

CENTRAL BANK OF THE REPUBLIC OF UZBEKISTAN



MONETARY POLICY GUIDELINES FOR 2023 AND THE PERIOD OF 2024-2025

Tashkent 2022

Central Bank of the Republic of Uzbekistan

**MONETARY POLICY
GUIDELINES FOR 2023 AND
THE PERIOD OF 2024-2025**

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ABBREVIATIONS

GDP	–	gross domestic product
CPI	–	consumer price index
PPI	–	producer price index
ACPI	–	alternative consumer price index
UN	–	United Nations
FAO	–	Food and Agriculture Organization of the UN
IMF	–	International Monetary Fund
IFI	–	International financial institutes
EBRD	–	European Bank for Reconstruction and Development
WTO	–	World Trade Organization
VAT	–	value added tax
USP	–	unified social payment
STA	–	single treasury account
GS	–	government securities
OPM	–	online price monitoring
p.p.	–	percentage point

INTRODUCTION

The Monetary Policy Guidelines reflect the measures to be implemented in the monetary policy, the response of the Central Bank to changes in external and internal economic conditions, approaches to conducting monetary policy and prospects for improvement in 2023-2025.

In the following years, the emphasis in the implementation of the monetary policy will be placed on achieving the main goal set by law - **price stability in the economy**. In accordance with this goal, monetary conditions serving **inclusive economic growth** and **financial stability** in our country will be ensured.

The work started on adapting the methods and criteria of monetary policy to **inflation targeting**¹ standards will be consistently continued. In particular, the reforms initiated in terms of improving the operational framework of monetary policy, developing the domestic currency market and analytical and forecasting capacity, as well as improving communication policy will be intensified.

It is worth noting, that by the end of 2021 the interim inflation target was achieved and inflation rate declined **to 10 percent**. This, in turn, served to shift inflation expectations downward at the beginning of this year.

The observed economic process and changes in the past period of 2022 developed in consistence with both the baseline and alternative scenarios of macroeconomic development. Meanwhile, the changes observed in the external

economic situation are more consistent with the conditions of the alternative scenario. In order to reduce the effects of external risks and ensure stability in the foreign exchange market, the monetary policy was adjusted, and the relative attractiveness of assets in the national currency was maintained.

In the context of changes in the external environment starting from the first quarter of this year, the rapid acceleration of inflationary processes in the world, an uncertain condition in the major trading partners and other factors affecting domestic prices, there are grounds and expectations to achieve **5 percent target** in the second half of 2024.

The Central Bank will take **balanced measures** to reduce the inflation with **minimal impact** on aggregate demand and economic activity.

Given **the increasing uncertainty** about future developments in the external economic environment, the growing likelihood of a global recession, and different expectations on prices for basic commodities despite their downward dynamic, as well as taking into account changes in domestic economic conditions and the pace of reforms, medium-term macroeconomic forecasts were developed on the basis of **2 different scenarios**.

In defining the assumptions for the scenarios, various developments were determined as **the main criteria** including the trends in the world economy, expectations regarding global inflationary

¹ In the countries that have adopted the inflation targeting regime, the inflation rate is on average lower than the indicators of the countries that do not apply this regime.

processes, current geopolitical situation, differences in the forecasts for commodity markets.

A baseline scenario, taking into account the continuation of macroeconomic development within the existing trends, the persistence of the negative effects of the external environment on the economy of our country at the level of 2022, the continuation and logical completion of the initiated structural reforms, and **an alternative (risky) scenario** have been designed assuming an increase in external risks and the occurrence of global crisis-recession processes.

According to **the baseline scenario**, growth rates of economic activity and increasing dynamics of investment and consumer demand will remain high in our country. Fiscal consolidation will begin as a result of structural reforms and the gradual adjustment of regulated prices to market prices, the competitive environment will be improved by reducing the role of the state in the economy and continuing structural reforms, private and foreign direct investment will grow at a high rate.

The alternative scenario of macroeconomic development was designed based on the possibility of a decrease in the external demand, a decline in foreign exchange flows coming in through various channels in the context of increased external risks and a global recession, reduction in the output and aggregate demand caused by climate changes. In this case, the reduction of aggregate demand is a factor that curbs global inflationary processes and lowers the prices of commodities, while the decrease in the aggregate supply has a

negative effect on the price level in the domestic market.

In this scenario, it is assumed that the structural reforms will be slower than in the baseline scenario, and the regulated prices will be indexed to the level of inflation. In order to stimulate the economy, it is expected that the current high rates of fiscal deficit will be maintained and the start of budget consolidation will be delayed to 2024 and beyond.

Depending on the **simultaneous occurrence** of one or more of the risks defined and assessed when developing the forecasts, their duration and negative impact on our economy was estimated.

Under the baseline scenario **monetary policy** will be maintained at a **relatively tight** phase. In the case of firm confidence in achieving the inflation target, the monetary conditions will be slightly eased and transferred to the **“neutral phase”**.

At the contrary, alternative scenario conditions may require the maintenance of relatively tight monetary conditions for a longer time. In this case, conditions will be created **to ensure a balance** between price stability and economic activity.

In both scenarios, to ensure the proportionality of gross demand in the economy to gross supply instruments of **restraining monetary factors** will be used, the transmission of decisions through various channels of monetary policy will be intensified.

Ensuring inclusive economic growth and the challenge of maintaining macroeconomic stability in the coming years amid limited budget support for the economy and the rising cost of external resources largely depends on the effectiveness of measures implemented in our country to continue **structural**

reforms, transform state enterprises, improve the capacity and productivity of

industries and develop a competitive environment in consumer markets.

I. SCENARIOS OF MACROECONOMIC DEVELOPMENT IN 2023-2025

In 2022, the factors affecting the macroeconomic situation and their characteristics were drastically different from previous years. Given the current economic situation and expected macroeconomic indicators, the macroeconomic policy implemented in the coming years will be oriented primarily towards two tasks:

- in **maintaining macroeconomic stability** paying special attention to reducing inflation to the 5 percent target by the end of 2024, maintaining the consolidated fiscal deficit to GDP below 3 percent in 2023 and 2 percent in 2024, ensuring at least 20-25 percent real (physical) growth of non-commodity exports.

- **achieving inclusive economic growth, including:**

a gradual completion of established structural reforms (transformation and privatization of state-owned enterprises and banks, land reform and reform of the fuel and energy sector, strengthening the competitive environment and further liberalization of foreign trade);

a steady **reduction of the state's burden of financing the economy** through macroeconomic, fiscal, and monetary policies aimed at **stimulating domestic and foreign private investment;**

ensuring a **personal income** growth by at least **5-6 percent** in real terms, an increase of private and foreign **direct investment** by **15-20** percent per annum, and improvement of transport and social infrastructure.

Atypical conditions and shocks of different directions (negative and positive) in the external environment throughout the year complicate macroeconomic analysis and forecasting.

The development of the conditions for the scenarios of the monetary policy guidelines was based **on expert judgement**, while the forecasts were based more **on expectations and estimations.**

Macroeconomic forecasts will be updated and modified as new data become available in future forecasting rounds.

The design of the macroeconomic scenarios for 2023-2025 was based on the following principles and perspectives.

- **External economic conditions:**

- In the context of geopolitical tensions **high levels of uncertainty** will remain in the global economy and trading partners. **External demand** will be lower than in 2022;

- global inflationary processes and the measures taken to address them may increase the likelihood of **stagnation or recession** of the world economy in the future. In addition, the **global inflation** will **slow down** from the **end of this year;**

- the **downward trend** in the **prices of basic commodities** will continue, in conditions of global recession prices may further decline and **pressures on currencies of developing countries** may arise;

- the situation related to disruptions in logistics and supply chains will **gradually improve**, whereas in international economic relations a rise in prices for

goods and financial resources, and rapid changes in migration processes may occur.

- **Internal economic conditions:**

- the **supportive effect** of financial stimulus of recent years on the economy **will diminish**;

- high economic growth requires **effective and strict structural reforms** aimed at reducing state involvement in the economy and improving the competitive environment;

- in view of the fact that from next year budget funding will be limited, there is a need to ensure high financial discipline in the allocation and implementation of public expenditure and to use revenues wisely and with purpose.

- the overall fiscal deficit will reduce, and the scale of the domestic market in funding will increase;

- the level of **aggregate demand** in the economy will steadily increase due to

the activity of the private sector; this trend may slow down in case of external shocks;

- the **reduction of the value-added tax** rate may be a factor that will increase incentives in production and services and slow down price growth;

- private investment, increased migration flows, export earnings, and cross-border remittances will simultaneously support domestic investment and consumer demand. While the effective implementation of reforms will accelerate this process, increased external risks will have a slowing effect.

Based on the scale and direction of changes in the above factors, **a baseline** (in conditions of which there is no high likelihood of sharp external shocks) and **an alternative** (taking into account assumptions of a sharp increase in external risks and delay of reforms) scenario of macroeconomic development has been designed.

Factors and channels influencing economic growth

Baseline scenario

Alternative scenario

External conditions

Amid high inflation and tight financial conditions, the global economy is expected to grow at a slower pace than previous forecasts. Labour market trends in developed economies may also change.	Global economic growth may slow down amid disruptions in the world value chain and the increasing risk of a global recession.
High returns on alternative investments can lead to a fall in the price of gold.	In the context of a global recession, lower incomes and relatively low liquidity will create downward pressure on gold in 2023, while the likelihood of monetary policy easing in developed countries from 2024 may be a factor driving up the gold price.
The current trends in oil prices will persist. Prices will be volatile and form around 80-90 dollars per barrel.	A slowdown in global mobility as a result of weaker global aggregate demand may contribute to lower oil prices. In 2023, the price of oil will be around \$50-60 per barrel.
There will be no dramatic changes in the exchange rates of the main trading partners. The Russian rouble may weaken by 15-20%. The exchange rate of the national currency will be relatively stable, no strong pressure on the real effective exchange rate is expected and the REER will form within a long-term trend.	Under the influence of the global recession, falling oil prices, and other negative factors, there may be a sharp (30-40%) depreciation in the exchange rates of the currencies of major trading partners. This in turn may cause the real effective exchange rate to deviate from the trend and put upward pressure on the exchange rate.
There will be a slight decline in remittances in 2023 and a steady growth trend from 2024.	Remittances will decrease significantly in 2023 compared to last year. The growth rate will gradually recover in 2024-2025.

External financial conditions

Foreign direct investment will continue to grow. A further revival of foreign investment is expected from 2024 onwards.	Tightening external financial conditions will have an adverse impact on foreign direct investment inflows and there will be no growth between 2023 and 2024.
In response to global inflationary developments, monetary policy will be continued in a tight phase until the second half of 2023 and early 2024.	The transition from a monetary tightening phase to a neutral phase will begin.

Global inflationary processes

The Food Price Index (FAO) is expected to fall to 130 points in 2023-2024. Disruptions in commodity supply and logistics will be gradually eliminated.	Between 2023 and 2024, weaker global demand will have a positive impact on prices, reducing inflationary pressures. The Food Price Index (FAO) will fall to 100-120 points in 2023-2024.
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Structural reforms

Reforms in the fuel and energy sector will be implemented in 2023-2024. The processes of transformation and privatization of enterprises are logically completed. Electricity and gas prices will gradually approach market prices.	Electricity and natural gas prices will be indexed at the level of inflation between 2023 and 2025. The enterprise transformation processes will continue at a slower pace than in the baseline scenario.
The value-added tax rate will be reduced to 12% from 1 January 2023 (desinflationary factor). The development of the domestic capital market will be accelerated. IPOs and SPOs of local companies will be introduced. Non-resident and resident individuals' participation in the government securities market will be intensified.	Based on external conditions, the pace of implementation of structural reforms in sectors of the economy may slow down. The focus will be on supporting economic activity and consumer demand. The demand for debt to finance budget expenditures may increase.

Internal conditions and aggregate demand

Fiscal consolidation will start in 2023. The ratio of fiscal deficit to GDP will gradually decrease.	Given external risks, the fiscal incentives will be maintained in 2023-2025. The fiscal deficit-to-GDP ratio will remain at current levels in this period.
Consumption and investment demand will rise due to increased activity in the private sector and migration flows. Meanwhile, supply in the labor market will also increase.	Lower external demand and changes in exchange rates may lead to a reduction in investment and consumer demand. Supply in the labor market may increase sharply.

1.1. Baseline scenario of macroeconomic development and monetary policy

According to the baseline scenario of macroeconomic development, although the situation in the world and in our country will be volatile, positive growth trends will continue. The complexity of the geopolitical situation, downward trends in energy and commodity prices will determine the external environment, while the internal conditions will depend more on continuing structural reforms, reducing the role of the state in the economy, activities in the private sector and the direction of fiscal measures.

External economic environment

Since late 2021 and early 2022, most of the world's economies have started to recover. However, since the end of February 2022 the crisis between Russia and Ukraine and fluctuations in the energy market, high inflationary pressures caused by the delay in adjusting supply volumes to high demand, and a tightening of monetary policy as a response have been observed.

Given these factors, the International Monetary Fund and the World Bank have revised the projections for the growth of the global economy and our major trading partners down for 2023.

According to updated projections, the International Monetary Fund expects the world economy to grow by **3.2** percent in 2022, **2.7** percent in 2023, and **3.2** percent in 2024. The World Bank estimates that the world economy will grow by **2.9** percent in 2022 and **3.0** percent in 2023-2024 (*Table 1.1.1*)

Moreover, economic activity in the major partners is also expected to be lower

than this year. Particularly, in 2023 economic growth in China is projected at 4.4-4.5 percent, while the economies of Kazakhstan and Türkiye are expected to increase by 3.5-4.4 percent and 2.7-3.0 percent, respectively.

On the other hand, Russian economy is expected to further decline in 2023, and growth rates are projected to be positive in 2024.

Alongside with the above-mentioned factors, the average dynamics and volatility in **oil prices** in recent months are expected to persist next year. In the baseline scenario, oil prices are estimated to range between **80-90 dollars/barrel** in 2023.

As a result of the relative slowdown in economic activity and the continuation of oil prices at current levels, high fluctuations in **the exchange rates of major trading partners** are not expected.

Expectations for the prices of **basic food staff** in the world markets are having a downward trend. With the gradual decline in transport and logistics prices, which reached their peak in 2020, world prices for basic food products are expected to be relatively lower in 2023.

The **FAO index** by the United Nations, which reflects the prices of food and agricultural products, is projected to fall to **120-130 points in 2023 (137 points as of September this year)**.

The downward trend in basic food prices, combined with measures taken by world central banks, will help to **mitigate global inflation** next year.

Table 1.1.1. Forecasts of the IMF and World Bank on global economic growth

Countries	2021 (actual)	2022	2023	2024
International Monetary Fund forecasts				
Uzbekistan	7.4	5.2	4.7	4.9
China	8.1	3.2	4.4	4.5
Russia	4.7	-3.4	-2.3	1.5
Kazakhstan	4.1	2.5	4.4	4.5
Türkiye	11.0	5.0	3.0	3.0
World	6.1	3.2	2.7	3.2
The World Bank forecasts				
Uzbekistan	7.4	5.3	4.9	5.1
China	8.1	2.8	4.5	5.1
Russia	4.7	-4.5	-3.6	1.6
Kazakhstan	4.0	3.0	3.5	4.0
Türkiye	11.0	4.7	2.7	4.0
World	5.7	2.9	3.0	3.0

Source: IMF, World Economic Outlook (October 2022); World Bank, Europe and Central Asia Economic Update (Fall 2022).

With high-interest rates on **international financial markets**, a high dollar index, uncertainty in the global economy, and expectations of recession, global demand is expected to be lower than in 2021 and cause the **prices of gold** and other **basic commodities** to go down.

According to the calculations under the baseline scenario **a gold price** is projected to be about 1,600-1,650 dollars per ounce in 2023, 1,600-1,700 dollars per ounce over 2024-2025, and **a copper price** is forecast to be around 7,000-7,500 dollars per ton over 2023-2024.

Under the baseline scenario, world central banks will keep **a tight monetary policy phase** in 2023. In the current uncertain conditions, central banks of Russia and Türkiye are pursuing **unconventional monetary policies** and lowering interest rates.

According to these forecasts the external demand for our country will be at a

relatively moderate level without dramatic changes in the coming year, the possibility of external pressure on the national currency will decrease, and the real effective exchange rate will be within its long-term trend.

Given these factors, exports (excluding gold) is projected to grow by **13-17 percent** in 2023 and **9-12 percent** in 2024-2025.

Exports of services, including tourism, financial and transport services, are expected to increase in the post-pandemic period next year, while exports of textile products and electrical equipment are expected to grow at a relatively high rate.

In the context of the difficult external conditions this year, re-export operations in our country's export structure can be observed. The continuation of this trend next year will be one of the factors affecting both export and import volumes.

Given continued economic activity and growth in the private sector, imports are

expected to increase by **14-15 percent** in 2023, **12-14 percent** in 2024, and **8-10 percent** in 2025.

In the structure of imports share of chemical products, machinery and equipment, and food imports is expected to be high.

As a result of continued structural reforms, **foreign direct investment** in our country will increase by **20-30 percent** in the coming year.

Due to the shift of informal remittances to formal channels, the fact that some payments for exports of fruit, vegetables and textile products are also carried out as international remittances, and the high value of the ruble, the volume of remittances to the country is observed to increase significantly in 2022.

In January-September, **remittances** to our country increased **2.2 times** compared with the corresponding period of the previous year and formed a high base. The volume of cross-border remittances in 2023 is projected to be lower than in 2022, taking into account expectations on Russian ruble devaluation for the next year, the flow of labor migrants, and geopolitical changes in trading partners.

The practice of channeling part of payments for the export of certain types of products (textiles, fruits and vegetables) to our country through the international money transfer system can be observed next year as well.

Under the influence of the above factors, the **current account deficit** is projected to be about **4-6 percent** of GDP in 2023.

Internal economic environment

Given the high level of fiscal stimulus during 2022, increased foreign exchange flows, and their significant support for domestic investment and consumer demand, economic growth is expected to be **5.2-5.8 percent** in real terms by the end of the year (*Table 1.1.2*).

Despite the continuation of positive dynamics in economic activity, due to external influences, limited opportunities for financing, as well as price increases for certain groups of goods, real economic growth is expected to be lower than in 2021-2022 and the potential level.

Under the **baseline scenario**, the real economic growth is projected at **4.5-5 percent** in 2023, **5-6 percent** in 2024, and **6-6.5 percent** in 2025 (*Figure 1.1.1*).

In this regard, ensuring economic growth close to its potential in the coming years will largely depend on the **logical completion of structural reforms**, a significant improvement in the investment and competitive environment, reducing the role of the state in the economy, **increasing the share** of financing through **private and foreign investment**, as well as **decreasing the scale of the shadow economy**.

In 2023-2024, it is essential to complete the transformation of companies and banks with state shares in major sectors of the economy, to raise capital through IPOs and SPOs, and to switch to market-based pricing of electricity and natural gas on the basis of supply and demand.

The results of these reforms will begin to be reflected in macroeconomic indicators since 2024 and will enhance the quality of economic growth indicators.

Table 1.1.2. Forecasts of macroeconomic indicators under the baseline scenario
(annual percentage)

Indicators	2021 (actual)	2022 (expected)	Baseline scenario forecasts		
			2023	2024	2025
Annual inflation rate	10	12-12.5	8.5-9.5	5-6	5
Real GDP	7.4	5.2-5.8	4.5-5	5-6	6-6.5
Final consumption expenditures	9.7	10-11	5-6	8-9	7-8
- households	11.6	12-14	5-6	9-10	8-9
- government	3.4	2-3	3-4	5-6	4-5
Investment in capital formation	5.2	5-6	9-10	12-13	10-11
- centralized investment	-3.6	-(10-15)	1-2	9-10	6-7
- non-centralized investment	7.4	10-14	11-12	14-15	11-12
of which: foreign direct investment	-3.4	5-6	20-30	20-25	10-15
Overall fiscal balance (% of GDP)	-5.8	-(4-4.5)	-(3-3.5)	-(2-2.5)	-2
Exports (without gold)	34.1	20-25	13-17	10-12	9-10
Imports	20.3	17-20	14-15	12-14	8-10
Outstanding loans to economy	18.4	17-19	15-16	16-17	14-15

Source: Central Bank calculations

Given that in 2023 the **inertial effects of fiscal stimulus** implemented in previous years **will fade**, along with the limited public resources and fiscal consolidation, the most important measure to be taken in order ensure economic growth in real terms is **stimulating private sector investment**.

The reduction of the value-added tax rate to 12 percent from January 1, 2023, in the absence of disruption in the VAT chain, is considered a factor further increasing the activity of enterprises and slowing the consumer price increases.

Under the baseline scenario, real growth in **final consumption expenditures** is projected at about **5-6 percent** in 2023 and about **7-9 percent** from 2024 to 2025, which will serve to positive formation of aggregate demand in the economy.

Another significant component of gross demand **investment in capital formation** is projected to grow by **9-10 percent** in 2023, **12-13 percent** in 2024, and **10-11 percent** in 2025.

Measures to develop the capital market with increased investment in

fixed assets create the preconditions necessary for the effective reallocation of financial resources in the economy.

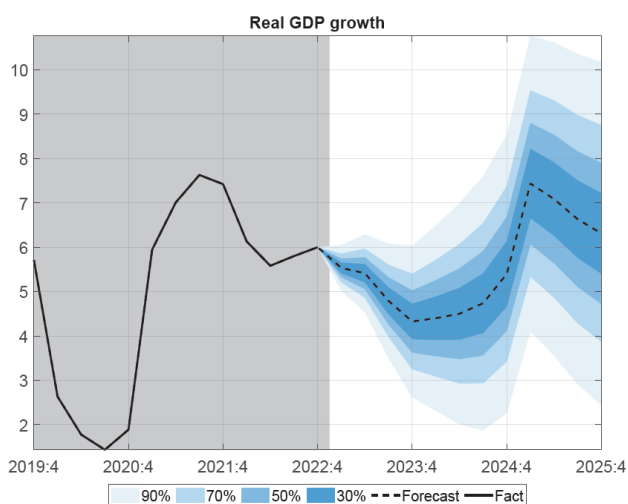
In addition, "positive" real interest rate formation in the economy is important for attracting domestic sources, in particular individual and enterprise funds on time deposits of commercial banks, and their subsequent channeling into the real sector in the form of long-term investment resources.

In the second half of 2024, the **output gap** will be significantly reduced, and economic growth will be close to its potential.

The consolidated budget deficit amounted to **5.6 percent of GDP** in 2021 due to the large fiscal stimulus to support the economy initiated during the pandemic and continued this year, and is expected to be equal to **4-4.5 percent in 2022**.

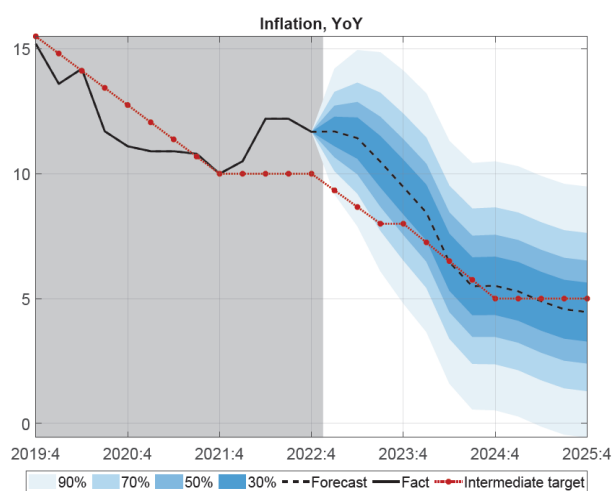
Maintaining macroeconomic stability and ensuring balanced growth of aggregate demand and aggregate supply requires implementing **fiscal consolidation** from 2023.

Figure 1.1.1. Real GDP forecast under the baseline scenario



Source: Central Bank forecasts

Figure 1.1.2. Inflation forecast under the baseline scenario



To this end, the budget deficit-to-GDP ratio is expected to be equal **to 3-3.5 percent** in 2023, **to 2-2.5 percent** in 2024 and **to around 2 percent** in 2025.

The provision of loans (in mortgages and agriculture) under government programmes, which despite not being part of the consolidated budget deficit, serve as a financial resource for the economy, is expected to be around **1 -1.5 percent** of GDP in 2023.

In the coming years, the transition to a phase of **counter-cyclical fiscal policy**, a reduction in the dependence of budget revenues on external markets and commodity sales, the introduction of **"fiscal rules"**, the collection of funds from privatization and a critical review of the effectiveness of projects financed through external debt, will have an important role **in coordinating fiscal and monetary policy**.

One of the conditions of the baseline scenario is that from 2023 the regulated

prices will be gradually adjusted to market prices.

According to the **baseline scenario**, **inflation** is projected to decrease to **8.5-9.5 percent** by the end of 2023 (*Figure 1.1.2*).

Given the above-mentioned developments in the external and internal economy, the factors determining the dynamics of aggregate demand and supply, and inflation expectations, **the basis for achieving the inflation target of 5 percent in the second half of 2024 is being formed**.

Monetary policy

In the next few years when implementing monetary policy the Central Bank will focus on ensuring **price and financial stability in the economy**. In determining monetary conditions, the Central Bank will primarily be guided by inflation forecasts and inflation expectations.

According to the terms of the baseline scenario

Inflation rate

In 2023, inflation is projected at **8.5-9.5 percent**. By the end of 2024, inflation will **decrease** to the **5 percent** target

Monetary policy measures

Monetary conditions

Taking into account the inflationary pressures in the economy, monetary conditions will remain at a **"relatively tight"** level throughout 2023 and will be shifted to the **"neutral"** phase in the second half of 2024, when the foundation for achieving the inflation target occur.

Interest rates on the money market

The **UZONIA rate** in real terms will be at **3-4 percent** in 2023 and at **1-2 percent** from the second half of 2024

Given the persistence of inflationary pressures and pass-through effects of the external environment, monetary conditions will be kept at a "**relatively tight**" level in 2023.

As strong grounds of achieving the 5 percent inflation target and formation of inflation within the target permanently occur, monetary conditions may be switched to a "**neutral**" phase since the second half of 2024.

UZONIA, the interest rate in the interbank money market will be ensured within **3-4** percent in real terms (*based on the inflation forecast for the next six months*) in 2023 by applying a set of monetary policy tools.

In 2024-2025, as monetary conditions move into a "**neutral**" phase, the ground will be created for **UZONIA** to form at a positive **1-2 percent** rate.

Prerequisites for effective monetary policy

In the coming years, the issue of improving the effectiveness of monetary policy will be closely linked to the following measures being implemented in various sectors of the economy.

Guidelines on development of the competitive environment in consumer markets:

conducting an inventory of decisions and decrees and mechanisms developed to support business entities in cooperation with **international consulting companies** and abolishing norms **contradicting market mechanisms and competitive environment;**

reducing tariff and non-tariff restrictions **on import of consumer goods**, further liberalizing this sector, ending the monopoly in foreign trade in consumer and investment goods, increasing the number

of importers, expanding the geography of imports and developing new alternative destinations

attracting the private sector to the railway and air **transport industry**, reducing the impact of transportation costs by creating conditions for free competition in the market for transportation services;

ensuring **transparency of pricing mechanisms** for goods and services of **monopolistic enterprises;**

accelerating the process of joining the world trade organization and taking steps to become an important part of regional transport corridors.

