Statistical assessment of the structure of foreign trade of the republic of Uzbekistan

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Abstract: In this article, a statistical assessment of the composition of the republic's foreign trade is carried out. In the article, statistical indicators that fully represent the changes in the composition of foreign trade were used in the assessment. Proposals and recommendations are given based on the results of the analysis.

Keywords: Statistical indicators, statistical assessment, export, import, trade balance, goods and services.

Introduction: According to the United Nations Department of Trade and Development (UNCTAD)'s "Trade and Development Report", "The global economy experienced an uneven and shallow global recovery in foreign trade in 2023. All countries, except for North Africa, Central Asia and East Asia, have shown a slowdown in foreign trade activity since 2022."

Trends in international trade processes have seen countries around the world witness China overtaking the United States as the leading exporting country. International trade in goods and services, which experienced an uneven trend in the world trade market in 2020-2022, is expected to grow by approximately 1% in 2023 [1]. This is significantly lower than the growth in world economic output. It is also lower than the average growth recorded in the last decade, and is the lowest average growth rate of global trade since the end of World War II. In the medium term, trade will return to its pre-crisis level.

The important and growing role of foreign trade in the economy of the Republic of Uzbekistan corresponds to the general trend in the development of the economy of our country, as in many other countries. In this regard, there are several important aspects of organizing foreign trade activities. First, as we have noted above, trade is currently an important lever in the development of the economies of most countries. The globalization of foreign trade activities is associated with an increase in the share of production, consumption and employment for countries of all incomes and levels of development, associated with imports, exports and foreign direct investment. Recent years have shown that the number and scale of trade negotiations between countries have recorded a significant increase.

METHODS

Statistical research of foreign trade is a statistical branch of foreign economic activity, which describes the current state and development trends of foreign trade relations in the country and its regions. Foreign trade allows any economic entity to achieve valuable

value. Because an item that is considered waste in one region may have a valuable value in another region. It can be concluded that the development of foreign trade relations attracts valuable resources to the country and its regions.

Many scholars have shown that the development of foreign trade of a country and its regions has a positive impact on the well-being of the country's population. For example, K.R. Reddy emphasizes that exports and imports enhance economic development, while G.T. Karamanaj argues that imports can satisfy the resource-scarce demand in the region. S. Yuksel and S. Zingen argue that imports, unlike exports, lead to the loss of national currency and weaken the trade balance in order to weaken economic growth. However, S. Bakari and M. Mabrouki argue that imports are a source of economic growth, and that imports can lead to investment flows and value addition.

In general, we can put forward two hypotheses that establish the impact of exports and imports on economic growth. In the first hypothesis, it is known that exports are the driving force of the economy, and we conclude that exports are the leading hypothesis. In addition, it can be assumed that the causal path goes from exports to production. When assessing foreign trade, it can certainly be assessed through its impact on the gross domestic product of the region. Imports also offer and should offer a beneficial exchange for the country and its regions. It is only required that national

production in the country does not stop developing.

