

## MAKING EFFECTIVE STRUCTURAL CHANGES IN TAJIK INDUSTRY

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### ABSTRACT

**B**ased on an analysis of the changes | Tajik industry, this article justifies the need  
going on in the sectoral structure of | to carry out its regular restructuring.

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**KEYWORDS:** *industry, restructuring, structural changes, structural effect, strategy of structural changes.*

## *Introduction*

Today, the economy of Tajik industry is an open, non-linear, dynamic and self-developing system distinguished by targeted, spontaneous, local, and systemic changes.

In recent years, uncontrollable spontaneous large-scale structural changes have been going on in the country's industry and new forms of ownership (as well as new owners) are continuing to take shape and develop. Changes in the comparative economic efficiency of different sectors of industry are promoting a flow of capital and labor from some production works to others, as well as the appearance of new organizational and managerial structures. However, they are not engaged in forming an efficient territorial and sectoral structure of the region's industry.

The spontaneous changes that have been going on in the republic's industry for decades have led to destructive consequences indicating a large-scale structural crisis that is manifested in the following:

- the wasted overheads incurred from the reforms carried out in 1990-1998 during transfer of the national economy to market conditions;
- the dramatic transformation of the sectoral structure of industry, as a result of which the share of market infrastructure institutions and the fuel and energy complex in GDP has significantly grown, while that of such sectors as the machine-building, chemical, and petrochemical industries has greatly declined. Inflation and free price formation caused value redistribution in favor of circulation and management, as well as of the fuel and energy complex, and a decrease in demand as a result of the drop in personal income and devaluation of the circulating funds of enterprises. There were not enough financial resources to ensure the simple reproduction of basic assets, the value of which abruptly dropped;
- the technological degradation of industry related to the attrition of science-intensive production (particularly in machine-building), the severe reduction in spending on science and education, as well as the drop in the share of high-tech sectors. This is mainly caused by underestimating the need for an innovative approach to restructuring the economy, primary orientation toward the export of raw materials and primary processing products, and directing the main financial resources into the circulation sphere isolated from the real sector;
- changes in property structure. They have led to the share of state and private property becoming almost equal. Moreover, as a result of privatization, corporate property has appeared. For example, whereas in 1995 the share of state property in industry amounted to 97.7%, by 2010, it was equal to 56.3%. In so doing, the share of joint ventures in state property amounted to 7.2%, and corporate property to 7.3%. But these changes did not lead to an increase in the efficiency of industrial production;
- transformation of the structure of foreign economic ties, increase in foreign trade turnover due to the increase in amount of import, increase in the external debt and its service charges, and dramatic increase in the import of consumer goods into the country.

## Structural Problems of Tajik Industry

A sufficient number of both objective and subjective problems have accumulated in the country's industry that are making it impossible to achieve sustainable economic growth or even the 1990 level.

The significant structural changes that occurred in the country's industry as a result of the reforms carried out were caused not by the rapid development of the sectors, but by the abrupt drop in production in some of them.

A comparison of the changes in sectoral structure observed in 1980 with the structural changes that occurred in 2010 show that the share of the fuel and energy complex, which was equal to 5.7%, increased to 14.9%. Considerable changes occurred in the sectors that put out technical industrial products; moreover, there has been an abrupt increase in the share of nonferrous metallurgy from 4.4% in 1980 to 35.7% in 2010.

At the same time, there has been a drop in production in machine-building and metal processing (from 10.2% to 2.6%), as well as in the chemical and petrochemical industry (from 3.3% to 0.5%).

Dramatic changes are also seen in the sectors operating in the consumer market; whereas in 1980 the share of the light industry reached 44.7%, in 2010 it amounted to 13.2%.

Transition of the economy to world prices had a considerable influence on the structure of industry, which had a particular impact on the basic sectors (the prices of their products proved much lower than the world level).

As for electric power, its share in the sectoral structure of the country's industry as whole increased considerably.

Tajikistan is rich in energy resources, but, in our opinion, their export is only justified if high value-added products are manufactured; but unfortunately this is not happening so far.

The production growth rates in certain sectors are also having an effect on changes in the structure of the country's industry.

In this respect, classifying sectors according to the elasticity coefficient ( $C_{el}$ ), which we calculated as the ratio of production volume growth rate in the sector to the industrial production growth rate throughout the country as a whole, proves quite interesting.

The results of the calculations we made show that elasticity coefficients in different sectors of industry differ considerably from each other (see Table 1).

$C_{el}$  shows the contribution each sector makes to the overall increase in industry. Its magnitude makes it possible to judge which sectors are the most "sensitive."

The calculation results show that on the whole during the entire period under examination the elasticity coefficient in such sectors of industry as the power sector and nonferrous metallurgy fluctuates between zero to one. In other words, they are among those sectors with a low growth elasticity and their contribution to the overall increase in industrial production is extremely insignificant. The chemical, petrochemical, glass, porcelain and pottery industries are among those sectors with a negative elasticity coefficient.

The other sectors are characterized by high growth elasticity, which is proof of abrupt structural changes. However, it should be noted that the changes going on in the structure of industry are uncontrollable; they are largely spontaneous and depend on world prices, the dynamics of foreign trade turnover, and the migration situation in the country.

