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Monitoring of Inflation in the New Geopolitical Reality

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ABSTRACT

The article is devoted to the assessment of the inflation rate based on the aggregated inflation index, which characterizes the dynamics of business processes in the main sectors and spheres of the national economy in the conditions of a new geopolitical reality due to the coronavirus pandemic and sanctions wars in connection with Russia's special military operation in the Donbas and Ukraine (SMO). The object of the study is the monitoring of inflation, acting as an up-to-date leading socio-economic barometer formed through the integration of private inflation indicators. During periods of macroeconomic instability, private inflation indices ambiguously reflect the real situation about the ongoing production and inflationary processes in the national economy. As a result, the decisions made are based mainly on unilateral expert analysis, which reduces the effectiveness of the decisions made. The article proposes an approach based on the selection and integration of private inflation indicators and the construction of an aggregated index using statistical methods. This makes it possible to more accurately and quickly calculate the impact of prices and tariffs on the development of key economic complexes, which determines the change in income levels and, accordingly, the quality of life of the population. The proposed methodology opens up significant prospects for monitoring inflation in comparison with the consumer price index used in Russian practice. The result of the work were the conclusions of the authors obtained by analyzing the calculations of the dynamic series of aggregated and partial inflation indices. It is determined that it is advisable to use the aggregated inflation index when indexing pensions, justifying the subsistence minimum and other macro indicators characterizing the level of economic growth and social progress. The aggregated inflation index is proposed to be considered as a target macro indicator of strategic development.

Keywords: macroeconomic instability; prices and tariffs; inflation; aggregated and private inflation indices; weighting factors; accounts payable; pension indexation

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INTRODUCTION

Inflation is an important barometer of social, economic, financial, and monetary stability of a leading type, from which the "health" of a nation is inferred. "Inflation is a reflection of all socio-economic imbalances in the country" [1]. The higher the inflation, the higher the risks in the national economy, and thus more expensive capital for its residents. This reduces the efficiency of economic activity, and sometimes makes it practically impossible in sectors and spheres of the national economy in the conditions of the new geopolitical reality.

In the world economy, globalisation has led to a new type of relations between countries, characterised by the export of inflation. Developed countries, owning the world reserve currencies, have the opportunity to reduce inflation in their economies at the expense of inflation growth in the economies of developing countries, restraining the growth of money supply and increasing their own revenues from foreign economic activity. As a rule, this is realised through the provision of international loans denominated in national or collective currencies of eurozone countries and the United States, export of goods and services at high prices, as well as through the reorientation of industrial production to low-cost countries [2]. "Imported inflation,

along with other inflationary factors, affects the exchange rate of the national currency against foreign currencies as well as the rate of price growth in the country" [3]. Thus, the countries — exporters of inflation strengthen their competitive position and make the received resources cheaper [4].

It is statistically proven that the exchange rate of the national currency of the CIS countries depends on the US dollar [5]. In Russia this influence is less significant, in contrast to the Republic of Belarus [6] and other CIS countries. When the inflow of foreign capital to developing countries grows, the output and supply of goods and services increases, which at the initial stage positively affects the living standards of the population. In the situation of "investment hunger" caused by high interest rates, the activities of national non-financial corporations of developing countries are often unprofitable. This is confirmed by the growth of inflation.

In the current geopolitical situation, attempts are being made to isolate Russia through sanctions wars (trade and economic, financial, monetary, information and communication, humanitarian) in order to undermine the country's state sovereignty. Logistical chains of links between producers of goods and services, as well as financial, monetary, transport and other organisations serving these links around the world are being destroyed. This leads to significant structural shifts in global production and consumption, and, as a consequence, to a sharp rise in inflation in the countries of the collective West (over 9% in the US and 10% in the eurozone and the UK). As a result, there is a threat of Russia's transition to a closed-type economy, primarily in relations with developed countries with world reserve currencies. As a consequence, inflation in Russia has changed its character and moved from monetary to non-monetary type. Stabilisation tools in this case become methods of "manual" management and increasing government intervention in the economy, which objectively increases the relevance of the development of new measures of inflation [7, 8].

To measure inflation, consumer price indexes (CPI), core and forecast inflation, etc. are used. [9, 10]. In the countries of the European Union (EU) since 1997, harmonised price indices have been used, which allow us to assess inflation in general in the EU countries with different geographical and natural-climatic conditions, as well as socio-economic characteristics and consumption patterns [11, 12]. However, these measures are based on the monetary concept of inflation, which proceeds from the well-known provision of the quantitative theory of money about the existence of a direct relationship between the money supply and the general price level in the economy [13]. At the same time, the inflationary process is a socio-economic phenomenon reflecting reproduction imbalances in various spheres of the national economy [14, 15]. Inflation expectations affect the decision-making by economic entities, which in turn determines the vector of development of the country as a whole [16].