In addition to statistical indicators that allow measuring quantitative changes in each part of the foreign trade indicators under study, the task of assessing socio-political changes in the course of the study can also be set. In such cases, it becomes necessary to study changes in economic phenomena over time. The issues of analyzing the structure of foreign trade of a country and its regions have been studied by many scientists. For example, Rizvanova E.R. in her study noted the existence of two methods for studying the structure of foreign trade and the comparative weight of their shares expressed in shares and percentages [10]. The researcher proposed a system of relative indicators that reveal structural changes in the structure. Another economist, Roditelskaya E. V., also noted the need to assess differences between similar structures as the most popular method for analyzing the structure of foreign trade (in this case, the study should consist of two periods) [11]. The economist gave a broader understanding of the terms "change" and "difference" in the structure of trade.таҳлил қилишда энг оммабоб услуб сифатида ўхшаш тузилмалар ўртасидаги тафовутларни баҳолашни амалга ошириш зарурлигини таъкидлаган (бунда тадқиқот иккита даврдан иборат бўлиши керак)[11]. Иқтисодчи томонидан савдо таркибидаги "ўзгариш" ҳамда "фарқ" атамаларига кенгроқ тушунча бериб ўтилган.
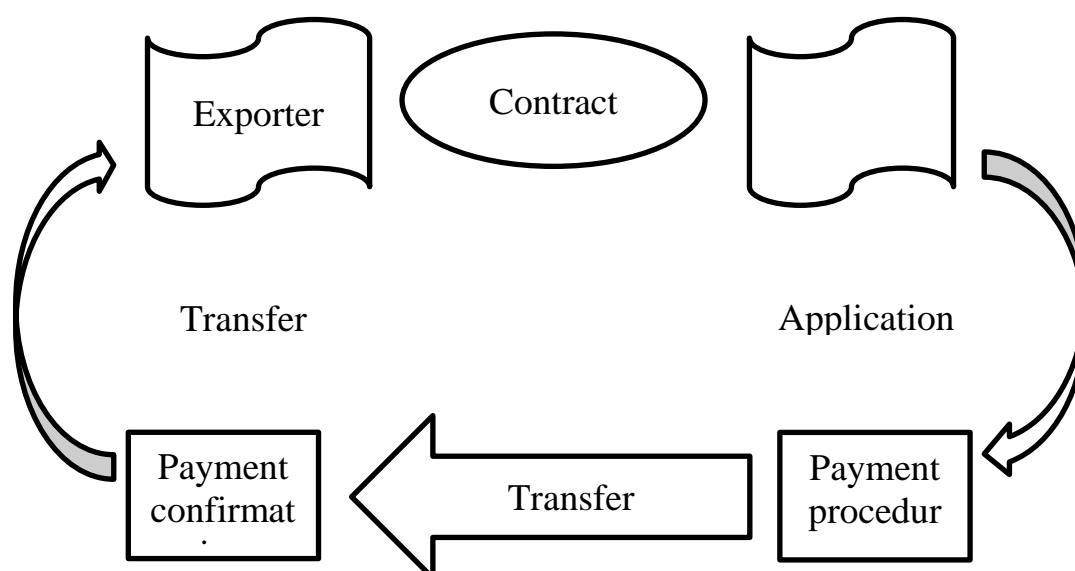
Fig. 1. The process of organizing foreign trade relations between countries

RESULTS

Today, these processes cover a wider range of issues and are carried out at the multilateral and regional levels. International trade in goods and services is one of the most important and dynamic factors in the globalization of the world economy and the participation of national economies in it.

Data on the structure of trade relations are provided in accordance with international classifications strictly regulated by the contracting countries.

Almost all existing methodologies for calculating foreign trade indicators use the same collection of Paasche, Laspeyres and Fisher formulas. Using these formulas, the initial data are changes in the prices and volumes of goods and services for the current and reporting periods.

The foreign trade turnover of the Republic of Uzbekistan in 2023 amounted to 62.6 billion. US dollars. We can see that this indicator has increased by 23.9% compared to 2022. In terms of volume, exports account for more than 39% of the country's gross domestic product, and imports account for almost 61%.

In absolute terms, the volume of exports in foreign trade turnover amounted to 24,426.2 million US dollars, and imports amounted to 38,141.2 million US dollars. Accordingly, compared to 2022, exports showed an increase of 23.8%, and imports - 24%. [8].

Compared to previous years, the growth trend in exports has accelerated and is approaching the growth rate of imports. However, due to the significant increase in the volume of imports compared to exports (Figure 2), the balance in the country's foreign trade turnover remains negative.

According to statistics, until 2012, the volume of exports exceeded the volume of imports. In recent years, the removal of import restrictions from a number of commodity groups and the introduction of steps towards a free market economy have shown a full demand for the volume of exported goods. As a result, local enterprises in our country's economy have also begun to work on the production of competitive goods and expanding the range of goods and services. As a result, the volume of exported goods and services has also increased. The reason for the decrease in the