Reducing the shadow economy

Defining strategic guidelines for reducing the shadow economy in our country and, with the involvement of all concerned ministries and agencies, implementing measures in the following areas:

creating a fair market opportunity and a healthy competitive environment for all market agents by conducting a full critical review and **abolishing exemptions** granted to certain enterprises or industries in 2023-2024;

developing and implementing a unified information system for the movement of imported goods in order to fully ensure that the **wholesale of imported goods** in the domestic market is conducted only **in the form of non-cash payment** and control over it;

ensuring imminent punishment in cases of **tax evasion**, making the formal economy more profitable than the shadow economy, removing obstacles in this regard, increasing awareness via all media channels;

introducing **income taxation of individuals** regarding the money

transferred by legal entities **as financial aid and loans** to the bank accounts of individuals. Exclusion of these revenues from the tax base in case of full repayment of funds;

strengthening the control and implementation of **early detection indicators** of suspicious customers and transactions as part of the system for combating money laundering and financing of terrorism.

Acceleration of transformation and privatization processes in the banking system

In 2023 the process of privatization of large banks with a high state share will be **logically completed**, in particular the shares of Qishloq Qurilish Bank, Xalq Bank, Mikrocreditbank, Aloqa Bank, Agro Bank and Milliy Bank will be placed on the **IPO** and the transformation processes in **Asaka Bank** will be intensified in cooperation with the European Bank of Reconstruction and Development;

Starting from 2023 taking measures for gradual abolition of **preferential lending** (loans in interest rate below the market) and **directive lending** (loans determined by local and state authorities), which have

a negative impact on the competitive environment and cause inefficient distribution of financial resources to stimulate economic activity;

60 percent of loans allocated by the banking system correspond to the share of loans granted on a directive manner, and due to this the share of non-performing loans in the loan portfolio of commercial banks remains at a high level.

It is important to carry out appropriate practical work based on international experience to improve the work initiated to create a **competitive market of banking services** and ensure a fair market for all participants.

The successful completion of the transformation and privatisation of state-owned banks will significantly reduce the need **to invest** from the state budget into **the capital of banks** in the coming years. The functioning of the banking system will be ensured on the basis of market relations, the capital of banks will be increased through foreign investment and funds from private investors, and the effective distribution of cash flows in the economy will allow for the expansion of lending to prospective projects.

Basic principles of monetary policy

In the international community, central banks base their monetary policy on principles, generally accepted methods, and criteria within the framework of the chosen regime. The inflation targeting mechanism is based on the following monetary policy principles.

An inflation target is set and all monetary policy measures are aimed at achieving this target level.

The inflation target rate is set based on the potential of the economy, changes in demand and supply, macroeconomic forecasts and generally accepted standards.

The current inflation target in our country is set at **5 percent**. The Central Bank also explains the conditions and factors for achieving this objective. Trends in the economy and the external environment indicate that the target will be reached **in the second half of 2024**.

Decisions and measures with tools are based on comprehensive macroeconomic analysis and forecasts.

Central bank decisions on the policy rate impact economic activity and aggregate demand gradually, **with a time lag**. The central bank, therefore, bases its monetary policy decisions on comprehensive **macroeconomic analysis and forecasts, inflation expectations and projections**.

It is worth noting that decisions on the policy rate are taken **under some uncertainty**. The reason is that macroeconomic forecasts are based on possible prospects for economic development, expected changes in global commodity and financial markets, and other factors. Therefore, the Central Bank decides on the monetary policy direction based on the relatively stable dynamics of the factors and their **impact on the inflation rate**.

The Central Bank's policy rate is the main instrument of monetary policy.

The policy rate of the Central Bank is the target interest rate used in transactions with banks to regulate the liquidity of the banking system. The Central Bank determines the **price of short-term resources** absorbed and provided by setting the level of the policy rate.

The Central Bank's Board meeting to revise the policy rate is held **8 times a year** on the basis of a predetermined schedule in the Monetary Policy Guidelines (*see the schedule of Board meetings for 2023 in Appendix 1*).

The operational framework of monetary policy is developed independently and improved based on international experience.

The operational framework of the monetary policy functions on the basis of the policy **rate and the interest rate corridor** of the Central Bank. Through the operational mechanism, the decisions of the Central Bank are transmitted first to the interbank money market and then to the interest rates of deposits and loans in the economy.

As a result, the economic decisions made by the population and business entities based on their expectations on consumption, savings and investment impact on the inflation rate through aggregate demand.

Changes in the monetary sector are transparent and explained in detail.

One of the main elements of the inflation targeting regime is the openness of decisions on the monetary policy and ensuring transparency in this regard. Developing an **effective communication policy** and timely communicating monetary policy decisions to the general public in an understandable language has great importance in the formation of **inflation expectations** of the population and business entities.

Ensuring a stable low inflation in the economy is necessary to improve the welfare of the population, support business activity, and create favorable business environment. In this

regard, the stable low level and predictability of inflation is crucial for both the population and business entities in making economic decisions.

Firstly, in conditions of low inflation, the **purchasing power** of the national currency and, thereby of incomes of the population is maintained at a stable level. As a result, decision-making on consumption or saving is easier for the population, and a balance between aggregate demand and gross savings is achieved in the economy.

Secondly, the long-term low inflation creates **favorable business environment** for entrepreneurs and allows to make investment decisions and implement medium-term planning for the expansion of production.

Thirdly, stable low inflation environment provides favorable conditions for economic growth, has a positive effect on macroeconomic stability, and stimulates investments, **including foreign direct investments** in the economy.

Moreover, low inflation serves as a guarantee of stable maintenance of the value of funds invested in the economy and income from them. On the contrary, high inflation and macroeconomic uncertainties lead to a reduction of investment inflows and a loss of investor confidence. Along with foreign investments employing advanced foreign experience in economic sectors **contributes not only to economic growth, but also economic efficiency**.

1.2. Alternative scenario of macroeconomic development and monetary policy

The formation of a macroeconomic situation different from the expectations and forecasts presented in the baseline scenario, as well as the occurrence of unforeseen circumstances and shocks and the increase in external risks are the factors determining the conditions of the **alternative (risky) scenario**.

External economic environment

Uncertainty in the world energy market, escalation of the crisis situation between Russia and Ukraine, strengthening of financial and economic sanctions and tightening of monetary policy by most central banks have a negative impact on the confidence of investors and producers on the economic recovery.

This, in turn, may lead to a shift to a more **cautious approach** in decisions on future investment and consumption, a reduction in global demand, a higher likelihood of recession in the global economy, and a slowdown in economic growth.

In particular, according to the **alternative scenario** of the International Monetary Fund², the growth of the world economy in 2023 is projected to be **1.5 percentage points** lower than in the baseline scenario and amount to about **1.2 percent**. In the World Bank's³ alternative scenario, the world economy is expected to grow **by 1.5 percent** in 2023, **1.5 percentage points** lower than in the baseline scenario.

The slowdown in global economic activity and aggregate demand will further disrupt supply chains and slow **global**

mobility over the coming year. This, in turn, may lead to a decline in global commodity, particularly oil prices.

Under the **alternative scenario**, **oil prices** are projected to fall to **50-60 dollars per barrel** in 2023. In subsequent years, oil prices may tend to rise if aggregate demand recovers.

The **exchange rates of major trading partners** may significantly **depreciate** due to recessionary expectations, declining oil prices, and other negative factors. This, in turn, may cause the real effective exchange rate to deviate from the trend and put pressure on the exchange rate of soum.

Lower incomes compared to the baseline scenario may negatively affect the dynamics of demand and contribute to an even more considerable decline in world prices of basic foodstuffs. In this condition, the **FAO index may decrease to 100-120 points** in 2023-2024. Despite being a factor reducing imported inflation lower food prices on foreign markets may not affect the prices of imported products on our domestic market due to possible pressure on the exchange rate.

Crisis situations in partner economies, which account for the largest share of cross-border remittances to Uzbekistan, and currency depreciation will have a significant impact on inflows of remittances and may result in a decline of **20-30 percent** in 2023. The rapid decline will also be partly due to a high base effect, that is, a large growth in remittances in

² *World Economic Outlook, IMF, October 2022*

³ *Economic Forecasts. World Bank, June 2022.*

2022. From 2024, the remittance growth rate will start to recover at **5-6 percent**.

In the global economy, declining investor confidence in the future, lower total revenues and the attraction of liquidity in the financial markets through securities and other instruments will cause **a reduction of the demand for gold**. In this context, the role of gold as a safe asset is expected to decrease and, its price is estimated to fall to **1,500-1,600 dollars** per ounce in 2023. However, in case central banks of developed countries restart easing monetary policy, the price may go up.

Also, a lower external demand compared to 2022 will cause the price of copper, other non-ferrous and ferrous metals to continue downward trend in 2023.

In 2023, under the alternative scenario, the amount of direct investment inflows into our country will be close to that of the current year, with no growth rate.

Moreover, under the alternative scenario, there may be grounds for a gradual transition of foreign central bank monetary conditions from a tight to **a neutral phase** from 2024 onwards.

In case of unfavorable external conjuncture, the growth of **export** volume in 2023 may be close to that of the current year, around 5-7 percent. With recovering external demand and prices, the volume of exports is projected to grow by **7-10 percent** annually in 2024-2025.

A slight slowdown in economic activity and a decline in consumer demand stimulated by currency inflows will cause **imports** to increase by **8-10 percent** in 2023. In addition, imports are expected to increase by **8-9 percent** in 2024 and by 10-11 percent in 2025.

Under the alternative scenario, the **current account deficit** in the balance of payments may expand more than in the baseline scenario to **7-9 percent** of GDP.

Internal economic environment

In the alternative scenario, the main determinants of domestic economic conditions are the pass-through effects of the external situation.

In 2023, if most of the conditions of this scenario simultaneously occur, real GDP growth is estimated to be around **3-3.5 percent** (*1-1.5 percentage points lower than in the baseline scenario*). However, real growth rates may be relatively higher if some of the risks assumed in the alternative scenario are not realized.

The level of uncertainty regarding the duration of risks is quite high. If economic activity and aggregate demand recover since 2024, real economic growth is estimated at **4-4.5 percent** in 2024 and **4-5 percent** in 2025 (*Figure 1.2.1*).

Under this scenario, the consumer demand in the economy is expected to be weaker compared to the baseline scenario. Particularly, real growth of final consumption is projected to amount to **2-3 percent** in 2023, **5-6 percent** in 2024, and **6-7 percent** in 2025.

There will be also a slowing trend in investment demand, and the growth of investment in fixed assets is projected at **3-4 percent** in 2023 and **6-8 percent** in 2024-2025.

A decline in regional attractiveness due to an escalation of external risks and geopolitical tensions in the major trading partners will have an adverse impact on the inflow of foreign investments to our country, and the volume of direct investments in 2023 will be lower than in 2022.

Table 1.2.1. Macroeconomic forecasts under the alternative scenario
(annual percentage)

Indicators	2021 (actual)	2022 (expected)	Alternative scenario forecasts		
			2023	2024	2025
Annual inflation rate	10	12-12.5	7-8	6-7	5-6
Real GDP	7.4	5.2-5.8	3-3.5	4-4.5	4-5
Final consumption expenditures	9.7	10-11	2-3	5-6	6-7
- households	11.6	12-14	2-2.5	6-7	6-7
- government	3.4	2-3	5-6	4-5	4-5
Investments in capital formation	5.2	5-6	3-4	7-8	6-7
- centralized investment	-3.6	-(10-15)	7-8	7-8	7-8
- non-centralized investment	7.4	10-14	2-3	6-7	5-6
of which, foreign direct investment	-3.4	5-6	-(15-25)	5-15	30-35
Overall fiscal balance (% of GDP)	-5.8	-(4-4.5)	-(4-4.5)	-(3.5-4)	-3
Exports (without gold)	34.1	20-25	5-7	7-9	9-10
Imports	20.3	17-20	8-10	8-9	10-11
Outstanding loans to economy	18.4	17-19	10-12	12-14	14-15

Source: Central Bank calculations

Under the alternative scenario, fiscal stimulus is expected to continue in 2023 supporting economic activity in our country. In this case, fiscal consolidation will be postponed to the following years.

The overall fiscal deficit to GDP ratio may be around **4-4.5 percent** in 2023, **3.5-4 percent** in 2024, and about **3 percent** in 2025.

Geopolitical tensions in the major trading partners may have a negative impact on labor migration. This, in turn, may affect the labor supply in the domestic market and the dynamics of domestic consumption in different directions.

In 2023, expenditure from the budget for social support to the population may increase significantly. As a result of directing funds that should have been allocated for centralized investment to social protection, the implementation of some structural reforms may be delayed. This situation may also lead to a decrease in the net volume of international reserves.

As for regulated prices, this scenario assumes that **electricity and natural gas prices will be indexed** at the inflation rate in 2023-2025. The transformation of state-owned enterprises will be slower or delayed.

During the forecast period, the negative output gap will remain, and the economic growth will be below the potential level. By the end of 2025, the negative output gap may close.

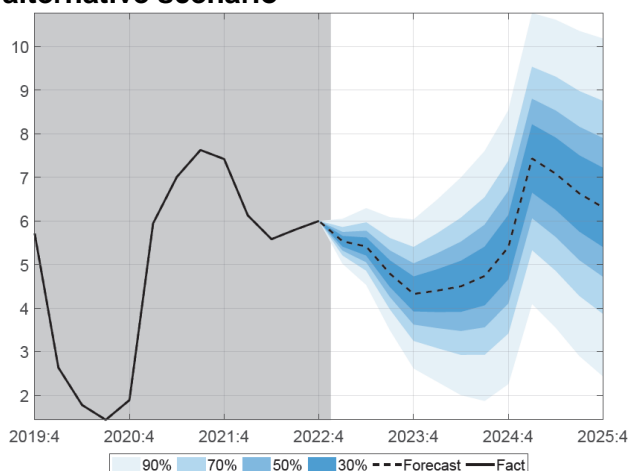
During 2023, weakening aggregate demand and lower pace in regulated prices will have a downward impact on consumer inflation, while fiscal stimulus and exchange rate pressures due to external factors may lead to higher prices.

Given the above factors, the inflation rate in the next year is projected at **7-8 percent** under the alternative scenario.

Although the inflation rate in the alternative scenario is lower in 2023 than in the baseline scenario, the indexation of regulated prices and the impact of exchange rate dynamics may imply that achieving **the 5 percent target** will have to be postponed beyond the second half of 2024.

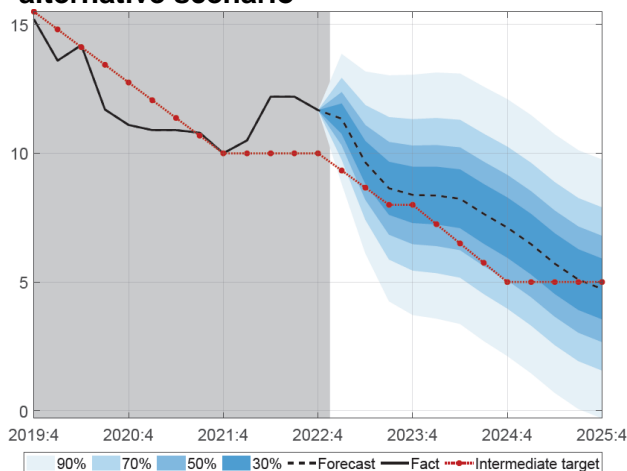
The above factors will cause inflation to be higher than in the baseline scenario at around **6-7 percent** in 2024 and, the inflation target is assumed to be achieved in the first half of 2025 (Figure 1.2.2).

Figure 1.2.1. Real GDP forecast under the alternative scenario



Source: Central Bank forecasts

Figure 1.2.2. Inflation forecast under the alternative scenario



Monetary policy

In the case of an alternative scenario, the Central Bank will keep **"relatively tight" monetary conditions until the end of the forecast period** in order to maintain a balance between price stability and support for economic activity.

In 2023-2025, monetary policy instruments will be actively employed so that the interest rate on the money market

- the UZONIA index - is around **2-3 percent** in real terms.

In order to ensure the continuity of the payment system, the volume of short-term liquidity provision operations (REPO and SWAP) will be increased.

The formation of positive real interest rates on the money market will mitigate **the pressure on the exchange rate** caused by external risks.

Monetary policy measures

Monetary conditions

Monetary conditions will be maintained **"relatively tight"** over the forecast period due to continued external risks, exchange rate pressures, and the longer period to achieve the target

Interest rates on the money market

In 2023-2025, the **UZONIA rate** is expected to be **2-3 percent** in real terms

Core inflation forecasts

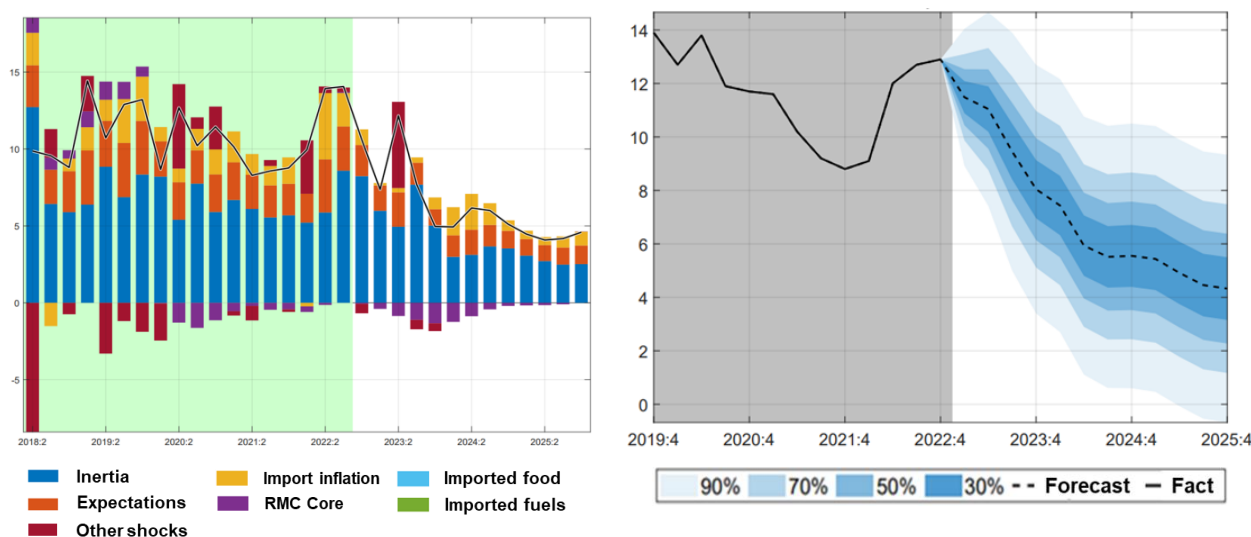
According to the Central Bank's forecasts, due to high inflation expectations and imported inflation, core inflation is expected to reach **12.5-13 percent** by the end of 2022.

According to the **baseline scenario**, **energy price liberalization** and its secondary impacts will put upward pressure on core inflation in second quarter of 2023. The price of **imports** and **real marginal costs**⁴ are expected to decline in the second half of 2023, contributing to a downward shift in core inflation trend (*Figure 2.1*).

The expected decrease in real marginal costs in the economy and imported inflation as a result of the stabilization of inflationary environment in partner countries will help reduce core inflation by 1-1,5 percentage points and 0,8 percentage points, in turn.

Under the baseline scenario, core inflation will start to decline from the second quarter of 2023, reaching approximately **8-9 percent** by the end of the year.

Figure 2.1. Core inflation forecast for 2022-2025 under the baseline scenario (annual percentage)



Source: Central bank calculations

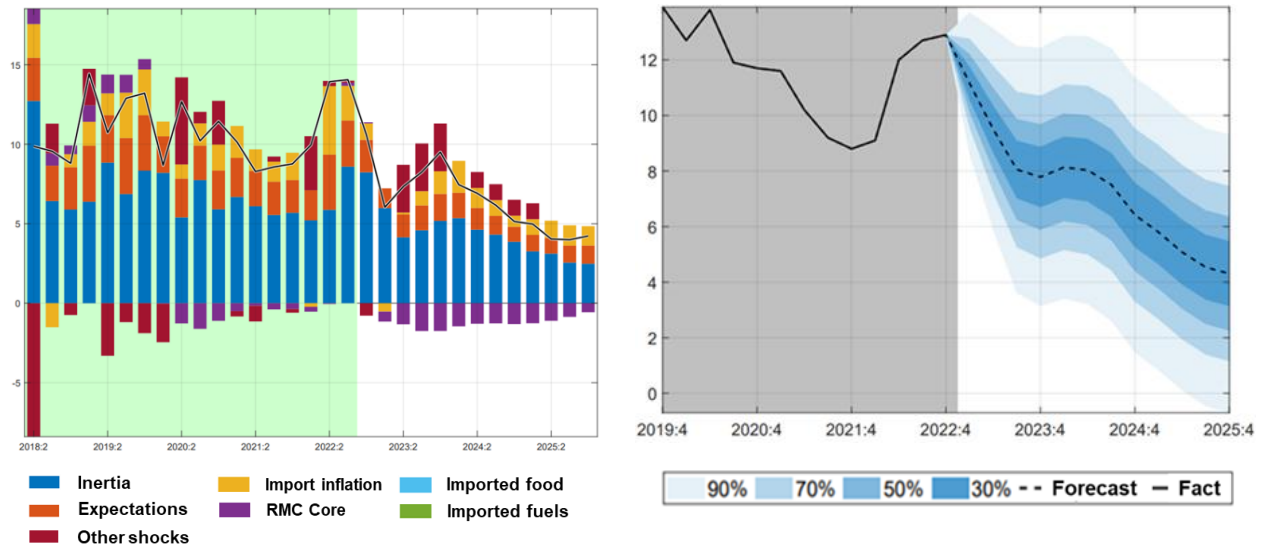
Given the liberalization of regulated prices and their secondary impacts on prices, "**relatively tight**" **monetary conditions** will be kept in the forecast horizon reducing core inflation by **5.5-6 percent** in 2024 and **4-4.5 percent** in 2025.

Under the **alternative scenario**, **core inflation** will start to slow down since the first quarter of 2023, reaching **7.5-8.5 percent** by the end of the year. In this scenario, regulated prices are expected to be indexed at the level of annual headline inflation.

According to the alternative scenario, global economy is expected to slow down amid increasing risks of a global recession. In turn, aggregate demand, as well as, commodity and energy prices will decline resulting in the stabilization of the inflationary environment in partner countries since the third quarter of 2023 (*Figure 2.2*).

According to the forecast, the contribution of **imported inflation** to core inflation will decrease by 0.5-1 percentage points. Also, **real marginal costs** have a declining contribution of about 1.5-2 percentage points.

Figure 2.2. Core inflation forecast for 2022-2025 under the alternative scenario (annual percentage)



Source: Central Bank calculations

Monetary conditions in the global market are estimated to ease since 2024. This will serve the aggregate demand to recover. With increased consumer demand, rising commodity and energy prices may put upward pressure on domestic prices.

In 2024, core inflation is projected to slightly accelerate to **6-7 percent** (0.5-1 percentage point higher than the baseline scenario).

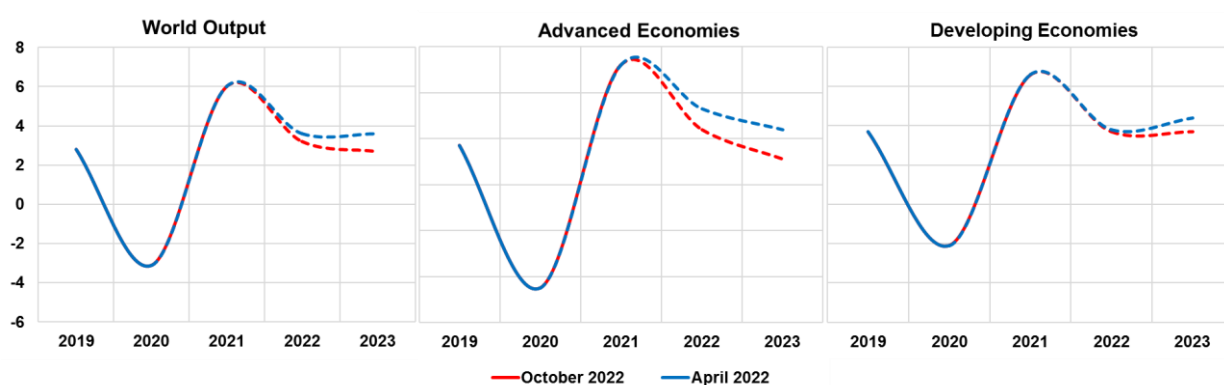
⁴ Real marginal cost is a change in total expenses required to manufacture one additional good.

External economic developments, global inflation and their impact on financial markets and the domestic economy

Current **geopolitical shocks** caused a slowdown in economic activity in the world and an acceleration of producer and consumer prices in most countries. Current external economic conditions are defined by a high level of uncertainty and risks, and the situation in the global economy remains tense. International financial institutions **have significantly lowered** their forecasts for global economic growth for 2022-2024 (*Figure 3.1*).

The slowdown in growth this year is related to the decline in **economic activity** in major economies, particularly **the reduced purchasing power of households** in the US, **quarantine-related restrictions** and the continuing **real estate crisis** in China, as well as increasing uncertainty in the **energy sector** in Europe, that is adversely affecting the economic situation and growth of other developing countries.

Figure 3.1. Global growth projections, (in percent)



Source: *World economic outlook, IMF, July, 2022*

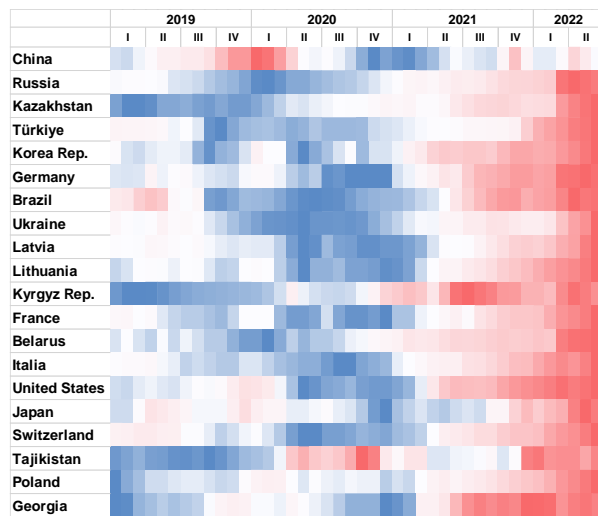
In addition, the global inflation projection has been revised upwards due to rising food and energy prices, a deteriorating situation in some regions of the world and an increasing imbalance between supply and demand. These factors put additional pressure on global price formation (*Figure 3.2*).

Consumer inflation is expected to reach an average of **6.6 percent** in developed countries and **9.5 percent** in developing countries this year.

This year, **central banks** have already begun cycles of raising interest rates to curb inflation (*Figure 3.3*). Strong restrictive monetary policy in developed countries will lead to a tightening of financial conditions. This will, on the one hand, complicate external borrowing for developing countries (*Figure 3.5*) and, on the other hand, lead to an increase in capital inflows to developed countries.