The importance of obtaining objective, reliable and timely assessment of the inflation rate in the implementation of the state socio-economic policy under the new geopolitical reality characterised by threats of high financial and macroeconomic instability are the main reasons for the search for new measures of inflation. Their application, along with private measures, will increase the accuracy, efficiency, and objectivity of inflation assessment [17].

AGGREGATE INFLATION RATE INDEX

The proposed aggregate inflation index (AII) is a gauge that makes it possible to supplement the system of private inflation indicators (PII) and summarise them taking into account the weight, for the determination of which statistical methods are applied. Such an approach has a number of advantages. Not

one, but several private inflation indicators from different industries and spheres of the national economy are used. In addition, the aggregate inflation index has a greater stability of dynamics, since the growth rates are used rather than cost values of indicators, which, with regular revision of average annual prices by the Federal State Statistics Service (Rosstat), ensures their more stable dynamics.

Formation of aggregate inflation index includes the following steps: selection of private inflation indicators, estimation of weights with which they are included in the aggregate index, and determination of the aggregate index itself.

At the stage of selecting indicators for inclusion in the definition of the aggregate inflation index, it is necessary to justify their economic feasibility and relevance in the context of changing geopolitical reality. It is also necessary to take into account their information availability: frequency of publication (monthly, quarterly and annual data for the entire period of the study); timeliness and regularity of data collection; their stability, taking into account the risks of replacement in the future. Therefore, private inflation indicators provided by Rosstat serve as the basis for the aggregate inflation index. Price change is one of the most representative and operational sectors of government statistics. For example, Rosstat calculates consumer price indexes (CPI) based on the change in the cost of the consumer basket, which currently consists of 566 items of goods and services.

In economic practice, there are alternative measures to Rosstat's inflation indices, such as the "FMCG Deflator" from the Romir research holding. This meter takes into account the prices at which purchases were realised, not for a basket of products and services at the time of registration, as Rosstat does. Therefore, the deflator actually demonstrates the average personal inflation of each consumer. However, this measure does not take into account the prices at which services were sold, and, in addition, it is characterised by low responsiveness compared to Rosstat's price indices (*Fig. 1*).

The first private inflation indicator used in the construction of aggregate inflation index is the consumer price index as the main internationally recognised indicator characterising the inflation rate.

The second private inflation indicator is the index of producer prices of industrial goods, as producer prices largely determine the investment and consumer behaviour of the population and businesses in Russia.

The share of food expenditures in the world practice is one of the generalising indicators of living standards: if the population spends more than 60% of income on food, the country is considered poor, and the population is considered low-income. In the EU countries this indicator does not exceed 20%. The consumption structure of the Russian population changes depending on the macroeconomic situation in the country's economy. Thus, in the 1990s the share of food products increased sharply, during the period of economic growth in the 2000s the share of expenditures on food products decreased, and after 2014 it increased again [18]. According to Rosstat, this indicator in 2021 amounted to more than 61%, which is higher than in 2015–2020. Therefore, the third private inflation indicator used to form the aggregate inflation index is the producer price index of agro-industrial products sold by agricultural organisations.

According to Rosstat, freight transportation tariffs increased by 14.7% in 2022.

Due to sanctions restrictions, international transportation companies — the main "culprits" of inflationary processes — left the Russian market or suspended their operations. In this connection, the prices for spare parts and new trucks rose sharply. All this affected the cost of goods and services. Thus, the fourth private inflation indicator used to form the aggregate

