Central Bank
of Armenia

2024 Q1

Monetary
Policy Report

Monetary Policy Program

Published March 12, 2024

Contents

In addition to the Monetary Policy Report, the CBA concurrently publishes additional materials on its website, which the reader is encouraged to reference. These include the MPR Chart Pack (containing statistical charts and tables for global and domestic economic developments as well as the illustrative scenario projections) and the Transparency Report (providing transparency into how the Board of the CBA arrived at its decision).

DISCLAIMER The data presented in this report is current as of March 7, 2024.

Central Bank
of Armenia

01 |

Executive
Summary

A. Executive Monetary Policy Statement

The Board of the CBA today decreased the Refinancing Rate to 8.5%.

At its meeting today, the Board of the Central Bank of Armenia decided to reduce the key policy rate (refinancing rate) by 25 basis points, setting it at 8.5 percent. At the same time, the Board set the Lombard repo facility rate at 10.0 percent, and the Deposit facility rate at 7.0 percent. The Board agrees that a lower refinancing rate is necessary to continue to meet its price stability objective of ensuring an inflation rate of 4 percent over the medium term.

Annual CPI inflation has continued to remain at low levels well below the target, registering -1.7% in February 2024. Core inflation also continued to decrease, at -0.4% year-over-year in January.

The inflationary effects of the global economy on Armenia's economy continue to weaken considerably. In the first quarter of 2024, economic activity globally and in the key trading partner countries of Armenia continue to slow, and annual inflation there continues to decrease. However, the overall inflationary environment continues to remain elevated amid sustained inflationary pressures coming from strong labor markets. Key trading partner central banks would be expected to maintain a tight monetary policy stance in the near term, which could pose contractionary risks to global demand and commodity prices. Further sources of downside risk related to the global outlook and volatility in commodity prices include the impact of heightened geopolitical tensions in the Middle East on oil prices and supply chain disruptions, as well as risks of a worsening outlook for the Chinese economy.

Economic activity in Armenia remained robust in the fourth quarter, continuing to be driven by high growth in the construction and trade sectors. External demand has continued to slow, but domestic demand continues to remain at relatively strong levels. Inflation in Armenia continues to remain low, primarily driven by contractionary policy stance conducted by the CBA, the deflationary pressures from the external sector, and the implications of the appreciated dram. At the same time, growth in labor supply has contributed to somewhat fewer imbalances between aggregate supply and aggregate demand, which has been reflected in cooling wage growth, gradually declining non-traded sticky price inflation, and lower inflation expectations.

In the face of high uncertainty, and given its commitment to achieving the price stability objective, the Board considers multiple scenarios during its deliberations. On the one hand, the Board discussed scenarios where possible underlying economic forces, including the potential for inflation expectations to prove to still be high, as well as uncertainty around the country risk premium, would require a tighter policy stance to cool domestic demand, re-anchor inflation expectations, and meet the price stability objective. On the other hand, the Board discussed scenarios where possible underlying economic developments, including a continued broad expansion of labor supply and weakening demand conditions, generate excess supply conditions that contribute to inflation persistently remaining at low levels. This would imply a more rapid and sizable downward policy rate path to sustainably bring inflation to target over the medium term horizon.

In summary, balancing the aforementioned risks in both directions, the Board of the Central Bank of Armenia finds it appropriate to continue to gradually ease the policy stance. The Board will continue to monitor risk scenarios, and stands ready to take adequate actions to ensure that the price stability objective of 4 percent inflation over the medium-term horizon is met.

Approved by the Board of the Central Bank of Armenia
March 12, 2024

Governor
Martin Galstyan

Deputy Governors
Hovhannes Khachatryan
Armen Nurbekyan

Board Members
Hasmik Ghahramanyan
Davit Nahapetyan
Artak Manukyan
Levon Sahakyan
Narek Ghazaryan

B. Summary of Economic Conditions

Global Economy

In 2023H2, economic activity among Armenia's main trading partners, has been mixed; however, the risks of weaker economic activity going forward are high. The US and Russia both continue to experience high rates of growth, despite continued contractionary monetary policy. On the other hand, the Eurozone is on the precipice of a recession, while sluggish growth in China has again raised questions about the stability of its financial system and remains a key concern for a much weaker global economic outlook. Heightened geopolitical tensions in the Middle East continue to pose risks to oil prices and supply chains.

While the overall inflationary environment in the world continued to soften, strong labor markets across many countries have helped sustain demand, and the domestically driven sticky prices of goods and services in key trading partner countries remain elevated. In such a situation, the key trading partner country central banks would be expected continue to pursue relatively contractionary monetary policy in the near future, until progress on this front is realized. As a result, deflationary effects from the external environment would likely persist in a high-interest rate environment.

Domestic Demand Conditions

The growth rate of economic activity in Armenia remained robust in Q4 2023, standing at 7.8% Y-o-Y, well above estimates of long-run sustainable growth of approximately 5%. Growth continues to be driven by strong activity in the trade and construction sectors. Similar trends were observed in January 2024, with the Y-o-Y economic activity index comprising 10.7%. However, the structure of growth and concentration in some subsectors serves as a source of uncertainty relating to the sustainability of growth. Moreover, growth in private consumption has slowed, though risks for future growth exist given accumulated savings and the potential for future credit expansion. Despite uncertainty, there appear to be somewhat fewer imbalances between aggregate demand and supply in the economy than in recent quarters.

Labor Market & Inflation

In the context of continued strong growth and demand, pressures in the labor market continue to persist despite some softening. Relative to prior quarters, the labor market has softened somewhat, with private wage growth standing at 7.9% y/y in Q4 2023 and 6.0% y/y in January 2024 due to increases in labor supply. The potential for labor supply to increase further, due to a combination of migrant workers to Armenia and the integration of forcibly displaced Armenians from Nagorno-K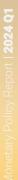arabakh into the labor market, could help ease labor market conditions, potentially moderating inflationary pressures in the medium to long term. The inflationary environment continued to soften, primarily driven by weakened pressures coming from the external sector and the impacts of the CBA's policy stance over the past several quarters. Overall CPI inflation has remained below target since April 2023, registering -1.7% Y-o-Y in February 2024. . Non-Traded Sticky Price Inflation, which captures domestically-driven demand dynamics, remained relatively stable in January 2024, at 3.0% Y-o-Y, continuing along its gradual downward path. At the same time, inflation for services that are highly exposed to external demand have softened.

Monetary Policy

The illustrative Case A scenario in the MPR, where the policy rate path would need to be higher than market expectations, is represented by a scenario motivated by the risk of higher and entrenched inflation expectations that might be masked by lower inflation, while could pose serious risk to price stability for the medium term. In such a scenario, lower real interest rates would reduce incentives to save and boost consumption, adding to existing demand pressures. This could result in a rapid acceleration of inflation, as current exogenous deflationary forces gradually fade away. In such a scenario, a tighter policy stance relative to current market expectations would be needed to anchor inflation expectations to the target and guarantee the price stability objective. The illustrative Case B scenario in the MPR, where the policy rate path would need to be lower than market expectations, is represented by a scenario in which the labor market experiences a broad expansion that generates excess supply conditions. This scenario presumes that labor supply trends noted in during 2023, including the gradual integration of forcibly displaced persons from Nagorno-Karabakh, migrant workers from India, and greater labor force participation, would continue at an accelerated pace. This would have the effect of raising labor supply, increasing potential output, and reducing pressures on wage growth, leading to excessive deflationary forces. Given this type of scenario, the policy rate would need to follow a more rapid and aggressive downward path than what is currently priced in markets in order to sustainably bring inflation back to target in the medium-term horizon.

In the context of the latent risks and uncertainties in the current period, the CBA builds and discusses various scenarios, summarized in the Taxonomy of Scenarios, with the aim of managing possible risks and assessing sources of uncertainty. At the same time, the MPR includes a deeper dive into two illustrative scenarios, which reflect illustrative future paths of the economy that would require either a higher path for the policy rate (Case A) or a lower path of the policy rate (Case B) relative to current market expectations. These illustrative scenarios do not represent a most-likely future, assign weight or probability to outcomes, or include all possible risks and uncertainties.

Central Bank
of Armenia

02 |

Monetary Policy
Objectives &
Framework

Statement of Long-Run Monetary Policy Objectives

Adopted effective March 12, 2024

As enshrined in "The Law of the Republic of Armenia on the Central Bank of Armenia," the primary objectives of the Central Bank of Armenia are to ensure price stability and financial stability. The Board of the CBA is committed to using its full suite of monetary policy instruments to achieve its price stability mandate and provide a nominal anchor for the economy.

We emphasize that the primary objectives of price stability and financial stability are a means to an end. The ultimate purpose of the CBA as an accountable public-sector institution is improving the welfare of our nation. By a commitment to achieving low and stable inflation provides a credible nominal anchor for the economy and thereby anchors inflation expectations, helps to avoid inefficient boom-bust cycles, stimulates investment, supports the economic development of the country, and improves living standards over time.

The CBA develops and implements monetary policy to achieve its price stability objective. The fundamental role of monetary policy is to provide an anchor for inflation and inflation expectations. The Board believes that a four percent inflation target is consistent with its price stability mandate. The inflation target is expressed in terms of the Consumer Price Index (CPI), since it is the best measure of the cost of living and final consumption expenditures, and is the primary reference point for market participants when making planning decisions and setting contracts. Nevertheless, the overall CPI basket of goods and services includes several items that are subject to seasonal fluctuations and global economic developments, which are not directly influenced by monetary policy. We therefore consider alternative measures of inflation, such as core and non-traded sticky prices, which can provide useful information on the underlying inflationary environment.