Tajikistan is experiencing a structural crisis that is hindering development of the country's economy. One of its main characteristics is an increase in moral and physical depreciation of basic assets. This in turn has led to burdening the structure of the national economy both with old production units and with the manufacture of low-quality products that cannot compete with imported analogues.

During the period under examination, the decrease in production volume in different sectors of the national economy was very uneven, which shows the increase in structural disproportions.

Table 1

**Elasticity of Production Growth  
in Terms of Tajik Industrial Sectors for 2000-2010**

Sector of Industry	Elasticity Coefficient		
	2000-2005	2005-2010	2000-2010
<b>All industries = 1</b>			
Electric power	0.296	0.441	0.334
Fuel	2.587	9.605	4.403
Chemical and petrochemical	1.319	-5.426	-0.427
Nonferrous	0.651	0.0469	0.494
Machine-building and metalworking	5.663	24.879	10.637
Timber, woodworking, cellulose and paper	4.160	27.168	10.115
Industrial building materials	4.070	11.770	6.063
Glass, porcelain, pottery	0.995	-3.763	-0.237
Light	1.356	-0.496	0.877
Food	1.921	4.340	2.547
Flour and cereal products and fodder	0.995	4.152	1.812

When studying the reasons for the structural crisis, it can be noted that the state of industry today results from both the influence of external macroeconomic factors and of the abysmal situation at the enterprises themselves; this is particularly manifested in the growing degradation of resource potential, poor adaptation to a competitive environment, and predomination of regions with unattractive types of production in the sectoral structure.

Many enterprises cannot reach the necessary competitive level due to their limited access to investment resources.

Despite the fact that the volume of manufactured goods rose at several production enterprises, it was not accompanied by an increase in resource quality or level of enterprise adaptation to the competitive environment.

Positive national economy development rates in no way indicate that positive changes are going on in its structure. A prevalent part of economic growth is associated with a quantitative increase in the production of primary resources and primary processing products. The insufficient dynamism of the progressive structural changes in the economy has led to the appearance of disproportions between production and society's needs.

The structure of industry that has developed in Tajikistan carries the stamp of the collapse of the Soviet Union, civil war, and special features of the country's historical development. As a result of this, it lags almost two centuries behind the leading countries of the world in its technical and economic development.

Another reason for the low efficiency of Tajik industry is its relative isolation from the world centers of scientific-technical and economic development. In 2000, the import quota amounted to 22.8%, in 2009 to 45.9%, and in 2010 to 47.1%. Furthermore, the goods structure of export has been degenerating: Tajikistan has turned into a raw material appendage of the highly developed countries.

The deep deformations in the industrial structure and low level of quality and competitiveness of a large part of the range of Tajikistan's industrial products are largely related to the country's raw material orientation and the self-contained national economic development it underwent for so many decades.

## Tajikistan and the WTO

On 10 December, 2012, Tajikistan acceded to the WTO, which could entail considerable losses for the country's industrial enterprises. Therefore, several measures must be carried out aimed at restructuring the country's industrial complex.

After its accession to the WTO, Tajikistan is going to encounter problems related to integration into and globalization of the world economy. Nor can the influence of transnational companies be ignored; according to different expert assessments, 500 of the largest of them account more than a quarter of world production of goods and services, a third of world export of the manufacturing industry, around 70% of trade in raw material products, and more than 80% of trade in new technologies.

Moreover, Tajikistan, being outside the epicenters of scientific and technical development of high technology in the real sector of the economy, is greatly under their influence. This is manifested in the country's strong dependence on the import of end products of the manufacturing industry, as well as on the delivery of new technology, production lines, knowhow, and so on.

So we need to draw up efficient approaches to defining a strategy for restructuring Tajikistan's industry.

During the years of independence, it has been essentially impossible to restructure the country's industry. This was due to the breakdown in the "enterprise-power body" management mechanism, the state's withdrawal from industrial regulation, and the privatization and denationalization processes. Loss of control and the impossibility of adapting to the contemporary demands of competitiveness brought industry to a crisis.

We carried out an assessment of the influence restructuring is having on the overall dynamics of economic development on the basis of the structure effect coefficient (see Table 2).

If the value of the coefficient is greater than one, this means that the development dynamics of the particular sector are ahead of the economic growth rate as a whole.

If the value of the coefficient fluctuates between zero and one, this shows the positive contribution of the particular sector to overall economic growth. But this also identifies a lag behind the overall economic development rates.

If, however, the coefficient is less than zero, this shows the negative contribution of the particular sector, that is, it causes a drop in the main macroeconomic indices of economic development.

As a result of calculating the structure effect coefficient for different sectors, we revealed that the influence of the industrial sector on GDP growth as a whole throughout the country differed from year to year.

However, in 2008-2009, many sectors operated inefficiently and the changes in sectoral structure and industrial production growth rates had a negative effect on economic growth as a whole throughout the country; the reason for this was the consequences of the world financial and energy crisis. Only the building material industry has continued to demonstrate economic growth, although it is insignificant.