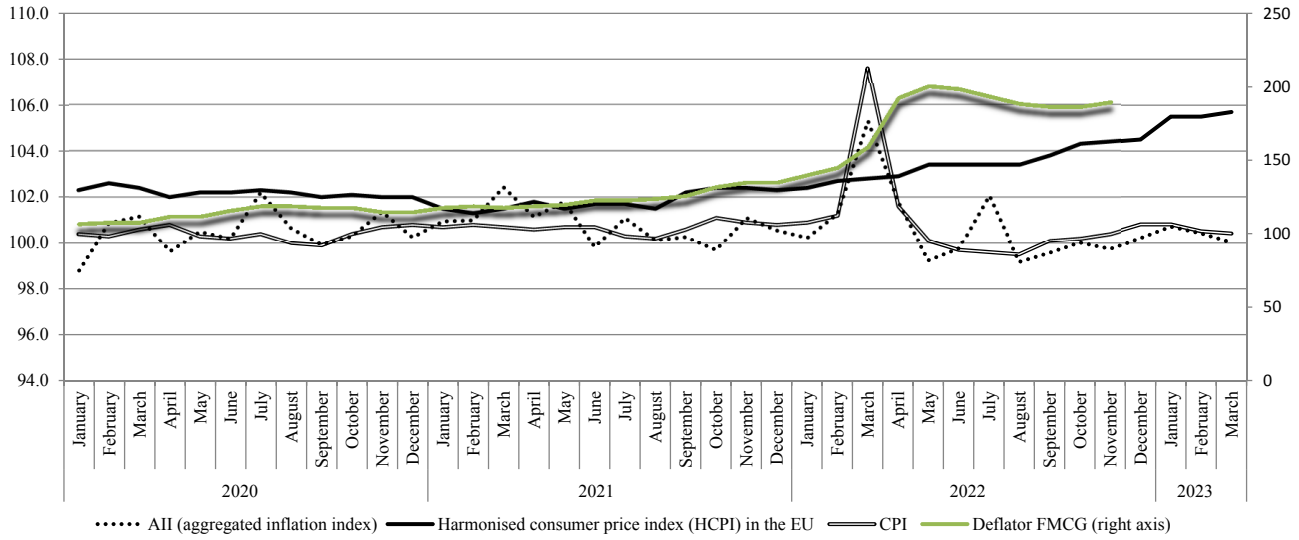

Fig. 1. **Dynamics of aggregated inflation indices, %**

Source: Rosstat, Eurostat. URL: https://ec.europa.eu/eurostat/databrowser/view/prc_hicp_manr/default/table?lang=en; Romir. URL: https://romir.ru

inflation index is the index of tariffs for freight transportation.

When calculating inflation, an important role is played by real estate prices, which are influenced by a large number of factors, the main of which can be considered the cost of construction. Taking into account the prices of producers of construction products in the aggregate inflation index will make its assessment more accurate, because the volume of housing sales transactions in Russia is consistently high. The total number of equity participation agreements (EPAs) registered by the Federal Service for State Registration, Cadastre and Cartography (Rosreestr/ Rosregistry) in the period from January to December 2021 in Russia as a whole amounted to 898.6 thousand, which is 17% higher than in 2020.[1] Despite the 22% decrease in the number of equity participation agreements in 2022, real estate remains the only protective asset for Russians. The decisions taken by the Russian Government to extend the preferential mortgage regime allow us to assume further growth in construction volumes. At the same time, according to Rosstat data, the growth of producer prices for construction products in 2022 against the figures of December of the previous year was continuous — from 2.9% in Q1 to 5.4; 6.5 and 8.1% in Q2, Q3 and Q4, respectively. Therefore, the fifth private inflation indicator is the producer price index for construction products.

Due to the aggravation of the sanctions wars, the sixth indicator of overdue accounts payable of organisations was included in the list of private inflation indicators. The contribution of this indicator to the growth of producer prices is still significant. Thus, according to the results of 2022, there are three creditor companies per one debtor company. According to Rosstat data, the average debt per creditor company in 2022 amounted to 285 million roubles.

The proposed list of private inflation indicators takes into account the demand component of inflation, including in the sphere of production, as well as "hidden" inflation in the real sector of the economy. Thus, aggregate inflation index allows to characterise more fully the dynamics of inflationary processes in the national economy.

[1] Rosreestr: official website. URL: https://rosreestr.gov.ru (accessed on 17.05.2023).

Obviously, the composition of private inflation indicators needs to be refined over time, although this is very difficult due to the problems of obtaining complete and reliable statistical information. Therefore, to determine the integral index we use an approach based on calculation of weights of private inflation indicators by pair correlation coefficients between them. The pairwise correlation coefficient allows us to assess the closeness of the relationship between two private inflation indicators included in the integral index. The more strongly a particular private indicator is related to other private indicators, the more weight it will have when included in the integral index.