The CBA's primary means of adjusting the stance and path of monetary policy is through changes in the expected path of short-term interest rates. If interest rates were to be constrained by the effective lower bound, the Bank would be prepared to use its full range of policy tools.

While emphasizing the primacy of achieving the price stability and financial stability mandates over the medium term, the CBA recognizes that it is also responsible for managing the short-run tradeoff between inflation and output. In an open market economy, periodic economic and financial shocks cause economic activity and inflation to fluctuate over time. In this context, the CBA does not target CPI inflation on a period-by-period basis and does not attempt to bring CPI inflation back to the target in the short term if it would result in undue economic and financial instability. In any economic situation, the CBA seeks to develop and implement monetary policy in a manner that brings inflation to the target in the medium-term (12 quarter) horizon, while minimizing associated social costs through a "least regrets" approach.

Effective monetary policy improves welfare by anchoring long-term inflation expectations and reducing the volatility of output and unemployment. Avoiding excessive volatility in the economy can result in substantial improvements in welfare by reducing average levels of unemployment and raising the productive capacity of the Armenian economy. The Bank emphasizes that placing weight on other near-term objectives must not be inconsistent with its primary responsibilities of achieving its four percent target in the medium term and maintaining price and financial stability.

The Board places great emphasis on the importance of communicating its policy and decision-making framework to the public in a clear and comprehensible manner. Clear and effective communication helps make policy more effective, and encourages financial markets, businesses, and the general public to better understand and manage risks and uncertainties. Moreover, this communications approach plays an important role in enhancing the transparency of monetary policy and central bank accountability, which is a key priority for the CBA as an independent public sector institution.

The Board will review and renew the Statement of Long-Run Monetary Policy Objectives during the first decision-making round of each year.

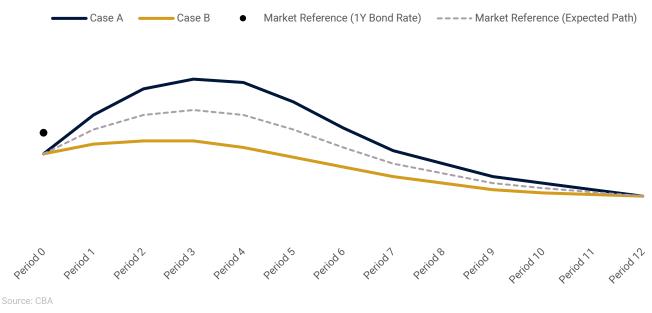# Framework for Monetary Policy as Risk Management

The CBA conducts monetary policy within a risk management framework to analyze and communicate the uncertainty surrounding the economic outlook more effectively. Our approach is to consider alternative scenarios for the evolution of the Armenian economy that have important implications for monetary policy. Elevated uncertainty is a reality that central banks must manage, and we do this by explicitly incorporating it into our framework and communication. We develop and analyze multiple scenarios that would imply a higher or lower path for interest rates than is currently priced in financial markets. At the same time, to steer the policy discussion and communication, we develop two or more illustrative scenarios. These scenarios should not be interpreted as pure risk scenarios but are meant to represent plausible paths for policy rate that could be consistent with managing monetary policy risks and concerns in an individual's economic scenario.

Market Reference is the expected path of the policy rate that is currently priced in financial markets. Ideally, if financial markets in Armenia were more developed, and there existed a derivative market for the policy rate, then we could construct an expected path based solely on market information. We therefore use the 1-year government bond yield, which should reflect the expected average policy rate over the next 12 months, plus some compensation for term premium. In addition, we conduct high-frequency surveys of market participants before, during, and following each decision-making cycle as another reference point for expectations of the policy rate.

Case A reflects a scenario that incorporates economic and financial developments that would require a higher interest rate path than what is currently priced in financial markets that is consistent with guiding the economy back to its long-run equilibrium and to achieve price stability objective.

Case B reflects a scenario that incorporates economic and financial developments that would require a lower interest rate path than what is currently priced in financial markets that is consistent with guiding the economy back to its long-run equilibrium and to achieve price stability objective.

Figure 2.1: Alternative Paths for the Policy Rate

Source: CBA

Note: For Illustrative Purposes Only

To learn more about the Central Bank of Armenia's approach to monetary policy, refer to the draft book, Prudent Risk Management Approach to Monetary Policy: Theory and Practice of FPAS Mark II at the Central Bank of Armenia, edited by Douglas Laxton, Martin Galstyan, and Vahe Avagyan (2024).

Report Structure

The MPR begins with the Executive Summary, which provides the Statement by the Board of the CBA as well as a high-level assessment of economic conditions and underlying forces. On alternating decision dates when the MPR is not released, the Executive Summary is issued as a standalone document, known as the Executive Monetary Policy Statement.

Section III presents in greater detail the CBA's implementation of this policymaking framework. It begins with an assessment of the first two ingredients essential for economic analysis: where is the economy now, and what are the underlying forces driving the economy. This section also communicates how the CBA is managing current risks through a framework of "least regrets". This includes a taxonomy of different types of scenarios that may be relevant in the current policy round, reflecting a summary of the universe of major issues the Board and Staff of the CBA, as well as external stakeholders, are concerned about. Against this context, the MPR presents two or more illustrative case scenarios representing what the CBA will do with its policy instruments in order to reach its objectives.

Section IV presents the Statistical Appendix, which contains charts and tables for relevant economic variables, followed by a chart pack providing key projections from the illustrative case scenarios.

Importantly, the MPR of the CBA is published on the same day as the policy decision is made by the Board of the CBA. This is intended to provide the public with sufficient detail and narratives that describe the framework and analysis that led to the decision in a near-real-time manner. Following the decision and press conference, a separate Transparency Appendix is released, containing more detailed information about how the Board came to the specific decision during the Board meeting.

Disclaimer

The information presented in this report is based on actual data available by March 7, 2024 as well as the results of the surveys conducted by the CBA and judgments made pursuant to the information on future developments of the macroeconomic environment.

The Monetary Policy Report serves as the chief monetary policy communications vehicle for the Central Bank of Armenia, and is published on a quarterly basis. The MPR has been designed to be a user-friendly document that covers key policy-relevant issues but remains accessible to technical and non-technical audiences alike. The report is structured to follow a narrative format that helps illustrate the key issues, risks, and uncertainties that drove the Board's thinking in the current decision-making round and how it arrived at its policy decision. Not all data, analysis, or issues can be reasonably included in the MPR in every quarter without overwhelming the reader or overshadowing key messages. For this reason, the MPR is supplemented with a Chart Pack that provides a complete and comprehensive overview of the current and underlying economic environment.

A decision made by the CBA Board today will affect inflation with a lag. The illustrative scenarios are chosen and designed by our Monetary Policy Department's economists to describe plausible paths of the economy under different risks. Importantly, the selected illustrative scenarios are two of many possible scenarios that the Board considers when making its decisions, which are represented in the Taxonomy of Scenarios in Section III. During each policymaking cycle, the Board is engaged in dynamic discussions and information-sharing with the Staff related to understanding the current position of the economy, its underlying drivers, and key sources of policy-relevant risk and uncertainty. These discussions, including the process through which the Taxonomy of Scenarios is developed and the illustrative scenarios are selected and quantified, are an important input for Board deliberations. The Taxonomy of Scenarios and the selected illustrative scenarios are produced four times a year and are a key, but not the only, input to the CBA Board's monetary policy decisions.

All monetary policy reports which have been published to date are available on the CBA's website (www.cba.am), which also contains all press releases, working papers, and other monetary policy-related publications.

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03 |

Monetary Policy
Outlook

A. Global Economic Developments

United States Economy

US output remained strong in 2023Q4 and expected to continue based on the Atlanta Fed's GDPNow estimate of 2.5%, Q-o-Q, for 2024Q1. A low savings rate (3.7 percentage points lower than pre-pandemic levels) and high wage growth (5%, Figure 3.A.2), reflecting a tight labor market (3.7% unemployment rate, below most estimates of NAIRU) are fueling consumption-led growth (2 percentage point contribution to a 3.2% growth rate in Q4). These coupled with the enormous increase in financial and non-financial household wealth suggests that strong demand may continue contributing to an inflationary environment that persists despite some measures of inflation falling rapidly in H2 2023 (Figure 3.A.2), especially considering the fact that the US economy has been and may continue growing well above most estimates of potential output growth (1.8-2%). These factors are putting the U.S. economy on a pedestal and keeping the Fed on edge (hesitant in cutting rates) with their policy rate instrument going forward, nudging market expectations of the Fed Funds rate upwards (3 expected cuts today vs. 6 in January for 2024).

Alternative measures of underlying inflation, such as the Atlanta Fed's sticky prices and wages, have not exhibited nearly as much disinflation as the Fed's preferred inflation measure that it targets (PCE) (Figure 3.A.2). If sticky prices better reflect underlying inflation dynamics, then the current Fed policy stance may need to be re-evaluated, such that it has not been nearly as restrictive as many would believe. On the other hand, inflation and economic growth could be near their long-term levels, reflecting lower underlying inflation and higher productivity and raising recessionary risks due to excessively tight credit conditions, suggesting that the lags of monetary policy on the real economy have yet to be fully realized.

One reliable measure for tracking this risk is the Fed's survey on bank lending conditions, which rose substantially in 2023 to levels that are typically associated with the onset of a recession (Figure 3.A.3). Despite recently slowing, these lending conditions continue tightening. The aforementioned household balance sheet situation could be distorting the impact of tighter credit conditions; moreover, the risk exists that the transmission lags are longer in this cycle, and that a sharp downturn in economic activity at any moment is also possible with clear implications for quicker deceleration of inflation.

