

ASSESSMENT OF FOOD INFLATION IN AZERBAIJAN POLICY PAPER



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ASSESSMENT OF FOOD INFLATION IN AZERBAIJAN

Policy paper

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1. Summary

Due to the sharp increase in prices over the last three years, we can say that everyone, regardless of their specialty or profession, is at least slightly aware of the term inflation. The effects of the pandemic and its restrictions, wars, and climate changes are closely felt in the economy of Azerbaijan.

The purpose of conducting this study is to investigate how the double-digit growth of inflation in Azerbaijan manifests itself in food prices and to assess its impact on the level of people's well-being. During the study, the databases of the World Bank, UN Food and Agriculture Organization (FAO), World Trade Organization (WTO), Organization for Economic Cooperation and Development (OECD), and information published by the State Statistical Committee (SSC), Central Bank, Chamber of Accounts, Azerbaijan Melioration and Water Management OJSC were widely used.

The first part of the paper contains information on the theoretical basis of inflation, its current situation, as well as the characteristics of the country's Consumer Price Index as the main indicator that determines inflation. It is shown how the figures announced by the SSC regarding the general index of inflation change by individual products. Inflation indicators in the countries of the region and measures to combat inflation are also reported.

In the second part of the study, information about the factors that cause inflation on a global scale and in the country, and their negative effects are reflected. As the factors that cause inflation, the negative effects that have occurred on a global scale in recent times, especially the increasing effect of the Russia-Ukraine war on food prices, and the processes that cause sharp inflation, such as the increase in fuel prices, have been studied.

In the third part, we can see the effect of food prices on inflation, the internal causes of inflation in Azerbaijan, and the shortcomings of the government's policy of reducing inflation.

In the last part, the methodological problems in the calculation of inflation in Azerbaijan and the world experience, the use of Laspeyre's, Paasche's, and Fisher's indices in the world experience, the differences between them, and the calculation methods are reflected.

2. Introduction

One of the main reasons for changes in the level of prices in Azerbaijan is related to the volatility in the prices of energy carriers in world markets. Similar processes were observed during the devaluation period recorded in 2015. At that time, the drop in oil prices to 50-55 dollars resulted in the reduction of the Central Bank's strategic foreign exchange reserves. Due to the loss of oil revenues, the Central Bank's attempts to maintain the exchange rate of the manat ended in failure. Despite spending more than 9 billion dollars of foreign exchange reserves during the year, the national currency was devalued twice and lost half of its value. Even in the devaluation of 2015, it became clear that the dependence of the state budget on oil was over 90 percent, and the development of the non-oil sector was at a very weak level. Even with inflation in the single digits for that year, food prices rose sharply. This directly resulted in a decrease in people's

purchasing power. Those who suffered the most from the inflationary processes were, as always, the lower-income part of the population.

The high increase in food prices observed in 2015-2016 began to normalize in 2018-2019. Following this, the world was faced with a global pandemic in 2020 that caused the countries' economies to shut down. Breaks in the value chain in the world showed their impact on import-export operations and led to high inflation again. In these years, even food inflation in Azerbaijan reached a double-digit level. The Second Karabakh War in 2020 and the Russia-Ukraine conflicts in 2022 became the main factor triggering inflation in the country. Undoubtedly, it is not correct to associate inflation, especially the increase in food prices, only with global problems, and the important role of internal factors, especially the monetary and fiscal policy conducted by the state, in these processes is undeniable. These factors were touched upon in the study, and the effects of those factors on inflation were studied.

As we emphasized above, one of the most negative effects of inflation is the decrease in people's purchasing power. The government tried to take advantage of the following mechanisms to protect the population from the negative effects of inflation:

- 1) increasing the minimum wage;
- 2) increasing the amount of salaries, pensions, allowances, and social benefits at the expense of state budget funds;
- 3) reviewing the cost of living minimum once a year.

In the last five years, the minimum wage has almost tripled but if you look at the consumer price index (CPI) during this period, it can be seen that inflation has exceeded the growth rate of per capita income of the population by almost 5-6 times.

