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IMPLEMENTATION OF INDUSTRIALIZATION POLICIES IN UZBEKISTAN AT THE MODERN STAGE OF ECONOMIC REFORMS

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ABSTRACT-- *At the present stage of economic reforms, raising the competitiveness of the national economy is becoming more relevant than ever before. One of the main conditions for improving the competitiveness of the national economy is the implementation of a deep and well-considered long-term industrial policy. Therefore, this article attempts to highlight the issues of the implementation of industrialization policies in our country.*

Keywords--*industrial policy, modernization and diversification of the economy, localization, innovative development, export of high technology products, scientific and technical development.*

I. INTRODUCTION

Today, refinement of the methodological basis for the establishment of the organizational and economic mechanism for the technological modernization of industries and sectors of economy and the deepening of integration processes of Uzbekistan into the world economic community require radical revision of the management system of regional and sectoral industrial complexes. The industry of our country faces such important tasks as adaptation to the changing conditions of the world market, development of innovative development strategies, solution of such tasks requires interaction of various levels of state and local governments and industrial enterprises and development of systematic measures. Since industrial policy is a set of economic, political and organizational measures aimed at supporting and sustaining growth of the national economic system, its main purpose is to accelerate the economic development of the country, to improve the well-being of national producers and their competitiveness. In this regard, industrial policy eliminates outdated manufacturing structures and creates modern structures, accelerates scientific and technical development and management, and also increases the resilience of the global economy to objective requirements. In order to stimulate industrial enterprises in our country, it is necessary to develop and implement innovative development strategies based on the latest achievements of science and technology in the development of science and technology. **[3]**

II. MAIN PART

Implementation of policies aimed at the organization of import-substituting industries in the economy is not only

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an organizational structure providing the management of material and financial assets, but also the social and economic realities of regulating production-infrastructure and scientific-technological activities. is an integral part of the transition from raw materials exports to high-tech products is a complex evolutionary process that requires a systematic approach. In particular, the analytical data provided by the Central Bank of the Republic of Uzbekistan on "Balance of Payments, International Investment Position and External Debt of the Republic of Uzbekistan" for 2018 shows that the foreign trade turnover of goods taking into account the results of 2018, including gold sales and adjustments, 6 bln. US dollars, exports and imports of $11.4 billion and $ 18.3 billion respectively. $ 6.9 billion as a result of negative balance of payments. The main share in total exports was gold (25.5% of total exports) and oil and gas products (23.3% of total exports). This suggests that diversification based on processing is relevant. Analyzing the structure of imports of goods from the perspective of accelerated industrial production, imports of machinery, equipment and mechanisms increased by 47.5% compared to 2017 and amounted to $6.2 billion. $3.7 billion in 2017, "non-precious metals and their products" - US $ 2.4 billion. $ 1.7 billion ($ 1.7 billion in 2017), $ 2.6 billion in onshore, on-water and air vehicles. These commodity groups accounted for 59% of total imports (52% in 2017) [5]. Such a situation in imports is highly likely to have a negative impact on the technical, technological and economic potential of national manufacturers in the near future.

New industrialization is a combination of industrial (traditional technologies, business and markets) and post-industrial (new technologies, business and markets) based on information systems and intellectual technologies that simultaneously change relevant business models and processes. and to increase the share of industrial production in the national economy. It is obvious that the implementation of industrial policy supporting import-substituting production requires revision of the principles of state economic policy. The Concept of Administrative Reforms being implemented in our country plays an important role in this. This issue is also highlighted in the Strategy of Action on the five priority areas of development of the Republic of Uzbekistan. Modernization of industrial enterprises and diversification of production will play an important role in expanding the scope of market reforms and increasing the need for the implementation of import-substituting industrial policies in the national economy. It should be noted that the efficiency of modernization and diversification of industrial production can be achieved through the integration of science, education and production. It is the scientific and technological organizers of the national economy that determine the form of social and economic relations development and the basis for the provision of scientific and technological competitiveness of domestic producers in the world markets. **[4,60]**.