Consumption-Led Growth is Fueling Strong Aggregate Demand that, by Most Estimates, Exceeds Potential Output

Figure 3.A.1: Contributions to US Real GDP Growth, Percentage points, Q-o-Q, Annualized

Source: US BEA; Atlanta Fed
Note: 2024 Q1 based on Latest AtlantaFed's GDPNow Estimate

Underlying Inflation Measures Differ Substantially from Each Other, Presenting Very Different Views about the Economy

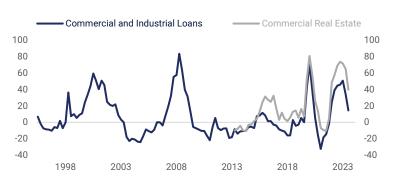Figure 3.A.2: Underlying Inflation Measures, US 3M-o-3M Annualized Change, %

Source: BLS; BEA; Atlanta Fed

Concerns of Tight Credit Standards are Sufficient to Slow the US Economy Down, Posing Risks of a Severe Recession

Figure 3.A.3: Net Percentage of Domestic Banks Tightening Standards, US
%

Source: Senior Loan Officer Opinion Survey on Bank Lending Practices
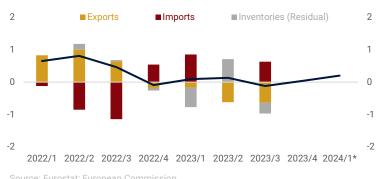
Eurozone Economy

The Eurozone's economy continues to grapple with stagnant growth, but persistent underlying inflationary pressures raise uncertainties around a higher-for-longer interest rate environment. In 2023Q4, Eurozone economic growth was 0.0% Q-o-Q annualized, narrowly avoiding a technical recession (Figure 3.A.4). In particular, Germany, once the bloc's bright spot, has seen increasing signs of strain amid an ongoing contraction in industrial production since 2023. Furthermore, Eurozone's PMI numbers indicate that the contraction in the bloc is mainly driven by the shrinking manufacturing sector that is still recovering from the energy shock, while the services sector remains rather resilient.

Despite low private consumption, underlying inflation measures, such as service inflation, remains elevated, potentially driven by high wage growth (Figure 3.A.5). The labor market continues to remain tight; the unemployment rate is at record lows (6.4% in January) along with an elevated job vacancy rate of 2.9 in 2023Q3. Moreover, households have managed to accumulate a large stock of savings and pandemic-era wealth accumulation that could further support the demand and prevent inflation from returning sustainably to 2% in the near term. However, unlike in the US, the accumulation in real terms is less dramatic and more comparable to household financial buffers relative to pre-pandemic levels. Nevertheless, considering that underlying inflation appears elevated, strong household balance sheets could still prevent a slowdown in demand that would be required for prices to fall sustainably to the 2% target.

Despite some expected economic recovery in 2024 and later (Table 3.A.2.), the Eurozone is in a much weaker position than the US, but faces a similar policy challenge, whereby tight credit conditions, which would normally be consistent with a significant recession, could still materialize and create a far stronger drag on the economy than what has been currently observed. For instance, the current macro situation is starting to weigh on lower-quality corporations, with credit spreads in the weaker end of the corporate bond market moving up and bankruptcies rising over the last few quarters (Figure 3.A.6). Given the weak starting point, the potential of cascading effects from financial acceleration is greater and could tip the Eurozone back into the low inflation trap that was dominated prior to the pandemic. However, uncertainty about the outlook remains high and is likely to persist as long as underlying forces in the real economy, especially the labor market and credit markets, have the potential tip the economy in very different directions.

A Stagflationary Environment in the Eurozone could Test the Resolve of the ECB to Bring Inflation on Target in a Timely Manner
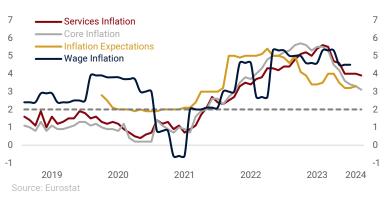
Figure 3.A.4: Contributions to Euro Area Real GDP Growth Percentage Points, Q-o-Q Annualized Change

Source: Eurostat; European Commission
Note: 2024/1 data is a preliminary estimate.
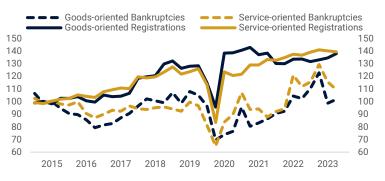
Underlying Inflation Measures Differ Substantially from Each Other, Presenting Very Different Views about the Economy

Figure 3.A.5: Underlying Inflation Measures, Euro Area Y-o-Y Change, %

Source: Eurostat

Potential for Tight Credit Conditions to Contribute to a Far Stronger Drag on the Economy than What Has Been Currently Observed

Figure 3.A.6: Registrations and Bankruptcies, Euro Area Index: 2015 = 100, Seasonally Adjusted

Source: Eurostat

Russian Economy

The Russian economy grew by an estimated 4.8% Y-o-Y in 2023Q4 (Figure 3.A.7). Strong growth has been broadly observed in both wholesale and retail trade and services, as well as the manufacturing (especially defense industries) and construction sectors. These strong demand conditions are underpinned by an exceedingly hot labor market, with the unemployment rate reaching record lows and real wage growth consequently rising rapidly, while capacity utilization is reaching historic highs. In this context, domestic demand is outstripping producers' capacity to meet demand in the goods and services markets.
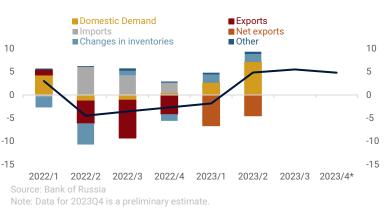
Labor shortages could prove to be a more structural issue, so long as Russia's access to the international labor market is hindered by ongoing economic sanctions. Although some disinflation was observed over 2023 Q4, the sustainability of these trends is under question given the current position of the economy. The exceptionally tight labor market is contributing to high real wage growth (Figure 3.A.8), which is likely to add significant inflationary pressures on the horizon and could necessitate tighter monetary conditions even though the BoR decided to keep rates unchanged in February.

Uncertainties around elevated underlying inflation and inflation expectations in the Russian economy are further fueled by surges in defense spending, expected to increase around 30% over the course of 2024. Overall, the Russian state budget expenditure is set to be expansionary for the current year and along the medium-term horizon, and could prove to be more inflationary. These factors underpin stronger economic growth going forward along with an acceleration in private demand that is contributing to a rapid decline in the trade surplus and putting pressure on the exchange rate.

The Russian economy remains vulnerable to developments in the oil market regardless of sanctions on Russian trade. Oil prices have been rising amid heightened geopolitical uncertainties in the Red Sea as well as the continuous voluntary cuts of oil production by the OPEC+ countries including Russia (in place until the end of 2024). However, China is an important buyer of global commodities, and its economic situation could lead to a protracted decline in demand if a correction in its housing and financial market is anywhere similar to the housing market adjustment in the US that precipitated the Global Financial Crisis.

Domestic Demand is Outstripping Capacities to Expand the Production of Goods and Services –Bank of Russia

Figure 3.A.7: Contribution to Russia Real GDP Growth, Percentage Points, Y-o-Y

Source: Bank of Russia
Note: Data for 2023Q4 is a preliminary estimate.
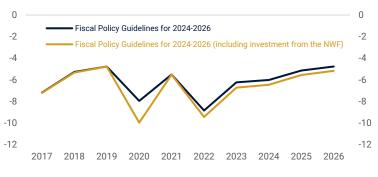
A Low Unemployment Rate and High Real Wage Growth Lend Credence to Ongoing Labor Shortages That Are Constraining the Expansion of Output of Goods and Services

Figure 3.A.8: Unemployment Rate and Real Wage Growth, Russia
LHS: Y-o-Y Change, %; RHS: %

Source: Rosstat

Fiscal Policy Guidelines for 2024-2026 Remain Accommodative

Figure 3.A.9: Non-Oil and Gas Primary Deficit, Russia
% of GDP

Source: Senior Loan Officer Opinion Survey on Bank Lending Practices

Commodity Markets
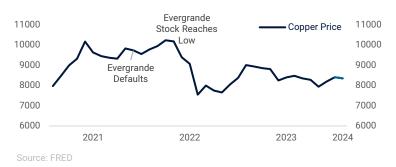
Copper: Prices of copper continued to fall on a quarterly basis in 2023Q4 and into 2024Q1. Since China is the main buyer of copper, the decline in its demand, especially amidst an ongoing reduction in investment in the Chinese construction sector, explains a significant portion in the drop of copper prices. Fears over China's largest, highly indebted property developer indicates further uncertainties in terms of sluggish demand. This is compounded by the potential that slower growth will be required in advanced economies to bring inflation sustainably to their respective targets. If these factors were to materialize, then it would be unlikely for copper prices to return to their previous 2021-2022-era highs for the foreseeable future. Nevertheless, the growing renewable energy sector, to a certain degree, could potentially offset the aforementioned downward pressures in demand as copper is a crucial input for the green transition.

Oil: The twofold nature of oil price movements in recent months is reflected in uncertainties related to the Middle East crisis and rising demand concerns. On the one hand, the fears of further escalations in the Red Sea have caused oil prices to bounce back and forth, while overall, being elevated throughout in recent weeks. Furthermore, freight indices have been increasing rapidly since mid-December because of higher transit times as vessels divert from the Red Sea. As the Middle East is responsible for around 25% of world's oil production, conflict escalation could further disrupt oil flow through key trade channels. On the other hand, the global economy remains in a precarious position with global recessionary growth forces still present in many economies including China which is having a dampening effect on prices.

