in terms of gold reserves, 7th in terms of uranium, 8th in terms of molybdenum and 10th in terms of copper. Natural gas is the most important fuel and energy resource, and Uzbekistan ranks 14th in the world in terms of its reserves. Noru is one of the world's leading producers of potassium salts and phosphorites. The largest deposits of various minerals are rich in Navoi, Tashkent, Kashkadarya, Bukhara regions and the Republic of Karakalpakstan. This means that the huge reserves of mineral resources create ample opportunities for the development of non-ferrous metallurgy, fuel, chemical and building materials industries in our country.

4. Analyses

Our country has agro-climatic resources that create favorable conditions for agricultural development. Due to the length of the growing season, the abundance of hot and sunny days, cotton growing and horticulture in

Uzbekistan. high-income agricultural sectors such as viticulture, vegetable growing, and horticulture are developing intensively. However, due to the fact that agriculture is developing mainly with the help of artificial irrigation, the agriculture of the republic is strongly dependent on water resources. Tashkent, Andijan, Surkhandarya and Samarkand regions are relatively well supplied with this type of natural resources. Also, in the western part of the country, in the Republic of Navoi, Bukhara and Karakalpakstan, where a small part is occupied by deserts, the situation is much more complicated. However, despite the lack of water resources in our regions, Uzbekistan ranks 11th in the world in terms of irrigated land.

The population and labor resources of Uzbekistan are also the basis of socio-economic development of the country. The population of the republic is constantly growing. The population of the republic, which was 20.2 thousand people in 1990, increased to 32.1 thousand people in 2017. In the post-2010 period, the birth rate in Uzbekistan was 23-24 per 1,000 people, the death rate was 5-6, and the natural increase was 18, or 1.8 percent. is happening. However, due to the fact that the migration balance was at a minimum negative level (-0.1-0.2 percent), the overall population growth rate is 1.6-1.7 percent.

During a short historical period, Uzbekistan has gradually and successfully solved such complex tasks as the introduction of international trade and economic relations, improving the structure of the national economy, industrial development, ensuring food, energy and transport security of the country.

In the dynamics of GDP growth in the country can be divided into 3 periods. The first is characterized by an economic downturn, including 1991-1996. This was mainly due to the breakdown of the system of territorial division of labor within the former Soviet Union, cooperation between the sectors of the Uzbek economy and the economy of other republics. The second phase between 1997 and 2003 was a period of stabilization of the national economy and the beginning of GDP growth. The third period began in 2004 and continues to this day. For these years, Uzbekistan's GDP is growing at a rate of not less than 8.0%.

Significant changes have also taken place in the structure of the national economy. First of all, it is noteworthy that the share of industry in GDP has grown significantly. In 1995, industry accounted for 17.1 percent of GDP, but in 2014 this figure rose to 26 percent. The share of agriculture in the national economy. respectively, from 28.1 percent to 17.6 percent. The network structure of the industry has also changed significantly. The role and importance of electricity, fuel, chemicals, non-ferrous metallurgy, machinery and other heavy industries in the country's industry has grown, and the share of light industry, which determines the specialization of the republic in the pre-independence period, decreased by almost 3 times. Since the beginning of 2000, the volume of industrial production in Uzbekistan has been growing steadily, and the growth rate of the processing industry is several times higher than that of the extractive industry. As a result, at the end of 2016, the leading position in the industry of the country was occupied by machine-building products with a share of almost 20%. In recent years, Uzbekistan has built the automotive, microelectronics, potassium fertilizers and soda, pharmaceutical, sugar and other industries. Very large enterprises have been launched in the oil and gas chemical industry. In the post-2010 period, the Topalang HPP, Ustyurt Gas Chemical Complex, Khandiza Mining and Metallurgical Combine, Dehkanabad Potash Plant, Khorezm Automobile Plant, Zafarabad Cement Plant and other important production facilities have been completed. To date, Uzbekistan has a strong industrial production potential. Our country is one of the leading producers of gold, uranium, natural gas, cadmium, molybdenum, sulfuric acid, nitrogen fertilizers, fabrics, cars and other products in the CIS and the world. There have also been changes in the regional structure of Uzbek industry. For example, in the late 1980s, the city of Tashkent and the regions of the gross industrial output 50 percent, while the current period, 30 percent of the territories. In turn, due to the establishment of a number of new enterprises, the share of Andijan, Kashkadarya, Navoi, Bukhara, Jizzakh regions and the Republic of Karakalpakstan in the country's industry has increased significantly. This means that the number of industrial centers in Uzbekistan is growing. Great changes have also taken place in Uzbekistan's agriculture. The priorities of the initial reforms in agriculture were cotton monopoly and the development of private farms and dehqan farms. Due to the sharp reduction in the area under cotton, the area under grain has increased 1.5 times. Due to this, the gross yield of wheat in Uzbekistan has increased by 3.5-4 times, and in a short period of time the country has achieved grain independence. In addition, great attention was paid to the development of agricultural sectors such as vegetable growing, potato growing, horticulture, viticulture, dairy farming, which play an important role in ensuring food security of the country. As a result, during the years of independence, the yield of cotton decreased from 5.5 thousand tons to 3.4 thousand tons, vegetables - 2.5 times, potatoes - 6 times, fruits - 4 times, grapes - 2.5 times, meat and milk production - 2 times. times.