Given the rapid development of organizational, information and technological elements of socio-economic development, the widespread global processes and the emergence of a new corporate structure of the domestic industry, the role and importance of the major factors influencing the development of industrial enterprises will also change. As part of this research, we have focused on the modeling of policy implementation processes aimed at establishing import-substituting industries in the Uzbek industry. During the development of the model, a system of equations, representing the average number of industrial enterprises operating in the economy, was developed. The following are the options for the state of the industry in our country: S_0 - Positive status of an enterprise with innovative leading position; C_1 is a difficult financial position requiring modernization; Positive status in the modernization mode of S_2; S_4 is a positive case that requires increased competitiveness. An illustrative model of the state of industrial enterprises in our country is as follows:

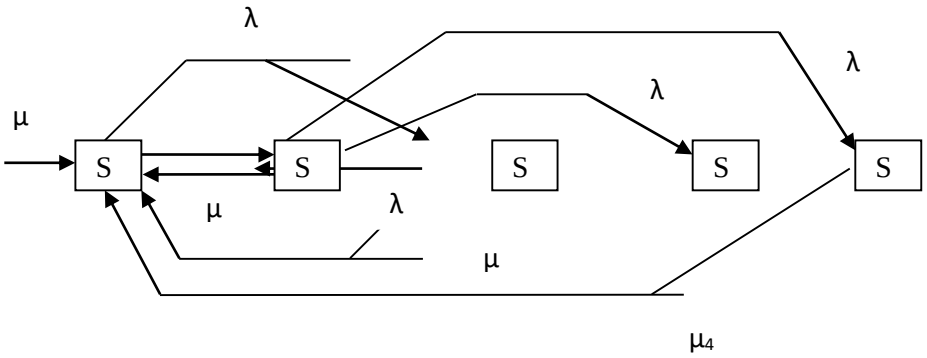

Illustration 1. Model of economic status of industrial enterprises.

Source: Research by the author.

Here: μ_0- speed of setting up of new enterprises; λ_0- the intensity of bankruptcy of enterprises whose modernization is impossible and in difficult financial position; λ_1- the intensity of bankruptcy of the financial institutions, which need a certain kind of modernization; μ_1- the intensity of the reconstruction of enterprises at the expense of reconstruction; λ_2- Intensity of transforming enterprises into innovative leadership; μ_2- intensity of transition of enterprises to financial stability; The rate at which enterprises in L3 transition to a difficult financial position; λ_4- speed of reconstruction; μ_4- speed of modernization of enterprises.

The following equations for the controlled processes of industrial development are derived from the model:

$$n(t) = A(t)n(t-1) + Bu(t); (t = 1,2, \dots, T) \quad (1)$$

$Here\ n = \|n_0, n_1, n_2, n_3, n_4\|^T$ – vector column of the number of businesses at any time; $u = \|u_0(t), u_1(t), 0, 0, u_4(t)\|^T$- vector-column of control; T- duration of the programmed period; т- Index of economic dynamics of enterprises; Δt- the annual interval was selected as the discrete interval.

Annual volume of work on capital repair as a measure of management of import substitution processes in industry - $u_0(t)$; the annual volume of reconstruction work - $u_1(t)$ and the annual volume of work on modernization - $u_4(t)$ The following links were identified:

$$u_0(t) = \mu_0 \Delta t;\ u_1(t) = \mu_1 \Delta t n_1(t-1) \text{ ва } u_4(t) = \mu_4 \Delta t n_1(t-1).$$

As a criterion for optimization of import-substituting production processes, we consider T minimization of costs for the planned period:

$$C_\Sigma(T) = \sum_{t=1}^{T} C(t)^T u(t) \Rightarrow min_{u(t)} \quad (2)$$

Here: $c = \|c_0, c_1, c_2, c_3, c_4\|$- vector of expenditure on measures to create import-substituting production at enterprises with different financial status; $d(t) = (1+E)^t$- time interval deflator between cost and time.

$$c_i(t) = c_i d(t) \quad (3)$$

Here: E- the moderate inflation rate used in the policy-making in the domestic industry aimed at establishing import-substituting industries.