The official living wage for the population of working age was 146 manats in 2016 and 220 manats in 2022 - that is, there is an increase of 74 manats or 50% during this period. However, based on the price monitoring of products and services for 2016 and 2022 official statistics, the prices of 20 most necessary food products and 3 types of utility services have increased by 75% over the last 6 years.¹ Furthermore, the average income of the population increased at a slower rate. So, in 2016-2021, nominal per capita incomes increased by only 21%, and if we take into account the possible growth of 13-14% expected for 2022, it is clear that prices are growing almost twice as fast as incomes.

3. Inflation processes in Azerbaijan

Since the end of 2014, the currency reserves of the Central Bank began to decrease against the background of the decrease of budget revenues due to the sharp depreciation of energy carriers in the world markets and the emergence of pressures against the national currency. In 2015, the manat lost up to 50% of its value against the dollar despite the intervention of the Central Bank

¹ <https://bakuresearchinstitute.org/qiyametler-ehalinin-qazanclarindan-ne-qeder-suretle-artir-gelirlerin-ve-inflyasiyanin-dinamikasinin-statistik-analizi/>

in the currency markets through its own reserves. The devaluation of the national currency had a serious impact on prices, especially the price of imported products.

In this period, the increase in the prices of food products can be cited as one of the main reasons for the increase in inflation in the country. Inflation, which is one of the main macroeconomic problems of the modern era, determines the continuous increase in the general level of prices, the decrease of incomes, and, as a result, the deterioration of the standard of living. Although high inflation has a negative impact on the purchasing power of the population, a normal level of inflation is necessary for the revival of markets. From this point of view, the fact that the inflation level is equal to zero cannot be considered a positive thing for the economy. In a market economy where prices do not rise, no one rushes to buy products. Because, in such a situation, consumers believe that product prices will not rise. Such a situation can reduce production due to the postponement of consumption decisions and eventually lead to stagnation in the economy.

The official inflation rate for 2022 was announced as 13.9 percent. Inflation in food products in the country has reached 20 percent.² This is the highest inflation rate recorded in the country since the global financial crisis in 2008.

In the last 20 years, the level of inflation in Azerbaijan has differed sharply. Inflation rose from 2.2 percent in 2003 to about 3 percent a year until the 2008 global financial crisis. While the inflation rate fell from 9.7 percent in 2005 to 8.3 percent in 2006, it doubled to 16.7 percent in 2007. In the year when the global financial crisis was observed, the inflation level in Azerbaijan reached the maximum level after 1996 and was equal to 20.8 percent. Inflation, which has begun to normalize since 2009, reached a double-digit number in 2016 for the first time after 2008 due to the impact of devaluation, and in 2016 and 2017, it was 12.4 and 12.9 percent, respectively. Inflation, which was equal to 6.7 percent in 2021, reached 13.9 percent in 2022.

Figure 1: Inflation indicators in Azerbaijan (2007-2022)



To measure the level of inflation, the price level must be determined. Two price indices are usually used for this. These are the GDP deflator and the Consumer Price Index (CPI). The GDP deflator is calculated as the ratio of nominal GDP to real GDP. The GDP deflator measures output, i.e. the average prices of final products produced in the economy; however, what

² https://www.stat.gov.az/news/source/Press-12_22.pdf

consumers are interested in is the average price they consume. These two indicators may not be equal. This is mainly due to the following reasons:

- Some products in the GDP are not sold to consumers, but to companies and foreign countries.
- Some products purchased by consumers are not produced domestically, but are imported from abroad.

The Consumer Price Index is used as the main macroeconomic indicator to measure the average price of consumption, i.e. the cost of living of the population. We can determine which of these two indicators is more effective in calculating inflation based on the fact that the GDP deflator is calculated on the basis of the price of manufactured goods, and the CPI is calculated on the basis of the price of consumed goods. If we look at the level of self-sufficiency in food products in Azerbaijan, we can see that it is mainly dependent on imports. Therefore, we can say that CPI is the best method for our country in measuring the level of inflation.