The decisions by the US Federal Reserve and the European Central Bank to **maintain tight monetary conditions** in order to bring inflation to long-term targets may cause **a rapid outflow of capital from the financial markets of emerging countries** (*Figure 3.4*).

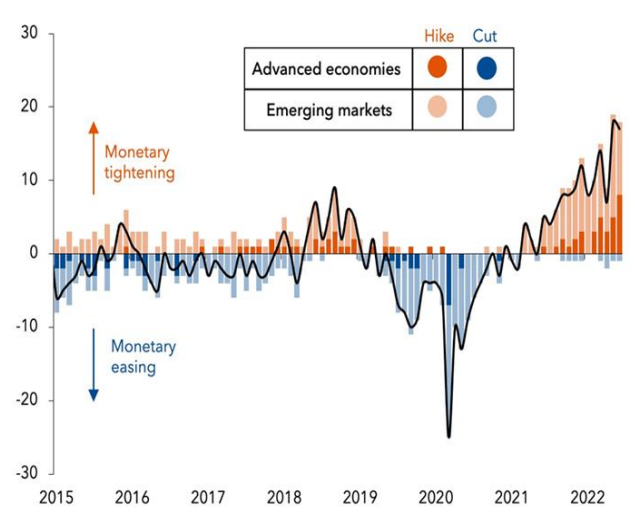
Figure 3.2. Inflation rate in major trading partners*



Source: IMF

*Note: The gradation from blue to red indicates a shift from lower to higher rates of inflation.

Figure 3.3. Number of central banks changing their monetary conditions



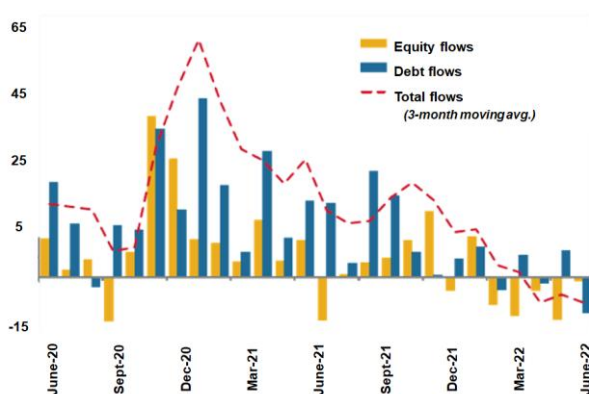
Measures taken to reduce the impact of the coronavirus crisis have prevented an economic crisis and ensured social protection. These circumstances have led to an increased debt burden in most countries. Today, limited fiscal space **complicates debt servicing**.

Also in countries with a high share of imported components in production, imported inflation has a negative impact on domestic prices and especially food security.

As a result, central banks in developing countries have to raise interest rates in response to relatively higher price increases.

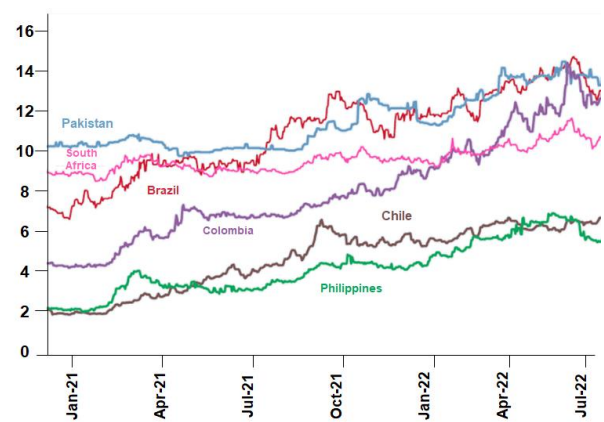
With the aggravation of the external economic environment, there were large fluctuations **in interest rates on Uzbekistan's sovereign bonds** (Figure 3.6). In June-July 2022, **bond yields** rose significantly.

Figure 3.4. Capital flows to emerging countries



Source: UN DESA ("Trading economics")

Figure 3.5. Yields on 10-year government bonds of developing countries



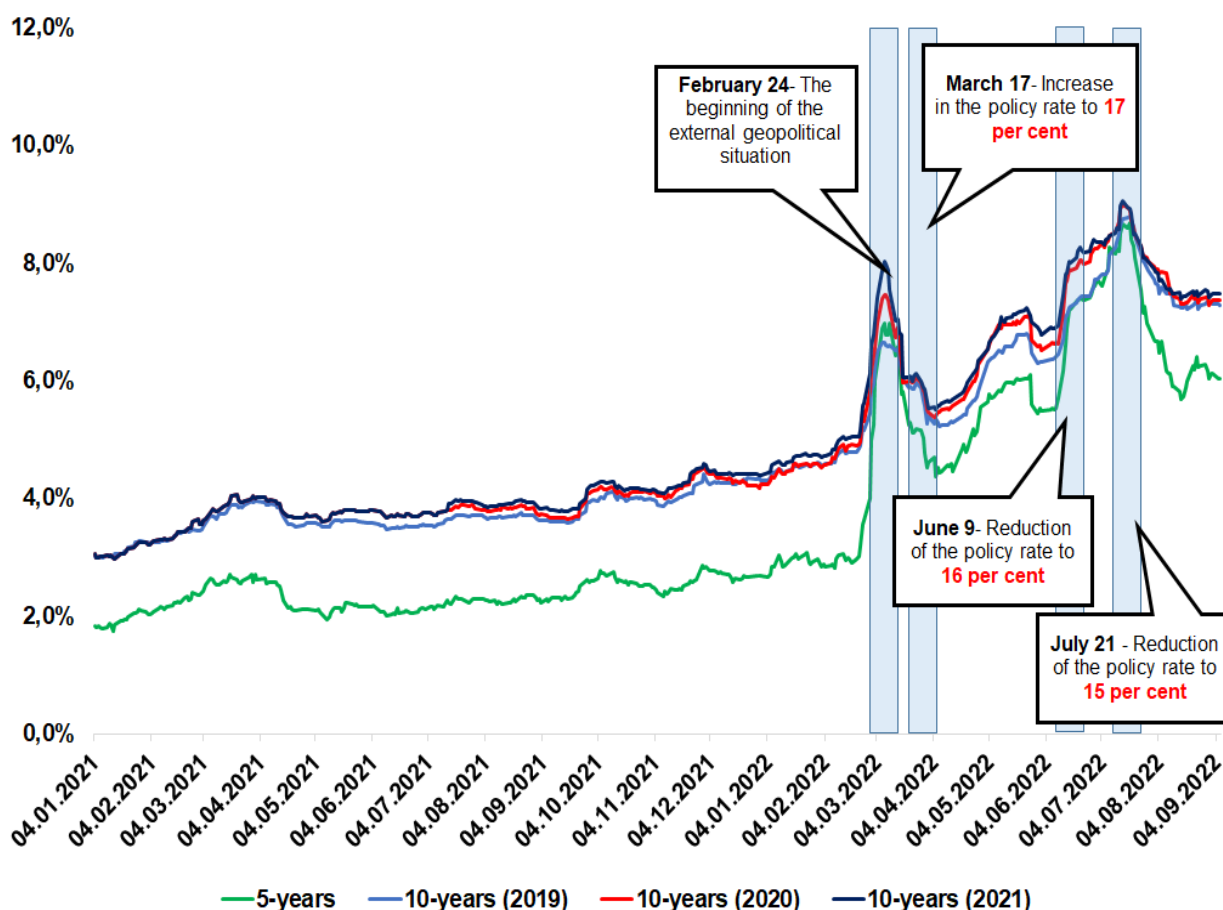
Source: UN DESA ("Trading economics")

Index of external conditions⁵

Foreign economic uncertainty also affects the economy of our country. **The index of external conditions**, reflecting the impact of external channels on the domestic economy, decreased as a result of accelerated global inflation, high volatility in exchange rates, a slowdown in economic activity in the middle of this year, as well as the tightening of global financial conditions (Figure 3.7).

Slowing economic activity in large economies and an acceleration of inflationary processes also adversely affected the economic growth of Uzbekistan’s main trading partners. Amid declining investment and sales in the real estate sector China's economy is expected to grow by 2.8 percent at the end of 2022. Tightening of monetary conditions in Kazakhstan leads to a slowdown and the economic growth is projected to amount to 3 percent, while the Russian economy is expected to fall by 4.5 percent due to sanctions and restrictions.

Figure 3.6. Yields on Eurobonds of the Republic of Uzbekistan



Source: Bloomberg

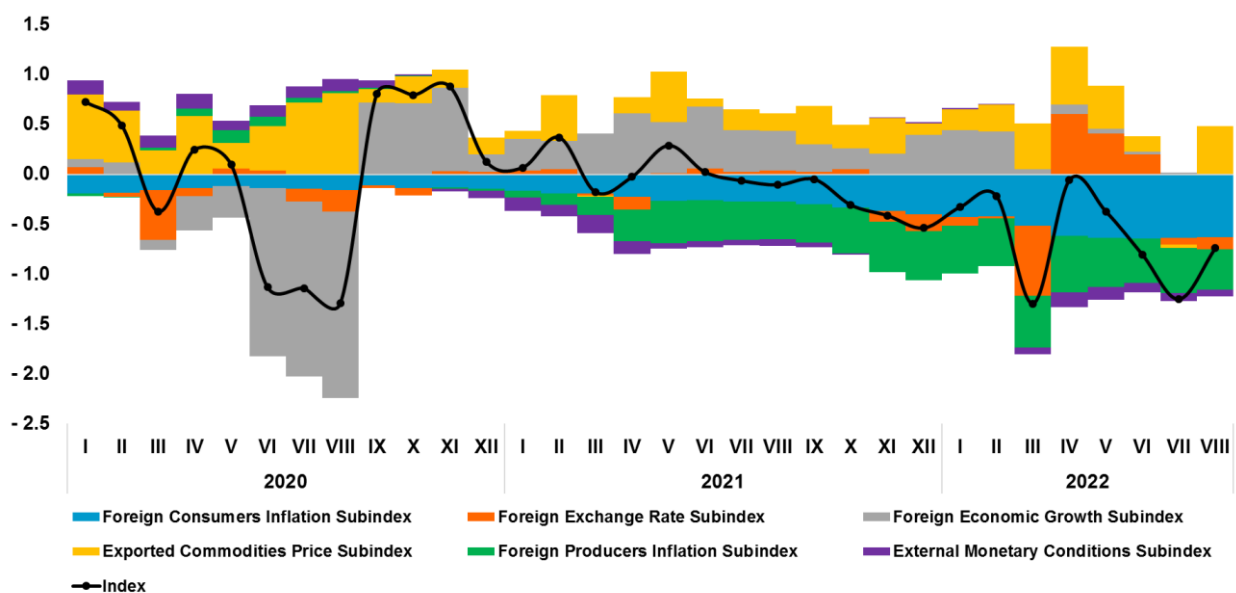
⁵The index of external conditions is an aggregate index that includes various sub-indices (sub-index of external consumer inflation, external economic growth, external production inflation, exchange rate, world prices of export goods, external monetary conditions), weighted on the basis of the shares of major trading partners (Kazakhstan, China, Russia and Türkiye) in foreign trade turnover and normalized by the method of max-min. An indicator above zero indicates favorable external economic conditions and vice versa.

Inflation in almost all trading partners reached historic highs in 2022 (in September, the annual inflation rate amounted to 2.7 percent in China, 17.7 percent in Kazakhstan, 13.7 percent in Russia, and 83.5 percent in Türkiye). The impact of external inflation, in turn, is reflected in the price of imported goods. However, the stable exchange rate of the national currency in the first half of 2022 partially mitigated the negative impact of imported inflation.

Moreover, in the first half of this year, high world prices on goods exported by Uzbekistan (gold, copper, food, fertilizers and textiles) allowed to increase exports and budget revenues. This, in turn, served as a supporting factor for the economy.

Sub-index of external monetary conditions, reflecting changes in policy rates of our trading partners and the United States, indicates a tightening of monetary conditions for our country in international markets. Tight monetary policy implemented by most central banks in order to reduce inflation leads to a decrease in aggregate demand and purchasing power of the population, which may affect exports of goods and services of Uzbekistan.

Figure 3.7. External conditions index



Source: CBU calculations

II. ANALYSIS OF ECONOMIC CONDITIONS AND MONETARY POLICY IN 2022

2.1. Economic development trends in 2022

In 2022, the economic development of our country has been forming in the conditions of high uncertainty and tensions in the world economy, global inflationary risks, tightening of monetary policy in the world, and is more in line with the conditions of the alternative scenario rather than the baseline scenario presented in the Monetary policy guidelines for 2022-2024.

In particular, geopolitical conflict between Russia and Ukraine, which began in late February this year, have led to a sharp increase in food and energy prices in the world.

As a result, the level of inflation in many developed countries rose to its maximum level in the last few decades, exceeding the inflation target of central banks by several times. And central banks, with the objective of ensuring price stability, have been sharply tightening their monetary policies (see Box 2 for details).

With the significant stabilization of the situation related to the pandemic in our country since the beginning of 2022, the

lifting of almost all quarantine restrictions since March has further boosted economic activity.

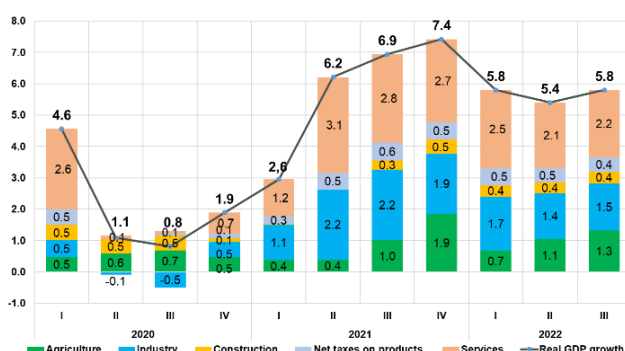
Amid a relative stable impact of external conditions on the domestic economy since May, the level of aggregate demand in the economy has formed at a high level.

Particularly, in the 9 months of 2022, the **real GDP growth** amounted to **5.8 percent** compared to the corresponding period of the previous year.

Meanwhile, a growth of the **industrial output** amounted to 5.3 percent (1.5 p.p. contribution to GDP growth), the volume of **services** rose by 15.4 percent (2.2 p.p.), the **agriculture** and the **construction** increased by 3.6 percent (1.3 p.p.) and 6.3 percent (0.4 p.p.), respectively.

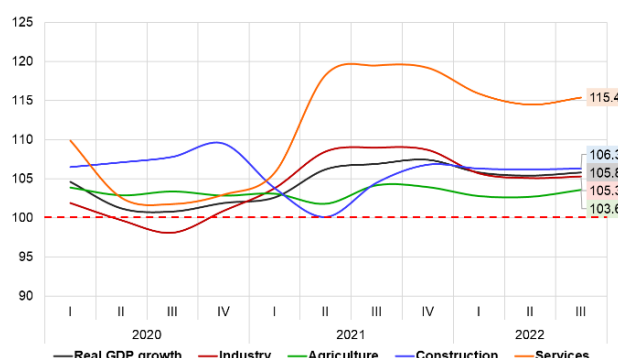
The change in **aggregate demand** was reflected in the increase in receipts from sales and paid services, the volume of retail trade turnover, remittances and export receipts in January-September.

Figure 2.1.1. Real GDP growth (percentage)



Source: State Statistics Committee

Figure 2.1.2. Growth of GDP and its components (cumulative)



Source: State Statistics Committee

In particular, in 9 months of 2022, receipts from sales and paid services rose by **1.3 times** (27.5 percent growth of cash receipts) compared to the corresponding period of the previous year (Figure 2.1.3).

In January-September 2022 the volume of remittances inflow increased significantly by **2.2 times** compared to the corresponding period of the previous year, reaching **12.6 billion USD** (Figure 2.1.4).

The sharp increase in cross-border remittances was due to such factors as the significant appreciation of the Russian ruble against the US dollar, the shift by labour migrants to sending remittances through formal rather than informal channels as a result of currency restrictions in Russia, the increase in small and medium-sized businesses exporting in

cash and the receipt of export revenues through the remittance channel.

In the 9 month of 2022, the volume of retail trade turnover increased by **10.8 percent** compared to the corresponding period of the previous year and reached 214.1 trillion soums in nominal terms.

In this period, the real growth of **investment in fixed assets** amounted 5.0 percent. Particularly, centralized investments (13.7 percent of share in total investments) decreased by **28.1 percent** compared to the corresponding period of last year, while a **13.2 percent** increase in non-centralized investment was a factor supporting investment activity (Figure 2.1.6).

Figure 2.1.3. Cash receipts from sales and paid services

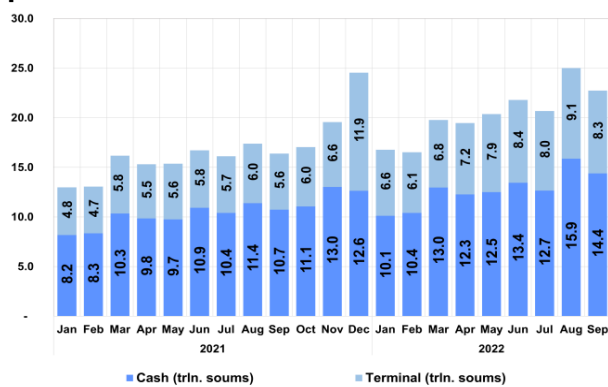


Figure 2.1.4. Cross-border remittances

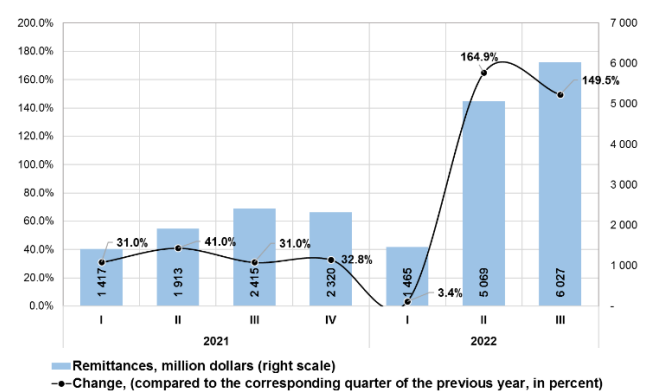


Figure 2.1.5. Volume of retail trade turnover

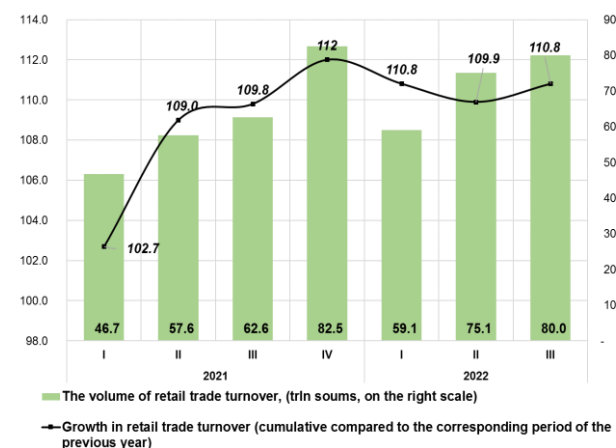
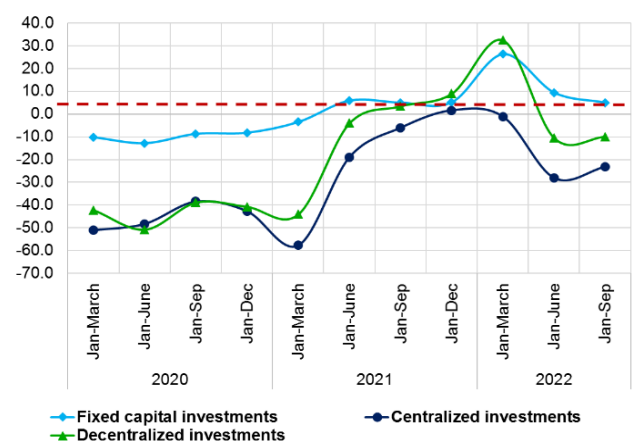


Figure 2.1.6. Growth in investment in fixed assets, in percent



Source: State Statistics Committee

In addition, investment from enterprise funds increased by **31.4 percent** compared to the corresponding period in 2022, while investment from bank loans rose by **30.2 percent** and foreign direct investment **declined by 1.8 percent**.

In the past period of this year, due to the indexation of wages and allowances, there has been a significant increase of **24.9 percent** in the **average monthly wage** in the economy compared to the corresponding period of the previous year, amounting to 3.7 million soums (Figure 2.1.7).

During this period, the **income of the population** increased by **10.7 percent** in **real terms** compared to the corresponding

period of 2021. This, in turn, has an important effect on the growth of aggregate demand.

Meanwhile, the volume of **consumer goods** production increased by 27.0 percent, the production of **food products** and **non-food products** rose by 21.4 percent and 30.3 percent, in turn (Figure 2.1.8).

In January-September 2022, the volume of **exports** reached to **14.1 billion** dollars (11.1 billion dollars excluding gold exports), growing by **35.7 percent** (23.9 percent) compared to the same period last year.

Figure 2.1.7. Dynamics of average wage and unemployment rate

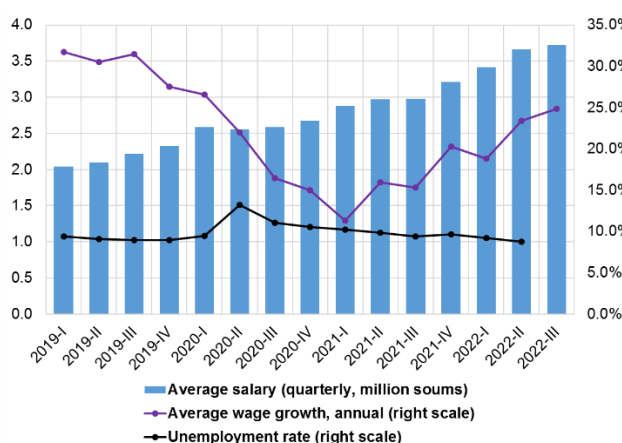


Figure 2.1.8. Consumer goods production, cumulative

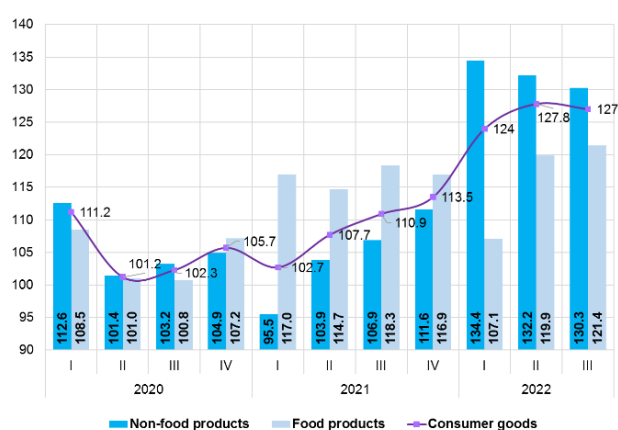


Figure 2.1.9. Exports (million USD)

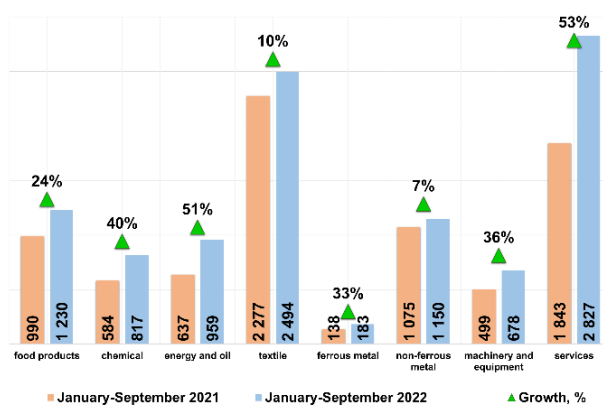
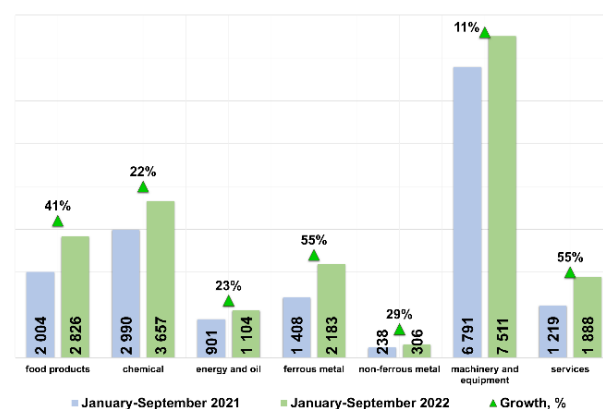


Figure 2.1.10. Imports (million USD)



Source: State Statistics Committee

In particular, the export of **textile** products increased by 10 percent (217 million dollars), the export of **services** and **food products** rose by 53 percent (984 million dollars) and 24 percent (240 million dollars), respectively, that served exports, even excluding gold exports, to be higher than in the corresponding period of the previous year.

Meanwhile, **the volume of imports** amounted to 21.9 billion dollars growing by **22.3 percent** compared to the same period last year. Import of **machinery** and **equipment** increased by 11 percent (719 million dollars), whereas import of **food imports** and **services** rose by 41 percent (823 million dollars) and 55 percent (669 million dollars), respectively.

Long-term projections on economic growth trends and the output gap

Analysis of the long-term trend of economic growth and the GDP gap is essential for decision-making on macroeconomic policy.

The long-term economic growth trend is a measure of the average potential growth of a country's production over a certain long-term period without fluctuation, and is referred to by economists as **potential economic growth** (potential growth).

Potential economic growth is a country's gross output growth in conditions of full employment and long-term enterprise profit maximization. This refers to real economic growth without the effects of price changes. The development of technologies used in production, the increase of capital and labor force are the main factors of the growth of the potential of the economy.

The difference between current economic growth and potential growth rate is referred to as the **output gap** or **GDP gap**.

If current economic growth is higher than the potential growth, the output gap is positive and indicates that the economy is developing above its potential, and prices are forming above **the optimal level**, that causes inflationary pressure in the economy. In contrary, if current economic growth is below the potential growth, a negative GDP gap occurs, indicating that the economy is not using its full potential and has a deflationary effect.

Therefore, an accurate estimate of potential GDP growth and the GDP gap is important for economic decision-making. However, it is not possible to estimate the growth potential with absolute accuracy.

In practice, economists employ various methods for estimating potential GDP growth. Among economists, the **Cobb-Douglas** production function, the labour efficiency function, and methods for estimating potential growth by using various **filters** (Hodrick-Prescott filter, Kalman filter, etc.) are widely applied.

The **long-term potential growth** for our economy, calculated using **Labour efficiency function** based on data for 2017-2022, amounts to **5.7 percent** per annum.

According to Figure 4.2, the output gap was positive in 2018-2019 (putting inflationary pressure), negative in 2020 (lower inflationary pressure) and positive again in 2021 (Figure 4.2).