During 2010-2011, Tajik industry had a positive influence on GDP growth; whereby the structure effect coefficient amounted to +0.27.

Table 2

## Dynamics of the Structure Effect Coefficient

Sector	2002-2003	2006-2007	2008-2009
Industry, total	+0.91	+1.27	-0.49
Electric power	+0.60	+0.72	-0.14
Fuel	+0.59	+4.24	-0.01
Nonferrous	+0.37	+0.17	-0.58
Chemical and petrochemical	+4.97	-0.25	-0.12
Machine-building and metalworking	+4.29	+5.91	-2.63
Industrial building materials	+4.77	+4.25	+0.16
Light	+1.62	+1.96	-0.69
Food	+0.26	+2.77	-0.42

As for the influence of restructuring on economic growth in the country's regions (see Table 3), as our calculations show, in each of the periods examined, the leading role in the increase of the gross regional product (GRP) shifted from one to another.

For example, between 2007 and 2009, districts of republican subordination largely showed considerable growth in GDP and GRP rates. In 2010, the picture changed and the Gorno-Badakhshan Autonomous Region took the lead, followed by Dushanbe in 2011.

It should be noted that in each region there are industrial sectors that define the overall GRP growth.

Table 3

## Structure Effect Coefficient by Region

	2007-2008	2008-2009	2009-2010	2010-2011
Dushanbe	+0.45	-1.05	+0.47	+4.79
Sughd Region	+0.12	+0.46	+3.21	+0.8
Khatlon Region	+0.47	+2.49	+1.29	+0.20
Gorno-Badakhshan Autonomous Region	+0.35	+0.76	+3.66	+0.27
Districts of republican subordination	+1.29	+4.51	+1.74	-2.58

Structural problems are also characteristic of the participants in the innovation process (from the viewpoint of correlating the industrial enterprises of small, medium, and large innovative business). Despite the certain amount of economic growth over the past few years, there have not been any positive structural changes in the country's industry.

Compared to most countries of the world, Tajikistan's economy lies in the complete lack of development of production for the consumer market and there is an insistent need for its accelerated outfitting.

Based on this, we believe that such priority sectors as the light and food industries should receive maximum support. From this point of view, investments in small and medium enterprises of the light industry that ensure rapid payoff are preferable.

In the current conditions, a possible way to restructure Tajik industry could be to start gradual structural renewal using the maximum multiplier by means of targeted consistent siphoning of funds into relatively self-contained economic systems (from local to more global). In this respect, a policy of small and medium industrial business support could play a significant role.

## Strategy for Restructuring Industry

Tajikistan has the responsible task of carrying out restructuring of industry and ensuring its sustainable development in the near future. This will help to incorporate Tajikistan into the world trade system not only as an exporter of agricultural products, but also as a country that puts out competitive industrial products.

Achieving a high level of competitiveness of industrial products is a large-scale national strategic task. It can only be solved by pursuing an active and dynamic structural policy that cannot be carried out within the framework of short- and medium-term industrial development programs of the country and its regions.

The current conditions are making new demands on the strategy for restructuring industry and ways to implement it.

Implementing the priority restructuring tasks in industry should rely on the following fundamental principles:

- purely administrative, financial, technological, and market resources (in addition to industrial policy tools);
- a cluster approach to building a structural policy as a powerful innovative instrument of regional development;
- development of state-private partnership not only at the state level, but also at the level of individual regions;
- creation of favorable conditions for forming mechanisms of economic self-development, raising the significance of scientific and technological progress, and using its achievements in production. This approach will promote the formation of technological, sectoral, and institutional industrial structures equivalent to those that exist in developed countries; this will allow Tajikistan to occupy a certain niche in the world economic system.

Both external and internal sources of industrial production development need to be activated in order to implement the above-listed tasks. Conditions must be created that are capable of transferring the industrial complex of the country and its regions to a regime of socioeconomic, structural-functional, and organizational-financial stability.

In current conditions, control needs to be maintained over sustainable development of industry. So restructuring of the country's industrial complex should be aimed at forming a competitive market environment. As for a structural policy, it should be viewed as a factor promoting the development of competition and demonopolization of the industrial sectors.

The problems and disproportions we revealed during our research confirm that the need has arisen in Tajikistan for drawing up a long-term strategy of industrial restructuring using the achievements of scientific and technological progress.

### *Conclusion*

World experience in studying the trends and legitimate patterns of industrial development show the need to form new mechanisms of management aimed at carrying out targeted structural changes, as well as raising the competitiveness of products and share of high value-added goods. The main qualitative vector of the structural changes in Tajikistan's industrial complex should be their innovation; this requires using the scientific and technical capacities that are available in the country and the world.

The main aim of restructuring is to ensure a balanced economy and maintain proportionality in which dynamic, balanced, and non-crisis development of industry in the country and its regions will help to integrate Tajikistan into the global economic system.

The state needs to exert efforts to resolve the multitude of problems related to industrial restructuring. This restructuring should be aimed at overcoming structural deformations, eliminating inefficient production units, restructuring current industrial enterprises, as well as forming a new structure capable of appreciating the new innovations, realizing competitive advantages, and creating new high-tech companies.