Inflation is measured through the Consumer Price Index and is calculated across three main components: food, non-food, and services. If we look at the statistics published by the Consumer Price Index of the State Statistical Committee on food products, we will see that the price increase in food products varies according to the type of product.³ For example, the CPI of bakery products for January-October 2022 increased by 20.6 percent compared to January-October 2021. The increase in the price of bakery products in 2022 was affected by the increase in food prices in the world, especially the problems caused by the war in the Russian Federation, where we depend on imports.

Looking at other types of products, we can observe that this indicator is 11.1 percent for the same period for meat and meat products, and 60.2 percent for vegetable products.

Table 1: Average market price changes for selected products

The name of the product	Unit of measurement	01.11.2021	01.11.2022	The price increase
Rye bread	1 kg	2,03	1,29	57%
An excellent type of wheat bread	1 kg	1,34	0,88	52%
Potato	1 kg	1,33	0,87	51%
Sunflower seeds	1 kg	7,62	5,32	43%
Dried apricots	1 kg	11,92	8,44	41%
Buckwheat	1 kg	3,94	2,83	39%
Chocolate and natural chocolate products	100 gr	2,02	1,49	36%
Corn oil	1 liter	7,46	5,53	35%
Sunflower oil	1 liter	5,74	4,27	34%
Melted cheese	1 kg	20,92	15,68	33%

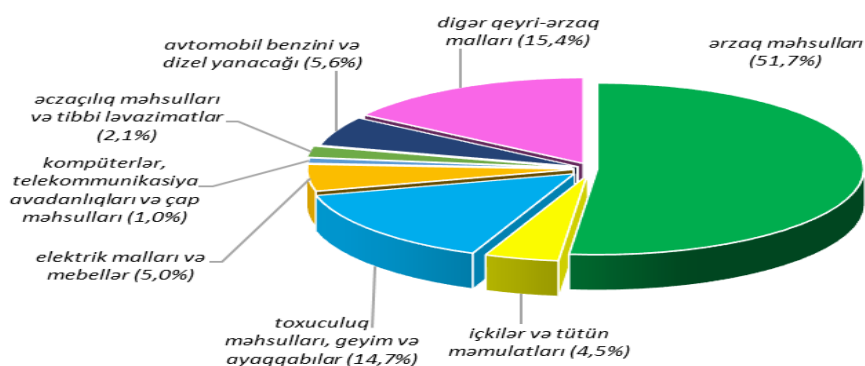
³ https://www.stat.gov.az/news/source/Press-12_22.pdf

Dry peas	1 kg	5,36	4,12	30%
Lentil	1 kg	3,92	3,06	28%
Table margarine	1 kg	5,89	4,60	28%
Baklava	1 kg	12,57	10,02	26%
Fruity-berry caramel	1 kg	6,09	4,85	26%
Sugar	1 kg	1,84	1,47	25%
Sausage, Sardelka	1 kg	13,40	10,68	25%

The table shows the growth of CPI by food products. When looking at each product separately, it can be seen in the statistics that the price increase of some food products has been up to 50-60 percent. For example, 1.29 manats were spent on 1 kilogram of rye bread in November 2021, while 2 manats and 3 gapiks were spent in the same period of 2022. In one year, the inflation rate for rye bread alone was equal to 57%. This indicator was 52, 51, 43, 41, and 39 percent in products such as excellent wheat bread, potatoes, sunflower seeds, dried apricots, and buckwheat. As can be seen from the table, the biggest increase in product prices is the products that we consume the most and spend the most money on, which has a direct negative impact on the social status of people.

In general, there are several indicators for determining the standard of living, one of which is the composition of household consumption expenditures. It is possible to determine the standard of living of people depending on what the population spends their income on. The main indicator here is the share of food products in total costs. While people in developed countries mainly spend money on non-food products and services, people in developing countries spend the majority of their income on food. If we look at the composition of consumption expenses of the population in Azerbaijan for 2022, we can see that more money is spent on food products. (Diagram 2)⁴

Figure 2. Structure of retail trade turnover in January-October 2022



⁴ https://www.stat.gov.az/news/source/DT_PRESS_10_2022.pdf

As can be seen from the diagram, in 2022, the population spent 51.6 percent of their income on food products. If we add alcoholic beverages and tobacco products to this, this indicator increases to 56.2%. This means that the 21% increase in food inflation in the country can cause citizens to face serious financial difficulties.