Figure 4.1. Growth of labor force and its efficiency

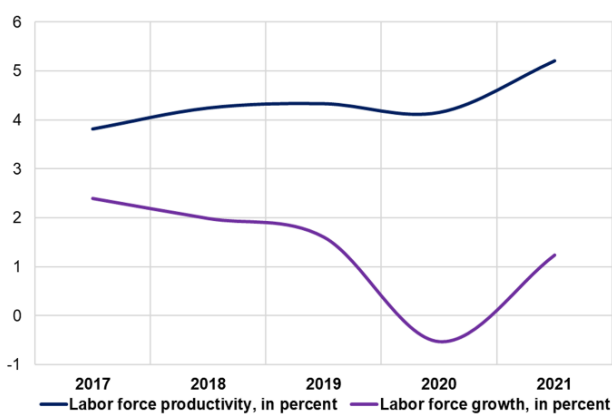
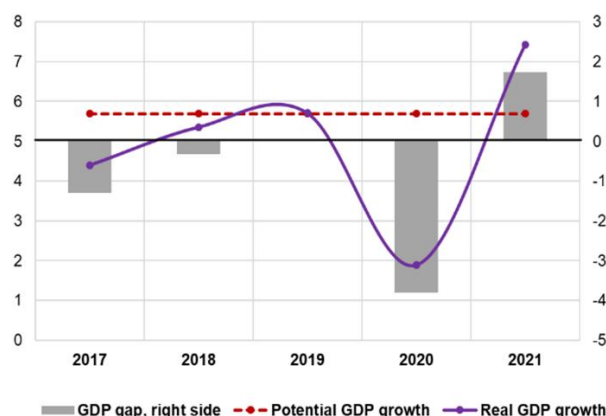


Figure 4.2. Real GDP growth, potential GDP and GDP gap



Source: Central Bank calculations based on data from State Statistics Committee

The long-term trend of GDP potential growth calculated using the **Hodrick-Prescott filter (HP filter)** amounts to **5.0 percent** (Figure 4.3).

Also the Central Bank in the process of medium-term macroeconomic forecasting uses a quarterly projection model (QPM), in which the GDP gap and potential GDP growth are estimated by the **Kalman filter**.

According to the **Kalman filter** results, there was a positive output gap in our economy in 2018-2019 and a negative gap in 2020-2021 due to the adverse impact of the pandemic on economic growth (Figure 4.4).

Figure 4.3. HP filter trend and real GDP growth

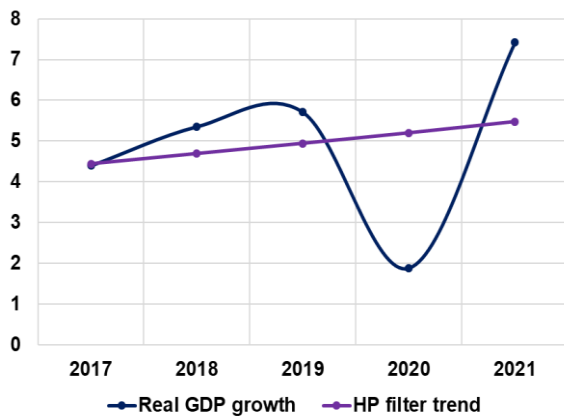
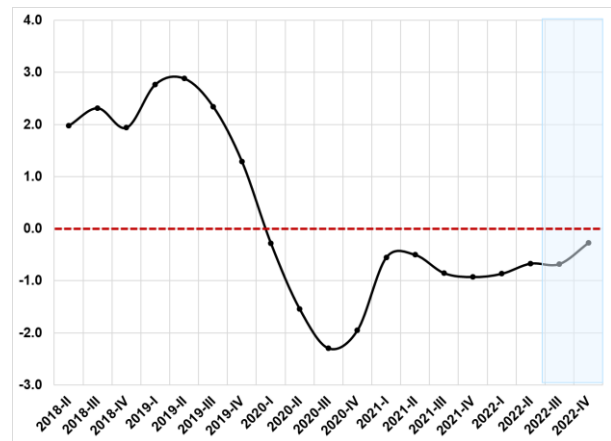


Figure 4.4. GDP gap estimated with Kalman filter



Source: Central Bank calculations

2.2. Analysis of inflation and its factors

In January-September, inflation dynamics were put upward pressure by **external factors** such as fluctuations in prices for goods and raw materials in the world market, disruptions in logistics and delivery (due to a reduction in overall supply), as well as, **internal factors** including a raise of nominal wage, lack of competition in the local market, supply issues and large remittance inflow.

In January-September, a variety of external and internal influences increased cumulative inflation to **8.1 percent** (1.8-2.2 percentage points higher than in the corresponding periods of previous years) and annual inflation to **12.2 percent**.

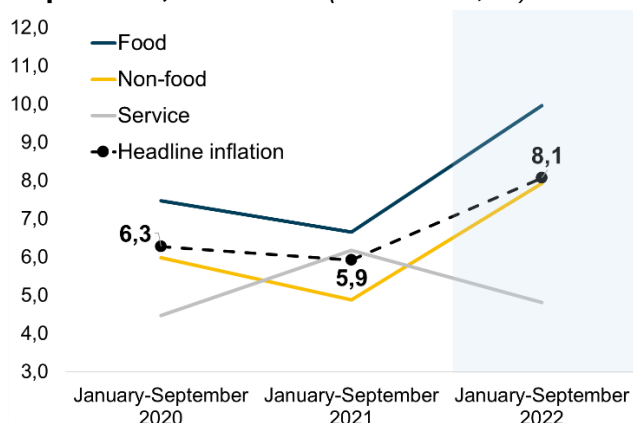
Since April 2022, along with headline inflation, **core**⁶ and **trimmed inflation**⁷ have also begun to show an upward trend.

The inflationary environment in our country became more **broad-based** in the period from April to September.

In particular, during January-April, the weight of goods and services, the price of which increased by more than **10 percent**, amounted to **30-40 percent** in the consumer price index (CPI) basket, whereas, in September, the weight of these of goods and service increased to **55 percent**. Such large shifts were also observed in groups of goods and services, the price of which rose by more than 15 and 20 percent.

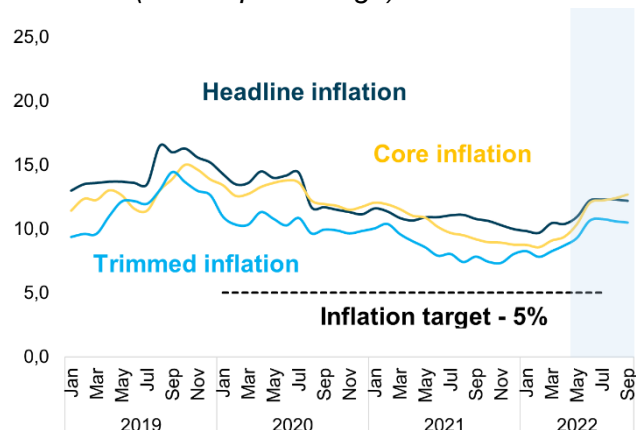
Meanwhile, core inflation started to outpace headline inflation since August, accelerating to **12.7 percent** year-on-year in September. The upward impact of **inflation expectations** on core inflation is estimated to remain high. Moreover, starting from the second quarter this year, the contribution of **imported inflation** on core inflation has been increasing (Figure 2.2.4).

Figure 2.2.1. Inflation dynamics in January-September, 2020-2022 (cumulative, %)



Source: CBU calculations based on data from State Statistics Committee

Figure 2.2.2. Headline, core and trimmed inflation (annual percentage)



⁶ **Core inflation** is calculated by excluding price changes of certain goods and services which have seasonality and are administratively regulated (fruits and vegetables, fuel, transport services, communication, utilities, etc.).

⁷ **Trimmed inflation** is calculated by excluding 10 groups of goods and services with the highest and lowest price changes.

External factors of inflation

Imported inflation accelerated in the first half of 2022.

The share of imported goods in consumer basket is growing. During the first half of 2022, the imported inflation increased due to several factors.

In the first half of 2022, the inflationary environment in partner countries is one of the main factors of imported inflation. In the second quarter, upward pressure of imported inflation on domestic prices amounted to **3.5-3.7 percentage points**. Since the third quarter the imported inflation is expected to gradually decrease (0,7-0,8 percentage points).

According to calculations, the overall upward contribution of imported inflation to core inflation was the highest in the second quarter, amounting to 4.3 percentage points. **In the coming periods**, as supply and logistics problems diminish, global demand becomes more balanced and other external shocks lessen, the impact of imported inflation on domestic prices is expected to gradually subside.

Moreover, the expectations of business entities regarding the pass-through effects of fluctuations in the exchange rate on domestic prices remained high during the first half of 2022 (*Figure 2.2.6*).

Currently a significant inflow of remittances and improving expectations regarding exchange rate serve to balance demand and supply factors, as well as to further stabilize the exchange rate.

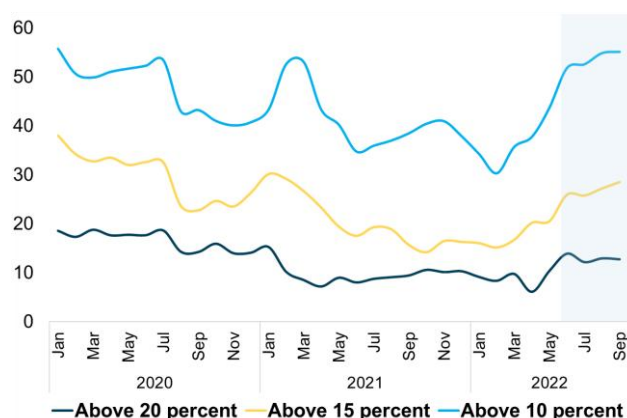
This, in turn, strengthens confidence that the exchange rate will have no pressure on domestic prices in terms of imported inflation until the end of the year.

Disruptions in logistics and delivery

In March, the geopolitical situation in the region and strict quarantine measures in China adversely affected supply factors and limited the delivery of food stuff, non-food products and raw materials.

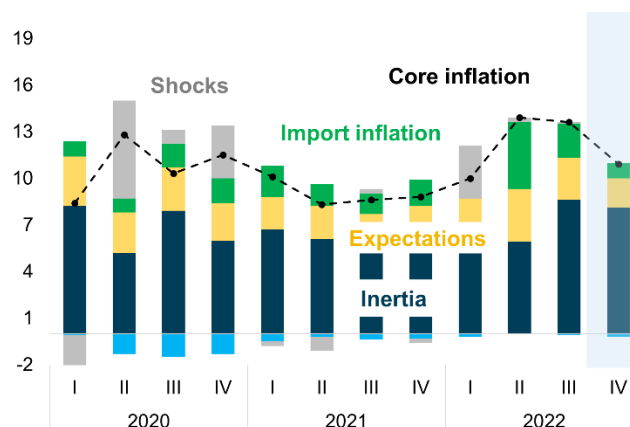
In addition, restrictions on Russian oil and gas had a negative impact on the supply of fuel, that, in turn, caused a significant increase in fuel prices in the world market. Rising energy prices are also reflected in production and transportation costs.

Figure 2.2.3. Weight of goods and services, the price of which increased by more than 10%, 15%, and 20% (share in percent)



Source: Central Bank calculations

Figure 2.2.4. Core inflation and its components (seasonally adjusted, annual percentage)



The majority of businesses surveyed by the Central Bank pointed to raw material shortages and rising fuel prices as factors negatively influencing their activities. This leads businesses to impose higher costs on final prices.

Price changes in the world market

Quantitative restrictions on the export of basic food products (*cereals, vegetable oil, sugar and meat products*) by many exporting countries caused a significant increase in prices in the world market.

Particularly, in March, Russia introduced quantitative restrictions on the export of grain products. In May, India imposed quantitative restrictions on wheat exports. As a result, wheat price in the world market rose to **522 dollars** per ton in March-May (*in January-February, wheat was traded at 370-390 dollars*).

Moreover, restrictions on the export of raw sugar and palm oil (*by India and Indonesia, respectively*) put pressure on world market prices.

Figure 2.2.5. Nominal effective exchange rate (NEER) dynamics (annual percentage)

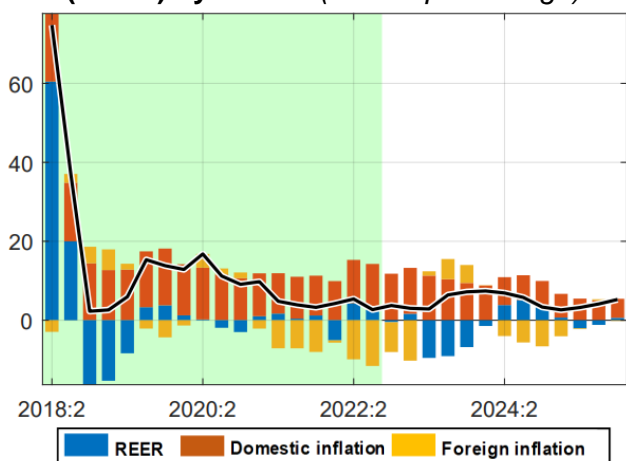
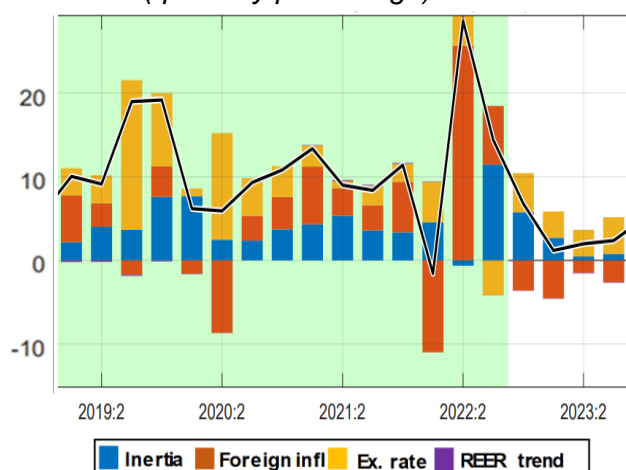
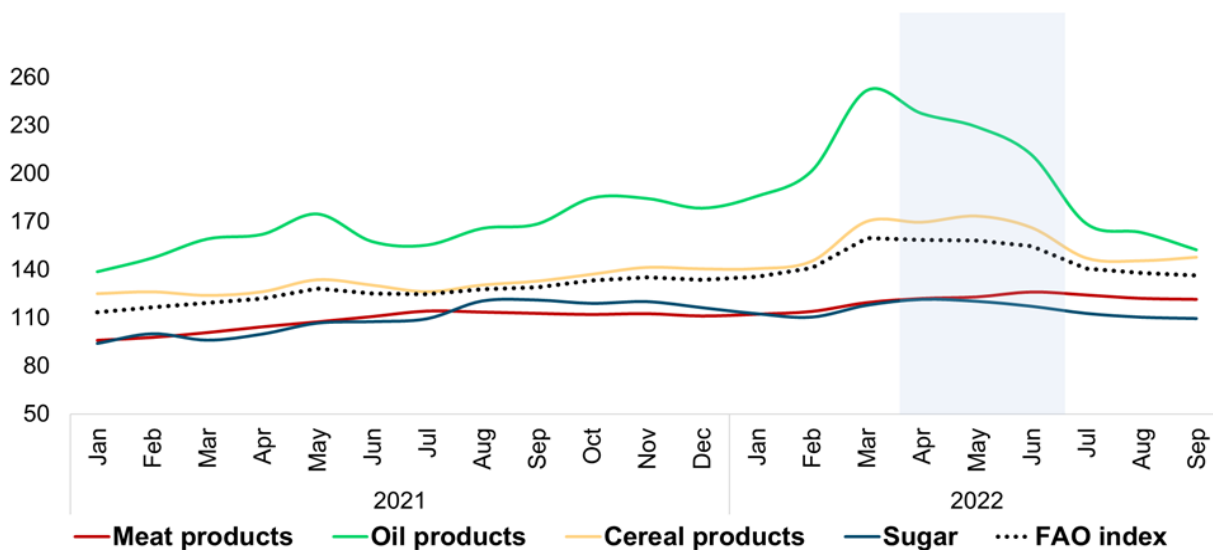


Figure 2.2.6. Components of imported inflation (quarterly percentage)



Source: Central Bank calculations

Figure 2.2.7. Price dynamics of basic consumer products in the world market (2014-2016=100, in percent)



Source: FAO Food Price Index

Rising prices for **wheat, sugar and oil products** in the world market have started to pass through imported inflation to domestic prices in the context of **the less competitive environment** in the domestic market and the absence of new import destinations.

According to the State Statistics Committee, in January-September, **prices for wheat flour and sugar** in the local market increased *(by 40.7 and 53.8 percent, respectively)* by three times higher than the headline inflation.

Internal factors of inflation

Continued real growth of household incomes has supported consumer demand.

Household incomes have been increasing since the second quarter of 2022. During this period, revival of economic activity, nominal wage increase in June, a significant inflow of cross-border remittances compared to the previous period has been major factors of consumer demand.

After the pandemic, the gradual recovery of economic activity and fiscal incentives have formed the basis for an

increase in real household incomes as well as deposits and **liquidity** (bank card funds).

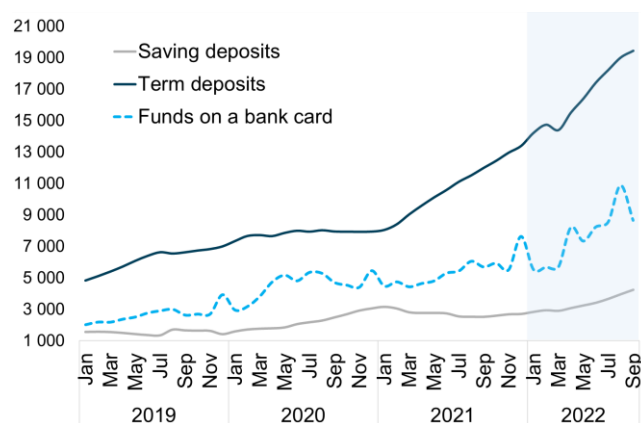
One of the main drivers stimulating consumer demand is **short-term liquid resources of households**. In January-September of 2022, the number of banking transactions, cash volume and terminal receipts were observed to grow at a higher rate than in previous years.

Notably, high consumer demand was also reported in surveys conducted among the population. According to the survey, most respondents indicated that they had increased their expenditure on large purchases, such as housing, furniture, household appliances and cars, as well as on family holidays and travel over the past period.

High inflation expectations of households and business entities put upward pressure on domestic prices.

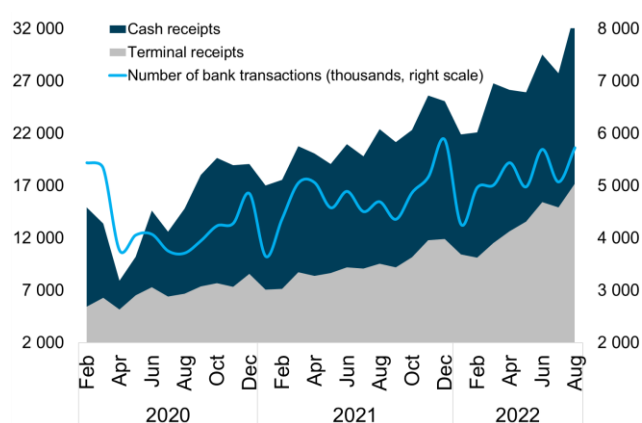
The decline in inflation in the second half of 2020 and throughout 2021 had a positive impact on strengthening the confidence of households and business entities on price stability.

Figure 2.2.8. Saving and term deposits and bank card funds (billion soums)



Source: Central Bank calculations

Figure 2.2.9. Number of cash and terminal receipts and banking transactions (billion soums)



However, since April of this year, the external inflationary environment began to pass into domestic prices with some time lag, which reflected in inflation expectations.

In June, inflation expectations of households and businesses rose to **17-18 percent**, differing from the headline inflation rate by **5-6 percentage points** (Figure 2.2.10).

In the first half of 2022, rising inflation expectations put upward pressure on domestic prices and contributed to an increase in core inflation by **3.4-3.5 percentage points**.

External inflationary pressures are expected to ease in the coming periods. This will serve to stabilize inflation expectations in the medium-term.

Larger than expected fiscal deficit is driving demand side factors.

Initially, the **budget deficit** was expected to decrease to about **3 percent** by the end of 2022. However, an increase

of budget spendings causes the budget deficit to expand to around **4-4.5 percent** of GDP by the end of this year.

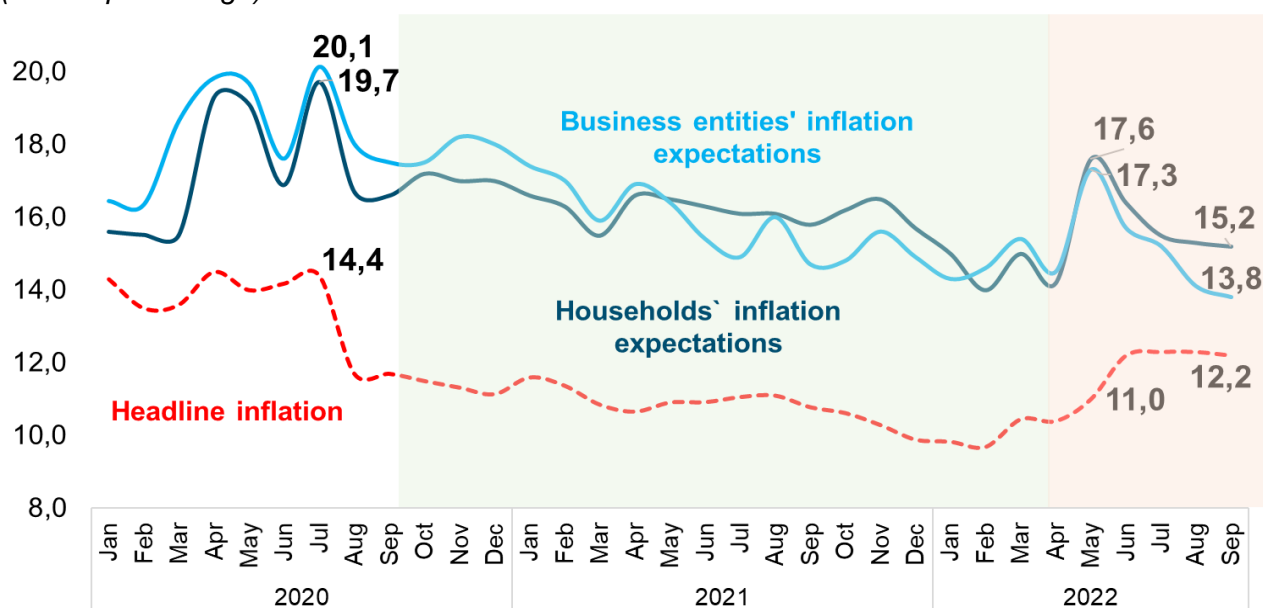
Whilst the increasing effects of previous years' budget deficits have not completely faded away, higher government spending this year will serve as a more stimulating factor for consumer demand (Appendix 2).

Since March, an increase in tourist flows has contributed to an upward trend in consumer demand in some sectors.

In the post-pandemic period, there has been a considerable recovery in the inflow of tourists to our country.

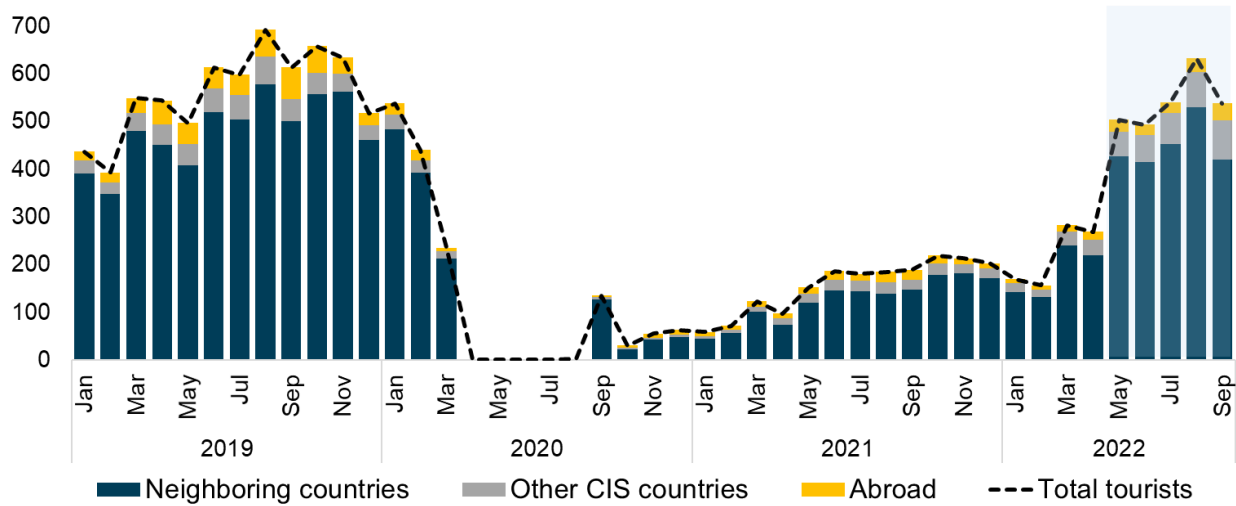
According to official statistics, in January-September, the number of tourists to our country reached **3.6 million** people, increasing by 2.9 times compared to the previous year of the corresponding period (around 1.2 million tourists in January-September 2021).

Figure 2.2.10. Dynamics of inflation expectations of the households and business entities (annual percentage)



Source: Central Bank calculations

Figure 2.2.11. Tourists inflow (thousand people)



Source: Ministry of tourism and cultural heritage

Climate change and its effect on world economy

Extreme weather conditions caused by climate change are constraining economic activity around the world and accelerating inflationary processes.

Unfavorable weather conditions have led to the destruction of crops and lower harvests, disruptions in energy supply and transportation. In turn, a decrease in production and aggregate supply due to bad weather conditions causes prices to rise.

This year, the world's largest economies such as the United States of America, the European Union and certain parts of China have been experiencing extreme drought.

European Union. Low rainfall and high temperatures in Europe (*Figure 5.1*) have had a detrimental effect on agriculture. In particular, grain and feed crops for cattle have declined, leading to a reduction in herds and an increase in the price of meat and dairy products (*Figure 5.2*). Particularly, in the first seven months of this year there was price increase by 10.7 percent for meat, by 14 percent for milk, cheese and eggs (*for comparison, in 2021 prices for those products rose by 2.9 percent and 3.1 percent respectively*), while the largest increase was in May (when drought began in the region).

In addition, shallowing of European rivers and a significant reduction in the generation of electricity needed for industrial production had an adverse impact on economic activity, the energy sector and a secondary effect on prices.

China. In August this year, most large factories in Chinese Sichuan province (*the world's largest producer and supplier region of semiconductors, lithium, and batteries for electric vehicles*) were closed due to extreme heat in the country. Hydropower generation in August halved from 900 million kWh per day to 440 million kWh.

Extreme weather conditions put considerable pressure on the country's power system and its partial shutdown contributed to reducing the stressful economic situation.

Meanwhile, a shortage of hydropower capacity is forcing the country to use more coal to meet electricity demand for the coming winter. This becomes one of the major reasons for the increase in demand and prices for coal (*along with the increased use of coal in Europe*) (*Figure 5.3*).