Food: International food prices have been on a downward trajectory for several months contributing to the global disinflation experienced in many countries in 2023 as supply conditions have normalized. The January 2024 FAO Food Price Index reading of around 118 marked the first instance of the index dipping below early 2021 levels. However, international food prices can be heavily influenced by geopolitical factors, including the situation in the Red Sea, which could put an end to the disinflation observed in food prices.
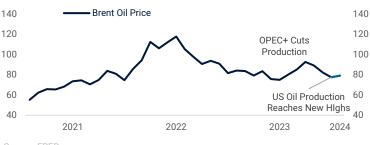
Copper Prices Struggle to Rise amid Continuing Concerns about China's Property Market and Global Recessionary Fears among Advanced Economies

Figure 3.A.10: Copper Prices
USD per Metric Ton

Source: FRED

Competition between OPEC+ and US Oil Producers amid Broader Global Recessionary Fears Has Contributed to a Volatile Period in the Oil Market, but Risks Tilted to Upside
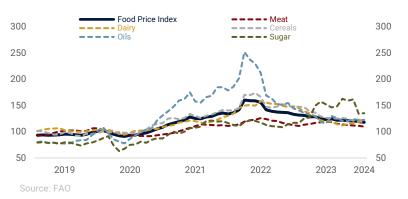
Figure 3.A.11: Brent Crude Oil Prices
USD per Barrel

Source: FRED

Global Food Prices Have Continued to Moderate as Supply/Demand Normalized Post-Covid, but Global Geopolitical Tensions Pose Risks

Figure 3.A.12: FAO Food Prices
Index: 2014-2016 = 100

Source: FAO

Table 3.A.1: Third-Party Projections for Commodity Prices

Source/ Topic	Oil (Brent, Dollars per Barrel)				Copper (LME $/t)			World Bank Food Price Forecasts (Annual Growth)		
	EIA	IMF	WB	Consensus	WB	REQ	Consensus	Oils and Meals	Grains	Other Food
Date	Feb 24	Jan 24	Oct 23	Mar 24	Oct 23	Dec 23	Mar-24	Oct 23	Oct 23	Oct 23
2024	82.4	79.1	81.0	82.5	7800	8072	8600	1.0	1.0	1.0
2025	79.5	75.3	80.0	80.0	8500	8509	9039	1.0	0.9	1.0

Source: US Energy Information Administration; World Bank; Australia Resources and Energy Quarterly (REQ); Bloomberg; IMF

Special Topic: Chinese Economy

China's economy has witnessed substantial growth of around 5.2% in 2023, despite the headwinds connected to a housing sector that has been in a protracted decline since 2021, when problems with real estate developer Evergrande were first reported. In fact, it has been about 11 quarters that the Chinese property market has been downsizing (same amount of time the US housing market declined in the lead-up to Lehman Brothers) due to mounting debts held by property developers (Figure 3.A.13).

It is possible that the real economy continues to remain buoyant (as was the case in the US prior to the GFC), but losses would eventually be expected to appear in the banking sector, which could be followed by a significant credit contraction and lower real growth (Figure 3.A.14). However, the magnitude of the problem is not well understood. Raw numbers—such as the size of residential investment as a share of GDP (Figure 3.A.13)—suggests the problem in China is potentially greater in scale than it was in the US prior to the GFC. However, a major driver of the GFC was the excessive collateralization of the housing sector that exposed the banking sector to systemic losses much larger than the housing sector itself.

An optimistic scenario would be where authorities have taken regulatory action and preemptive steps to keep banks well capitalized in the event of a sharper economic downturn. The Chinese economy is at a critical juncture, given the rapidly declining consumer and investor confidence, which has already moved well beyond the real estate sector. Government stimulus and business-friendly policies have provided a real economy boost. However, investors are still shifting away their funds from China to less risky assets abroad and the Chinese stock market has declined around 20% over the past two years.

China's economy is relevant for a few reasons. First, it is the second largest economy in the world and a growth slowdown would be felt around the world. In particular, China is a large consumer of oil and copper (over 16% and 59% of global consumption, respectively) and if its economy were to enter a severe growth recession whereby its demand for commodities also drop would likely lead to a sharp decline in oil and commodity prices. This type of scenario would have implications for Russia, whose breakeven price for oil is around $60 per barrel, which could have ripple effects on the Armenian economy. Lastly, decline in Chinese demand could send copper prices sharply down, which would have downside impacts on Armenia's mining sector.
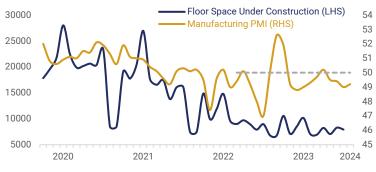
China's Large Real Estate Sector Poses Significant Risks to the Global Economy, Though Extent of Financial Collateralization Is Not Well Known

Figure 3.A.13: US and China Real Estate Investment
LHS: USD, Billions, RHS: % of GDP

Source: FRED; National Bureau of Statistics

China's Real Economy Is Still Holding Up, despite the Housing Sector Being in Contraction for over Two Years

Figure 3.A.14: Floor Space under Construction vs PMI
LHS: 10,000 sq.m, RHS: Index: Below 50 = Contraction

Source: FRED; National Bureau of Statistics
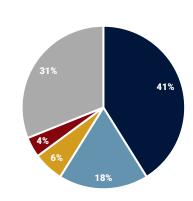
Chinese Property Market Crash Potentially Having Spillovers to Global Commodity Markets

Figure 3.A.15: China Copper Demand, 2022
Share of Global Demand
Percent

Source: Bloomberg

Table 3.A.2. Third-Party Projections for GDP Growth and Inflation in Key Trading Partner Countries

Source	United States					Euro Area						Russia				
	IMF	WB	OECD	Fed	Consensus	IMF	WB	OECD	EC	ECB	Consensus	IMF	WB	OECD	CBR	Consensus
Date	Oct 23	Jan 24	Feb 24	Dec 23	Mar 24	Oct 23	Jan 24	Feb 24	Feb 24	Dec 23	Mar 24	Oct 23	Jan 24	Feb 24	Feb 24	Mar 24
GDP Growth (Annual Rate, %)																
2023			2.5 (Actual)					0.5 (Actual)						3.6 (Initial Estimate)		
2024	1.5	1.6	2.1	1.4	2.1	1.2	0.7	0.6	0.8	0.8	0.5	1.1	1.3	1.8	1.5	1.8
2025	1.8	1.7	1.7	1.8	1.7	1.8	1.6	1.3	1.5	1.5	1.4	1.0	0.9	1.0	1.5	1.0
2026	2.1	-	-	1.9	2.0	1.7	-	-	-	1.5	1.4	1.0	-	-	2.0	1.3
Inflation (Annual Rate, %)																
2023			3.4 (Actual)					2.9 (Actual)						7.4 (Actual)		
2024	2.6	-	2.2	2.4	2.7	2.7	-	2.6	2.7	2.7	2.3	5.0	-	7.2	4.3	6.5
2025	2.3	-	2.0	2.1	2.4	2.2	-	2.2	2.2	2.1	2.1	4.0	-	5.3	4.0	4.5
2026	2.1	-	-	2.0	2.3	1.9	-	-	-	1.9	2.0	4.0	-	-	4.0	4.1

Source: IMF; World Bank (WB); OECD; Fed; ECB; CBR; European Commission (EC); Bloomberg

Box 1. Market Reference Scenario

Under the CBA Monetary Policy Framework (FPAS Mark II), the CBA does not prepare baseline projections. Instead, we rely on information from financial market participants (including commercial banks, fund managers, institutional investors, and so on)—compiled through quarterly surveys—to develop a macro-consistent "market reference scenario (MRS)." This MRS, in many ways, serves a similar purpose as a traditional baseline projection, in the sense that it represents the market's rough estimation of the "most likely future," given the information available to market participants at a particular point in time. The MRS can serve as a substitute for the baseline for those external stakeholders (e.g. IFIs, fiscal authorities, and others) who rely on exogenously-provided projections when making their own planning decisions. Through the use of the MRS, the CBA provides the opportunity to markets to not only understand third-party forecasts of the "most likely" future, but also pay attention to those types of risks, uncertainties, and scenarios that can pose risks from the perspective of monetary policy and price stability. At the same time, this provides an opportunity to effectively communicate the logic and rationale behind CBA's policy decisions under the prudent risk management approach. The market reference scenario is shown together with the CBA's illustrative case scenarios. Additionally, where available, we provide select third-parties' projections for other important variables, as an additional reference point for discussing the underlying macroeconomic expectations for the external sector and domestic economy.

B. Domestic Demand Conditions
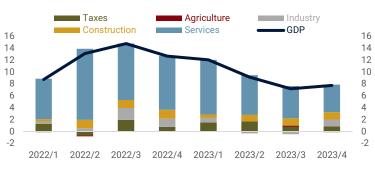
Gross Domestic Product

Estimated economic growth in Q4 2023 came in at a strong 7.8% Y-o-Y, largely driven by strong growth in the construction (12.7%) and services (9.1%) sectors. Agriculture and industry remained subdued, though the latter rebounded at year-end thanks to growth in manufacturing. While growth momentum remains strong, the structure of GDP growth has changed to some degree, raising questions about the sustainability of similarly high growth going forward. Information and Communication services, in particular, contracted for the first time in Q4 2023 after a boom in recent years. Given its role in driving potential output and export capacities, an adverse adjustment to the IT outlook could have medium-term implications. However, there are no clear signs as of yet of a widespread contraction; rather, restructuring may be taking place in response to AI and global trends, and the contraction experienced in Armenia is still lower compared to the global tech slowdown of the past two years. Further, the share of trade in services sector has increased, suggesting that either demand-driven factors are outpacing supply, or that large shares of growth are concentrated in re-exporting activities. The manufacturing rebound is also not widespread, reflecting developments in narrow subsector.