Now let's take a brief look at the inflation situation in the countries of the region:

Azerbaijan and neighboring countries were among the countries that suffered the most from the devaluation that took place in 2015, from the pandemic that swept the world in 2020, or from the Russia-Ukraine war that started in 2022.

Food inflation⁵ in Russia for April 2022 was 18.75%, and non-food inflation was 20.21%. Inflation, which was 7.8% in 2014, increased to 15.5% in 2015. Food inflation for that year reached 24.1 percent. In 2016 and 2017, inflation decreased to 5.38% and 2.52%, respectively. From the first days of the war, there has been a rise in food prices in Russia. In March 2022, the price increase of some fruits and vegetables in the country was 14.22% on average. Looking at the price increase for each product: onions increased by 50.1%, white cabbage - 39.8%, bananas - 31.5%, carrots - 29.5%, fresh tomatoes - 27.4%, sugar - 44.0%, salt - 14.2%, rice - 12.9%, buckwheat -10.2%, sunflower oil - 7.2%.

The inflation level⁶ in Turkey has been in double digits since 2017. In September 2022, official annual inflation exceeded 83%. After transport, the highest price increase was in food. Food prices have increased by 92% in the last 1 year. In 2022, high inflation indicators were also recorded in Georgia.⁷ The price increase was 11% higher than in October 2021. Compared to October of the previous three years, the overall price level in October 2022 was 21% higher. Food prices have increased by 31%. Half of the 11% annual increase in consumer goods prices was accounted for by increases in food prices. The second largest growth after the food was in the service sector. The reason for the high growth in the group of hotels, cafes, and restaurants was that Russian citizens left their country and sought refuge in Georgia and other CIS countries in order to avoid military mobilization or sanctions against the background of the war.

4. Causes of inflation

In recent years, food prices have increased significantly in Azerbaijan. This price increase is at its highest level after the devaluation that took place in 2015-2016. The increase in food prices is due to global and domestic reasons.

Restrictions regarding the **pandemic** in 2020 were the biggest cause of rising inflation globally. The pandemic has created problems in the food supply, including production, processing, and retail. In countries going into lockdown, forcing people to stay at home has resulted in restaurants and other catering establishments losing customers. Grocery stores, on the other hand, experienced a strong influx of customers. As a result, there was a shortage of products in some stores and shops, which led to an increase in the price of products.

⁵ <https://www.worlddata.info/europe/russia/inflation-rates.php>

⁶ <https://data.tuik.gov.tr/Kategori/GetKategori?p=Enflasyon-ve-Fiyat-106>

⁷ <https://www.geostat.ge/en/modules/categories/26/cpi-inflation>

At the same time, it became difficult for people to engage in economic activities, and problems arose in harvesting from the fields. On the other hand, the increase in transportation costs has created logistical problems, which has led to a sharp increase in prices for transportation by land, air, and sea. This directly affected the increase in the cost of products.

During this period, a sharp increase in the transportation costs of large ships was observed, as the means of international transportation of most goods was by containers. How much shipping costs have increased is determined by the FBX Global Container Shipping Index. Compared to February 2020, this index increased 8 times, from about \$1,300 per container to \$11,000 in September 2021. Costs vary with shipping routes. For example, the cost of shipping a container from China to the West Coast of the United States has increased more than 12 times in 2020-2022, from \$1,300 to \$16,000.⁸

Figure 3. FBX Global Container Index (2017-2022)



Another factor affecting the increase in food prices is **climate change**. Climate change is already happening and its consequences are manifesting themselves.⁹ So, as shown in the 4th Report of the Intergovernmental Panel on Climate Change, in the last 100 years, the average annual temperature on Earth has increased by 0.80 degrees Celsius, the ocean level has risen by 15-25 cm, and the depth of ocean warming has reached 3,000 meters. Azerbaijan has not been left out of the influence of global climate change. In the last 100 years, average annual temperatures in the territory of Azerbaijan have increased by 0.4-1.3 °C. The increase in temperature is unevenly distributed depending on the region. So, an increase in the average annual temperature of 1.1-1.3 °C was observed in the highlands of the Greater Caucasus. According to the information released by the Azerbaijan Reclamation and Water Management Open Joint-Stock Company, there are currently 1 million 400 thousand hectares of land suitable for agriculture in Azerbaijan, and one-fifth of these lands have salinization.