Figure 5.1. Drought level in Europe
(end of July 2022)

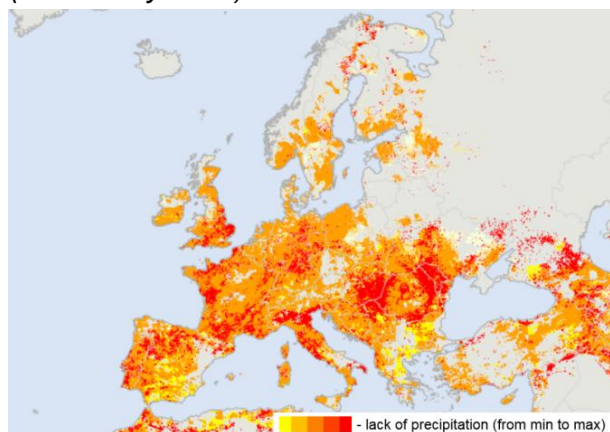


Figure 5.2. Changes in meat and dairy prices in Europe
(2020=100)

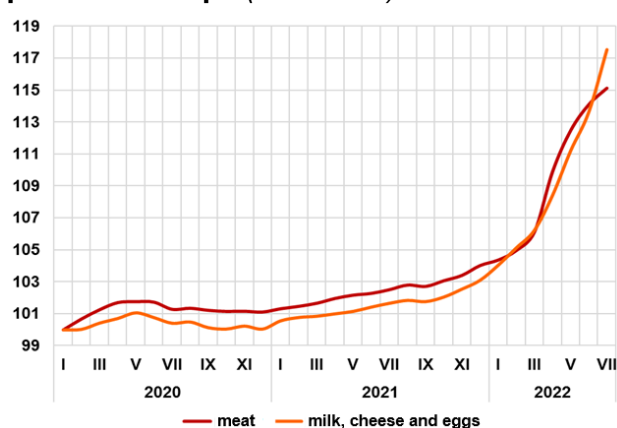
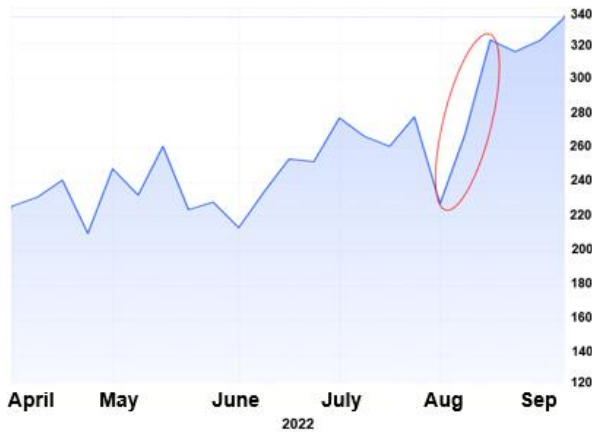


Figure 5.3. Coal price
(US dollars per ton)



Source: tradingview.com

Figure 5.4. Cotton price
(US dollars per kg)



Source: World Bank

United States. According to the American Farm Bureau Federation, in US the vast areas of cotton cultivation, 80 percent wheat-growing territories, and 75 percent of areas sown by farms producing meat have been suffering from severe drought this year. Twice in 2022 (in March and August) cotton prices rose significantly amid reports of an extreme heat wave (Figure 5.4). In addition, prices of wheat and cattle futures contracts also increased (Figures 5.5 and 5.6).

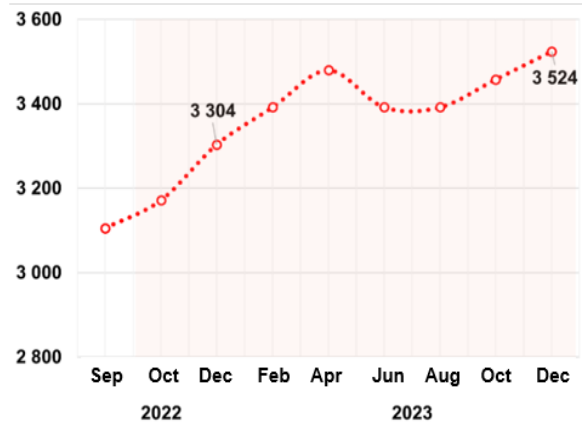
Climate change affects all sectors of the economy, especially agriculture. Food prices have recently been highly volatile due to weather changes, which, in turn, are becoming persistent and making inflation forecasting more complicated.

Figure 5.5. Wheat futures
(US dollars per ton, September 2022)



Source: investing.com

Figure 5.5. Cattle futures
(US dollars per ton, September 2022)



2.3. Analysis of monetary conditions and monetary policy instruments

In 2022, the degree of tightness of monetary conditions in the economy was formed differently under the influence of external economic environment. In order to reduce the impact of external risks on our economy in the context of the external geopolitical situation since February and its initial negative effects, in March the policy rate of the Central Bank was raised to **17 percent per annum** ensuring "tight" monetary conditions were.

In March such monetary conditions allowed to reduce the dollarization of savings by increasing the attractiveness of national currency assets and eliminating the **sharp fluctuations** in the national currency exchange rate in the context of a temporary decline in foreign currency flows (in the form of remittances, export earnings) and a sharp increase in devaluation expectations of the population.

Macroeconomic situation in the second quarter of this year is explained by the fact that the impact of external risks was lower than expected and the sharp increase in

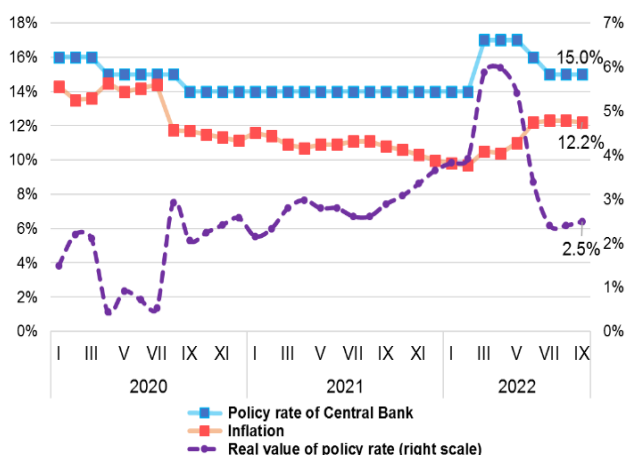
the volume of remittances and export earnings.

To that end, the policy rate of the Central Bank was reduced to **15 percent per annum** in June-July due to the absence of some anticipated inflationary factors. In this case, the maintenance of a positive **real interest of 2-3 percent** has been serving to keep "relatively tight" monetary conditions in the economy (Figure 2.3.1).

Decisions on the policy rate, in turn, affect the corresponding change of interest rates in the interbank money market through the instruments of the operational framework.

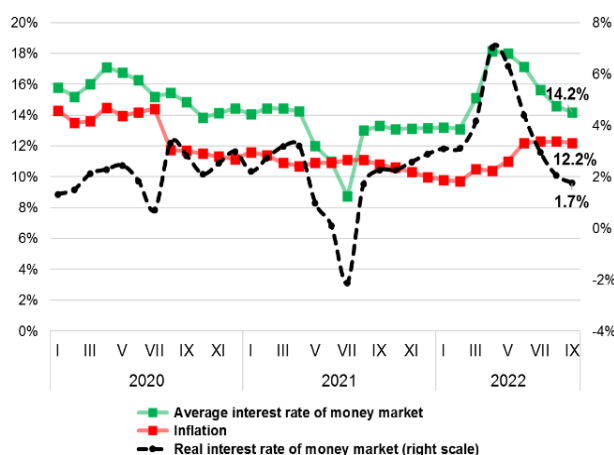
In particular, the average interest rates in the money market rose to **18.2 percent** in April due to the raise of the policy rate in March and the temporary decrease in total liquidity. In the following months, due to the increase in the liquidity of the banking system and the reduction of the policy rate by 200 basis points, the interest rates decreased to **14.2 percent** in September (Figure 2.3.2).

Figure 2.3.1. Dynamics of the Central bank's policy rate



Source: Central Bank calculations

Figure 2.3.2. Interest rates in the interbank money market



In turn, money market interest rates pass through to deposit and lending rates in the economy and are reflected in the decisions of economic agents. In particular, interest rates on term deposits of the population in national currency increased from **20.2 percent** at the beginning of the year to **21.8 percent** in August. Due to slightly accelerated inflationary processes in the economy, real interest rates on these deposits decreased from **9.5 percent** at the beginning of the year to **7.8 percent** in August (*Figure 2.3.3*).

At this point, it should be noted that the real interest rates on **term deposits in the national currency** are formed **positive at 4-5 percent** related to the **inflation expectations** of the population for the next 12 months (**15-16 percent**). Currently this situation contributes to a significant increase in the volume of deposits of the population in national currency.

In particular, term deposits of the population in national currency increased by **1.7 times** in 2021 and **36 percent** in 9 months of 2022.

In the first half of 2022, interest rates on **loans in national currency** also had a

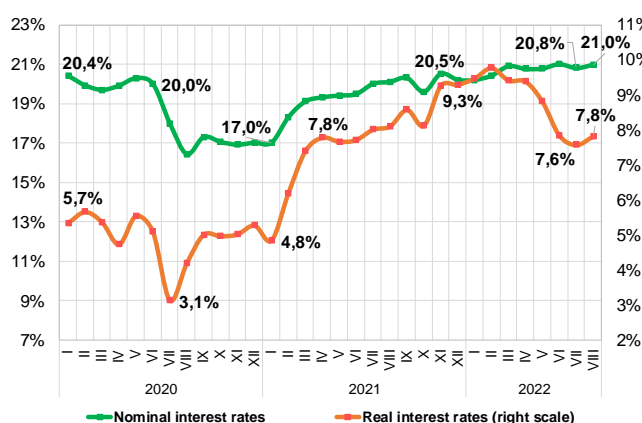
marginal upward trend due to a raise in the Central Bank's policy rate, while those in August was equal to **22.7 percent** to individuals in national currency and to **21.9 percent** to legal entities (*Figure 2.3.4*).

Decisions on the policy rate are transmitted into interest rates on deposits and loans in the economy with a **certain lag** (*in international practice, this lag is 2-6 quarters*). For this reason, the effect of the reduction of the policy rate in June-July on the interest rates on loans is expected to appear in the following quarters and the interest rates on loans in the national currency are likely to decrease.

In addition to deciding on the policy rate, the Central Bank adjusts the monetary policy framework to the norms of the inflation targeting regime and, in the context of increasing overall banking system liquidity, also modifies **monetary operations** accordingly.

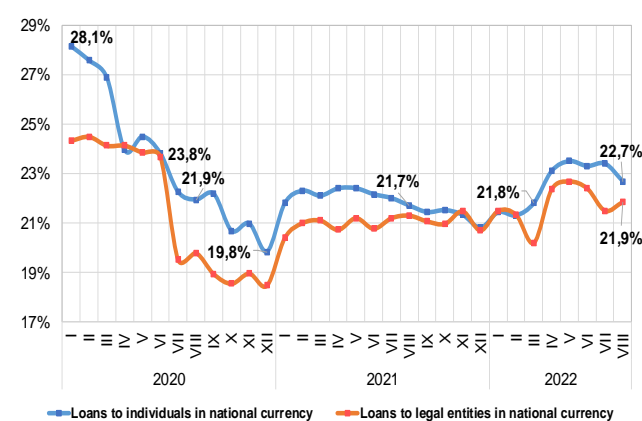
The **maximum yield limit** on Central Bank notes has been increased to the **upper limit of the interest corridor** since March of this year.

Figure 2.3.3. Interest rates on term deposits of the individuals in national currency



Source: Central Bank calculations

Figure 2.3.4. Interest rates on loans in national currency



This decision is based on the fact that the Central Bank mainly controls the price of short-term liquidity, while long-term interest rates are formed according to the **macroeconomic expectations** of market participants for the next period, and the Central Bank should be the **"price taker"** for long-term interest rates. After this decision, there was an increase in the rate of return on Central Bank notes.

Also, since March, deposit auctions to absorb liquidity were conducted in the form of **"fixed-rate full-allotment"** operations, that is, in an unlimited amount based on the demand of banks and at the policy rate of the Central Bank.

As a result, the effectiveness of deposit auctions, which are the main instrument of liquidity management, to transmit policy rate decisions to the banking system and subsequently to interest rates in the economy has improved.

In order to facilitate commercial banks' liquidity management during the required reserves maintenance period, since July this year these auctions have been

replaced by **weekly** auctions conducted on Thursdays.

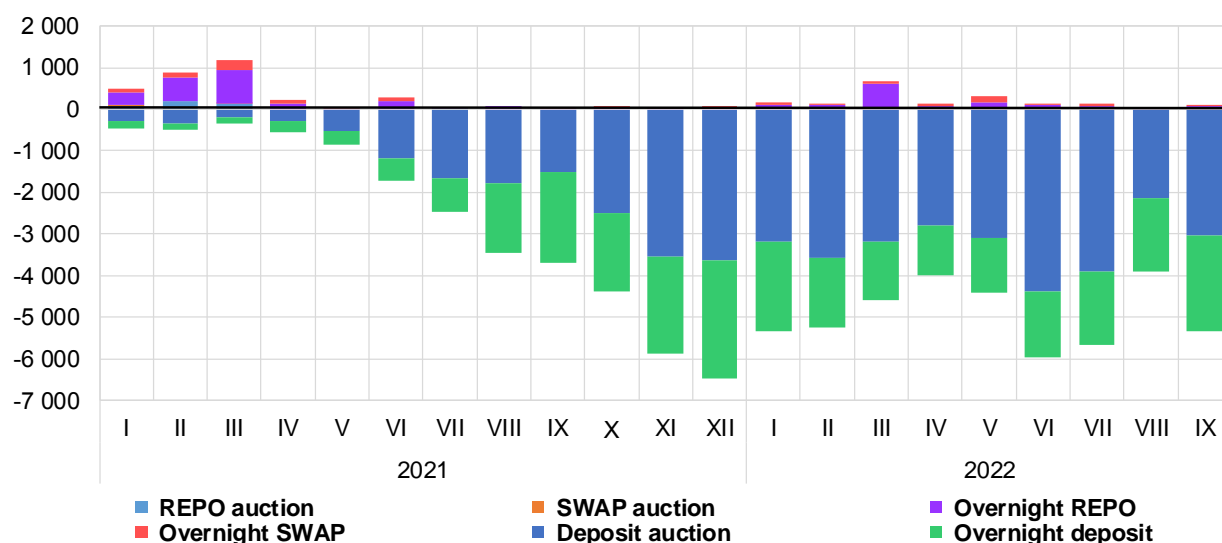
The average monthly limit on Central Bank notes was **15 trillion** soums at the beginning of the year and was raised to **25 trillion** soums. Moreover, in the conditions of the upward dynamics in the overall liquidity of the banking system, measures are being taken to effectively absorb liquidity with **longer-term instruments** and thereby minimize the impact of monetary factors on inflation.

In general, even in 2022, the Central Bank has been actively using short-term monetary policy instruments to regulate the overall liquidity. The volume of these operations was determined depending on the liquidity of the banking system and the level of compliance by commercial banks with the established ratios.

In order to absorb the additional liquidity for a longer period a total of **69.2 trillion** soums Central Bank notes were issued in 9 months of 2022. As of October 1 of this year, the stock of Central Bank notes in circulation amounted to **16.5 trillion** soums.

Figure 2.3.5. Dynamics of the outstanding short-term monetary operations

(average daily balance during the month, billion soums)



Source: Central Bank calculations

The demand for Central Bank liquidity management instruments was related to **the dynamics of overall liquidity** in the banking system.

In the first quarter of this year, due to the **seasonal reduction** in government spending and external risks that took place in March, the demand for liquidity absorption operations decreased slightly, while the demand for overnight REPO and SWAP operations for liquidity provision occurred in March.

Since April, with the balancing of the total liquidity volume and an increase of factors rising liquidity, the demand for overnight REPO and SWAP operations has

been formed at a **minimal level**, while the demand for **deposit operations** has risen (*Figure 2.3.5*).

It should be noted that with the active continuation of structural reforms in the economy and the improvement of the investment environment, the foreign currency inflow to our country is expected to increase, and in the context of the maintenance of the overall fiscal deficit, **the amount of additional liquidity in the banking system is predicted to rise** in the coming years. This, in turn, will result in an upward dynamic in the volume of liquidity absorbing operations of the Central Bank.

2.4. Developments in the domestic FX market

In the 9 months of 2022, the situation in the domestic FX market was influenced by the external risks and their impact on **devaluation expectations** of the economic agents, as well as a significant increase in **currency inflows** (*in the form of remittances, export receipts and bank deposits*) to the country.

In particular, in the first two months this year, the **demand in the domestic FX market was higher than supply** due to the rise of budget expenditures on investment projects by Ministry of Finance in the end of 2021.

In the conditions of **external geopolitical tension** and high level of uncertainty regarding external risks, which started at the end of February, **devaluation expectations** of both the population and business entities **rose**, and the demand for foreign currency increased sharply. In this case, the population transferred part of

their savings in national currency into foreign currency.

In this context, the volume of **interventions** of the Central Bank in the domestic FX market was significantly expanded and the policy rate was increased **by 3 percentage points**. Interventions helped to **reduce devaluation expectations** by fully meeting the demand, while the raise in interest rates served to slow down the process of transferring deposits into foreign currency by increasing the attractiveness of deposits in national currency.

Since April, due to less negative than expected effects of external risks there was a significant increase in foreign currency inflows to the domestic market.

In particular, having decreased in March, the **volume of cross-border remittances** has been considerably increasing since April. For 9 months of 2022 the remittance inflow to our country

amounted to a total of **12.6 billion** dollars, **2.2 times** more than in the corresponding period of the previous year, that was a factor supporting supply in the foreign exchange market (Figure 2.4.1).

Moreover, there were positive trends in the **foreign exchange practices of commercial banks with households**. Since April, in a condition of the stable exchange rate, the volume of foreign currency sales by the population to banks has been rising.

For the last 9 months of 2022, the positive difference between the sale and purchase of currency by the population amounted to **2.5 billion** dollars and became one of the main factors supporting the supply in the domestic currency market and ensuring exchange rate stabilization (Figure 2.4.2).

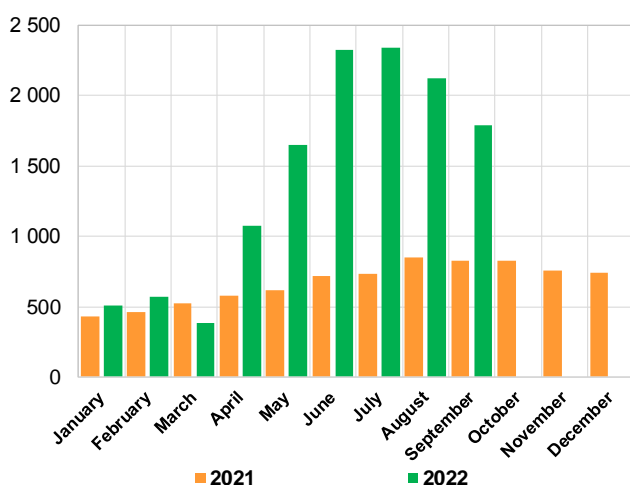
The supply and demand dynamics on the domestic foreign exchange market were also influenced by the above-mentioned factors and there was a temporary increase in the supply and demand gap in March.

Since April, with the appreciation of the soum, there had been a sharp increase in the volume of supply, and taking into account the FX practices of the Government, during April-May the Central Bank participated in the domestic FX market as a "net purchaser" and conducted interventions to purchase the excess supply (Figure 2.4.3).

As of March 18 the exchange rate of the soum against the US dollar had **depreciated by 6.8 percent** since the beginning of the year in the context of external risks. In the following months, however, the **national currency** appreciated as a result of measures taken and an increase in the supply of foreign currency, and as of October 1, the rate of depreciation compared to the beginning of the year was equal to 1.6 percent (Figure 2.4.4).

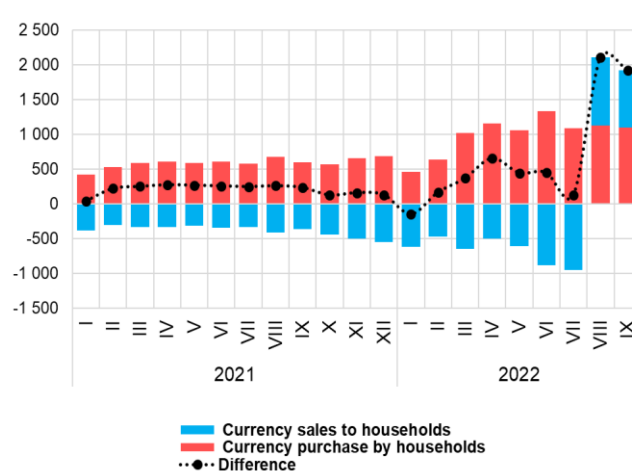
In the medium-term perspective, the volatility of the national currency exchange rate is expected to slow down due to intensification of structural reforms and an increase in foreign exchange flows to the country.

Figure 2.4.1. Dynamics of cross-border remittances (million dollars)



Source: Central Bank calculations

Figure 2.4.2. FX operations with households (million dollars)



At this point, the Central Bank will continue the **"free floating" exchange rate policy** within the inflation targeting regime and intervene in the domestic foreign exchange market in accordance with **the principle of "international reserves neutrality"**, which has been in force since 2018.

The Central Bank will continue to actively take systemic measures to further improve the domestic foreign exchange market, increase the role of commercial banks in determining the exchange rate, and expand the range of foreign exchange instruments.

In particular, in the last quarter of 2021, **the practice of Market-making** was introduced in order to continuously ensure liquidity in the domestic FX market, and the activity of commercial banks as "market-makers" and their role in determining the exchange rate was increased.

The **benefits and responsibilities** of commercial banks having obtained market maker status have been clearly defined. To date, **2 commercial banks** have market maker functions in the domestic foreign exchange market.

Also, in order to further improve foreign exchange operations on the domestic

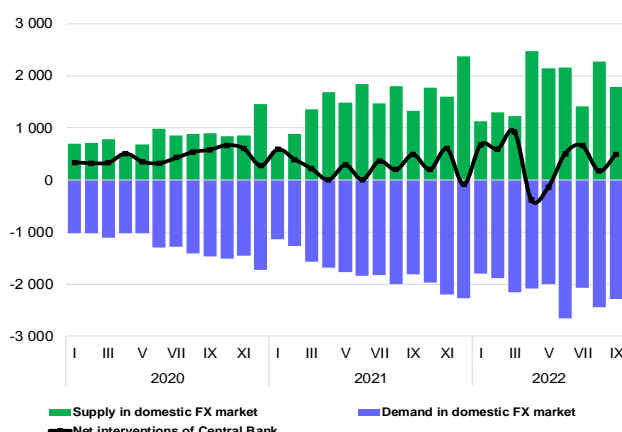
foreign exchange market, including the organization of market activities based on **high standards** by market participants, the Central Bank of Uzbekistan, together with commercial banks, has developed a **"Code of Ethics on the Domestic Foreign Exchange Market"** which has been implemented by all commercial banks in practice.

This code is the basis for the stable operation of domestic foreign exchange market participants and represents a set of universal norms formed for fair and impartial operations, taking into account the legitimate rights and interests of all parties involved.

Today, in order to further develop the domestic FX market and to mitigate the impact of external shocks that may adversely affect the financial situation of entrepreneurs, and **to hedge currency risks**, the work is being completed on the establishment of an **online platform** that allows trading of **derivative instruments** (FX futures contracts) amongst banks.

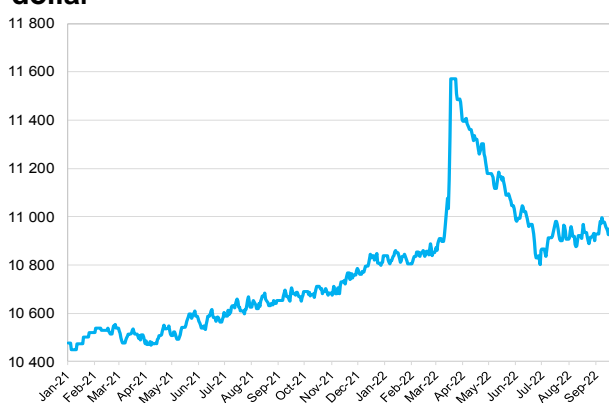
The development of an interbank **FX futures market** will in turn allow commercial banks to offer new types of **derivative products** (FX forwards and swap contracts) to business entities.

Figure 2.4.3. Demand and supply dynamics in the domestic FX market (million dollars)



Source: Central Bank calculations

Figure 2.4.4. Dynamics of the exchange rate of the national currency against the US dollar



Dollarization in banks and measures to reduce it

At the end of September this year the level of dollarization of loans and deposits remained high, amounting to **46 percent** and **38 percent**, respectively. The high level of dollarization in the economy **reduces the effectiveness of the monetary policy** in achieving the ultimate goal of price stabilization.

Dollarization of loans

Relatively **high demand for loans in foreign currency by private and state-owned enterprises**, larger **share of external financing sources** in lending to the economy, and **the absence of hedging instruments** are the reasons for high dollarization of loans (Figure 6.1).

Excluding exchange rate changes, the dollarization rate of loans has been declining for the past year and a half (from 43% in April 2021 to 39% in September of this year). This is mainly due to **certain difficulties in attracting external resources by banks** as a result of the raises of interest rates in the world financial markets in response to the global inflation acceleration and the inflationary risks.

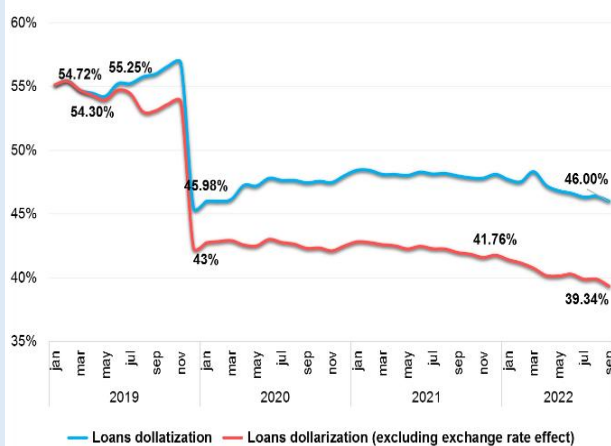
Meanwhile, the importance of domestic deposits as a source of loan financing is increasing. In particular, in the last 2 years, the growth rate of deposits is observed to be higher than that of loans. This, in turn, **reduces the vulnerability of banks to external risks**, improves the diversification of funding sources, and ensures that banks have a relatively stable internal resource base.

Dollarization of deposits

In previous periods, currency restrictions, **lack of confidence of the population in the national currency**, a **relatively high inflation**, as well as a small number of instruments of saving led to a high level of dollarization of deposits in banks (Figure 6.2).