In this case, the weights of private inflation indicators are a determinant of the specific weight or share of private indicators in the aggregate, since the sum of all weights determines all interrelationships between private indicators. In this regard, they should not be negative and in the sum be equal to one. The first condition can be achieved by summing up the pair correlation coefficients for individual private inflation indicators, and to fulfill the second it is necessary to normalise the obtained sums. Thus, it is logical to use the matrix of pairwise correlation coefficients to determine the weighting coefficients of aggregate inflation index. Then the numerator is the sum of absolute values of pair correlation coefficients for each private inflation indicator, and the denominator is the sum of absolute values of all coefficients:

$$W_j = \frac{\sum_{j=1}^{m} |r_{ij}|}{\sum_{j=1}^{m} \sum_{i=1}^{m} |r_{ij}|}, \quad (1)$$

where r_{ij} — is the linear correlation coefficient between i and j private inflation indicators (i, j — 1, 2 ..., m); m — is the number of private inflation indicators.

The aggregate inflation index itself is determined through a linear combination of private inflation indicators with weighting:

$$АИИ = \sum_{j=1}^{m} X_j W_j, \quad (2)$$

where X_j — PII (private inflation indicator).

The proposed approach in determining the aggregate inflation index is mathematically sound, as it is based on mutual dependencies of private indicators. This allows us to obtain objective results of calculations and leads to prompt correction of calculations due to changes in the number of private indicators for their aggregation.

A more detailed algorithm for the construction of aggregate inflation index is presented in the paper [17].

PRACTICAL RESULTS OF CALCULATIONS AND INFLATION TREND ANALYSIS

Monthly dynamics of the selected private inflation indicators is represented by their growth rates from January 2020 to March 2023 inclusive (*Table 1*). This corresponds to the periods of the coronavirus pandemic and sanctions wars unleashed by the collective West in connection with the start of the SMO (special military operation).

Table 1 gives the updated weights of the indices: 0.22; 0.17; 0.17; 0.12; 0.18 and 0.14. In [19], the period from January 2019 to June 2020 was analysed. In this case, the PII (private inflation indicator) weights had the values: 0.25; 0.17; 0.15; 0.12; 0.22 and 0.09, respectively.

Comparing the above results of calculation of weights, we can conclude that the weight of the index of overdue accounts payable, which characterises hidden inflation, increased most significantly (by 5 p.p.), and the maximum fall in weight (by 4 p.p.) was observed in the index of producer prices of construction products. The weight of the consumer price index also

Table 1

Values of private inflation indices and the aggregated inflation index, % of the previous period

Periods	Consumer price index for goods and services	Producer price index for industrial goods	Producer price index of agricultural products sold by agricultural organisations	Freight transport tariff index	Producer price index for construction products	Index of overdue accounts payable	Aggregate inflation index
	1	2	3	4	5	6	7
Weights	0.22	0.17	0.17	0.12	0.18	0.14	1.00
2020							
January	100.4	101.2	99.5	98.9	100.2	90.6	98.8
February	100.3	99.4	100.2	100.1	100.6	105.4	100.9
March	100.6	98.7	100.1	100.8	102.7	104.6	101.2
April	100.8	92.8	101.6	104.2	100.4	98.8	99.6
May	100.3	97.2	99.4	99.8	99.7	107.8	100.5
June	100.2	106.1	99.7	99.9	98.6	95.9	100.2
July	100.4	104.3	101.0	99.7	100.9	107.7	102.2
August	100.0	101.0	100.5	100.0	100.9	101.7	100.7
September	99.9	100.7	100.5	100.1	100.6	97.3	99.9
October	100.4	100.3	103.0	94.6	100.5	101.5	100.3
November	100.7	101.0	103.1	107.4	100.0	97.3	101.4
December	100.8	101.5	103.8	99.9	99.7	94.6	100.3
2021							
January	100.7	103.4	101.8	103.1	100.4	96.2	100.9
February	100.8	103.5	102.6	100.0	100.2	98.2	101.0
March	100.7	103.6	101.7	100.0	100.4	109.3	102.4
April	100.6	102.7	101.7	103.5	100.9	97.7	101.1
May	100.7	102.3	100.1	99.9	100.5	108.3	101.8
June	100.7	102.9	99.1	100.0	100.5	94.6	99.8
July	100.3	102.6	99.2	99.7	101.4	103.6	101.1
August	100.2	101.5	100.0	100.0	100.7	97.9	100.1
September	100.6	99.0	101.8	100.0	100.5	99.4	100.3
October	101.1	100.4	103.4	98.4	100.5	92.2	99.7

Table 1 (continued)