⁸ <https://fbx.freightos.com/>

⁹ <http://eco.gov.az/az/hidrometeorologiya/iqlim-deyismeleri>

Another big reason for rising food prices is the **Russia-Ukraine conflict**. Since February 2022, increasing tensions in the Black Sea region, and Russia's occupation of the territory of Ukraine, have led to price increases in the world and in Azerbaijan, supply chain disruptions, and risks to the global food market, which is trying to recover after the pandemic. In its report, the UN Food and Agriculture Organization (FAO) announced that more than 30 percent of world wheat exports are accounted for by Ukraine and the Russian Federation alone.

On July 22, Ukraine and Russia signed an agreement on the release of 20 million tons of grain stuck in Black Sea ports. According to McKinsey & Company, while the release brought some relief to the market, long-term ramifications remain. McKinsey & Company predicts that the grain harvest in Ukraine in 2022-2023 will be below the normal level - more than 30 million tons.

The world was faced with a shortage because Ukraine failed to fulfill its role as a major wheat producer. A short supply means higher wheat prices, making key ingredients like flour and starch more expensive to process. Considering that the demand for wheat in Azerbaijan depends on imports, we can understand that the Russia-Ukraine conflict also affected the prices of food in the country. Looking at the example of wheat alone, we can see that Azerbaijan's level of self-sufficiency in food wheat is below 50% in the "food balances" statistics of the State Statistical Committee.¹⁰

Sanctions against Russia also played a role in the acceleration of price increases. Due to the war in Ukraine, Western countries have imposed bans on Russian imports, including oil and gas. Energy prices rose 23.8% from August 2021 to August 2022, according to the latest CPI report. High energy prices add to food production and transportation costs that have become more expensive due to the pandemic. The increase in fertilizer costs also stimulates the increase in food prices. Since early 2021, farmers have been struggling to cope with rising fertilizer costs. According to the American Farm Bureau Federation, prices in some areas have risen more than 300% since the war in Ukraine. Russian sanctions are exacerbating an already existing fertilizer shortage. It should be noted that Russia is the main exporter of fertilizers and Russia accounts for about 30% of the world's fertilizer exports.

5. Food inflation

In September 2022, the share of food products in the formation of the total annual inflation was equal to 60%. That is, the increase in food prices is the main factor in such high inflation. Therefore, when determining inflation, the reasons for price increases and their effects on inflation should be investigated first. In the previous section, we tried to identify external and global causes of inflation. Now let's consider the internal factors in the formation of inflation.

The following are the internal causes of inflation in our country:

- Improper policy in the field of money credit and taxation. Prices remain high as a result of improper monetary and fiscal policies by governments. Some businesses increase the

¹⁰ https://www.stat.gov.az/source/food_balances/

price of goods to cover the high-interest rate. Moreover, as a result of incorrect tax policy, i.e. increasing the tax on profits, investment in production is reduced. Accordingly, production decreases. In such a case, production decreases and the price of goods starts to rise.

- Non-compliance with the law of money circulation. In the real economy, the amount of money is not regulated according to the requirements of the law of money circulation. It is known that the circulation of money is under the monopoly of the Central Bank. If necessary, the state increases the money supply, which causes inflation.
- Existence of budget deficit. Every country's budget has a budget deficit problem to a greater or lesser extent. As a result of the state revenues being less than the expenses, the increase of the state budget deficit and the release of new money in circulation to cover the budget deficit cause inflation.

Furthermore, one of the causes of inflation is the increase in fuel prices. This factor specifically affects passenger transport and cargo transport. In particular, the increase in the cost of transporting goods increases the cost of using agricultural machinery, which directly affects the cost of the product. The increase in the cost of goods is clearly reflected in the price of products put on the market. For example, the 60.2 percent increase in the Consumer Price Index of vegetables for 2022 compared to 2021 is proof of this.