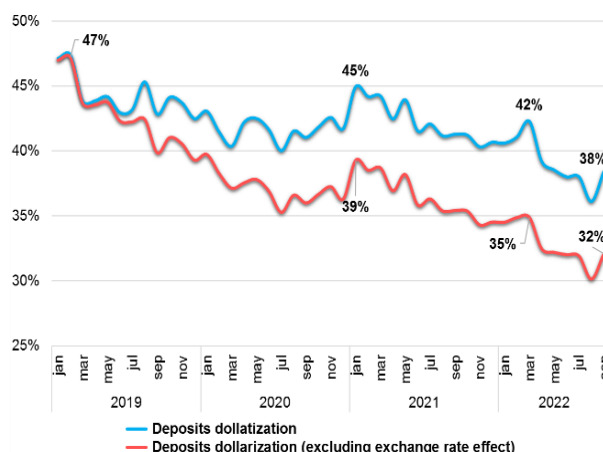
In recent years, relatively **high real interest rates** in the economy (Figure 6.3), stability of the national currency and high interest rates on deposits in the national currency serve to increase deposits in the national currency (Figure 6.4).

Figure 6.1. Level of loan dollarization



Source: Central Bank calculations

Figure 6.2. Level of deposit dollarization



Meanwhile, the relatively high mandatory reserve requirements for foreign currency deposits (18%) and other measures served to a decrease in dollarization of deposits from 45 percent in January 2021 to 38.4 percent at the end of September this year.

It should be noted that the foreign currency deposits of individuals are highly sensitive to short-term exchange rate fluctuations. In particular, the depreciation of the soum against the US dollar by 5.2 percent in the first quarter this year increased dollarization of individual deposits from 34 percent to 37 percent. However, in March in the context of national currency appreciation as a result of a raise of the Central Bank's policy rate to 17 percent, dollarization of household deposits decreased to 32.1 percent in September.

In the medium-term perspective, dollarization of deposits is expected to decline and the amount of inflows of national currency savings into the banking system is expected to increase due to maintenance of positive real interest rates on deposits in national currency, exchange rate stability, and measures taken to raise the level of financial literacy.

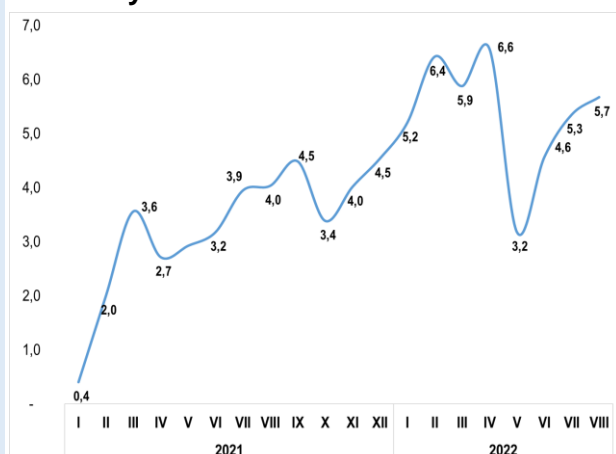
Currency mismatch

A growth of financial turnover due to larger external debts of the financial and corporate sectors, as well as the imbalance between foreign currency assets and liabilities, leads to an increase in the concentration of currency risk in the banking system.

According to the results of the II quarter this year, the level of dollarization of assets and liabilities of commercial banks was equal to 49 percent and 51 percent, respectively.

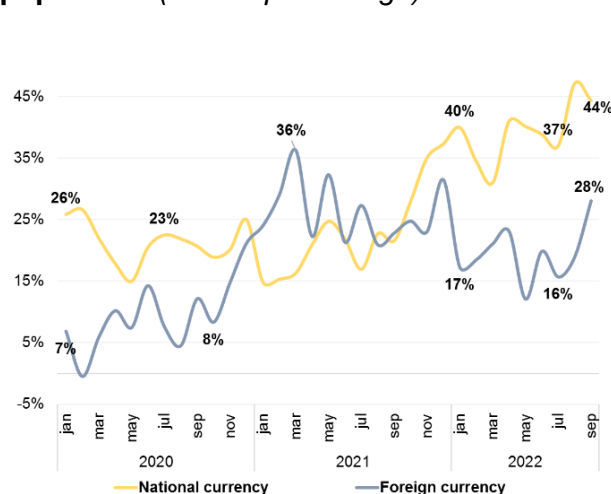
Over the past 4 years, the limits set on the open currency position⁸ have had an important role in balancing the ratio of foreign exchange claims and liabilities of commercial banks.

Figure 6.3. Real interest rates on term deposits of the population in national currency⁹



Source: Central Bank calculations

Figure 6.4. Change of deposits of the population (annual percentage)



⁸ An open currency position is a currency position in which the amount of the bank's foreign currency claims does not match (is not equal to) the amount of its foreign currency liabilities.

⁹ It is calculated on the basis of the inflationary expectations of the population for the next 12 months, showing growing dynamics, increasing the attractiveness of time deposits in the national currency.

Meanwhile, the bulk of banks' foreign exchange claims is the claims for the corporate sector (*around 40% of the total foreign currency assets*). Lack protection from possible exchange rate fluctuations in this sector may lead to increased solvency and liquidity risks in the banking system in the future.

Moreover, the government's fiscal consolidation policy along with a decrease in foreign credit lines, may cause a shortage of financial resources in the economy. Therefore, it is required to strengthen the measures **to expand the deposit base and to reduce the state's participation in the banking system.**

Measures to reduce the level of dollarization

The Decree of the President of the Republic of Uzbekistan №-5992 dated May 12, 2020 "On the strategy of reforming the banking system of the Republic of Uzbekistan for 2020-2025" provides for the formation of macroeconomic conditions to reduce the share of foreign currency in the assets and liabilities of banks, as well as to introduce restrictions on loans in foreign currency. Along with that, the share of liabilities in foreign currency in the total volume of liabilities is planned to be gradually reduced.

Banks are legally banned from lending to individuals in foreign currency. The basis for this decision is that payments for any type of trade and services within the country will be made in the national currency, that will reduce the population's demand for foreign currency. In addition, due to **high sensitivity** of the population to changes in the exchange rate, loans in foreign currency are not provided to them.

Also, the **reserve requirement** instrument is actively applied to reduce the level of dollarization. In this regard, required reserves on foreign currency deposits was set **at 18 percent**. However, since foreign credit lines and other creditor debts of banks are not included in the reserve requirement base, the impact of this instrument on reducing the dollarization of loans and liabilities of banks remains relatively low.

As the inflation declines in the medium term as a result of measures under the inflation targeting regime, the policy rate of the Central Bank will be lowered accordingly. Consequently, interest rates on loans in the economy and, thereby the dollarization of loans is expected to decrease.

In addition, **an interbank FX futures market**, which will allow banks to issue loans in national currency at the expense of resources raised in foreign currency by managing currency risks, is being established.

Consistent use of monetary and macroprudential policy instruments to reduce dollarization in the banking system will allow to gradually decrease it in the medium-term perspective and, as a result, to improve the effectiveness of monetary policy.

III. GUIDELINES FOR MONETARY POLICY IMPROVEMENT IN 2023-2025

Measures to be taken to develop the monetary policy	
Improving operational framework instruments	Complete abolition of existing caps on yields when issuing Central Bank notes and ensuring that the Central Bank becomes a price taker in pricing longer-term liquidity
	Introduction of the Central Bank's "intraday credit facility" and provision of interest-free loans to banks against collateral during the day
	Using "fine-tuning" operations if necessary (in particular on the last day of the required reserve maintenance period) based on the overall liquidity situation and the liquidity management capacity of banks
Improving the capacity to forecast liquidity in the banking system	Improvement of the daily liquidity forecasting system and active use of its results in planning the parameters of monetary operations
	Forecasting the impact of operations through the Single Treasury Account (STA) and cash transactions on liquidity using econometric models in improving the daily liquidity forecasting system
	Development of a "long-term liquidity management strategy" with experts from the European Bank for Reconstruction and Development and OG Research (Czech Republic)
Expanding the scope for using money market benchmark indicators	In cooperation with the European Bank for Reconstruction and Development introduction of benchmark rates in the provision of banking services with flexible interest rates
	Formation of the yield curve of government securities and development of the secondary market for government securities
Guidelines for improving monetary policy communication	Increasing the number and quality of monetary policy communication instruments
	Expanding information channels, ensuring continuity of the information flow, and assessing the impact of decisions on the information recipients
	Study of advanced foreign experience in improving the effectiveness of monetary policy communications, participation in international rankings in the field of communication policy
	Analysis of the effectiveness of monetary policy communication, studying public opinion, and curbing inflation expectations
Guidelines for the development of forecasting and analytical capacity	Short-term forecasting of inflation by different groups and improvement of the multi-factor BVAR model
	Online inflation forecasting based on Online Price Monitoring system - e-CPI Project Development
	Implementation of the next phase of the Dynamic Stochastic General Equilibrium Model (DSGE) project, facilitated by the Swiss National Bank. Improving decision-making processes based on forecasts
	Analysis of the equilibrium (neutral) real interest rate and real exchange rate in the Uzbek economy to assess real monetary conditions in the decision-making process
	Studying the prospects of using artificial intelligence and machine learning based on Big Data in macroeconomic forecasting

3.1. Measures to further develop the operational mechanism of monetary policy

In the coming years, the Central Bank will actively continue work on adapting the operational framework and instruments of the monetary policy to the standards of the **inflation targeting regime**.

In this direction, in 2023-2025, a number of systematic measures, such as further improving the operational framework, increasing the capacity of forecasting the liquidity of the banking system, developing the infrastructure of the interbank REPO market, and increasing the role of banks in liquidity management and pricing, are planned to be implemented.

The implementation of these measures will, in turn, serve to improve the efficiency of the transmission of monetary policy decisions to and through the interbank money market on interest rates in the economy, as well as improve the effectiveness of **the interest rate channel of the transmission mechanism**.

1. **Improvement of operational framework instruments.** The yield of Central Bank notes is forming close to the upper limit of the Central Bank's interest corridor. This may lead to misunderstandings about the signals of monetary policy decisions. Therefore, it is planned to **gradually increase** the share of deposit auctions in the management of total liquidity in the medium term.

On the other hand, one of the main objectives is **to completely remove the existing caps** on yields in circulation of Central bank notes and to ensure that the Central Bank becomes the **"price taker"** in pricing long-term liquidity.

In March of this year, as a first step in this direction, the yield cap on Central Bank

bonds was increased to the upper limit of the interest corridor, and in the future, it is aimed to completely abandon this limit and achieve price formation based on the **macroeconomic expectations** of market participants.

The current limit is aimed **at preventing an arbitrage condition** and is planned to be abolished as the banks' liquidity management becomes more efficient.

In doing so, there are plans to make changes to **the overnight transactions** of the Central Bank, which are conducted within the interest rate corridor. Today, these operations are carried out from 10 a.m. to 4 p.m. Given that the banking day is usually until 5 p.m. (on some days the banking day may be extended), in the medium term the plan is to ensure that the overnight operations are open for a further **30 minutes** after the end of the banking day.

Currently, transactions on the interbank money market are open until the end of the banking day, and the objective is that this market operates **for another 15 minutes after the end of the banking day**.

Also, there will be an opportunity for commercial banks after the end of banking day to reallocate total liquidity in the money market and then call on overnight transactions from the Central Bank, thereby greatly increasing the efficiency of liquidity management.

At this point, it is also important to ensure that banks' overnight transactions in the money market are in the form of **"real overnight"** and are repaid at the beginning of the next banking day.

Today, overnight transactions in the money market are carried out on the basis of mutual agreement by banks and in most cases they are repaid at any time within 24 hours. This leads them to differ from the Central Bank liquidity operations.

In turn, the Central Bank may consider the introduction of "intraday credit facility" and issue **of interest-free loans against collateral** during the day. This would serve to prevent liquidity interruptions in banks and ensure the continuity of the payment system.

With the introduction of intraday credit facilities, banks will be able to repay overnight deposits in the money market at the beginning of the next banking day.

In addition, the operational framework of the Central Bank envisages "**fine-tuning operations**", which have not yet been applied. An increase in the overall liquidity of the banking system and the widespread non-use of the reserve requirement averaging mechanism by banks have not created a need for these operations.

In the medium term, it is envisaged to implement fine-tuning operations when necessary based on the overall liquidity situation and banks' capacity to manage liquidity (in particular, on the last day of the required reserve maintenance period).

2. Increase the capacity of forecasting the liquidity of the banking system. At the Central Bank, a **system of daily analysis and forecasting** of the liquidity of the banking system in terms of autonomous factors has been established, and measures to further improve these processes are planned to be taken.

First, it is aimed to improve the **daily liquidity forecasting** system and actively

use its results in planning **the parameters of monetary policy operations**.

Today, **monthly projections** are mainly used to determine the parameters of monetary operations, and the absence of daily forecasts on **government operations** and other factors limits the possibilities for daily projections.

Improvement of the daily forecast involves forecasting the effect of transactions through the Single Treasury Account (STA) and cash operations on liquidity employing modern econometric models (ARIMA model). There will also be an ongoing exchange of information with the Ministry of Finance, and particular attention will be paid to improving the accuracy of future liquidity forecasts by improving the reliability and quality of information.

In the meantime, the Central Bank is currently developing a "**Long-term liquidity management strategy**" with the participation of experts from the European Bank for Reconstruction and Development and the Czech consulting company OG Research, followed by the introduction of long-term forecasting of overall liquidity.

3. Expanding the use of money market benchmarks. By improving money market benchmarks and expanding their practical use, it is planned to introduce a flexible interest rate service at banks and improve their capacity to manage interest rate risk. In July 2022, according to the decision of the Central Bank, relevant changes were made to the benchmark indicators of the money market. UZONIA rate and indices have been introduced in a new methodology.

Seminars are planned to be organized on the practical application of these benchmark rates in the provision of **flexible**

interest banking services with the help of the Money Market Working Group established in cooperation with the European Bank for Reconstruction and Development.

Moreover, in this direction, a **yield curve** for government securities is aimed to

be formed in the medium term. In this case, the notes of the Central Bank serve to develop the short-term part of the yield curve (up to 6 months), and the bonds of the Ministry of Finance serve to develop the longer-term part.

3.2. Guidelines for further improvement of the interbank REPO and government securities markets

Improvement of money markets, which is necessary for the liquidity management of commercial banks, is important for the effective operation of the interest rate channel of the transmission mechanism of monetary policy.

Today **unsecured interbank money market** is actively operating.

Due to the absence of collateral in this market, credit risk persists despite overnight transactions being largely carried out.

In order to increase confidence in interbank transactions and **reduce credit risk**, the **interbank REPO market** was launched through the **online platform** introduced by the Central Bank at the Republican Currency Exchange since March 2022.

A number of improvements to the interbank REPO market are currently underway, in particular the introduction of a **more user-friendly infrastructure** and the launch of **fully automated transactions**. In this direction, it is planned to establish cooperation with the European Bank for Reconstruction and Development and foreign central banks and apply advanced foreign experience.

Although a **small number** of operations have been carried out in the interbank REPO market since March, these

operations allow to study and improve the shortcomings in infrastructural and operational processes.

The establishment of the interbank REPO market is expected to increase the efficiency of total liquidity redistribution between banks and **the effectiveness of the interest channel**.

It should be noted that the development of this market will depend on the activity of the market of government securities considered as collateral and the size of the portfolio of government securities owned by commercial banks.

Today, the Ministry of Finance issues government bonds of various maturities to cover the state budget deficit, while the Central Bank issues its notes to manage liquidity. Both types of securities serve as **collateral** for REPO transactions by banks, both with the Central Bank and with each other.

The share of Central Bank notes in the total volume of government securities is large, being one of the main instruments of liquidity management in the current excess liquidity conditions.

The fact that the volume of bonds issued by the Ministry of Finance is gradually increasing may strengthen the role of local currency bonds in covering the overall budget deficit in the future.

Measures will be taken to establish the practice of purchasing bonds issued on the domestic market for **non-residents and individuals** in local currency.

In addition, a **primary market** for government securities is now in operation, and government securities purchased by commercial banks are held until maturity

without being placed on the secondary market.

In the coming years, development of the **secondary market of government securities** and thereby formation of an effective **yield curve** indicating the macroeconomic expectations of the market participants is one of the important tasks.

3.3. Guidelines for improving monetary policy communication

The central bank is taking appropriate measures to ensure price stability in the economy and reduce the inflation to the **target level**.

Transparent communication of these measures to market participants through different channels, **building their confidence** in the monetary policy implemented, will increase the effectiveness of the actions taken and allow inflation targets to be reached more quickly.

Improvements in monetary policy communication will be implemented in the following directions.

I. Increasing the number and the quality of communication instruments of monetary policy

Currently, there are a total of **130** annual publications of **19** types within the monetary policy communication of the Central Bank and the number has increased **by 6** types in the last 2 years. Annual, semi-annual, quarterly, monthly, and daily information is regularly published on the official website of the Central Bank and on the official pages on other social media.

In the coming years, special attention will be paid to **enriching the content of these publications, bringing them**

closer to the needs of readers and strengthening their analysis, simplifying the **"writing style"** used in the publications as much as possible, by explaining in a language understandable to the general public.

In order to **raise the awareness** of market participants in the field of monetary policy, videos, info-graphics and analytical materials are regularly posted on the official pages of the Central Bank.

It is planned to organize lectures, seminars, open dialogues on the policy of the Central Bank within the framework of the inflation targeting regime in universities and other educational institutions, and these activities serve to enhance young professionals' knowledge of current monetary policy reforms.

II. Expansion of data transmission channels, ensuring continuity of data

The openness and transparency of monetary policy is reflected in the degree of development of its communication policy. The effectiveness of the communication policy is determined by **the response of market participants** to the measures taken by the Central Bank.

The plan at this stage is to pay particular attention to ensuring that communication with the public is **two-way**.

Given the large role of information intermediaries (*journalists, bloggers, independent experts, etc.*) in communicating information posted on the official website of the Central Bank and social media to the general public, intensifying the communication channel with **media representatives** in the coming years will ensure that the Central Bank's monetary policy and other relevant information is correctly interpreted for the general public.

The posting of information in all communication channels in a single set form and periodicity, ensuring permanence and turning the official website of the Central Bank into the main database determines the discipline of monetary policy communication.

In times of high information flow, establishing **targeted communication** in the future in order to focus the reader's attention on relevant content is considered one of the main tasks.

III. Studying advanced foreign experiences in improving the effectiveness of monetary policy communication

It is aimed to establish mutual cooperation with foreign central banks and international financial institutions in improving monetary communication of the Central Bank and communication policy in general.

In particular, in 2022 several seminars on improving communication policy have been arranged with experts from the International Monetary Fund (IMF), during which the prospects of using communication as a separate and effective

monetary policy tool were discussed in detail.

Steps are currently being taken to attract an IMF **technical assistance program** on communication policy, and in the process, there are plans to analyze the opportunities to actively use monetary policy communication to manage the inflation and macroeconomic expectations of economic agents.

Additionally, establishing mutual cooperation with advanced central banks in the field of communication and sharing experience in this field are also important tasks.

IV. Evaluation and analysis of the effectiveness of communication policy

One of the important directions in improving monetary policy communication is to analyze and evaluate the effectiveness of the implemented communication policy. In this case, the evaluation process will be carried out in the following two directions:

a. Quantitative and qualitative assessment of monetary policy information. Content analysis of press releases, analysis of publication views, and improvements to the communication index will be continued, and **an overall communication performance index** will be developed;

b. Public perception of published information. The research will be done on the perception of the Central Bank's monetary policy, including decisions on the policy rate, by the general public and their impact on economic decisions, as well as on other macroeconomic indicators.

3.4. Measures to improve the effectiveness of the transmission mechanism of monetary policy

Central bank monetary policy decisions to reduce inflation have an effect on economic processes through **a variety of channels**.

Within the framework of the inflation targeting regime, today the main channel of the transmission mechanism is the **interest channel**. The central bank employs the **policy rate** as the main monetary policy instrument.

In doing so, the Central Bank influences interest rates on deposits and loans in the economy, prices of financial assets, and macroeconomic expectations by **changing the policy rate**.

As a result of this effect, **inflation expectations** of the population and economic agents are formed and **economic decisions** (whether to consume, save or invest) are made on the basis of these expectations. Consequently, monetary policy impacts on the inflation rate by forming **aggregate demand** in the economy.

Interest rate channel. As the **main channel** of the transmission mechanism, that channel has been systematically improved by the Central Bank. In particular, significant changes have been made to the **operational framework** this year, thereby improving the efficiency of the transmission of decisions to the money market.

In the intervening period 2022, the central bank's policy rate was revised **3 times**, and these changes were translated into interest rates on the money market on the next business day. There is also **a positive trend** in the translation of money market interest rates into deposit and lending rates, and measures to

develop this part of the interest rate channel are to be implemented in the next phase of reforms.

In particular, **a technical assistance programme** on "Improving the transmission mechanism of monetary policy" from the European Bank for Reconstruction and Development has so far been implemented, with a focus on increasing the effectiveness of the interest rate channel.

Changes in interest rates formed in the money market will take some time to be reflected **in the rate of deposit**. Today the deposit base of banks is relatively small (*the share of deposits in total liabilities is about 40 percent*), and the primary objective is to efficiently attract non-bank savings to the banking system and thereby increase the deposit base.

In the conditions of declining inflation and relatively stable exchange rate, current interest rates offered by banks, including interest rates on term deposits in national currency, are considered attractive and contribute to a rapid increase in the volume of savings.

In the following years, due to the formation of positive real interest rates on national currency deposits, it is expected that savings flow into the banking system will continue and the dollarization of deposits will decrease. This, in turn, will indicate **an increase in the influence of the interest rate channel of monetary policy**.

As the deposit base gets larger, deposit interest rates will converge with money market interest rates and have similar dynamics. As a result, interest rates

on loans will tend to approximate interest rates on deposits, with interest margins remaining unchanged.

High demand for loans accumulated over many years appeared in the last 4-5 years and was reflected in a sharp increase in the loans to the economy, and although the pace of growth slightly slowed in recent years, **retail loans** continue to rise at high rates. This, in turn, causes relatively high interest rates on loans to the population.

In the medium-term perspective, as the **population's debt burden increases** and the demand for loans declines, interest rates on retail loans are expected to decrease and change in line with interest rates on other banking services.

In 2022, the development of money market benchmark interest rate was completed and the methodology for calculating UZONIA interest rates was published in the coming years, there are plans to expand the scope of this interest rate in banking practice and introduce a **"flexible" interest rate** on deposits and loans.

In this case, the change in the policy rate will be reflected in the benchmark rate of the money market, and interest rates on deposits and loans will also change accordingly. As a result, banking services with "flexible" interest rate are expected to significantly contribute to the **increase in the effectiveness of the interest channel**.

Exchange rate channel. In countries with free capital flows and a relatively advanced financial markets, the importance of the exchange rate channel in monetary transmission is high.

In conditions of free capital flows, the correlation of interest and exchange rate channels is high, and a rise in the interest

rate must result in an appreciation of national currency by growing currency inflows to the country.

In the Uzbekistan context, the transmission effect of the exchange rate channel is low, due, on the one hand, to capital flow restrictions and, on the other hand, to the undeveloped financial market. In this direction, non-residents were allowed to purchase government bonds this year, and in the coming years, establishing an infrastructure for them to purchase bonds is an important task.

Meanwhile, there is a direct impact of exchange rate changes on inflation, and due to the high role of **devaluation expectations** in the inflation expectations of the population and **the significant share of imported goods** in the consumer basket, exchange rate changes are reflected in inflation, and today this **"pass-through coefficient"** is estimated at between 0.3-0.4.

The formation of the exchange rate channel in the medium term depends on factors such as the measures taken to liberalize capital flows, **the access of non-residents** to the government securities market, and the dynamics of currency inflows into the country.

Credit channel. Starting from 2021, the growth of loans to the economy in the economy **have been balancing** and forming within the nominal GDP growth rate. This, in turn, serves to reduce the impact of monetary factors on inflation.

The stability of loan growth relates largely to factors such as the tight monetary conditions in the economy, the implementation of **prudential regulations**, the increased **debt burden**, the higher **level of credit saturation**, and the lower ability of banks to raise external debt in the current situation.

The credit channel is strongly connected with the interest channel, and for their effective operation, reducing the level of dollarization of loans and **gradually abandoning** the practice of **preferential loans** are defined as important measures to be taken.

Today, the establishment of the **FX futures market** for commercial banks and the active operation of this market in the future will provide an opportunity for banks to **effectively manage exchange rate risks**, as well as to allocate loans in

national currency at the expense of sources attracted in foreign currency. The development of the FX derivatives market is expected to reduce the dollarization of loans.

Also, the **coordination** of monetary policy and macroprudential regulations in the medium term aims at achieving an increase in loans to the economy in line with nominal GDP growth. This, in turn, serves to reduce the influence of monetary factors on inflation.

3.5. Guidelines for the development of analytical and forecasting capacity

Further improvement of analytical and forecasting capacity is becoming important for making comprehensive decisions in the monetary policy of the Central Bank, improving the effectiveness of these decisions in real sectors of the economy.

Currently, a number of models are used in macroeconomic analysis and forecasting. In particular, **moving average** and **Bayesian vector autoregression** (BVAR) are used for short-term inflation projections, **quarterly projection model** (QPM) is employed for medium-term forecasts and for nowcasting and short-term forecasting of real GDP - **multivariate regression models** (DFM, VAR and ARDL) are applied.

A number of activities are planned for next year to improve the quality of econometric models in forecasting macroeconomic indicators, in particular inflation, and to increase capacity in this area.

In order to introduce **short-term inflation forecasting** (NTF - Near Term

Forecast) the inclusion of additional variables in **ARIMA** model and forecast across different inflation **groups** (food, non-food products, services, fruits and vegetables and trimmed inflation) is planned to be implemented.

In short-term inflation forecasting it is planned in cooperation with foreign banks to modify the existing **BVAR (Bayesian Vector Autoregression) model** in terms of improving the equations linking inflation, interest rates, production, and exchange rates, widening the range of variables, and to provide for a wider use of the model results in future forecasting rounds.

An **e-CPI** project that forecasts inflation rate based on **online price monitoring system (OPM)** will be developed. In cooperation with foreign central banks, short-term inflation forecasts based on online system data and **e-CPI** system forecasts will be checked for consistency with other models.

In the direction of improving the QPM model this year, the **FDI** and **external**

sector sections previously added to the model will be fully improved in practice. The capacity of the model and the newly added blocks to cover and assess our national economy will be expanded. The work on minimizing systemic errors will be continued.

Prospects for using **artificial intelligence (AI)**¹⁰-based models and **machine learning (ML)**¹¹ through Big Data technology in macroeconomic analysis and forecasting will be studied.

In cooperation with the Swiss National Bank and international consulting

companies, a **dynamic stochastic general equilibrium (DSGE)**, which allows to assess macroeconomic decisions and the impact of structural reforms on economic development model, is being developed. This model presents the macroeconomic performance of the sectors of the national economy in relation to the micro-level indicators of economic activity as a holistic model. At the next stage the model is to be supplemented by our country's specifics (*see Box 7 for details*).

¹⁰ Artificial intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems.

¹¹ Machine learning (ML) is a method of data analysis that automates analytical model building. The advantage of ML is that it can make relatively more accurate forecasts using a large database.