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The following are the constraints that determine the range of policy implementation processes aimed at the establishment of import-substituting industries in the **N** network, which require the level of $\mathbf{K_I}$-tech and modernization at the end of the analyzed period **T**:

$N(U(T))=N$ (4)

$K_{BG}(U(T)) \geq \acute{K_{BG}}$ (5)

$K_I(u(t)) \geq \acute{K_I}$ (6)

$K_{BG}(u(t)) \geq \acute{K_{BG}}$ (7)

(t=1, 2, …,T)

Here: $U(T) = \{u(1), u(2), \dots, u(T)\}$- the technical development management program for the period covered by the program;

$N\big(U(T)\big) = \sum_{t=0}^{2} n_i\big(U(T)\big)$- the number of enterprises in the network at the end of the period covered by the program; $K_I = \frac{n_0(t)+n_2(t)}{n(t)}$- coefficient of technological level of the enterprise; $K_{BG} = \frac{n_2(t)}{n_0(t)+n_2(t)}$ - coefficient of modernization of the enterprise;

$K_{BG}(T) = K_1\left[1 - \frac{\sum_{t=1}^{T} u_4(t)}{N^T} - \frac{\sum_{t=1}^{T} u_0(t)}{N^T}\right] + K_4\frac{\sum_{t=1}^{T} u_4(t)}{N^T} + K_0\frac{\sum_{t=1}^{T} u_0(t)}{N^T}$- capacity factor of industrial enterprises in the network. This coefficient represents the weighted average of K_1, which reflects the initial capacity of the enterprises, the K_4 coefficient reflecting the state of the enterprises undergoing modernization, and the K_0 coefficient, which represents the number of new enterprises entering the network. Hence $C_{\sum(T)} = \sum_{t=1}^{T} C(t)u(t) \Rightarrow min_{u(t),}$ to find a solution for a function, we express it as follows: $C_{\sum}\big(U(T)\big) = C_{\sum}\big(U(T)\big) + C_{\sum}(U(T-t))$

We reflect on the iteration of optimization of import-substituting production processes:

$C_{\sum}(U^*(T))=\min_{U(T)} C_{\sum}(U(T))=\min_{U(T)}$ $(C_{\sum}U(t)+\min_{u(T-t)} C_{\sum}U(T-t)))=\min_{U(t)}$ $(C_{\sum}U(t)+ C_{\sum}(U^*(T-t)))$ (t=1, 2, …,T) (8)

N(U(T))=N and $K_{БП}(U(T))\geq \acute{K}_{БП}$ constraints should be linked to production dynamics. For this $\omega^T = \|1,1,1,0,0\|$ enter the vector and the number of businesses in the network $N(T)=n_0(T)+ n_1(T)+ n_2(T)$ can be expressed as $N(T)= \omega^T n(t)$, here: $n_0(T)$, $n_1(T)$, $n_2(T)$ – respectively represent the number of businesses in a different position.

n(T)+ A(t)n(t-1)+Bu(t); (t=1,2,…,T) Using the equation we get the constraint N (U (T)) = N, which is related to the step-by-step management of import-substituting production processes. This allows us to obtain the following equation: $\acute{N} = \omega^T n(t) = \omega^T A(T)n(T-1) + \omega^T Bu(T) = \omega^T[\prod_{t=1}^{T} A(t)]n(0) + + \sum_{t=1}^{T} \omega^T B^{T-t+1}u(t)$ (9)

$\dot{N}' = \omega^T[\prod_{t=1}^{T} A(t)]n(0)$- The cost characterizes the number of enterprises at the end of the planned period under the low efficiency of managing new industrialization processes. The difference between the number of planned businesses N and the number of actual businesses $(N\,\hat{}\,')\dot{}\,(T)$ is $\Delta\_1\,(T) = N\dot{}\,- (N\,\hat{}\,')\dot{}\,(t)$, and this difference must be compensated by new industrialization management. For measures aimed to be taken $d_1 = \frac{\Delta_1(T)}{T}$ as during a flat or planned period $d_1(t) = \frac{\Delta_1(T)}{T-t}; (t = 1,2, \dots, T)$ we can distribute unevenly.