5. Strategies, the state bodies, and state target programs for industrial systems' development

The main strategies aimed to develop the industrial systems could be divided into two groups: "direct" and "indirect".

In modern conditions the following "direct" strategies prevailed:

- industry and its sectors development program;
- legal terms of industrial enterprises functioning;
- corporate planning system;
- international conventions and financial-industrial groups.

The main “indirect” strategies include those types of contracts between organizations which arrange cooperation network as well as establish vertical and horizontal integrated unions, etc. “Indirect” strategies are the main results of selfadjustment of economic bodies in diapason established by “direct” ones, and “direct” strategies are based on political process results. Hence, “indirect” strategies defined by economic genotype. In turn, “direct” strategies are defined by public objectives, more accurately — the views of governments, which must be able to choose the priorities and achieve these aims.

Thereafter, the diversification of “direct” strategies is more dynamic, in turn the diversification of “indirect” ones is enough stable. These statements are formulating the fundamental gaps of economic dynamic. The high rate of aims’ differentiation born the conflicts in economy development, which are solved by compulsory measures using instruments of economic policy.

The general industrial policy makers in today’s

Uzbekistan are:

- Ministry of Economy;
- Ministry for Foreign Economic Relations, Investments and Trade;
- Ministry of Finance;
- Chamber of Commerce and Industry;
- Large scale companies, public organizations

and associations, etc.

The set of the state target development programs is the key instrument of industrial policy in Uzbekistan after the collapse of USSR. In fact, the projecting of such programs replaced methods of centralized planning as in Soviet era. Hence, it is important to define the quality of projects and adoption to modern Uzbek conditions Today, Uzbekistan is one of the world’s leading producers and exporters of grapes, melons and some fruits. In addition, the traditional specialized sectors of agriculture in Uzbekistan - cotton, silkworm, karakul - have not lost their importance. In particular, as of 2016, the country ranks 6th in the world in terms of gross cotton harvest, 3rd in terms of exports, 6th in terms of silk production, and the production of astrakhan leather. and in 2nd place.

Significant results have also been achieved in the development of the transport system. The most important of these is the achievement of the integrity of the republic's railway transport system. Given the fact that the territory of Uzbekistan stretches for hundreds of kilometers from northwest to southeast, and the state borders in a unique way through mountain ranges and vast deserts, this issue is of strategic importance. We are sure that The territory of Surkhandarya region is connected with the single railway network of Uzbekistan with the construction of Tashguzor Boysun Kumkurgan, Khorezm region and the Republic of Karakalpakstan Uchkuduk - Miskin Nukus, Fergana valley Angren - Pop landi. As a result, transport security and independence of our country have been ensured. Currently, the Konimex-Miskin railway, which connects Navoi and Bukhara regions with the Republic of Karakalpakstan for a relatively short distance, and the railway from Urgench to Khiva, an international tourist center, are under construction. In addition, significant work has been done in Uzbekistan on the electrification of railways and the construction of high-speed train routes. In particular, Afrosiyob on the Tashkent-Samarkand route, Nasaf on the Tashkent-Karshi route, and Sharq high-speed trains from Tashkent to Bukhara have been launched. Now the electrification of the Karshi-Termez, Karshi-Kitab and other railways has begun. Upon completion, the geography of high-speed train routes in the country is expected to expand.