Growth in 2022 was driven primarily by high external demand from international visitors, but this has begun to ease in 2023, as real expenses per tourist have normalized even as tourist arrivals have remained elevated. Nevertheless, strong growth and demand in the major source market of Russia, along with continuing accommodative fiscal policy there, suggests that tourism growth could be sustained at a high level over the medium term. While positive for short-run economic and export activity, this poses a risk that the structure of the economy could shift towards tourism-oriented services and away from more productive sectors, with implications for long run potential growth.

Considering the above, the output gap (Figure 3.B.3) is estimated to have been slightly positive in Q4. On the one hand, growth remained strong and above long-run potential, and some new excess demand and inflationary pressures did emerge in Q4. On the other hand, subdued private consumption and high investment growth (Figure 3.B.4), coupled with some softening in the labor market and wage growth (Figure 3.C.4) suggest fewer and less worrisome imbalances between aggregate demand and supply in the economy. Moreover, the cyclically appreciated real effective exchange rate (Figure 3.B.8) has also helped stem excess demand pressures from the external sector.

Strong Economic Growth Continues in 2023Q4

Figure 3.B.1: Contribution to Real GDP Growth by Production Approach
Percentage Points, Y-o-Y
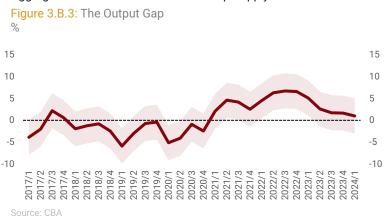
Source: Statistical Committee of the Republic of Armenia; CBA

Both Inbound Tourism and Real Expenses per Tourist are Normalizing

Figure 3.B.2: Real Expenses per Tourist and Inbound Tourists
Index: 2019 = 100

Source: Statistical Committee of the Republic of Armenia; CBA

Aggregate Demand Continues to Outstrip Supply

Figure 3.B.3: The Output Gap
%

Source: CBA

Over the medium-term horizon, greater investment activity, higher labor productivity, and increases in labor supply could drive economic growth to be above its long-term sustainable level of 4.5%. At the same time, fundamental uncertainty around how growth would evolve in the medium term remains. The taxonomy of scenarios in Section E addresses sources of risk that could drive the overall economy in various directions, with different implications for policy.

Consumption and Investment

While overall consumption has continued to grow, in 2023Q4 it was mainly driven by public expenditures growing at 15.6% Y-o-Y (Figure 3.B.4). Meanwhile, private consumption, which had been accelerating in the first half of 2023, has since pulled back somewhat, registering growth of 5.2% Y-o-Y in 2023Q4. Investment growth remains strong, supported by both elevated capital expenditures as well as private investment mostly directed to residential real estate investments. The rise of private investment on the back of accumulated savings during previous years suggests better supply conditions in the economy and provides some confidence over the cooling down of excess demand pressures over the medium term (Figure 3.B.3). Private investment is expected to continue to grow at very high levels, as evidenced by the higher levels of construction permits (Figure 3.B.6) and import of investment goods. Moreover, planned construction activities connected to operation of Amulsar would positively contribute to the construction and mining sectors in 2024, increasing the supply and export capacities in domestic economy.
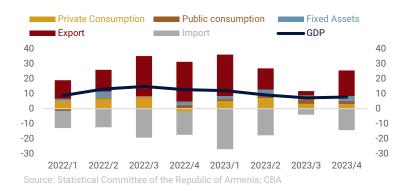
The main concern in the near term is the acceleration of internal demand, driven by the previously accumulated savings in the private sector as well as reduced debt burden and subsequent potential for credit growth. These factors could fuel further excess demand pressures in an economy already operating at or slightly above potential and prevent the downward adjustment of underlying inflationary pressures and inflation expectations. Moreover, the inflow of forcibly displaced people from Nagorno-Karabakh and social assistance programs to support their socioeconomic integration are also expected to have some positive effect on aggregated demand in the near term (see Box 2). Their integration into the labor market will continue to play a role in balancing these demand and supply forces in the economy.

Remittances of individuals in 2023 declined considerably compared to the previous year (Figure 3.B.5), due to slowdown of economic activity in trade partner countries as well as the sharp depreciation in the ruble since July 2023. At the same, the narrowing wage gap between construction sector of Armenia and Russia(Figure 3.C.3), as well as potential taxation of migrant workers' incomes earned abroad could create risks of potential slowdown in seasonal migration and remittances, which would be expected to exert downward pressures on domestic consumption.

Overheating in Economy is Not Broad-Based, but Upside Risks Exist, Stemming from the Potential for Accelerated Consumption

Figure 3.B.4: Contribution to Real GDP Growth by Expenditure Approach
Percentage Points, Y-o-Y

Source: Statistical Committee of the Republic of Armenia; CBA
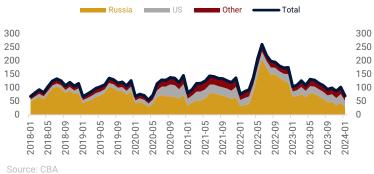
Remittances have Declined Considerably from 2022 Peaks

Figure 3.B.5: Inflow of Non-Commercial Transfers by Source Country
Million USD

Source: CBA

Construction Permit Growth Continues at a Record Pace

Figure 3.B.6: Quarterly Permitting Activity
Number of New Permits

Source: Yerevan Municipality

External Trade and Demand

Given the accumulation of wealth and incomes over the past two years, internal demand for foreign goods remains robust, supported by the fact that import growth rates accelerated in 2023 Q4, after some adjustment in the previous quarter. At the same time, high external demand for domestic goods and services supported rapid growth in goods exports. Furthermore, an improved investment climate may be reflected in strong growth in imported capital goods, despite some adjustment recently. In the medium term, the increase in imported investment goods has the potential to offset the inflationary impact from consumer imports as investment goods help raise capacity in the economy.
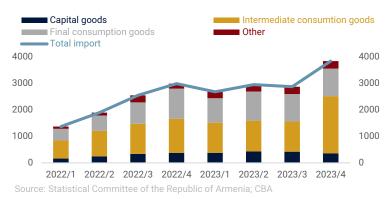
A key consideration relates to uncertainties regarding the cyclically appreciated exchange rate. Elevated external demand since 2022 amid geopolitical developments in the Eurasian space, capital and labor inflows, high touristic inflows and export of highly productive IT services have contributed to a significant appreciation of the real effective exchange rate in the economy (see Figure 3.B.8), while weak inflation in the domestic economy relative to partner countries contributed to less REER appreciation. If REER appreciation were to prove to be cyclical, its adjustment would inevitably result in a sharp increase of the current account deficit. On the other hand, it may be that current levels of external demand reflect new opportunities that would permanently support export potential (especially of services), driving fundamental (rather than cyclical) REER appreciation This notion is supported by growth supply and export capacities during this period.

Fiscal Policy

Given strong GDP growth and potential excess demand in the economy, countercyclical fiscal policy is desirable and was generally the case in 2023, where the fiscal impulse was negative due to improved tax-to-GDP ratio as well as modest expenditure growth (compared to nominal GDP). Taking the 2024 Budget and 2024-2026 Mid-Term Expenditures Framework as a basis, the impact of fiscal policy on aggregate demand in the medium run is estimated to be close to neutral. This would depend on expected growth in current and capital expenditures and a gradual increase in the tax-to-GDP ratio, given improved tax policy. However, there is a risk that under-utilization of capital expenditures, coupled potentially larger social assistance programs for displaced people with the use of reserve funds than what is planned in the budget (see Box 2), can, in the near term, orient fiscal spending towards current expenditures and fuel domestic consumption. Further, any underutilization of capital expenditures poses risks to the economy's medium-term growth potential.
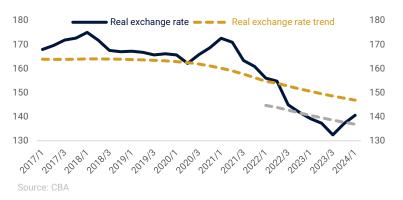
Demand for Consumption & Investment Goods Remains Strong

Figure 3.B.7: Value of Imports by Broad Economic Category (BEC)
Million USD

Source: Statistical Committee of the Republic of Armenia; CBA
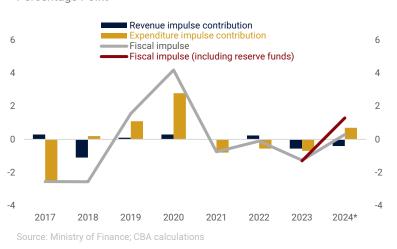
Uncertainty Regarding the Cyclical Position of the Real Exchange Rate Persists

Figure 3.B.8: Real Effective Exchange Rate and Trend for AMD against USD, EUR and RUB (Lower Value means Stronger Dram)
Index

Source: CBA

Underspending of Capital Expenditures, Coupled with Possible Expansion of Current Expenses, Can Orient Fiscal Spending Towards Current Expenditures

Figure 3.B.9: Fiscal Impulse and Scenarios for 2024
Contribution to GDP Growth
Percentage Point

Source: Ministry of Finance; CBA calculations

Box 2. Macroeconomic Implications of Forcibly Displaced Persons from Nagorno-Karabakh

Following the forced displacement of approximately 100,000 indigenous Armenians from Nagorno-Karabakh in September 2023, many have relocated to various cities and villages throughout Armenia, often arriving with few belongings due to the abrupt and violent nature of their displacement. The following analysis seeks to assess the macroeconomic implications of these events on the Republic of Armenia.

From the lens of macroeconomics, the influx of displaced people from Nagorno-Karabakh would have both short-term and medium-term implications, affecting demand and supply conditions in the economy, as well as fiscal policy and public debt. In the short term, the effects on the Armenian economy will primarily depend on the magnitude of additional demand pressures from displaced people (stemming from the need to rebuild their stock of durable goods and sustain their previous consumption levels within Armenia, along with some additional demand for housing).