volume of gross domestic product in the 2020s is the transition to the practice of free conversion.
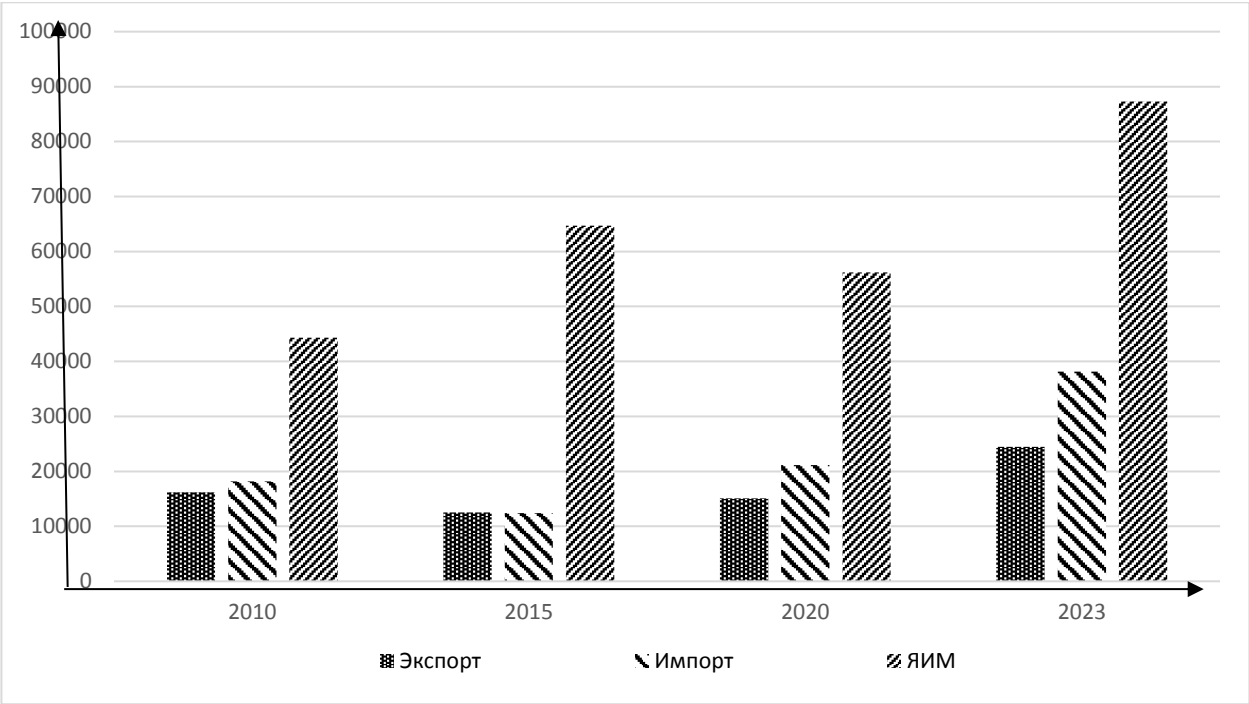

Figure 2. Dynamics of changes in foreign trade indicators and gross domestic product of the Republic of Uzbekistan in 2010-2023 (in million US dollars)

The largest share in the foreign trade turnover of the Republic of Uzbekistan belongs to the city of Tashkent in terms of territory. Statistical reports for the last 5 years (Table 1) show that the city of Tashkent is the absolute leading region. The main volume in the foreign trade turnover of the region falls on the services sector. Absolute indicators of foreign trade affect macroeconomic indicators, including gross domestic product (hereinafter referred to as GDP). The volume of the foreign trade balance, in turn, changes the volume of GDP. Among a number of indicators, the main indicator of the national economy is GDP.

According to the 2023 data of the Statistics Agency, the next places after Tashkent are occupied by Tashkent region and Andijan region with shares of 9.1% and 8%, respectively.

Statistical research shows that the volume of imports in the foreign trade of our country is

significantly higher. The analysis based on 2023 data shows that only in Kashkadarya and the Republic of Karakalpakstan, the export volume is greater than the import volume. In Navoi region, the shares of export and import are close to each other compared to the rest of the regions. In 2022-2023, the import volume of Tashkent city is on average 11% more than the share of GRP [Table 1].

Table 1.