Also, in order to realize the transit potential of economic and geographical space through the connection of regional transport systems in different parts of Eurasia, to have reliable access to the seaports of the Republic of Uzbekistan in several directions, Turkmenistan, Kazakhstan is establishing comprehensive cooperation with countries such as the Russian Federation, Khilai, Azerbaijan, Georgia, Iran and Oman. The first Termez Mazar-i-Sharif railway in Afghanistan, built with the help of our country, was the first step in creating the shortest transport outlet from Uzbekistan to the world's ocean ports in the southern direction. Unfortunately, the instability of the geopolitical situation in Afghanistan has indefinitely suspended the construction of the planned transport highways from the territory of this country to the Indian Ocean. Extensive work in the transport system is an integral part of efforts to further develop the country's foreign economic relations. The Russian Federation, China, Kazakhstan, the Republic of Korea, Turkey and European countries are among the most important trade partners of the Republic of Uzbekistan, which has established foreign economic relations with about 140 countries. The development of the transport system will allow expanding the foreign economic activity of the republic in new geographical directions. During the years of independence, the commodity structure of the republic's exports has undergone significant changes. At the time of independence, the share of cotton fiber in the country's exports was 60%. In subsequent years, that number has steadily declined, dropping to 5 percent by 2016. In turn, the role of energy sources (primarily natural gas), non-ferrous metals, food and textiles, chemical products, automobile production in the structure of domestic exports has grown significantly. In recent years, a number of free economic zones (FEZ) have been established in the country at the initiative of the Government of the Republic in order to increase the industrial production and export potential of the regions, to attract more foreign industry to our national economy. First "Navoi", "Angren", "Jizzakh" (with a branch in Syrdarya region), then "Hazarasp" in Khorezm region, "Gijduvon" in Bukhara region, "Urgut" in Samarkand region and "Kokand" in Fergana region. EIZs were created. To date, hundreds of new production projects with the participation of domestic and foreign investors are being implemented in these regions. The prospects of socio-economic development of Uzbekistan depend on the rational use of the potential of each district and region of the republic in the national and regional interests. During the years of independence, the region has developed in all directions, its cities and villages have prospered, and the living standards of the population have increased. As a result of consistent reforms in the region, significant results have been achieved in construction, agriculture, small business and private entrepreneurship, and the development of the social sphere.

In 2016, the region's GDP growth rate was 9.6 percent. Industrial production grew by 17.8%, gross agricultural output by 6.3%, construction by 11.8% and retail trade by 15.2%.

Last year, 304 industrial development projects and 696 agricultural projects were implemented.

As a result of the work carried out to support businesses and protect their legal interests, the share of small business and private entrepreneurship in the gross regional product in 2016 amounted to 80.3%.

The enterprises of the regional administration exported goods and services worth \$ 38 million

Jizzakh Free Economic Zone plays an important role in the development of regional industry. In 2016, the enterprises operating here produced goods worth 163 billion soums.

In this special zone, established on the basis of the Decree of the First President of the Republic of Uzbekistan dated March 18, 2013 "On the establishment of a special industrial zone" Jizzakh ", 20 enterprises (15 in Jizzakh and 5 in Syrdarya) have been launched in recent years.

More than 1,000 new jobs have been created in enterprises equipped with modern technologies. About 60 percent of the jobs are filled by university and vocational college graduates.

Now in the free economic zone, various industrial products such as brake pads for trucks and cars, TVs, air conditioners, refrigerators, washing machines, microwave ovens, LED lights, polypropylene wires, video and IP telephones, telecommunications equipment, internet speed boosting components produced.

In his election program, Shavkat Mirziyoyev outlined grand plans and goals for the consistent continuation of the great creative work carried out in the region, the comprehensive development of the region, the interests of the population. During the visit to Jizzakh, the President will get acquainted with the implementation of these plans, ongoing reforms and promising projects. Dozens of cars are produced at the Samarkand Automobile

Plant, JV Man Auto Uzbekistan JV, which is equipped to the highest standards in the world. British-American tobacco, Sam Antep Gilam, UrgGazKarpet, Amin Invest, Daka Tex, Agromir Samarkand joint ventures, Sino, Samarkandkimyo joint-stock companies, Large production facilities, such as a private concern, make a significant contribution to the economic development of the region.

In 2016, another 19 joint ventures were established, bringing the total to 263 in the region. The region's foreign trade turnover amounted to 1 billion 195 million dollars. Exports increased by almost 1.5 times compared to 2015.