Another important factor in the increase in food prices is the high level of customs duties. Compared with neighboring countries, we can say that Azerbaijan is a country that imposes high customs duty on imported products.¹¹ In the “World Tariff Profiles 2022” report released by the World Trade Organization (WTO), Azerbaijan's simple average most-favoured-nation customs tariff in 2021 was equal to 8.5 percent. For comparison with another South Caucasus country, let's say that this indicator was equal to only 1.4 percent in Georgia. That is, 6 times lower than in Azerbaijan. In Armenia, the corresponding indicator was 26 percent less than in Azerbaijan - equal to 6.3 percent.

In the report published by the WTO, customs duties are classified into two forms: agricultural and non-agricultural. According to that report, the simple average most-favoured-nation tariff applied to agricultural products in Azerbaijan in 2021 was equal to 13.9%. This indicator was equal to 8.1 percent in Armenia, 6 percent in Georgia, and 9.1 percent in Russia.

Given that agricultural products, tobacco, and alcoholic beverages account for the highest share of the applied customs duties, we should not be surprised that food inflation in the country is at a high level. Most of the agricultural goods that we consume on a daily basis can be produced domestically but the fertilizer for most of them is imported. Such a high level of customs duties and price increases in logistics activities are currently the main causes of food inflation. Looking at the average customs duties for different product groups, we can see that the highest customs duties are observed for food products.

Table 2: Average customs duties by product groups

¹¹ <https://agora-az.org/gomruk-rusumlarinin-az%99rbaycanda-qiym%99t-artimlarina-t%99siri-v%99imkanlar>

Məhsul qrupu	Orta gömrük rüsumları
Spirtili içkilər və tütün məhsulları	29.9%
Geyim	15.0%
Meyvə və tərəvəzlər	14.9%
Heyvan mənşəli məhsullar	14.8%
Çay və kofe	14.6%
Gündəlik tələbat malları	13.6%
Şəkər	13.5%
Tekstil məhsulları	12.2%
Bitki və heyvan mənşəli yağlar və piylər	8.0%

6. Methodological problems in calculating inflation

There are several forms of calculating inflation. In the State Statistical Committee, we can see 3 forms of inflation:

1. Monthly inflation
2. Average annual inflation
3. Annual inflation

Monthly inflation shows how much the current month's CPI has changed compared to the previous month. Average annual inflation is calculated by dividing monthly price changes by 12. Annual inflation reflects price changes between the month of the current year and the same month of the previous year.

The most widely used indicator for calculating inflation is the Consumer Price Index. In economic policy, CPI is mostly used in determining the main directions of monetary and credit policy, and in forecasting price processes. They include it among the important indicators characterizing the standard of living of the population. The Consumer Price Index characterizes the change in the general level of food, non-food, and services of the population over a certain period of time. There are international standards for calculating the CPI; however, the methodology applied in each country is unique and differs from the methodologies in other countries. The main reason for this is the adaptation of these methodologies to the characteristics of national economies. It is for this reason that the successful methodology applied in one country may not fully reflect the reality in another country.

According to international standards, the general approaches used in the calculation of CPI are as follows:

According to **consumption**: The calculated CPI shows the change in the prices of consumer goods and services used by households. In a number of countries (Canada, Great Britain, Iceland, Finland, Sweden), when the CPI is calculated based on this concept, the flow of values related to the service to the main capital, such as housing, is also included in this index.

According to **possession**: CPI calculated based on this concept shows the change in the price of all goods and services that a household owns, regardless of whether or not the household pays for the full price of the product or service or uses it. It should be noted that in Australia and New Zealand, changes in the value of housing owned by households are also taken into account when calculating the CPI using this concept.

According to **payment**: This approach takes into account changes in the prices of goods and services purchased by the household during the period of statistical observation when calculating the CPI. This concept is widely used in Ireland and Great Britain.