Periods	Consumer price index for goods and services	Producer price index for industrial goods	Producer price index of agricultural products sold by agricultural organisations	Freight transport tariff index	Producer price index for construction products	Index of overdue accounts payable	Aggregate inflation index
November	100.9	102.7	101.3	100.1	100.8	100.4	101.1
December	100.8	100.8	100.3	100.0	100.8	100.4	100.6
2022							
January	100.9	100.1	100.4	103.6	101.3	94.9	100.2
February	101.2	103.9	100.6	100.1	101.1	100.3	101.3
March	107.6	105.9	101.5	103.2	106.3	105.9	105.3
April	101.6	106.3	102.1	100.3	98.4	101.8	101.8
May	100.1	93.1	98.9	98.3	101.2	104.0	99.2
June	99.7	96.1	98.2	104.2	100.1	101.9	99.8
July	99.6	97.8	98.8	117.8	100.4	103.7	102.1
August	99.5	98.9	98.8	100.2	100.6	96.7	99.2
September	100.1	99.2	99.1	100.2	100.2	98.4	99.6
October	100.2	97.5	98.9	98.4	100.6	104.8	100.0
November	100.4	99.6	99.3	100.0	100.5	98.2	99.7
December	100.8	99.2	99.4	100.9	100.2	100.8	100.2
2023							
January	100.8	99.1	100.1	103.4	100.7	100.9	100.7
February	100.5	100.9	100.2	100.9	100.6	99.2	100.4
March	100.4	100.2	99.8	100.1	100.1	99.2	100.0

Source: Rosstat, developed by the authors.

fell significantly (by 3 p.p.) (by 2 p.p.). Only the weights of indices of industrial production and tariffs for freight transportation remained unchanged, which indicates a relatively high stability of the dynamics of changes in prices and tariffs in these industries during the period of coronavirus pandemic and sanctions wars in connection with the conduct of the SMO.

Figure 2 shows the intra-annual dynamics of average indices (consumer price indexes and aggregate inflation index). On its basis we can conclude that in the second half of the year the

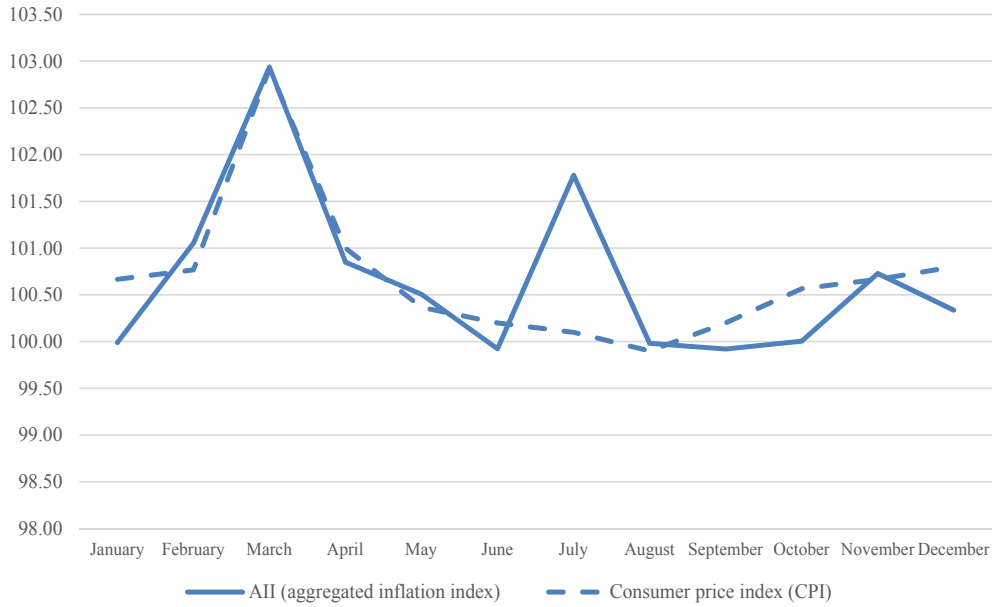

Fig. 2. **Inside the annual dynamics of the aggregated inflation index and CPI (average indices for the same periods), %**

Source: Rosstat, developed by the authors.

nature of the dynamics of the indices under consideration does not coincide. consumer price indexes do not capture price growth in July, decrease in October and December.

According to *Fig. 1,* we can conclude that the volatility of inflation in Russia is higher than in the EU countries. Starting from September 2021 HCPI has a stable growth, while inflation indices in Russia since January 2023 record a downward trend. Note that in 2023 Russia is among the leading countries in terms of inflation reduction in its economy. Figure 1 also shows the dynamics of the alternative inflation index of the FMCG deflator, which reflects the average personal inflation for the population. As we can see, there is a lag of about two months: price growth in March 2022 was reflected in the personal inflation of the population in May 2022.