These indicators are also reflected in the socio-economic development of Samarkand. This is evidenced by the fact that in 2016, the gross regional product grew by 8.7%.

The people of Samarkand, who have long been known for their craftsmanship and business acumen, are achieving significant results in the field of small business and private entrepreneurship. At the same time, the share of this sector in the gross regional product of the region has exceeded 78%, and more than 84% of the employed population work in this sector.

Systematic work is being carried out in the region to reform and modernize the agricultural sector. In 2016, 2,838 diversified farms, 9,079 hectares of intensive orchards and 1,000 hectares of vineyards were established. 11,349 jobs were created in this area.

Today, 33 percent of vegetables, 38 percent of fruits, 34 percent of milk and 27 percent of meat are processed at local businesses in the region. Such growth rates are reflected in the living conditions of the people, in the appearance of cities and villages in the region. SRED and industrialization

SRED play the main role in the process of transition of Uzbek economy to the innovative type of development. In order to assess the level of SRED in a country the set of indicators can be used, such as the number of scientific publications; the number of patent and patentees; the number of researchers and experts of SRED; costs for education; etc. However, the most universal indicator is the level of costs for SRED itself.

This indicator is a relative number and calculated as total state and private costs for SRED during one calendar year, including state budget; commercial organizations' budgets; different NGO's and private foundations' grants.

In 2010, the first three places in the world in share of SRED costs ranked by the State of Israel (4.39%), Finland (3.78%), and Korea (3.74%). This indicator in Uzbekistan has made 0.185% of GDP.

Table 1. – Share of costs for SRED in 2004–2011, % of GDP

	2004	2005	2006	2007	2008	2009	2010	2011
Israel	4,29	4,42	4,50	4,84	4,77	4,49	4,35	4,39
Finland	3,45	3,48	3,48	3,47	3,70	3,94	3,90	3,78
Korea	2,68	2,79	3,01	3,21	3,36	3,56	3,74	NA
USA	2,55	2,59	2,65	2,72	2,86	2,91	2,83	2,77
Russia	1,15	1,07	1,07	1,12	1,04	1,25	1,16	1,12
Uzbekistan	0,25	0,23	0,2	0,19	0,18	0,185	NA	NA
World	2,05	2,05	2,06	2,03	2,12	2,19	2,20	2,08

Sources: adopted and modified from www.worldbank.org. National Innovation System of Uzbekistan: assess-

ment of potential and effectiveness (2011). P.49. UNDP project, Tashkent.

Table 1 above indicates that the tendency for SRED costs increasing observed from 2.05% in 2008 to 2.08% in 2011. Despite the decreasing of costs for SRED in total volume of all industrial development programs, this indicator is not significant due to the possibility of new programs planning in this period of time. For further stages of a new industrial policy development it is necessary to assess the volume of resources needed, as well as to find and indicate sources of it. Moreover, all limitations and risks must be examined. The most important from this point of view is the effect of associated programs; the transmission of resources from one activity to another; interregional resources' flow and regional.

Conclusion

Thus, it is necessary to take into account not only the volumes of investments to fixed assets of enterprises, but also investment to education and other social spheres, which are influencing the quality of human capital and its growth. This in turn lead the economic growth of the human capital quality and its further growing and stability. The problem of distribution of possible level of all investments between technological skills and the capital (belong to the worker of industrial enterprises) is the nontrivial aim of reindustrialization process management and its tempos.

Usually, there are two sources for needed measures:

- Creation of resource and its distribution correspondent to aim of reindustrialization and to the program, which aggregate the development program of sectors and directions of activities in joint document or/and act;
- Redistribution of available resources through economic system institutional modification, notably through modified taxes; formation of debit part of budget; withdrawal of resources from extractive industry and services sphere (labour potential) to the development of processing industry.

The synergy of these two basic sources allows to develop the target programs for industrial systems together with extension of relationships between public and private enterprises.

State target development programs must follow the criteria of confront the costs and benefits. Thus, the assessment of effectiveness acts as the major project criteria, including the process of consideration of programs and kind of economic and industrial policy.

Coherence of all kind of policies plays the main role for solving any problems in industrial sectors development due to monetary and budgeting policies must be based on development of macro aggregates and thus due to ability to solve the problems of development. Hence, it is impossible to realize the program of industrial regeneration with representing the robust monetary restrictions and economy demonetization. Thus, this approach has to be taken into account within the formation of aims for socio-economic and strategic development of Uzbekistan.

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