The State Statistical Committee is directly responsible for CPI, which is the main indicator of inflation in Azerbaijan, and all calculation procedures are carried out by this institution.¹² Calculation of CPI in Azerbaijan started in 1990. Later, in order to improve the methodology and study the international experience, the State Statistical Committee began to cooperate with the International Monetary Fund from 1993 to the end of 1994 within a program. Under the guidance of experts, the volume and scope, weight, and consumption basket of the CPI were clarified. Software necessary for calculations, price registration rules, and a new system have been developed.

As we mentioned above, when calculating inflation, reference is made to food, non-food, and services in the consumption basket. The consumption basket established in Azerbaijan in 1993 together with the International Monetary Fund included 268 representative goods and services. Later, in 2000, 380 goods and services were included in the consumption basket, including 116 food goods, 204 non-food goods, and 60 services. Currently, the consumer basket includes 585 goods and services. Of these, 151 are related to food, 307 to non-food (111 to clothing, 22 to construction materials, 174 to household equipment), and 127 to the service sector.

Determining the prices of these selected types of goods is done through the registration of each of them. So, for registration, the actual price of the commodity on free sale is taken, the price includes VAT, excise duties, and other indirect taxes. Different prices for a specific product are recorded, which allows for determining their average quantity. The average price of the product is defined as an algebraic average quantity. The price of all products of the same type of the selected product is collected and divided by their number, and the average price is found.

Laspeyre's, Paasche's, and Fisher's indices are used in the calculation of CPI.

In countries benefiting from Laspeyre's index, the price of a mixed basket consisting of goods and services is measured over a specific period of time. So, when calculating the CPI, the prices of the same consumption basket in the current period (month, quarter, and year) are found by dividing the prices of that consumption basket in the previous period. This period is different for

¹² https://www.stat.gov.az/source/price_tarif/az/Metodoloji_izahlar.docx

the countries of the mentioned region and it varies from 1 year to 10 years. In fact, the countries that use Laspeyre's index are looking for an answer to this question: What should be the current price of goods and services that consist of consumer spending in the base period?

A mixed basket is also used in Paasche's formula, but its difference from Laspeyre's is that the prices of the previous period are not divided. The question that Paasche's index seeks to answer is this: What should be the price of goods and services in the base period based on today's average consumption?

The general formula of Paasche's index is as follows:

$$I_{01} = \frac{1}{\sum_{j=1}^M I_{10}(j) w_{j1}}$$

Here,

I_{01} – the price index in period 1 compared to period 0 (base period);

w_{j1} – the specific weight of goods and services in the 1st period.

In a number of countries, the Fisher's index is also used, and this formula suggests a geometric model, taking advantage of the various elements of both indices:

$$I_{01} = \sqrt{\text{Laspeyres} \times \text{Paasche}}$$

Although Laspeyre's index is taken as the main formula for calculating the CPI in the international methodology, this method has some shortcomings.

One of them is that the specific weight indicator of each of the products included in the consumer basket in the general basket is outdated. As we know, when calculating the CPI for the current month, the figures of the previous month are used as an indicator of the specific weight of each product. This leads to the fact that the consumption behavior of the population during that month is not taken into account when calculating the CPI for the current month.

Another drawback is that the standard CPI methodology does not allow for observing the change in the quality of goods. So, the strengthening of competition forces companies to change the quality of their product, and this process goes very quickly. Therefore, the change in the quality of the products cannot be observed in the standard methodology of the CPI.

The next drawback is that the standard CPI methodology does not allow for taking into account the effect of seasonal factors on the price. Especially if the CPI is calculated for a short-term period (for example, one month), then it becomes difficult to solve this problem. That is, the fact that consumer products of a seasonal nature are sometimes more or less observed in the markets,

and sometimes they are not observed at all, reduces the adequacy of the CPI calculated for those periods.