The period from February to April 2022 is characterised by a sharp rise in prices due to political events that led to instability in the economy, changes in the conditions of economic activity. Already in May 2022, Russian inflation indices recorded its level lower than in previous years, which indicates the stabilisation of the country's economy, its adaptation to external shocks. Under the conditions of the beginning of Western sanctions (February, March 2022), the reaction of consumer price indexes is stronger than that of the aggregate index, which indicates the dominance of consumer inflation in the formation of inflation in the economy as a whole. This, in turn, confirms the non-monetary nature of inflation in Russia. Let us conduct a comparative analysis of the dynamics of the aggregate inflation index and private inflation indicator, on the basis of which it was constructed, using the data from *Table 1.*

The results of the analysis show that the reflection of the inflation process in the form of a single private indicator does not quite adequately show the overall picture of inflation. In 2020, differences in the trends of aggregate inflation index and consumer price indexes are observed in January, April, and September. In January, February, March and May, the values of aggregate index and producer price index of industrial goods are not unidirectional.

In Q2 2020 the value of the aggregate index reflects the opposite trend to the producer price index of agricultural products sold by agricultural organisations. And the dynamics of the aggregate inflation index and the index of tariffs for freight transportation in Q1, August, September and November 2020 reflects the trends of inflationary processes in the same manner.

The dynamics of the producer price index of construction products in 2020 does not agree with the dynamics of the aggregate index in half of the periods. Dynamics of overdue accounts payable index is more consistent with the dynamics of aggregate inflation index (except for June, September, November, and December).

In January 2021, the growth rate of consumer prices amounted to 100.7%. But if we take into account the fact that producer prices of industrial goods increased by 3.4%, and agricultural producers increased by 1.8%, the resulting value of the aggregate inflation index — 101.0% — more accurately reflects the state of the inflationary process this month.

A similar situation was observed in February. The aggregate inflation index revealed an increase in inflation by 1.0%, as producer prices of industrial goods increased by 3.5%, and those of agricultural producers — increased by 2.6%. Consumer price indexes showed growth by 0.8%. A similar situation occurred in March 2021, when the growth rate of overdue accounts payable, which characterises "hidden" inflation, amounted to 109.3%, while the consumer price index — 100.7%, as a result of which the aggregate index showed an increase in inflation by 2.3%.

In April 2021, freight transportation tariffs rose by 3.5%, producer prices of industrial goods by 2.7%, and those of agricultural producers rose by 1.7%. At the same time, the consumer price index showed an increase in prices by only 0.6%, while the aggregate index revealed an increase in prices in the economy by 1.2%.

In May, the aggregate index showed price growth by 1.0% more than consumer price indexes, as its value took into account the growth of producer prices of industrial products by 2.3% and overdue accounts payable by 8.3%.

In 2021, the values of aggregate inflation index and consumer price indexes characterised the same inflation trends (except for June and October), but the values of aggregate index were ahead of the values of consumer price indexes. In favour of the aggregate inflation index are the facts that it takes into account changes in prices of agricultural producers and the level of overdue accounts payable. Thus, in July, the growth of overdue accounts payable (i.e., hidden inflation in the economy) by 3.6% was reflected in the value of aggregate inflation index — 1.1%, while consumer price indexes showed an increase of 0.3%.

In August, consumer price indexes and aggregate inflation indexes showed the same growth of prices, although the index of overdue accounts payable decreased by 2.1%. However, other private inflation indicators recorded growth of prices or their stabilisation. The value of the aggregate inflation index amounted to 100.2%, and consumer price indexes — 100.2%. In September 2021, all private inflation indicators, except for the agricultural producer price index, were below the level of consumer price indexes. At the same time, the aggregate index showed price growth by 0.3%, and consumer price indexes — by 0.6%.

The situation in October 2021 is interesting, when two private price indices reflected a significant decline. Consumer price indexes had a value of 101.1%. At the same time, the value of aggregate inflation index was 99.8%, which is more objective. In November and December 2021, all private inflation indicators showed an increase in prices. Aggregate inflation index also showed an increase in prices in November by 1.1% (which is more than the value of

Table 2

Annual dynamics of pension indexation, aggregated inflation indices and consumer price indices, % compared to the previous period

Indicators/year	2020	2021	2022
CPI	104,9	108,4	112,1
aggregate inflation index	106,0	110,5	108,5
Planned indexation of pensions	106,6	108,6	108,6
Actual indexation of pensions.	106,6	108,6	115,3

Source: Rosstat, developed by the authors.