According to the official pre-war statistics on Nagorno-Karabakh, the annual consumption of displaced people in 2019 was around 250 billion AMD annually, of which approximately 100 billion AMD was imported from Armenia, and the remaining consumption depended on the domestic production of Nagorno-Karabakh. Therefore, assuming that previous consumption levels are sustained, the additional demand pressures are estimated to be equivalent to the non-imported share of consumption, or around 150 billion AMD, as well as additional one-time demand for building back a stock of housing and durable goods. Consumption can be less than these estimates due to a potential lack of necessary means for funding this consumption, as well as uncertainty regarding future incomes, possibly leading people to adopt a more precautionary stance.

The potential sources for funding this demand can include the savings of displaced Armenians from Nagorno-Karabakh as well as state support programs. According to data available for August 2023, Nagorno-Karabakh Armenians' deposits are estimated around 200 bln AMD, including cash. The government has implemented number of programs after September 2023 to support the displaced persons, including one-time transfers, monetary assistance for rental housing and utilities, assistance for tuition fees, pensions, and other programs. According to the 2024 state budget, around 47 bln AMD is allocated for various support programs for displaced people in 2024. Taken in tandem with support from the population of Armenia and abroad, these measures are expected to add to domestic demand pressures in the short-term. However the impact on inflation can be limited due to moral grounds. According to the SC of RA, retail trade significantly accelerated since October, possibly reflecting elevated demand pressures in the economy.
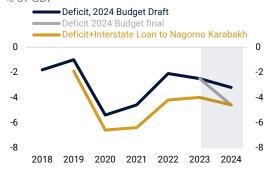
From the perspective of fiscal policy and public debt, it is crucial to acknowledge that the costs designated for supporting the forcibly displaced population from Nagorno-Karabakh will be covered by reallocating resources from the interstate loan originally intended for Nagorno-Karabakh. Therefore, the uptick in the budget deficit in 2024 to 4.6% of GDP doesn't technically represent an increase in spending, but rather, a redistribution of budgetary funds from loans to current expenses. Previously, interstate loans were set at around 150 billion AMD for 2024, of which 47.3 billion drams were reallocated to concrete measures for 2024. These expenses encompassed education (1.2 billion drams) and labor and social protection (46.1 billion drams). The remaining portion of the interstate loan was directed towards a reserve fund intended to finance future spending initiatives.

Over the medium-term horizon, the influx of displaced people from Nagorno-Karabakh is expected to positively affect potential GDP growth through the effects of increased labor supply and potential acceleration of investment to support the expanding labor force. However, initially, a rise in the unemployment rate is possible, due to the large number of displaced people and the relatively limited capacity of the Armenian labor market to absorb the entirety of the increased labor force. Various scenarios may unfold, but assuming that all individuals from Nagorno-Karabakh remain in Armenia, and based on the CBA's estimates regarding the share of labor force (around 43%) among the displaced population, the initial impact on the unemployment rate is projected to be a maximum of 2.7%. In the medium term, the positive impact on potential growth, considering only the effect of increased labor supply, is estimated to be around 1%. Additionally, there may be other positive effects contingent upon capital accumulation, which will be influenced by broader macroeconomic conditions and business confidence. Moreover, the faster integration of displaced persons into the labor market would help ease inflationary pressures stemming from the already hot labor market and would result in better supply and demand conditions in the broader economy.

Figure B.2.1: Savings of Nagorno-Karabakh Population, Billion AMD, August 2023

Figure B.2.2: Budget Deficit and Net Lending % of GDP

Figure B.2.3: Initial Impact on Unemployment Rate, %
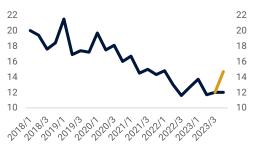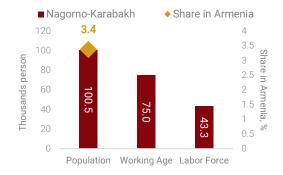
Figure B.2.4: Displaced People from Nagorno-Karabakh
Thousand Persons (LHS); Share in Armenia, % (RHS)

Source: Statistical Committee of the Republic of Armenia; CBA; CBA staff estimates

C. Labor Market and Inflation

Unemployment

The unemployment rate remains historically low at 12.0% in 2023Q3 (figure 3.C.1), reflecting hot labor market conditions. The number of registered employees (based on State Revenue Committee data rather than household surveys, considered a more reliable indicator of the workforce) continued to increase and does not show any strong signs of cooling down.
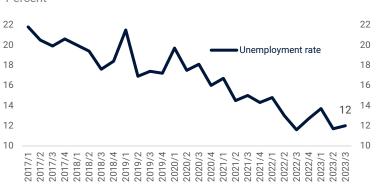
On the other hand, the increased labor force participation rate, coupled with the continued inflow of migrant workers, could potentially soften labor market conditions, thus, quickly alleviating inflationary pressures coming from the labor market. In particular, the continued inflow of migrant workers from India may have some sectoral impacts on the labor market (particularly in sectors facing understaffing, such as construction, services, textiles, etc.), if this trend continues. Wage gaps between Armenia and India are an important motivator for the arrival of migrant workers. Before 2021, the wage gap between Armenia and India was moderately positive and stable, but since 2021, the relative wage gap has widened significantly (nearly double in many sectors), incentivizing Indians to migrate to Armenia for work (Chart 3.C.2).

Additionally, the wage gap between Armenia and Russia continues to narrow (especially in the construction sector, where many Armenian migrant workers have been concentrated), driven by sustained high economic activity in the domestic construction sector and partly by recent Ruble depreciation relative to dram since 2023. This trend may somewhat dis-incentivize Armenian migrant workers from going to Russia at the same rates as in the past. This could have positive impacts on the domestic labor market, with labor supply expanding and improving potential output to some extent (Chart 3.C.3).

At the same time, the influx of displaced persons from Nagorno-Karabakh could have positive impacts on labor supply and potential growth over the medium-term horizon. Depending on the pace of integration, and assuming that all individuals will choose to stay in Armenia, this could lead to a modest increase in unemployment in the short term. However, in the medium to long term, positive impacts on potential GDP growth through increased labor supply and capital accumulation would be expected. In the event that this scenario plays out, inflationary pressures stemming from the labor market would moderate (refer to Box 2).

Amid Historically Low Rate of Unemployment, Potential Sources of Labor Supply Expansion May Help Soften Wage Pressures

Figure 3.C.1: Unemployment Rate
Percent

Source: Statistical Committee of the Republic of Armenia

Record Number of Indians Migrating to Armenia
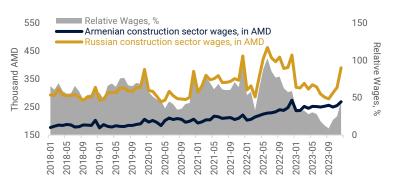
Figure 3.C.2: Border Crossings by Indian Residents
Number of Persons, Thousands

Source: Statistical Committee of the Republic of Armenia; CBA

Difference in Average Construction Wages in Armenia and Russia has Narrowed, Reducing Incentives for Seasonal Armenian Labor Migration to Russia

Figure 3.C.3: Construction Wages in Russia and Armenia
Thousands, AMD (LHS) and Relative Wages, % (RHS)

Source: Rosstat; Statistical Committee of the Republic of Armenia; CBA

Wage Growth

Nominal private wage growth remains broadly elevated in 2023Q4 amounting to 7.9% Y-o-Y (figure 3.C.4). Some of the wage increase is backed by an increase in productivity (e.g. inflow of highly productive labor to information and communication sector), while the softening momentum is partly driven by increases in labor supply (i.e. migrant workers from India, increased labor force participation, displaced persons from Nagorno-Karabakh, etc.). While private wage growth lost some momentum in the fourth quarter, wage growth remains elevated and well above other measures of inflation, continuing to put upward pressure on inflation.

Inflation

The inflationary environment continued to soften, primarily driven by weakened pressures coming from the external sector and reflected in the price decreases of imported goods. External and domestic demand-driven services inflation also softened, after remaining at very high levels over the prior two years. At the same time, the continued increase of consumer loans, coupled with pressures coming from the labor market, may continue to pose domestic demand-driven inflationary risks. Additionally, a minor source of potential upward pressures includes revisions to the tax code (namely turnover tax, excise tax, taxi services tax etc.). However, the overall effect on inflation is expected to be limited, and could be even smaller if it is not entirely passed through to the consumer. Third-party forecasts of inflation through 2024, including the IMF and surveys of market participants, suggest inflation in the near-term is likely to remain at or below target (Table 3.C.1).

Non-Traded Sticky Price Inflation (NTSPI) remained relatively stable in January 2024, at 3.0% Y-o-Y. The recent uptick in momentum observed in Q4 2023, driven by high demand for residential rent and other non-tradeable sticky services, are gradually fading away, suggesting that upward pressures on sticky prices have largely dissipated. At the same time, inflation for services that are highly exposed to external demand, such as air transport, restaurants, hotels, medical services, and recreation and culture, has somewhat softened, and some items have even experienced deflation on a M-o-M basis (including hotels, at -2.8%, and transport, at -1.2%). Meanwhile, core inflation, which excludes seasonal food and regulated services, has stayed in negative territory, at -0.4%, Y-o-Y. This largely reflects declines in imported and non-seasonal food items (e.g. bread, oils & fats, sugar, etc.).