Box 7

Prospects of using the dynamic stochastic general equilibrium (DSGE) model in assessing the impact of monetary policy on the economy

Macroeconomic models play an important role in the development of monetary policy parameters. Although simple theoretical models can provide partial insights into economic mechanisms and are useful for forecasting and analysis, **comprehensive macroeconomic models** provide a general equilibrium perspective that is crucial for economic forecasting, assessing alternative scenarios and macroeconomic risks, and analyzing monetary policy strategy. One of such models is the **dynamic stochastic general equilibrium (DSGE)** model.

In the last decade, a new generation of DSGE models has been developed and is now widely used by many central banks, including the Federal Reserve System of the USA, the European Central Bank, the Swiss National Bank, the Bank of England, and others. In the Central Bank of the Republic of Uzbekistan, the process of step-by-step formation of the DSGE model has been started in 2022 in cooperation with the Swiss National Bank.

DSGE models are built **on microeconomic fundamentals** emphasize the **intertemporal choices** of economic agents. One of the main features of such models is the **dynamic interaction between blocks**, where expectations regarding the future are a determinant in today's decisions. Thus, the dependence of current choices on **uncertain future results** makes the model **dynamic**.

The models' **feature** of **general equilibrium** indicates the interaction between decisions on economic policy and the behavior of agents. In addition, a more detailed specification of the **stochastic** shocks, which result in economic fluctuations, allows to trace the **transmission of shocks to the economy** more clearly.

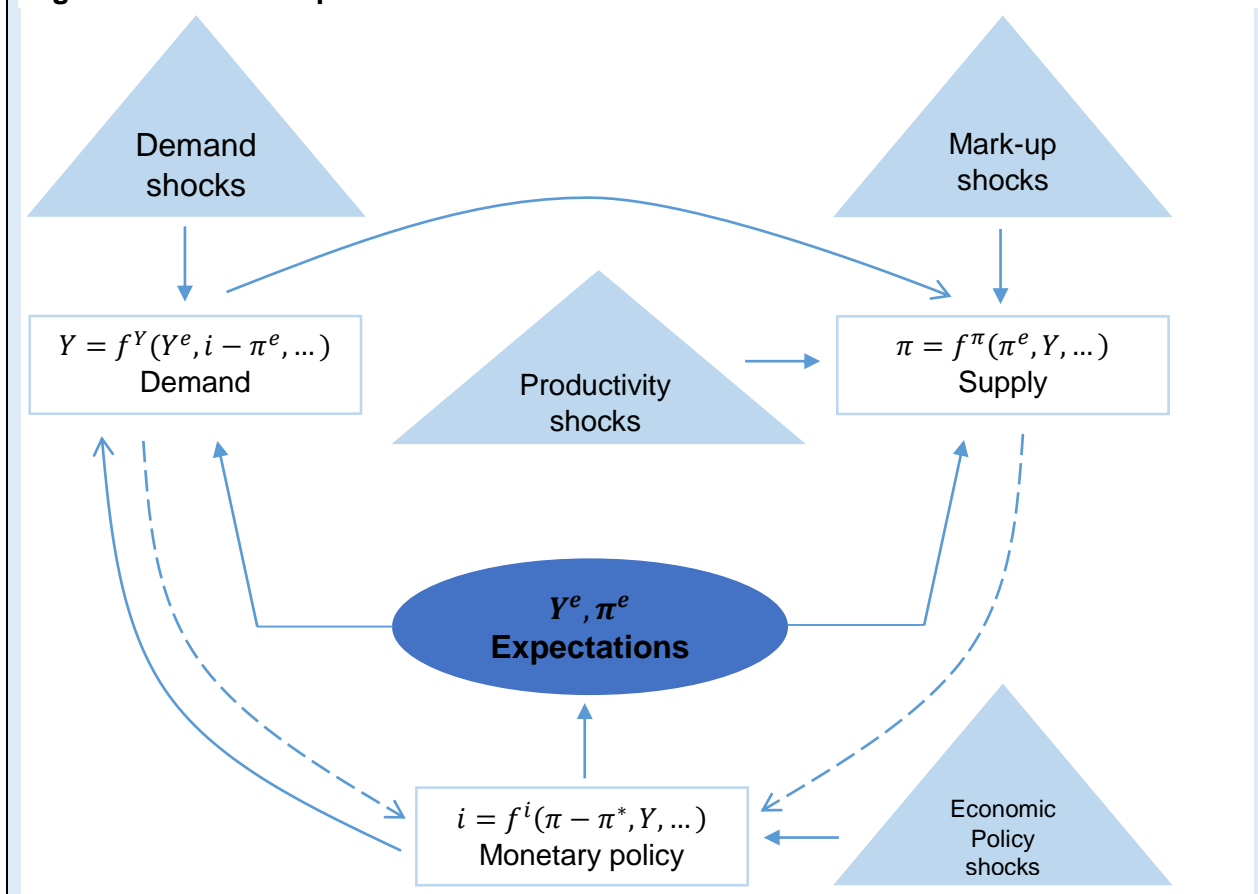
Dynamic stochastic general equilibrium models used for macroeconomic policy analysis are generally built around **three interrelated blocks** with a relatively simple structure: **a demand block, a supply block, and a monetary policy rule**.

The equations determining these blocks, as mentioned above, are derived from **microeconomic fundamentals, that is the explicit assumptions** about the behavior of the main economic agents – **households, firms and the government** are used. Under the influence of the interaction of those agents, the markets reach equilibrium in each period, leading to the “**general equilibrium**”, main feature of these models.

An overview of the DSGE model includes interconnected blocks of demand, supply and monetary policy (*Figure 7.1*).

The demand block determines real activity (Y) as a function of the past real interest rate, which is the nominal rate minus expected inflation ($i - \pi^e$), and the expected future real activity (Y^e). The concept of this block is that households and firms prefer to save rather than consume or invest when real interest rates are temporarily high. Meanwhile, consumers are willing to spend more when expectations about the future are positive (higher Y^e), no matter what interest rate.

The line connecting the demand block to the supply block shows that the level of activity (Y) resulting from the demand block is a key factor in determining inflation (π), together with future inflation expectations (π^e).

Figure 7.1. Main components of the DSGE model¹²

During periods of high economic activity, firms need to raise wages to encourage employees to work longer. Higher wages increase **marginal costs**, thereby putting pressure on prices and causing inflation. In addition, the higher inflation expectations are for the future, the higher the increase in prices, that results in inflation today.

Output and inflation, defined in the supply and demand blocks, are included as **factors in the monetary policy block**, as shown by dashed lines. The equation in this block shows how the central bank typically sets the nominal interest rate (i) as a function of inflation and real activity. This rule implies that central banks raise short-term interest rates **when the economy is overheated** and inflation is high, and lower rates when there is economic stagnation.

Through this adjustment of the nominal interest rate, monetary policy, in turn, impacts on real activity and thereby inflation. In the scheme, this process is represented by a line that goes from the monetary policy block to demand block, and then to the supply block. The policy rule therefore closes the circle, giving us a complete model of the relationship between the three main **endogenous variables**: output (Y), inflation (π) and nominal interest rate (i).

While this brief description may **seem static**, one of the fundamental features of DSGE models is the dynamic interaction between these blocks, in the sense that **expectations about the future** are a determining factor in today's decisions. Therefore, future output and inflation, and thus today's expectations about them, depend on

¹² Sbordone A. et al. Policy Analysis Using DSGE Models: An Introduction. FRBNY Economic Policy Review. October 2010.

monetary policy tomorrow, obviously, taking into account what will happen in the theoretically infinite future.

The diagram clearly depicts the role of expectations in the model and the dynamic relationships between the blocks they create. The impact of expectations on the economy is represented by arrows that go from monetary policy to demand, and then to the supply block, where production and inflation are determined. This is to emphasize that the monetary policy has a large influence on the formation of expectations. In fact, in **DSGE models, expectations are the main channel through which monetary policy impacts on the economy**, and this is feature consistent with the fact that financial markets and the public pay close attention to central bank's statements regarding the likely course of action.

The last component of DSGE models described in the diagram is their **stochastic nature**. In each period, **random exogenous events** disrupt the equilibrium in each block, causing uncertainty in the development of the economy, thereby resulting in economic fluctuations. Without these shocks, the economy would develop along a perfectly **predictable path and business cycles would not exist**.

These shocks are represented in the diagram as triangles with arrows pointing toward the equilibrium which they directly affect. For example, **mark-up and efficiency shocks** affect the prices and production decisions of firms shaping a supply block, while **demand shocks** include changes in the willingness of households to purchase goods produced by these firms.

The DSGE model being developed for Uzbekistan also reflects the traditional features of the New Keynesian approach based on the above general economic approach.

The model captures the process of domestic production and transactions with the outside world, that is the production of gross domestic product and its consumption by agents, and the balance of payments.

In the model, the production process is **conditionally divided into three parts**:

- basic good producers manufacture **intermediate goods** employing capital and labor, which are the main production factors;
- this intermediate product is delivered by monopolistically competitive suppliers - **distributors** - to final product producers - aggregators;
- **the final good** is manufactures by aggregators using intermediate inputs.

In this model, the main goal of the Central Bank is **to ensure that inflation is within the target range**, employing the interest rate based on the **Taylor rule**.

In the model, households are the owners of capital and the source of labor. They create the demand for the final product, provide the supply of labor, and try to maximize their utility within **the budget constraint during their lifetime**.

Government spends to perform its main functions, also creating demand for final products, and generates income through taxes collected from households. If expenditures exceed revenues, a budget deficit occurs, and in the model, the government tries to ensure that this deficit is within the specified debt target ratio.

The model also includes **the rest of the world (external) block**, where firms import in order to produce goods and export some part of the finished products. In addition, households may have deposits and loans in foreign currency, and the government may attract foreign debt to finance budget deficits, where exchange rates and foreign interest rates have an important role.

APPENDICES

Appendix 1

Schedule of the Board meetings of the Central Bank of the Republic of Uzbekistan to revise the policy rate in 2023

In 2023, meetings of the Board of the Central Bank to revise the policy rate will be held according to the following schedule:

January 26;

March 16;

April 27;

June 15;

July 27;

September 14;

October 26;

December 14.

Following all the Board meetings, a press release of the Central Bank is to be published on the official website of the Central Bank.

Also, there will be a press conference with the Central Bank management on the results of the main meetings on January 26, April 27, July 27 and October 26, and the "Monetary Policy Review" will be announced.

Appendix 2

Expansionary fiscal policy, its impact on inflation and possibilities of applying fiscal rules

*Fiscal policy has an important role in driving economic activity, as well as in achieving **price stability**. Fiscal policy instruments - government spending, tax rates, fiscal balance, and public debt - influence aggregate demand and, in turn, lead to changes in the overall price level.*

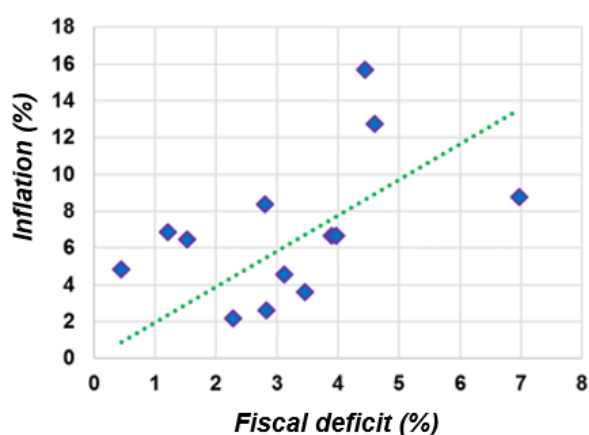
In a context of high uncertainty in the external economy and growing risks of economic slowdown, further economic development, and maintenance of macroeconomic stability **prompt governments to pursue expansionary fiscal policies**, which puts additional pressure on the budget and expands the fiscal deficit.

As a result of reforms in recent years, Uzbekistan's budget deficit by the end of 2021 amounted to **5.6 percent** of GDP (*in international practice, a deficit of less than 3 percent of GDP is considered moderate*).

The impact of a budget deficit on inflation depends on **the way and source** of financing it. Today, many countries, particularly Uzbekistan, finance their negative fiscal balances through **external borrowing**.

In recent years there has been much debate among economists regarding the impact of budget deficits financed through external debt on inflation. Empirical estimates show that the nature of macroeconomic indicators varies considerably across countries and that the interdependence of indicators **changes over time** (e.g. during a crisis). Therefore, estimating this relationship with linear models (without taking into account changes over time) may lead to inaccurate results.

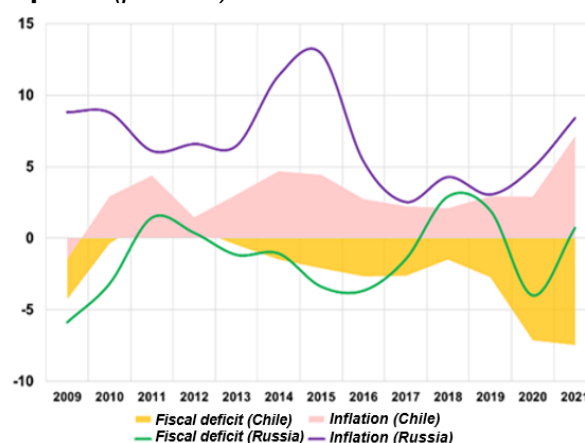
Figure 2.1. Correlation between fiscal deficits and inflation in emerging economies*



Source: based on IMF data

* Group of emerging economies: Belarus, Bulgaria, Kazakhstan, Kyrgyzstan, Moldova, Poland, Russia, Tajikistan, Türkiye, Ukraine, Uzbekistan, Vietnam, Pakistan. The figures are averages for 2019-2021.

Figure 2.2. Fiscal deficits and inflation in countries with a high share of commodity exports (percent)



Meanwhile, an IMF study¹³ on the basis of data on **107 countries** found a positive relationship between fiscal deficits and inflation in the group of developing countries (with no significant correlation in the group of developed countries).

Also, budget deficits have been found to have a significant impact on the overall price level in a period of relatively high inflation. According to an analysis of recent data, the correlation between these indicators persists in developing countries with relatively high inflation rates.¹⁴ (Figure 2.2).

The analysis shows that there is **certain interrelation between the budget deficit and the inflation** in Uzbekistan as well.

An analysis with a non-linear autoregressive distributed lag model (NARDL) revealed that the negative impulse of the state budget balance, that is deficit widening by **1 p.p.** in the short-run leads to an increase in inflation by **0.7-0.8 p.p.**, while the overall long-run effect is estimated at **0.9-1 p.p.**

In the transition to an inflation targeting regime, it is crucial to improve fiscal discipline, including fiscal consolidation and compliance with "**fiscal rules**", that can significantly reduce the adverse effects of public expenditure volatility on the inflation rate.

Model equation used for the analysis: (1)

$$\Delta CPI_t = \alpha_t + \beta \Delta CPI_{t-1} + \theta^+ \Delta FB_{t-1}^+ + \theta^- \Delta FB_{t-1}^- + \sum_{i=1}^p \gamma_1 \Delta CPI_{t-i} + \sum_{i=0}^q \gamma_2 \Delta FB_{t-i}^+ + \sum_{i=0}^q \gamma_3 \Delta FB_{t-i}^- + \mu_t$$

where: ΔCPI_t – price level change; ΔFB_t – fiscal balance («+» - positive fiscal impulse, «-» - negative fiscal impulse); $\alpha, \beta, \gamma, \theta$ – coefficients, μ_t – residuals.

Fiscal rules in countries with a high share of commodity exports

By the end of 2021, 105 countries **were employing fiscal rules** to ensure macroeconomic policy predictability and stability. Meanwhile, in countries exporting mainly commodities, fiscal balance constraints are widely used, primarily by setting a base price for commodities. This serves to reduce the high volatility of the national exchange rate and **the country's risk premium**, resulting in improved investment attractiveness.

Our major **oil-exporting** trading partners adopted a budget rule using the base price for oil.

In particular, in Russia until 2022, the Budget rule applied was to set **a base price for oil** and accumulate all revenues from oil exports at a price above the base price into a special fund. If the selling price is below the base price, the "**uncovered**" part of the budget deficit is financed from this fund.

For the base oil price, the annual average oil price (\$40 per barrel in 2017 prices, indexed at 2% per year from 2018) was taken as the reference price, but in 2022, due to the geopolitical crisis, this rule was abolished.

Since 2022, **a countercyclical budget** rule has been introduced **in Kazakhstan** and is planned to be used in the formation of the budget for 2023-2025. Under this rule, the marginal price of oil for the following year is set and is used to determine the amount of the

¹³ Fiscal deficits and inflation / Luis Catão and Marco E. Terrones. IMF. Research Department

¹⁴ Lin H.Y., Chu H.P. (2013). Are fiscal deficits inflationary? Journal of International Money and Finance. 214-233.

guaranteed transfer when forming the budget. In the year in which the budget rule is in force, if oil production exceeds **90.5 million tonnes** (the highest in the pre-pandemic period), the marginal price will be revised downwards proportionally.

Other countries that use fiscal rules based on the oil price include Mexico and Norway.

In addition, **in Chile**, structural balance¹⁵ is parameterized taking into account the long-term price of **copper** (one of Chile's main exports) and the production potential of the economy. Moreover, independent organisations are involved in the long-term forecasting of copper prices, that ensures effective compliance with the rule by the state. However, the high price level is not taken into account in the budget process and only serves as a reference point for the government.

¹⁵ Structural balance - fiscal balance when the economy is at a potential level

Correlation between consumer price index, GDP deflator and producer price index

The analysis of inflation rates on an ongoing basis is essential for the effective implementation of monetary policy by central banks.

Inflation **in a broad sense** is a measure of the level of price increases in an economy, and in practice, several methods are used to calculate it. Price changes and the calculation of inflation are monitored by state statistics authorities and calculated on the basis of generally accepted indicators such as **consumer price index (CPI)**, gross domestic product (GDP) **deflator** and **industrial producer price index** as a generally accepted main indicator.

Consumer Price Index (CPI) is one of the most important indicators of inflation, which measures the overall change in the price of a fixed set of goods and services purchased by the average consumer. The consumer price index shows the average change in the prices of all types of goods and services across the country.

Producer Price Index (PPI) is one of the main indicators of inflation in the manufacturing sector, describing the change in prices over time without changing the structure of the output. This index is calculated on the basis of information on the recorded prices of goods of industrial enterprises and their weights according to the composition of industries. Producer price indices calculated by product are sequentially aggregated into an overall producer price index for the relevant industries (sub-industries) and for the industry as a whole.

GDP deflator measures the change in price per unit of a good produced in the current period compared to the price per unit of a good produced in the base period and is equal to the ratio of the nominal and real growth rates of GDP.

Structurally, **imported goods and services** constitute a significant part of the consumer basket, and their non-inclusion in PPI results in a significant difference between the two indices. In addition, the two indices classify goods and services into different groups.

For example, **the prices of energy resources** are classified as goods in the PPI index, while in CPI, they are included in the services. PPI calculates the costs of transportation, retail and wholesale of goods **separately** from the cost of goods, while CPI usually takes into account the price of goods for the consumer. Furthermore, CPI includes **sales and excise taxes**, whereas these taxes are not reflected in the PPI.

According to the State Statistics Committee, these price indices have had different dynamics in recent years in our country, but in 2017-2019 **significant growth was observed in all three indicators**.

This was mainly due to the sharp depreciation the official exchange rate as a result of foreign exchange market liberalization in 2017. That is, the transition to market-based exchange rate determination based on supply and demand, as well as the convergence of local product prices with those of neighboring countries as a result of foreign trade liberalization.

During this period, there were sharper changes in the dynamics of GDP deflator and CPI, which means that the prices included in these indices were set by local producers and

included export prices calculated through **the official exchange rate**, and as a consequence, the effect of the rapid appreciation of the official exchange rate was significant.

On the contrary, CPI does not include export prices, but the import prices, and the prices of imported goods in consumer markets were formed based on **the informal exchange rate**, the change in the official exchange rate had less effect on CPI index (*Figure 3.1*).

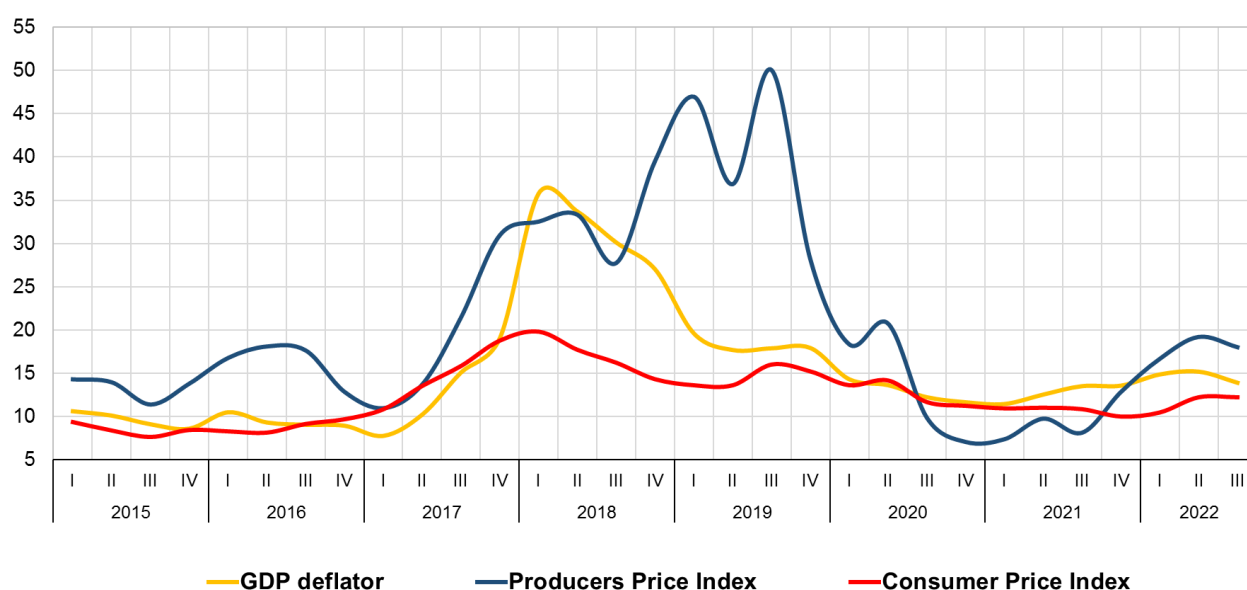
In 2018-2019, there was a sharp increase in imports of food and non-food products as a result of **import liberalization processes**. This process was formed in direct connection with the liberalization of the foreign exchange market and trade, the rapid expansion of loans, as well as a strong rise in domestic demand.

Due to the large share of imported goods in consumer food and non-food products, the CPI index was lower than GDP deflator in 2019. In 2019, PPI and GDP deflator figures were also high due to the pricing of imported components used in the manufacture of **industrial products** based on new exchange rates, which in turn led to an increase in the cost of final products.

In addition, rising energy prices in the fourth quarter of 2018 and tax changes in the first month of 2019 (*extension of VAT*), and price increases **in the chemical and metal industries** caused producer prices to rise.

If the higher growth of the GDP deflator in the first half of 2022 compared to the previous year was a result of an **increase** in the prices of the main manufactured consumer goods and **export prices in the world**, the formation of CPI lower than GDP deflator and PPI is explained by the high share of imported goods among food and non-food products (*Figure 3.2*).

Figure 3.1. Dynamics of GDP deflator, PPI and CPI in Uzbekistan over 2015-2022



Source: Central Bank calculations based on the data from the State Statistics Committee

In the last months of 2019, there was downward dynamics in CPI, PPI and GDP deflator as a result of the reforms in the framework of the transition to the inflation targeting regime in the economy, and from the second half of 2020, weaker consumer demand due to the pandemic served to lower all three indicators.

In turn, in the post-pandemic period, as a result of the gradual recovery of the economy, there was an increase in **consumer demand** leading to an upward dynamic in CPI, PPI and GDP deflator.

In particular, during and after the pandemic, as a result of rising world prices of gold, copper and natural gas, which are our main export products, the indicators of the GDP deflator and CPI accordingly increased.

In the first half of 2022, the increase in prices of **non-ferrous metals** (gold and copper) and **processing industry products** put an upward pressure on the producer price index (Figure 3.3).

In addition, oil and metal ore mining, foodstuffs, chemicals, vehicles and water processing also demonstrated high growth rates.

Additionally, price increases in food production in the summer months of this year was due to **the price liberalization of wheat** purchased from farmers.

Figure 3.2. Changes in the composition of the GDP deflator (contribution, in percentage points)

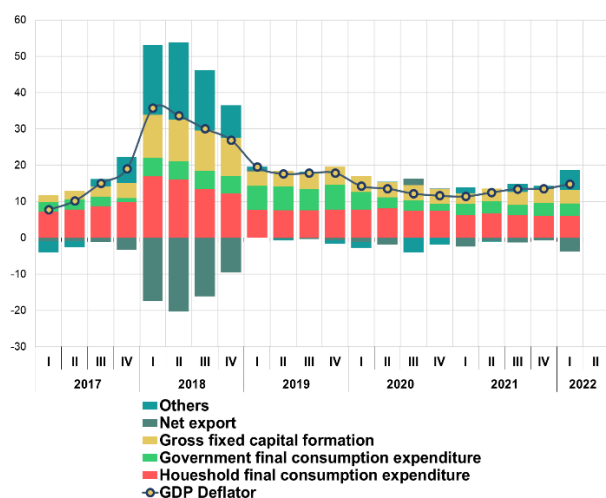
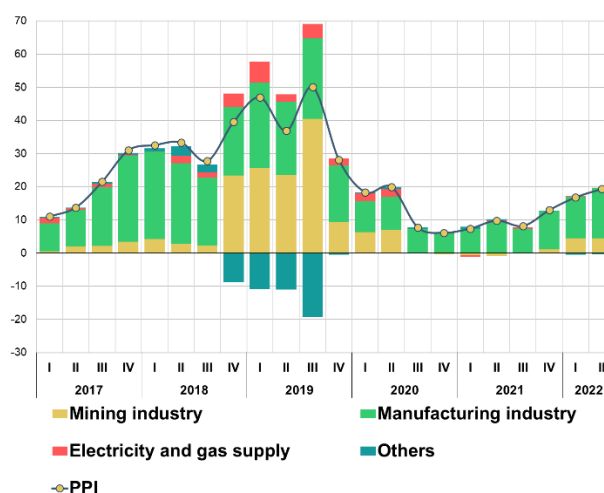


Figure 3.3. Changes in the composition of the PPI (contribution, in percentage points)



Source: Central Bank calculations based on the data from the State Statistics Committee

Appendix 4

Online price monitoring system

Since August 2021, the Central Bank has launched a process for **operational** monitoring of price changes in basic consumer goods and services **from alternative sources (without human factors)** - the permanent Online Price Monitoring (OPM) system.

Through this system of the Central Bank, the prices of goods and services **published for general use** on the websites of economic entities producing, selling and delivering them, are **monitored** by **software** and collected **in a single database**.

This makes a significant contribution to operational analysis of the price dynamics of consumer goods and services and developing appropriate recommendations in the context of the acceleration of current economic processes.

To date, about 1,000 prices from about 50 websites are tracked each week through an online price monitoring system, for which 262 different types of food and non-food items and services most consumed by the population and with the highest weight in total CPI were selected. Weekly, monthly and annual **ACPI** (alternative consumer price index) is calculated based on the price changes of these products.