Foreign trade turnover of the regions of the Republic of Uzbekistan and their share in the country's foreign trade turnover [9]

Regions	2019		2020		2021		2022		2023	
	mln. USA dollar	%	mln. USA dollar	%	mln. USA dollar	%	mln. USA dollar	%	mln. USA dollar	%

Karakalpa-gistan	700	2.3	539,7	1,5	657,2	1,6	611,8	1,2	544,3	0,9
Andijan	2532,8	8,3	2796,4	7,7	3166,1	7,5	4281,4	8,6	5030,3	8,0
Bukhara	1259,4	4,1	831,4	2,3	1086,9	2,6	1227,7	2,5	1202,9	1,9
Jizzakh	508,8	1,7	816,4	2,2	532,2	1,3	688,0	1,4	1427,0	2,3
Kashkadarya	824,8	2,7	544,2	1,5	661,9	1,6	547,5	1,1	735,6	1,2
Navoi	834,8	2,7	1312,0	3,6	1166,1	2,8	1244,6	2,5	1326,6	2,1
Namangan	986,5	3,2	871,4	2,4	1089,5	2,6	1276,1	2,6	1380,0	2,2
Samarkand	1749,9	5,7	1492,1	4,1	1920,3	4,6	2384,5	4,8	2865,5	4,6
Surkhandarya	562,7	1,8	421,7	1,2	443,1	1,1	372,8	0,7	325,2	0,5
Sirdarya	570,8	1,9	642,3	1,8	668,4	1,6	813,5	1,6	849,6	1,4
Tashkent	4746,9	15,6	4598,0	12,7	5312,0	12,6	5593,2	11,2	5706,8	9,1
Fergana	1417,8	4,7	1462,3	4,0	1835,0	4,4	2061,4	4,1	1968,5	3,1
Khorezm	557,7	1,8	468,5	1,3	516,7	1,2	7855,0	15,7	871,7	1,4
Tashkent c	13229,5	43,4	12 424,1	34,2	16 431,6	39,1	19 530,1	39,1	24 265	38,8

According to statistical theory, relative indicators of foreign trade include a number of indicators.

There are two methods of expressing the structure of economic processes in comparative indicators. Including, it can be expressed in the form of indicators of the share of statistical indicators expressing the structure of foreign trade and the relative weight of their shares expressed in percentage. In such cases, indicators for two or more periods can be used in statistical assessment based on two groups of indicators. That is, the first are indicators based on the differences between the shares of similar parts of the period, and the second are indicators based on the ratio of the relative weights of similar parts of the set. In our study, we set out to consider changes in the structure of foreign trade and indicators characterizing structural changes. First of all, we note that the term

"structural changes" is understood as differences in the shares that characterize the composition of foreign trade over time, and this indicator expresses the trend of changes in similar structural indicators over time. Table 1 presents structural changes in the commodity composition of foreign trade of the Republic of Uzbekistan in 2010-2013. According to these data, the share of industrial products in the country's export structure increased by 3.7%, while its share in the import structure decreased by 1.2%. Trade in services has a positive indicator in the structure of exports and imports, respectively, the export of services increased by 12.3%, while the import of services characterized the growth by 2.0%. The share of machinery and transport equipment in exports remained almost unchanged, while its share in imports decreased by 4.4%.

Table 2

Changes in the commodity composition of foreign trade of the Republic of Uzbekistan (%) [9]

Классификатор	Структура(%)				Структуравий ўзгаришлар (%)	
	2010		2023			
	Экспорт	Импорт	Экспорт	Импорт	Экспорт	Импорт
Chemicals and similar products not included in other categories	5,0	11,7	5,3	12,6	0,3	0,8
Industrial goods classified mainly	12,6	17,5	16,3	16,4	3,7	-1,2

according to the type of material						
Machines and transport equipment	5,5	43,1	5,2	38,6	-0,2	-4,4
Various finished products	1,2	3,7	4,8	3,9	3,6	0,1
Services	10,4	5,9	22,7	8,0	12,3	2,0
Food products and live animals	8,2	5,8	7,1	9,0	-1,1	3,3
Beverages and tobacco	0,3	0,6	0,5	0,5	0,1	-0,1
Other goods	20,5	0,0	32,9	0,2	12,4	0,2