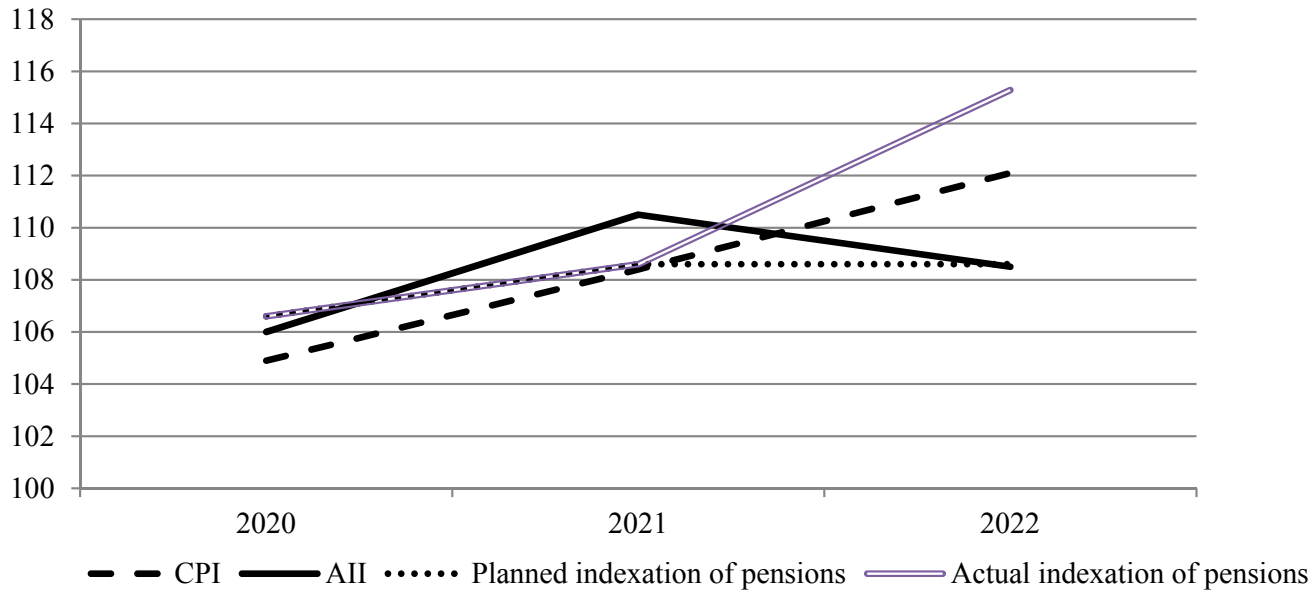

Fig 3. **Dynamics of the aggregate inflation index, consumer price index and pension indexation, %**

Source: Rosstat, developed by the authors.

consumer price indexes), in December — by 0.6% (less than the value of consumer price indexes). This is due to the change in producer prices, which is taken into account to a greater extent in the aggregate inflation index value.

In January 2022, compared to December 2021, the consumer price indexes changed by 0.9%, although the growth of prices for freight transportation amounted to 3.6% and producer prices for construction products amounted to — 1.3%. At the same time, the index of overdue accounts payable decreased by 5.1%. The aggregate inflation index "caught" this decrease. Its value recorded the growth of prices in the economy by 0.3%. It should also be noted the importance of taking into account in inflation measures the indicator of overdue accounts payable, the change in which reflects "hidden" inflation.

In March 2022, there was a large-scale growth of prices. The value of the average monthly consumer price indexes was 107.6%; the producer price index of industrial goods — 105.9%; the price index of agricultural products — 101.5%, the index of tariffs for freight transportation — 103.2%, the producer

price index of construction products — 106.3%, the index of overdue accounts payable — 105.9%.

In the second quarter of 2022, aggregate inflation index "caught" the decrease in the inflation rate in the economy faster than consumer price indexes. Thus, the value of consumer price indexes in May 2022 amounted to 100.1%, and aggregate inflation index — 99.2%.

In the second half of 2022, the compared inflation indices had multidirectional dynamics in July, September, and November, which is mainly due to changes in overdue accounts payable.

In the first quarter of 2023, the trends of consumer price indexes and aggregate inflation index coincided. However, the aggregate inflation index recorded a lower inflation rate, as in January there was a decrease in producer prices of industrial goods, and in February and March there was a decrease in overdue accounts payable.

Table 2 and Fig. 3 present the annual dynamics of aggregate inflation index and CPI, where we can see that their values differ significantly.