Though Lower than Earlier in the Year, Nominal Wage Growth Remains Elevated

Figure 3.C.4: Nominal Private Wage Growth
Y-o-Y Change, %

Source: Statistical Committee of the Republic of Armenia
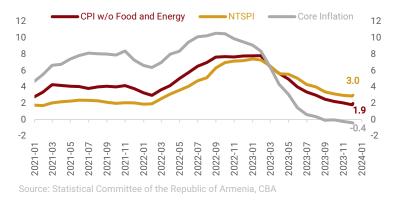
CPI Remains Below the Target, Primarily Driven by Declines in Imported Goods, Including Food; Services Inflation Somewhat Softened

Figure 3.C.5: Y-o-Y CPI Inflation and the Target
Y-o-Y Change, %

Source: Statistical Committee of the Republic of Armenia, CBA

Upward Pressures on Non-Traded Sticky Prices have Continued to Recede

Figure 3.C.6: Underlying Inflation Measures
Y-o-Y Change, %

Source: Statistical Committee of the Republic of Armenia, CBA
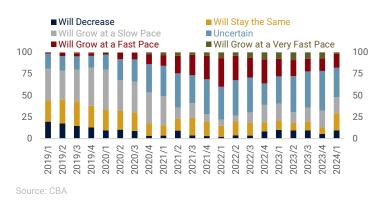
Inflation Expectations

The household survey on inflation expectations, conducted by the CBA, suggests that relative to prior quarters, somewhat fewer households in Q1 2024 expect inflation to grow at a fast or very past face, which is in line with the broader disinflationary trend expressed in headline CPI numbers. Similarly, a greater share of households expect inflation to remain stable or grow at a slow pace than in past quarters. However, uncertainty about inflation, while lower than in the past two quarters, remains high, likely reflecting public perceptions of inflation staying elevated for certain products, in particular services. Moreover, while the overall trend in the Q1 survey is a positive development, inflation expectations overall remain broadly elevated relative to where they stood before the 2021-2022 inflationary period, suggesting that expectations of future inflation have been much slower to adjust to falling headline inflation numbers.

Fewer Respondents Expect Higher Inflation than in the Past, but Uncertainty Remains Elevated

Figure 3.C.7: Survey on Households' Inflation Expectations
Percent of Respondents

Source: CBA

Table 3.C.1: Third-Party Projections for GDP Growth and Inflation in Armenia

Source	IMF	CBA Macro Survey	Consensus
Date	Oct 23	Q4 23	Mar-24
GDP Growth (Annual Rate, %)			
2023 (Actual)	7.8		
2024	5.0	6.0	5.9
2025	4.5	5.5	4.7
2026	4.5	5.5	-
Inflation (Annual Rate, %)			
2023 (Actual)	-0.6		
2024	4.0	3.3	3.7
2025	4.0	4.0	4.0
2026	4.0	4.0	-

Source: IMF; CBA Macro Survey; Bloomberg

Box 3. Non-Tradeable Sticky Price Inflation (NTSPI): Developing Better Concepts for Monetary Policy Analysis

When making monetary policy decisions amidst uncertainty, having useful decompositions of key variables such as inflation can help policymakers better understand underlying dynamics and better contextualize them within a comprehensive analysis of the economy and policy. The purpose of developing NTSPI is not to simply develop yet another alternative measure of inflation that is purely statistical in nature. Traditional measures of underlying inflation like core, median, or trimmed mean are often approached statistically, focusing on eliminating volatile items without deeply considering the economic rationale behind categorizing items into different buckets for analytical clarity. Rather, the motivation for developing a measure for NTSPI comes from the need to decompose the CPI in such a way that would help execute and communicate our analysis around the modern monetary policy transmission mechanism and align with its two most prominent aspects: the expected short-term interest rate path and exchange rate implications, with special attention paid to the latter.

When conducting forward-looking policy analysis under uncertainty, policymakers must pay important attention to early warning signals that suggest that inflation expectations could become de-anchored. In this context, a measure of inflation that is designed to better reflect generalized excess demand conditions and to help understand what is motivating price movements can be particularly useful. We build on the work of Dornbusch's "overshooting sticky-price model" and Rogoff and Obstfeld's New Open Economy Macroeconomics, using these as conceptual frameworks for differentiating prices sensitive to exchange rate fluctuations (flexible) and those less sensitive (sticky), which are crucial for evaluating the effectiveness of short-term interest rates over time. Internationally traded goods, directly impacted by the exchange rate, are categorized as flexible prices, while non-traded items, such as most services, fall under sticky prices.

The intuition behind the sticky price measure is that certain prices are set less frequently than others. In this context, because sticky prices do not respond to changes as quickly as "flexible" price goods, it is reasonable to think that they may incorporate a degree of forward-looking expectations about future inflation. In this way, sticky prices are more forward-looking than flexible prices and may provide better signals about inflation expectations. At the same time, flexible prices are influenced by unique, or idiosyncratic, shocks, and can adjust quickly to market conditions and offer early warnings about inflationary trends. If monetary policy fails to adequately respond to these signals, particularly under conditions of generalized excess demand affecting these markets, there is a risk that this inflationary pressure will spread into stickier segments of the economy (e.g. wages, non-traded sticky prices). If these pressures take hold, then a much more aggressive policy adjustment might be required, resulting in unnecessary harm for the real economy. Differentiating between traded and non-traded products in this way can also allow policymakers to think about, and communicate, the role of the exchange rate in a more sensible way.

Drawing inspiration from the aforementioned research, as well as the work done by the Atlanta Fed in developing a Sticky Price Inflation measure, the CBA has developed Non-Traded Sticky Price Inflation (NTSPI). Comprising goods and services that aren't subject to international trade like housing, healthcare, and education, the NTSPI captures roughly 15% of the Armenian CPI basket.

Importantly, one should be careful to acknowledge that the NTSPI—as with any measure of inflation—does not offer a cure-all solution to these challenges. Rather, it is merely one of many helpful tools that, when used within a robust policymaking framework that emphasizes risk management, transparent communications, and historical narrative-based critical thinking, can help policymakers make and communicate better-informed decisions.

Figure B.3.1: Historical Narrative: CPI and Non-Traded Sticky Price Inflation
Y-o-Y % change, 2007-2023

Source: CBA; Statistical Committee of the Republic of Armenia

Figure B.3.1 presents CPI and NTSPI inflation (Y-o-Y) for Armenia since 2007, demonstrating its usefulness in policy analysis. While CPI demonstrates much greater volatility and rises/falls in response to various factors including idiosyncratic price shocks, NTSPI, for reasons noted above, has tended to rise in periods where there are generalized excess demand conditions that necessitate an aggressive policy response (including, most notably, the period surrounding the Russian Financial Crisis and the post-Covid period).

D. Financial Markets

Market Expectations of Policy Rates

The CBA conducts high-frequency surveys of financial market participants, including commercial banks, institutional investors, asset managers, and others (see Box 3). According to the latest survey as of March 6, 2024, the average of all responses suggests that market participants expect the CBA to continue gradually loosening the policy rate over the course of the next eight decisions. The key risks and issues that respondents emphasized as motivating these projections have served as an important input into the taxonomy of scenarios presented in Section E.
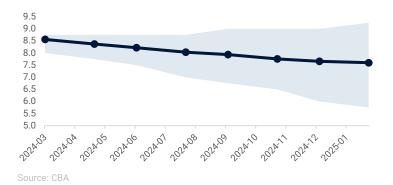
According to market expectations derived from the yield curve, bond markets reflect slightly higher interest rate expectations compared to surveys over the one-year horizon. Overall, since the January policy rate decision, the longer-term edge of the yield curve (particularly one-year and longer) has shifted downward considerably. Lower longer-term bond yields in part also reflect the gradual normalization and decline of the policy rate towards the long-run neutral level (see Figure 3.D.3). However the short term part of the curve still remains relatively elevated since the September events. This can be related to higher inflation expectations or higher country risk premium that markets are pricing in since the events in Nagorno-Karabakh and the movement of forcibly displaced people to Armenia. Alternatively, the upward shift of the curve after September could reflect volatility in term premium related to supply and demand shifts in government bond market.

Neutral Interest Rate

Uncertainty persists around equilibrium rates, prompting questions about the distance of the policy rate from the level at which it is neither contractionary nor expansionary. Based on the prior months' shifts in the yield curve (Figure 3.D.2), one interpretation could center on a possible elevated country risk premium, which could be reflected in higher neutral real rates. Elevated long term interest rates globally also suggest that underlying equilibrium interest rates in the world might be higher, thus necessitating higher policy rates in the long term in advanced countries with potential spillovers to emerging market economies. On the other hand, growth of export capacities in Armenia over the last two years and appreciation of real effective exchange rate might suggest lower underlying interest rate in domestic economy, as investors also consider domestic currency dynamics when making cross-border investment decisions. For a further discussion about the Neutral Interest Rate, refer to Box 2 in the CBA's Q4 2019 MPR.
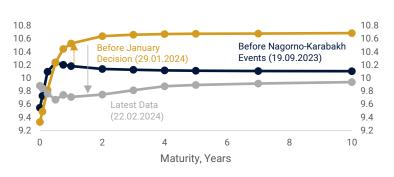
Most Market Participants Expect Gradual Loosening of Policy Rate over the Next Year

Figure 3.D.1: Financial Market Participants' Expectations of the Policy Rate According to March 6, 2024 CBA Survey
Interest Rate, %

Source: CBA

After Rising Since September Events, Bond Yields have Steadily Declined in February

Figure 3.D.2: Yield Curve Dynamics
Yield, %

Source: CBA

How Tight are Monetary Conditions?