Network enterprises -$K_{BG}(T)$'s in terms of potential, the same changes are required as above. In this condition $K_{BG}(U(T)) \geq \acute{K_{BG}}$- the terminal limitation is as follows $\sum_{t=1}^{T} K^T u(t) \geq (\acute{K_{BG}}\dot{N} - -K_1 N(0)) = \Delta_2(T)$.

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A vector of coefficients with a high proportion for calculations - $K^T = \|K_0, K_1, 0,0,0, K_4\|$ is applied. Hence, $\Delta_2(0) = (\acute{K}_{BG}\dot{N} - K_1 N(0))$ reflects an imbalance in the potential of enterprises, which is coordinated through management measures. $d_1(t) = \frac{\Delta_2(T)}{T-t}$ the distribution of characteristic imbalances through the management measures taken is required.

$K_I(u(t)) \geq \acute{K}_I$ ва $K_{BG}(u(t)) \geq \acute{K}_{BG}$ The restrictions are directly related to management measures. Ушбу ҳолатда $n_0(t)$, $n_1(t)$, $n_2(t)$ the number of enterprises will look like a scalar product:

$$n_0(t) = a_1^T n(t-1) + b_1^T u(t)$$
$$n_1(t) = a_2^T n(t-1) + b_2^T u(t)$$
$$n_2(t) = a_3^T n(t-1)$$

Here a_i^T ва b_i^T лар A, B are vector-columns of matrices reflecting the number of corresponding enterprises. Restrictions on the improvement of management processes, depending on the appropriate level of technical and modernization of enterprises, will be as follows:

$$\left[b_2^T - \frac{(1-\acute{K}_I)}{\acute{K}_I} b_1^T\right] u(t) \leq \left[\frac{(1-\acute{K}_I)}{\acute{K}_I}(a_2^T + a_3^T) - a_2^T\right] n(t-1)$$

$$b_2^T u(t) \leq \left[\frac{1-\acute{K}_{BG}}{\acute{K}_{BG}} a_3^T - a_1^T\right] n(t-1)$$

As a result, we have a number of indicators of dynamic management of import-substituting processes. In particular $d_1(t)$,$d_2(t)$ identifying imbalances at each stage of the process, t=1,2…,T at every stage of management processes $\omega^T Bu(t)=d_{1(t)}$ and $K^T u(t)=d_2(t)$ we will be able to minimize the final costs, by taking into account the limitations: $C_\Sigma(U^*(T))=\min_{U(T)}\{C^T(t)u(t)C_\Sigma(U^*(t-1))\}$

$$\left[b_2^T - \frac{1-\acute{K}_И}{\acute{K}_И} b_1^T\right] u(t) \leq \left[\frac{1-\acute{K}_I}{\acute{K}_I}(a_1^T + a_3^T) - a_2^T\right] n(t-1) \qquad (10)$$

$$b_1^T u(t) \leq \left[\frac{1-\acute{K}_{BG}}{\acute{K}_{BG}} a_3^T - a_1^T\right] n(t-1) \qquad (11)$$

u(t)>0

III. CONCLUSION

Based on the above calculations, we can conclude that the above factors play an important role in building socio-economic mechanisms for the implementation of policies aimed at the organization of import-substituting industries on a new technological basis. In this regard, based on the tasks set in the Action Strategy for the Development of the country for 2017-2021 **[1]** to increase the competitiveness of the national economy, modernize sectors of the economy and diversify production, support for import-substituting industries, business structures and research institutions. it should be noted that integration relations should be raised to a qualitatively new level.

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