In this study, we aimed to assess the relative changes in the structure of the country's foreign trade. In this case, we use the system of statistical indicators proposed by the above scientists for the statistical assessment of similar structures of foreign trade in two periods. Through this comparative analysis, we will be able to find answers to our theoretical and practical questions and structurally assess the structure of foreign trade. This method is currently widely used not only in comparative analyses of trade structure, but also in comparative analyses between counterpart countries. This allows us to assess the patterns emerging in the foreign trade relations of states. Accordingly, in our study, we aimed to analyze the mobility, stability, and structural changes of dynamic series representing foreign trade indicators. In this case, we use the recommended linear coefficient of "absolute" structural changes. This indicator reflects the average change in the share of foreign trade during the research period in % value.

$$\bar{\Delta}d_i - d_0 = \frac{\sum_{k=0}^{n}(|d_{ij} - d_{ij-1}|)}{k}$$

Here, d_{ij} is the share of goods in the foreign trade structure, i is the ordinal number of the trade structure, j is the research period, and k is the number of groups.

In addition, in this study, we also use the "square coefficient of absolute structural shifts" $(\sigma_{d_1-d_0})$, which provides a deeper expression of the structural changes in the set:

Here, the share of goods in the structure of foreign trade, the order number of the structure of trade, the research period, and the number of groups

In addition, in this study, we also use the "quadratic coefficient of absolute structural shifts", which gives a deeper expression to the structural changes in the set:

$$\sigma_{d_1-d_0} = \sqrt{\frac{\sum_{k=0}^{n}(d_{ij} - d_{ij-1})^2}{k}}$$

In the study of the composition of foreign trade, linear and quadratic coefficients allow us to obtain a general estimate of the relative rate of change of individual components of the composition of foreign trade. For a brief and clear description of the intensity of specific weighted changes in the composition of foreign trade, we use the coefficient of the square of relative structural changes $(\sigma_{\frac{d_1}{d_0}})$

$$\sigma_{\frac{d_1}{d_0}} = \sqrt{\frac{\sum_{k=0}^{n}(d_{ij} - d_{ij-1})^2}{d_{ij-1}} \cdot 100}$$

Through this indicator, we determine the average relative growth (decrease) of the share of foreign trade in the period of the research. As a result, we can reach

clear conclusions through the intensity of changes, as we mentioned above.

Table 3

Coefficients of structural changes in foreign trade of the Republic of Uzbekistan (%) [9]

Coefficient	Экспорт	Импорт
Linear	5,9	1,3
Quadratic	8,7	1,9
Relative quadrate %	78,2	20,2
Linear (for period n)	0,5	0,1

The result of our research shows that (appendices 1-4), from 2010 to 2023, the share of goods and services in exports changed by an average of 5.9%. From this it can be concluded that the linear differences in the share of goods and services in the composition of exports have a significant variable character. As for imports, the difference between the shares of the composition groups represents a somewhat slower change and is 1.3%. As a general conclusion, the volume variability of the groups of goods and services in the export content represented a strong variable feature compared to the import indicators. We can confirm this conclusion in the quadratic coefficients of structural shifts of export and import indicators. According to our research, this indicator represents 8.7% for import content and 1.9% for export content.

In addition, our study shows that, in relative terms, each share of the export group composition represented 78.2% of the average value, while the structural groups of imported goods and services represented 20.2% of the average value. The average annual change in the shares of export and import groups during 2010-2023 was 0.5% and 0.1%, respectively.

CONCLUSIONS

As a result of world experience, our country Uzbekistan shows the need to form multilateral policy measures and coordination mechanisms for the development of trade processes. This will allow us to develop weak economic points and protect our country and its regions from various shocks and crises. At the same time, based on our research, we will make the following conclusions and recommendations:

• Formation of a system of incentives for specialization in absolute and relative advantage sectors for the development of trade processes in the regions;

• Mitigation of income inequality across regions as a result of increasing trade volumes;

• Creation of mechanisms to prevent increased debt pressure and political autonomy in developing economic sectors.

Based on the recommendations of our research, we will have the opportunity to mitigate the inequality of incomes of the population in the regions of the country by improving trade processes in the regions.

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