Particularly, observations include **114** food items, **108** non-food products, and **39** types of services. In the future, as the number of online stores increases the list of observed sources will be expanded.

Online price monitoring results

According to online observations, the alternative price index on selected goods and services increased **by 1.5 percent** in September of this year. In particular, price increase amounted **to 2.3 percent** for food stuff, to 0.4 percent for non-food products and **to 1.2** in services (*Figure 4.1*).

Stages of calculation of alternative consumer price index

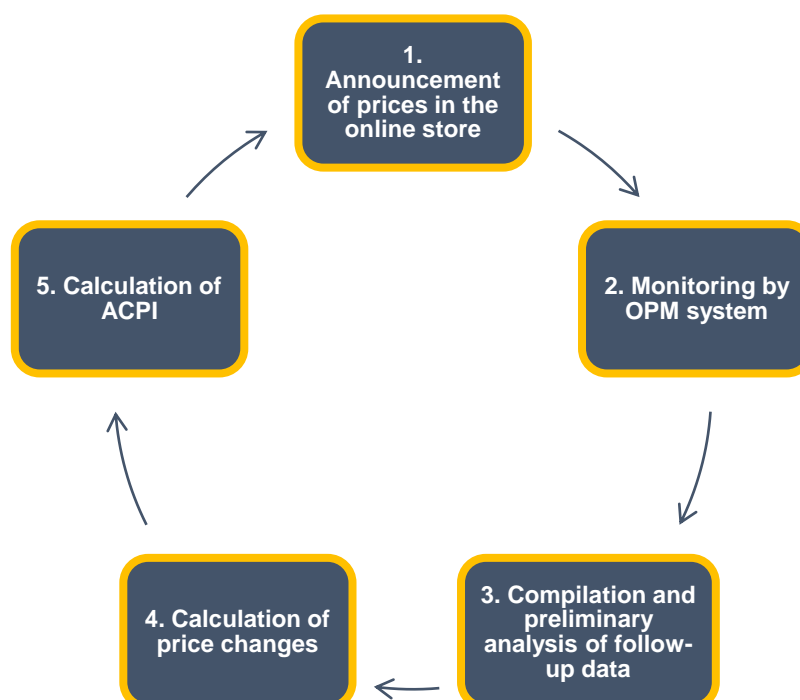


Figure 4.1. Monthly ACPI by groups of goods and services (in percent)

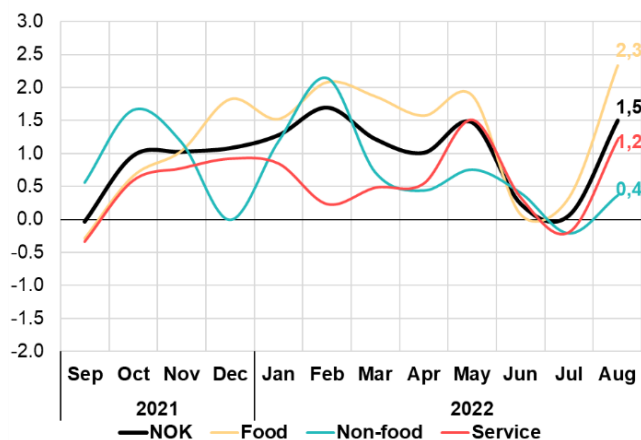
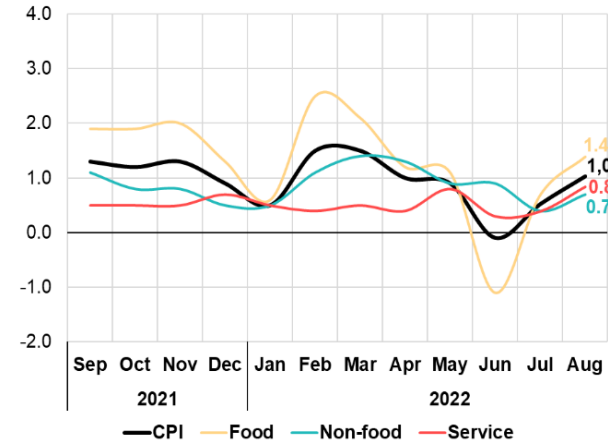


Figure 4.2. Monthly CPI by groups of goods and services (in percent)



Source: State Statistics Committee data and Central Bank calculations

In September, the contribution of food prices to the ACPI was **1.1 percentage points**, while those of non-food products and services amounted to **0.1** and **0.3 percentage points**, respectively (Figure 4.3).

The ACPI indicators, calculated on the basis of the data collected through the online price monitoring system, are compared with the results of observations of the Central Bank's regional departments in markets and with the consumer price index of the State Statistics Committee.

Although these three different indices had relatively different dynamics in September-October of last year, since March of this year, all three indicators have been having **similar trends** (Figure 4.5).

Also, in March, the downward trend in price indicators of the OPM system was more rapid, whereas the CPI started to decrease with a slight delay, however, in the following months, the trends were similar.

Figure 4.3. Monthly ACPI and contribution of its components (in percent and percentage points, as of August 2022)

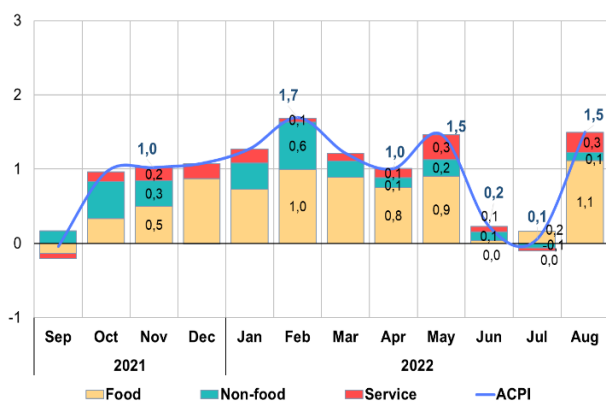
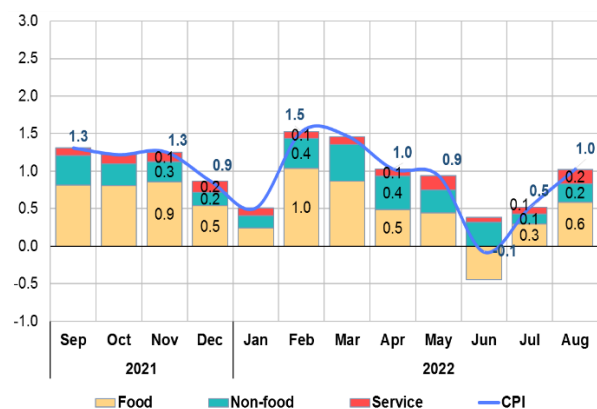


Figure 4.4. Monthly CPI and contribution of its components (in percent and percentage points, as of August 2022)

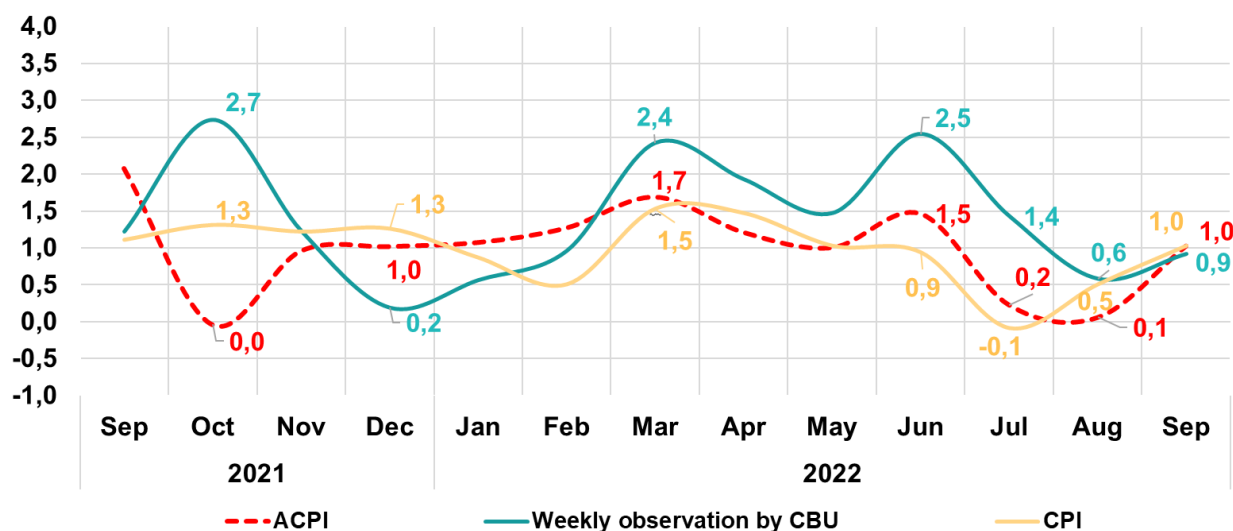


Source: Central Bank calculations

Due to the fact that prices are collected daily in the OPM system, there are opportunities to respond quickly to price changes. In this regard, the operating efficiency of the OPM is of great importance today.

In the near term, an increase in the number and scale of shopping malls, delivery services, and different brands in densely populated cities will serve to improve the competitive environment in this segment and, as a consequence, the sustainable pricing of consumer goods.

Figure 4.5. Price indices calculated through OPM system, weekly observations, and by the State Statistics Committee



Source: Central Bank calculations

The varying trend in the alternative index in September-October last year can be explained by the fact that **the impact of the monthly wage increase** in September occurred earlier **in farmers' market prices** than in the prices of large supermarkets.

In addition, in October 2021, the price impact of the introduction of VAT exemptions on meat products, potatoes, and vegetable oil and the waiving of customs duties on imports of citrus and other fruits occurred earlier in supermarkets than in farmers' markets.

Taking into account the above, the results of the three indicators are consistent, but the period of **sensitivity to inflation factors** is different. Alternative indicators of inflation are more efficient in operational monitoring and analysis of changes in consumer prices.

As of September annually inflation calculated through OPM amounted to **12.1 percent** mainly due to higher food prices. In particular, food products rose in price **by 15.9 percent**, contributing to the total ACPI **by 7.6 percentage points**.

In this period, the price of non-food goods in online stores increased **by 9.6 percent**, contributing to the overall alternative inflation by 2.9 percentage points, while total offered services rose in price **by 7.1 percent**, contributing to the total ACPI by 1.6 percentage points.

Measures to be taken to develop the OPM system

Following measures are to be taken in the next stages in order to improve and develop the capacity of the OPM system, as well as to further increase the transparency of the collected data:

to increase the number of trade outlets and main types of goods and services tracked in the system;

to further improve the capacity of the program and establish **a daily study** of prices in online stores and retail chains;

within the framework of **the e-CPI project**, to further develop the OPM system, online inflation forecasting and exchange of experience with foreign central banks;

to implement **short-term projection models** using the dynamics of generalized alternative indices developed on the basis of daily and weekly online prices;

to publish **infographics** and **videos** on the results of OPM system quarterly on the official pages of the Central Bank;

to monitor the difference between the prices in the central bazaars and large shopping malls in the regions and the prices of the online stores.

Appendix 5

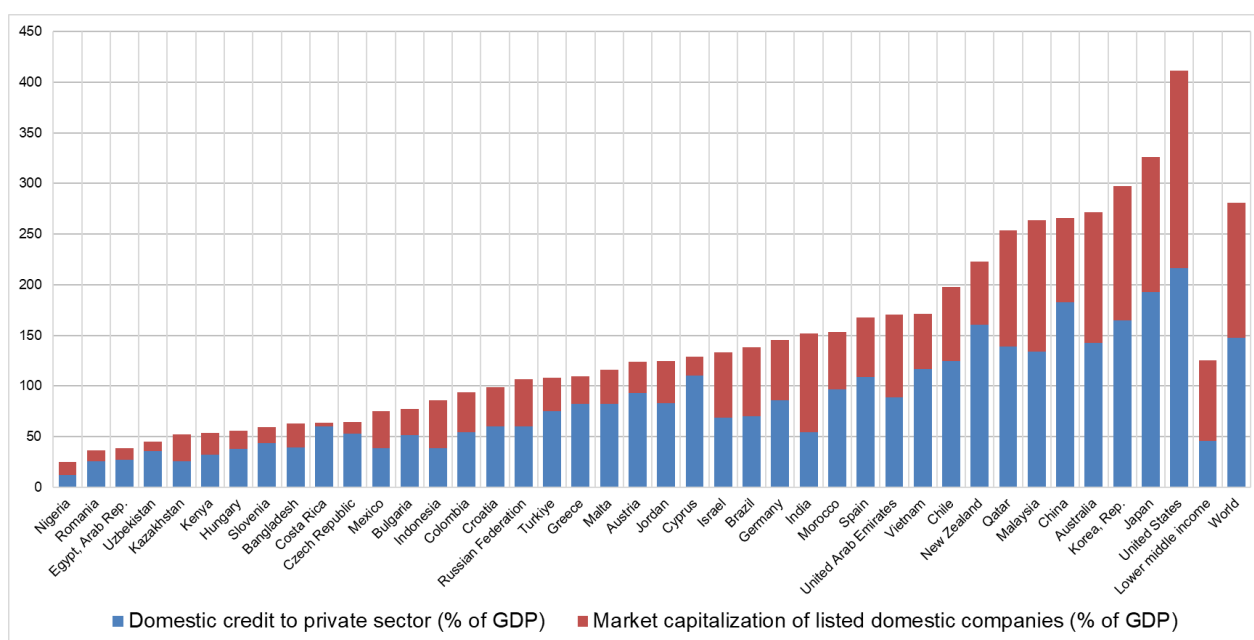
International experience in expanding access to finance

Financial systems can be divided into **two large groups**, which are bank-based and market-based financial systems. In a bank-based system, main participants in the financial market are banks, whereas in market-based financial system, **trading securities and bonds** are the major source of financing.

It should be noted that based on the structure and historical features of a particular economy, one or another system has its own **benefits** and **drawbacks**. In doing so, the formation of financial systems is based on a certain sequence and relevant stages.

In the formation of the financial system, a banking system emerges first and a government bond market starts to form in the next stage. As financial markets develop, a corporate securities market and, finally, a stock market emerge.

Figure 5.1. Total funding by countries (as a percentage of GDP)



Source: World Development Indicators

In turn, the introduction of financial derivatives and other complex financial instruments serve to make the system more complicated.

Advantages of bank financing. Banks usually have **enough information** about a client when deciding on lending. This facilitates collateral requirements and ensures that clients are provided with a loan. In turn, the availability of credit requirements in the financial sector stimulates the introduction of advanced standards of corporate governance, as well as to a certain extent the improvement of the financial discipline of enterprises.

Banks are **better at assessing their existing risks** and allocating those risks more effectively over time. Whereas financial markets rely more on short-term sources of funding.

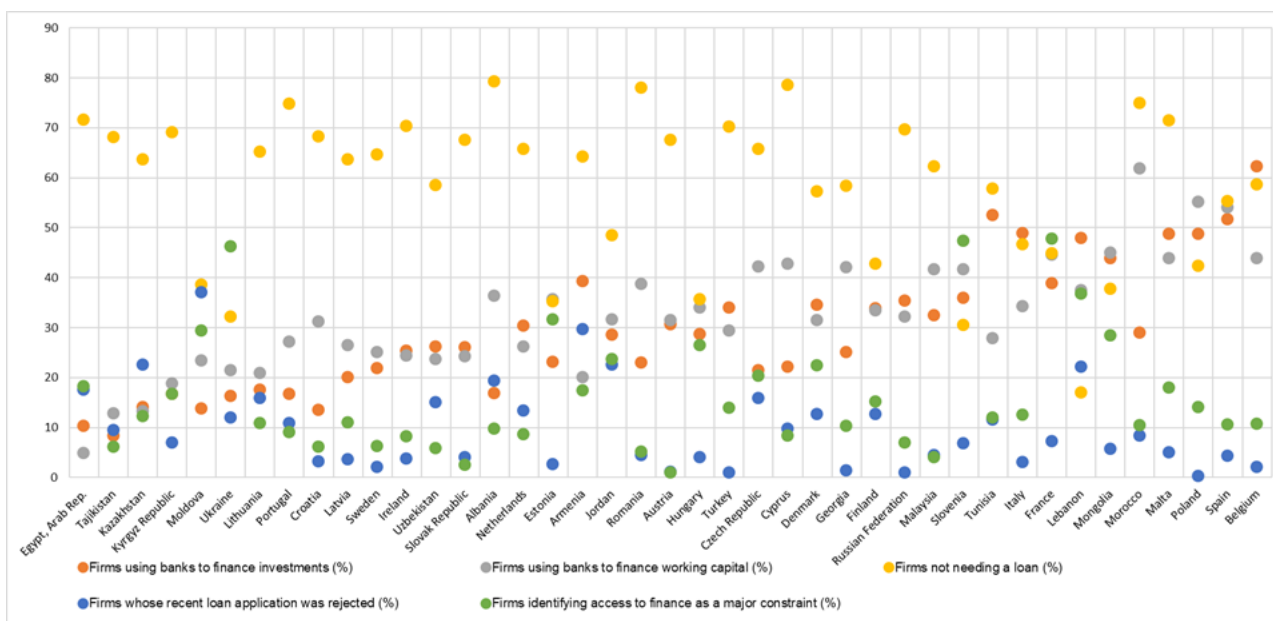
A number of **advantages of financial markets** over banks should be noted here. In particular, there are opportunities in the financial market **to finance innovative and high-**

return projects with relatively high risk. In contrary, the risk norms in banks are somewhat limited.

Moreover, regulations established in the financial market greatly help **to improve the management of businesses** and change **inefficient management systems**.

Also, in a context of high uncertainty and rapid change, financial markets are **highly flexible** in **collecting information** as well as in introducing innovative products and technologies, which, unlike the banking system, contributes to a reduction in **ownership concentration**.

Figure 5.2. Use of bank resources by enterprises (*share of respondents, in percent*)



Source: Global Financial Development Database

Additionally, availability of **initial public offerings** on the financial markets for companies in various sectors, including innovative companies, facilitates the mobilization of the necessary financial resources to some extent. Enterprises also tend to meet established requirements for adequate financing of their activities, as well as to ensure transparency.

Studies show, in emerging markets banking system plays a more important role. In this regard as **incomes in the economy grow**, so does the importance of the financial market.

Many developing countries have **comprehensive programs** and **strategies** for the development of a financial sector that meets modern standards and is able to ensure balanced economic growth.

In particular, changes in the financial sector **in Chile** began with the processes of liberalization of the sector. In doing so, the government deregulated the banking system, including control of interest rate and lending controls and privatized state-owned banks.

Furthermore, liberalization of the financial sector was continued along the following lines. In particular, the stock market was **reformed**, followed by the reform of the insurance market. The accumulation pension system and procedures for issuing and placing securities were simplified.

In this country, pension funds, insurance companies and other financial assets in the financial sector (investment funds) account for almost half of all assets. These conditions

contribute significantly to the sustainability of the local capital market. Well-developed pension funds and insurance companies serve to mitigate the negative effects of global financial instability.

According to the analysis, in 2020, Chile's total local loans to the private sector and the stock market amounted to 197.6 percent of the GDP. Meanwhile, bank lending to the private sector was equal to 88.7 percent of the GDP.

The sufficient development of Malaysia's financial sector (private sector credit of 134 percent of GDP, stock market capitalization of 129.5 percent of GDP) serves to ensure macroeconomic stability in the country and improve the sector's financial resilience to external shocks.

Also, **financial market depth** supports economic growth by reducing the cost of financial resources, thus stimulating public and private investment.

Malaysia's financial sector includes traditional and Islamic banks and non-bank financial institutions. Although the share of banks in the financial sector remains high (*bank loans to the private sector accounts for about 134 percent of GDP*), the share of non-bank finance is increasing significantly.

The expansion of the local currency **stock** and **bond market** is important for the stable development of the financial sector and to a certain extent protects the national economy, especially the financial sector, from external instability.

While pension funds and insurance companies invest a large part of their financial portfolios in the local bond market, the gradual loosening of restrictions for residents has helped to increase investment in foreign countries. This, in turn, allows loans to be raised from foreign financial markets to finance local infrastructure in local currency.

Significant progress has been achieved in covering low-income populations through improvements in **microfinance**, as well as **financial literacy** and **consumer protection systems**. The development of Islamic finance has further expanded the use of financial services.

Between 2001 and 2020, there were two main plans for developing Malaysia's financial system. **The first plan was to improve the institutional capacity** of the financial system and develop the country's financial infrastructure. This plan resulted in a market-based financial sector and a competitive financial market environment.

The **second main plan** was to develop **efficient intermediation**, deep and dynamic financial markets for high value-added and profitable economy, increase financial inclusion, strengthen international financial integration, globalize Islamic finance, ensure the stability of the financial system, achieve high economic efficiency through electronic payments, focus on customers and educate professionals for the financial sector.

The plan also aimed to **improve financial regulation** and develop **an ecosystem financing** small business.

GLOSSARY

Administratively regulated prices	are prices for certain types of products (goods, services), which are not determined by market mechanisms (supply and demand), but rather are administratively regulated through government agencies, organizations and enterprises.
Anchoring inflation expectations	is linking inflation expectations of the population and business entities for the next medium term period to a certain quantitative indicator (inflation target).
Balance of payments	is statistical report which reflects all economic transactions between residents and non-residents for a certain period of time.
Consumer demand	is a part of the aggregate demand related to consumer goods and services in the economy.
Consumer Price Index (CPI)	is an indicator of the change in the general level of prices for goods and services purchased by the population for consumption. The CPI is calculated as the ratio of the sum of prices of these goods and services in the current period to the prices of the previous (base) period.
Core inflation	is inflation calculated excluding changes of prices for certain goods and services (fruits and vegetables, fuel, certain types of public transport, communication services, housing and public utilities, etc.), which are influenced by factors of seasonal and administrative character.
Cross-border money transfer	is transfer of funds to or from the country through international money transfer systems.
Currency interventions of the Central Bank	is the participation of the Central Bank in the foreign exchange market by selling and purchasing foreign currency in order to sterilize the excess liquidity in the banking system caused by the purchase of monetary gold by the Central Bank, as well as to prevent sharp fluctuations in the exchange rate of the national currency.
Current account	is a section of the balance of payments of the country which reflects the flow of goods, services, primary and secondary income (wages of employees, return on investments and others) between residents and non-residents.
Deposit auctions	are operations of the Central Bank to attract funds from the representative account of commercial banks into deposits at auction interest rates (usually for one or two weeks) to manage the overall liquidity of the banking system and to temporarily withdraw excess liquidity from the banking system in conditions of structural liquidity surplus.
Economic cycle	is a natural form of economic development, in which the increase in production, employment, GDP growth is replaced by periods of recession.
Financial market	is a system of economic relations arising in the process of the exchange of economic resources.
Financial stability	is the state of the financial system, in which it is capable to effectively perform its functions in emergency situations, ensuring the

	redistribution of resources and financial risk management, there is no excessive volatility in the financial market (its segments), continuity of settlements is ensured, as well as the ability to eliminate the effects of negative shocks and to recover from stress.
Financial system	is a totality of financial organizations and financial markets, providing the formation and use of funds from the state, organizations, and the population through various financial instruments. In this case, financial institutions (markets and financial organizations) redistribute limited financial resources from one economic entity to another.
Gross domestic product deflator	is a change in the overall level of prices for goods and services produced and consumed in a country over a period of time.
Inflation inertia	is a tendency of inflation to return slowly to its long-term (equilibrium) level after the shock, which deviated it from this long-term level.
Inflation target	is a pre-announced target of inflation that provides the basis for long-term economic growth and price stability.
Inflation targeting regime	is the monetary policy regime, in which the Central Bank declares medium-term target for the inflation rate and focuses all its efforts on bringing current inflation to its target by applying monetary instruments.
Inflation expectations	are assumptions of the population and economic entities regarding the inflation rate for the nearest period. On the basis of inflation expectations, producers and consumers, sellers and buyers determine their future investment, credit, financial and pricing policies, estimate income, expenditure and expected profits.
Interbank money market	is a system of organizing and conducting short-term (usually up to one year) exchange trades for placing and raising funds in the national and foreign currencies.
Interest rate corridor	is a system of bringing short-term interest rates in the money market closer to the Central Bank's policy rate (target interest rate); the upper bound of the interest rate corridor is the Central Bank's lending rate to commercial banks (usually the overnight rate), and the lower limit is the Central Bank's deposit rate for commercial banks.
Investment demand	is demand from business entities for physical capital objects (cars, equipment) and services used to maintain or expand its activities. Investment demand is a part of the aggregate demand in the economy.
Liquidity of the banking system	is cash balances in the national currency on correspondent accounts of commercial banks in the Central Bank of the Republic of Uzbekistan.
Macroprudential policy	is a set of proactive measures aimed at minimizing systemic risk in the financial sector or specific segments thereof.
Monetary factors of inflation	are inflationary factors that can be directly influenced by the Central Bank's monetary policy instruments in the medium term.
Monetary policy	is a part of macroeconomic policy conducted in order to ensure price stability in the domestic market. Monetary policy is implemented to maintain the volume of liquidity in the banking system, interest rates and other monetary indicators at a set level using monetary instruments.

Output gap	is a difference between actual GDP and potential GDP. A positive GDP gap is referred to as an inflationary gap. This means that the growth rate of aggregate demand exceeds that of aggregate supply, which can cause inflationary pressure. In contrast, a negative GDP gap leading to deflation is called a recessionary gap.
Policy rate	is the interest rate, which determines the interest rate on loans for commercial banks and the cost of borrowing for borrowers; changes in the policy rate influence interest rates in the interbank money market.
Recession	is a sharp decrease in production in the economy or a significant slowdown in economic growth.
REPO operations	are transactions of selling government securities to the Central Bank under a repurchase agreement for short-term borrowing by commercial banks or transactions of selling securities to commercial banks for the purpose of managing the Central Bank's money supply and bank reserves (with the government securities serving as collateral).
Reserve requirements of commercial banks	are funds deposited by commercial banks at the Central Bank to comply with the mandatory reserve requirements of the Central Bank. The minimum level of mandatory reserves maintained the Central Bank is determined by the regulations of the Central Bank, taking into account the objectives of monetary policy, the type and term of deposits and other liabilities of banks. Mandatory reserves for each category of funds are equal for all banks.
Stagflation	is high inflation coupled with low economic growth.
Systemic risk	unlike the risks associated with the single financial market or group of participants, it is the risk of collapse of the entire financial system or financial market activity.
Time lag	is a measure of the impact of one of economic event on another dependent economic event with a specific time lag; the time interval between the occurrence of two or more related events.
Transmission channels of the monetary policy	are the channels through which monetary policy decisions influence price dynamics and the economy. The process of gradual transmission of the Central Bank's signal on interest rate changes or its future trajectory from financial market segments to the real economy and, as a consequence, to the inflation rate. Interest rate changes are transmitted to the economy through the following main channels: interest rate, credit, currency, asset prices and expectations.
Trend	is the main tendency of the change in an indicator. Trends can be represented by various equations – linear, logarithmic, power, etc. The actual type of trend is determined by statistical methods or by smoothing the time series of its functional model.
Trimmed inflation	is inflation calculated by excluding the 10 groups of goods (services) with the highest and lowest price increases respectively.