To summarise, we can say that in periods of instability, i.e., a sharp rise or fall in prices in different sectors of the economy, the value of aggregate inflation index significantly differs from the values of private inflation indicators.

APPLICATION OF AGGREGATE INFLATION INDEX

Let us consider the practical application of aggregate inflation index on the example of pension indexation.

The analysis of the data presented in *Table 2 and Fig. 3*, showed that there is a significant difference in the values of aggregate inflation index and consumer price indexes (in 2020 by 1.1%, in 2021 by 2.1%, in 2022 by 3.6%).[2]

[2] The annual levels of CPI and AII are shifted one year ahead in Table 2 and Fig. 3, since the indexation of pensions of the current year is determined, as a rule, on the basis of the CPI value of the previous year.

From 2020 to 2021 inclusive, the situation in the economy destabilised due to external and internal shocks of the coronavirus pandemic. At the same time, the dynamics of aggregate inflation index exceeded consumer price indexes.

In 2022, aggregate inflation index demonstrated downward dynamics with stable growth of consumer price indexes.

According to our estimates, the indexation of pensions in 2020 outpaces consumer price indexes by 1.7%, in 2021 — only by 0.2% and in 2022 — by 3.2%.

In 2021, aggregate inflation index will outpace the growth of pensions by 1.9%, taking into account their one-time additional indexation.

In 2022, insurance pensions of non-working pensioners were indexed twice. At the same time, their planned indexation from January 1, 2022 was supposed to increase by 8.6%, but the aggregate inflation index amounted to 8.5%. Thus, it is more appropriate to use the aggregate inflation index for indexation of pensions.

There are many ways of constructing inflation indices. Aggregate inflation index, calculated according to the methodology described in the article [20] and other works, was widely used in 1998–2010 to analyse inflation in Russia. The improved methodological approach to determining the aggregate inflation index proposed in this article can be appropriately applied in planning the indexation of pensions, subsistence minimum, minimum wage and other macro-indicators characterising the level of social progress.

CONCLUSIONS

The current situation in which the world economy finds itself is characterised by a high probability of stagflation, the consequence of which is the threat of collapse of the world economic and

financial system and "pandemic" of prices. It is practically impossible to predict the moment when the transition from the world economic model based on globalisation and the dominance of financial capital to a new model of development of a multipolar world, currency zones and political unions is realised. One of the leading indicators, based on which it is possible to establish how the economies of countries cope with the new realities, is the inflation rate.

The inflation indicators used in practice, primarily the consumer price index used by the current management system, incompletely and ambiguously characterise the situation about the ongoing inflationary processes in the strategic development of countries. This is due to the fact that the reaction of economic agents to changes in the conditions of their activities is different, especially in periods of instability and external shocks, which include the period of coronavirus pandemic and sanctions wars in connection with the conduct of the Special Military Operation.

The consumer price index plays the role of a cross-country criterion, but its potential is insufficient for a correct assessment of inflation due to changes in its content. A significant disadvantage of the consumer price index as a measure of inflation is that it lags in capturing the impact of price hikes caused, as a rule, by non-monetary geopolitical factors, which are difficult to predict and cannot be formalised. At the same time, these factors are becoming increasingly persistent for most countries in the world.

In this regard, it is necessary to use new measuring instruments. The proposed AII (Aggregate inflation index) as an integral measure of inflation — provides a more correct assessment of its level for the calendar period under study. Aggregate inflation index takes into account the dynamics of prices in the most important national economic complexes (consumer, industrial, agricultural, transport, construction, financial), which to a large extent form consumer, investment and financial behaviour of the population and businesses.

The proposed approach of aggregation of private inflation indicators on the basis of statistical methods opens new perspectives for inflation monitoring. The list of private indicators, which are included for calculation of aggregate inflation index, is basic and can be supplemented by new private indicators. Moreover, they do not necessarily have to be direct measures of inflation. In particular, in the period of financial and macroeconomic instability it was proposed to use the indicator of overdue accounts payable of organisations, which ensured the accounting of hidden inflation in the economy in the aggregate inflation index. In this regard, the Aggregate inflation index can be regarded as a target indicator and used in the development and implementation of a new model of strategic development, ensuring maximum mobilisation of resources in priority areas.

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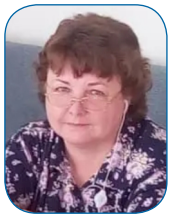

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B.I. Tikhomirov — description of the results and formation of the conclusions of the study.
A.A. Surkov — description of the methodology, calculation, preparation of the article for submission to the editor.

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