However, despite all this, in most countries of the world, especially Azerbaijan, the CPI is calculated based on Laspeyre's formula. The CPI in Azerbaijan is calculated based on the modification of Laspeyre's formula:

$$I_p = \frac{\sum \frac{p_1}{p_0} \cdot q_0 \cdot p_0}{\sum q_0 \cdot p_0} \text{ və ya } I_p = \frac{\sum i_p \cdot q_0 \cdot p_0}{\sum q_0 \cdot p_0}$$

Here,

p_0 – the price of goods in the base period

p_1 – the price of goods in the current period

q_0 – the price of each commodity in the consumption basket in the base period

$q_0 p_0$ - the value of each product in the consumption basket in the base period

The methodology used by the SSC is quite advanced, except for some aspects, but the main problem here is the application of the methodology, even the highest level methodology can lead to undesirable results if it is not applied correctly. The factors affecting the decrease of quality indicators of CPI in Azerbaijan can be divided into several groups. The first of these is determining the structure and weights of the consumer basket.

1. Methodology for determining the specific weights of goods and services in consumption:

According to the methodological information provided by the Statistical Committee, the weights of the goods and services in the consumption basket are mainly determined by budget surveys, which are one of the forms of selective observation of the population's consumption, income, and expenses. In general, when studying methodologically, it can be said that the methodology of the SSC is appropriate, but when looking at it practically, it turns out that the observation of the budget examination of households is not carried out correctly. So, the most affluent part of households is traditionally left out of the selection. This happens for two reasons. The first reason is that most of the wealthy class refuses to answer the survey. Secondly, for certain reasons, no one is interested in registering their personal well-being at a high level in the country's statistics.

2. The number of representative goods and services in the consumption basket:

In the last three years, the number of representative goods and services in the consumer basket reached 585. This increase coincides with a period of double-digit inflation in recent times. In general, when looking at world experience, this number is 200 in the USA, 161 in France, 600 in Canada, 315 in New Zealand, 514 in Bulgaria, 270 in Ukraine, 311 in Georgia, and 343 in Kyrgyzstan. In order to conduct price monitoring more effectively in world practice, they reduce the number of goods and services included in the consumer basket. In our country, we observe the opposite. This is because the index is lowered. Because the rate of increase in the price of more consumed goods and services is greater than the price of less consumed goods and services. For example, if we look at the size of the weight of the goods and services in the consumption basket in Azerbaijan, the total weight of the last 165 goods and services is not even 1% in the consumption basket.

3. The weight of representative goods and services in the consumption basket:

Although the specific weight of the goods and services included in the consumption basket is based on the observation of the budget examination, other factors also play a role here. Other factors include the provision of "expert opinions". In general, goods and services with less price increase are included in the consumption basket with larger weights as possible. For example, let's pay attention to the specific weight of the prices of subway fares in the consumption basket. According to the calculations of the SSC, the fee paid for the metro ride ranks 18th in terms of size among the consumption expenses of the population. This is completely unacceptable. First, there is no metro in any region of Azerbaijan except Baku. Secondly, not all people living in Baku regularly use the metro. Thirdly, the subway fare is so low that the total amount paid for it is not even 1.04% of the total budget. At the same time, the fact that the composition of the basket used in the inflation calculation and the periodicity of updating the weights of the goods is not operative also leads to problems in terms of calculating the real inflation.

7. Conclusion and recommendations

As a result of the study, we can say that such an increase in inflation today is mainly related to the negative consequences of external influences in our country. The rapid increase in food inflation in particular suggests that agriculture is still heavily dependent on imports. This brings to the fore the level of the food supply of the country's citizens and the issue of food insecurity.

Although the government has implemented measures such as the introduction of preferential tax and customs duties and subsidies to small and medium-sized enterprises in order to stimulate local production and reduce dependence on imports, the economy is still highly dependent on imports. It is also necessary to take into account that such an increase in inflation is not only related to the unstable situations occurring in the world but also to some gaps in the anti-inflation policy conducted by the state within the country, difficulties in determining prices in the market economy, and the existence of monopolies in the markets.

Considering all this, it can be recommended that the government improve its mechanisms to stimulate domestic production in the country. Because, if high dependence on imports continues, the impact of foreign economic processes on price increases in the country will continue to be

high. At the same time, the development of the competitive environment in the country's economy has the potential to positively influence the formation of prices in Azerbaijan.

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Reference to IDI is compulsory when using information.

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