Figure 3.D.3: CBA Policy Rate and Underlying Equilibrium Rate
%

Source: CBA

Bank Lending Conditions

The funds attracted and provided by commercial banks continued to grow during Q4 2023, reflecting high economic activity in the real sector. At the same time, an increase in interest rates of loans to households was recorded driven, in part, by high demand for consumer loans and mortgages. Following a second consecutive year of a high economic growth the private sector has seen a significant rise in incomes and relatively easy debt burden compared to the incomes, which can rise the confidence among economic agents to engage in riskier activities by fueling the further raise in credit and inflationary pressures in the economy. Additionally, Central Bank of Armenia surveys show that demand for loans continued to grow, mainly owing to consumer loans, while the index of demand for mortgage loans followed a net downward trend. The growth of lending in the financial system resumed after uncertainty and volatility in the financial system, which increased in Q4, began to diminish.

Nominal Exchange Rate
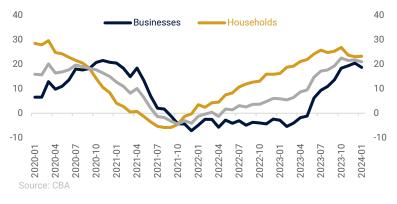
In Q1 2024, the dram has remained relatively steady versus the US dollar, while it has slightly depreciated against the Euro and Ruble (Figure 3.D.7). The latter largely follows these currencies' slight appreciation relative to the US dollar during this period. The relative steadiness of the dram during this period reflects the balance of both appreciation and depreciation pressures. On the one hand, high demand for domestic services from international visitors, as well as the increased output and export of high-productivity services, continue to pose upside appreciation pressures. On the other hand, these have been somewhat offset by strong domestic demand contributing to sustained high imports.

The country risk premium (Figure 3.D.8; estimated as the difference between the yield on Armenian Eurobonds maturing in 2029 and a benchmark risk-free interest rate with the same maturity) remains relatively subdued after somewhat rising in September and October of 2023 following the events in Nagorno-Karabakh. Currently it is below the levels seen before September, partly following the trends in emerging markets. The decline in long-term interest rates in US since then reduced concerns of capital outflows from emerging market economies, thus resulting in a positive reassessment of the riskiness of emerging market economies in general. However, the factors specific to the Armenian economy, including uncertainty regarding the outlook for regional geopolitical tensions, poses upside risks to the country risk premium, with potential implications on financial markets and capital flows

Demand for Consumer Loans Continue to Grow
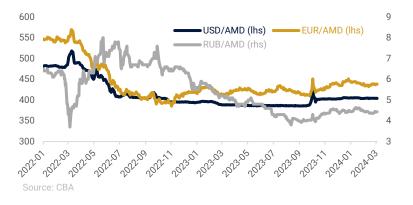
Figure 3.D.4: Change in Total Loans Provided by Commercial Banks to Households and Businesses
% Change, Y-o-Y

Source: CBA

Significant Appreciation of AMD since mid-2022
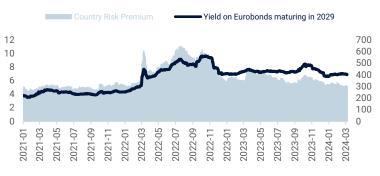
Figure 3.D.5: Nominal Exchange Rate for AMD against USD, EUR and RUB (Lower Value means Stronger Dram)
USD/AMD and EUR/AMD (LHS); RUB/AMD (RHS)

Source: CBA

Uncertainty Regarding the Outlook for Regional Geopolitical Tensions Poses Upside Risks with Implications on Financial Markets, Including through a Reassessment of the Country Risk Premium

Figure 3.D.6: Yield on Armenian Eurobonds Maturing in 2029 and Estimated Country Risk Premium
Yields, Percent (LHS); Country Risk Premium, Basis Points (RHS)

Source: Ministry of Finance, CBA

Box 4. Scenarios-Based Forward Guidance: The Role of Market Expectations

Approaching monetary policy through the lens of risk management under FPAS Mark II requires a different approach to the scenario-building process. Rather than treating its own central projections as the best piece of information and forcing market participants to coalesce around this singular view of unfolding economic conditions, the CBA instead utilizes market expectations for the central bank policy rate as a starting point for policy deliberations. Market expectations, by design, contain significant information about market views on current economic developments and possible behavior of monetary policy in the future economic environment.

Before the development of flexible-inflation-targeting approaches, monetary policy communication predominantly focused on direct actions like the setting of short-term policy rates. However, short-term rates are not particularly relevant for most people; longer-term interest rates tend to hold greater significance as these are the types of maturities at which households and businesses typically borrow and lend. The two principal components that make up longer-term rates are the term and risk premiums and the expected path of the policy rate. Of these two components, the expected path of the policy rate is most significant. As inflation targeting regimes were adopted, transparency in communicating a central bank's perspective and rationale became a necessary precondition for the regime's efficacy. With greater central bank clarity, financial markets gain the agility to recalibrate efficiently between policy decisions. Importantly, on decision dates, policymakers do not merely set the current policy rate; they also provide insights into their monetary policy decisions, including how the policy rate may change in the future based on different narratives, scenarios, and assumptions.

In advanced economies with well-developed financial markets (including secondary bond markets), gleaning market expectations of the future path of the policy rate is a relatively straightforward task. For countries with less developed financial markets that lack options markets, such as Armenia, the task is less straightforward. It requires synthesizing multiple approaches, without resorting to "over-modeling" and attempting to ascribe a false degree of precision that is based on unreliable or incomplete information.

Market Expectations of the Policy Rate: We synthesize two approaches. First, we take as a starting point information from the spot market for shorter-term bonds (one year and less) and perfect foresight-based inferences about the term structure of the yield curve. We recognize that data from the spot market is imperfect and cannot paint a complete (or always accurate) picture about market expectations of the policy rate. For example, bond markets experience high term premium volatility, face frequent liquidity and other shocks, and so on, making it difficult to perfectly assess which price movements result from changes in expectations versus other factors. Therefore, we dovetail this approach with a high-frequency survey of policy rate expectations among financial markets (including commercial banks, institutional investors, asset managers, and others). Of course, when considered in isolation, survey results are also imperfect, in the sense that they do not always align with what is actually priced in markets. Therefore, as a rule, we evaluate both survey- and bond market-based measures in order to develop a rich and sensible understanding of market expectations for the future path of the policy rate, without underselling the fundamental uncertainty and room for a range of interpretations.

Scenarios-Based Forward Guidance: To graphically illustrate our case scenarios relative to market expectations, we rely on a simplified approach using the one-year bond rate (see Figure B.4.1). The black line represents the CBA's refinancing rate historically. The one-year bond rate at the time of the decision is depicted with a red dot, representing the market's assessment of the most probable trajectory of the average policy rate over the course of the coming 12 months, plus some compensation for uncertainty regarding inflation and policy rates over this horizon (term premium). This provides a reference point around which the illustrative Case A (orange line) and Case B (blue line) scenarios for the policy rate are constructed. Additionally, we show the corresponding one-year bond rates that would be consistent with the Case A scenario (light orange dot) and Case B scenario (light blue dot) materializing. Finally, the average of the financial market survey responses is shown with the dotted gray line.
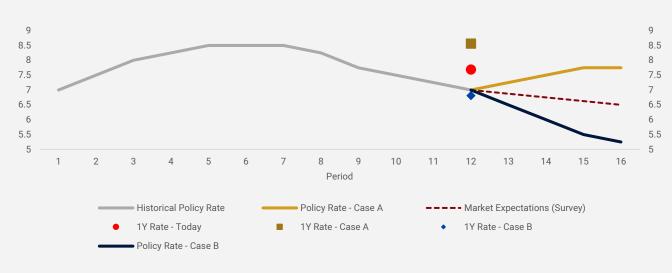
Figure B.4.1: <u>Hypothetical</u> Example of Case Scenarios and Market Expectations under FPAS Mark II
Interest Rate, %

Source: CBA

E. Taxonomy of Scenarios

Purpose and Structure of the Taxonomy

The purpose of this taxonomy is to provide a structured assessment of the different types of risks and shocks that can affect the Armenian economy and describe their impact on inflation and economic environment in Armenia, as well as loosely illustrate implied monetary policy reactions by the CBA. Having a structured framework for classifying these risks allows the reader to more effectively understand the wide range of information, ideas, and opinions that are held by various stakeholders, from the Board and Staff of the CBA to financial markets and the public. To allow the diversity of viewpoints among these various groups to flourish and to facilitate the development and communication of better policy decisions, it is imperative to structure these views within a cohesive structure. The taxonomy is intended to provide a concise summary of the Staff's views about the totality of all the policy-relevant risks held by various stakeholders, which are most policy-relevant for Armenia.

Table E.1: Taxonomy Structure

Case A-Type Considerations	Case B-Type Considerations
Expansionary Demand: Shocks result in aggregate demand rising more than aggregate supply, increasing underlying inflation. This requires an increase in the policy rate path that is sufficiently aggressive to anchor inflation and inflation expectations. Complications: credibility is fragile Output + | Inflation +	**Contractionary Demand:** Shocks result in aggregate demand rising less than aggregate supply, decreasing underlying inflation. This requires a decrease in the policy rate path that is sufficiently aggressive to anchor inflation and inflation expectations. Complications: ELB, stuck in low inflation trap Output - | Inflation −
Contractionary Supply: Nasty stagflationary shocks that require an aggressive upward adjustment in the expected path of the policy rate, resulting in a significant short-run tradeoff between inflation and other real objectives (e.g., unemployment) Complications: Hard to hit the wounded economy Output - | Inflation +	**Expansionary Supply:** Favorable supply shock(s) reduce inflation toward the target and results in higher growth as well as lower interest rates; is a policymaker's dream. Complications: can be risky if this environment is extrapolated into the future Output + | Inflation -

The taxonomy is classified into those that can have Case A-type (expansionary demand, contractionary supply) and Case B-type (contractionary demand, expansionary supply) considerations. Although the classification of shocks can be done in different ways across different features, the one presented here is based on a typical distinction between supply and demand side forces and is particularly useful from policymakers' point of view as it provides a framework for analyzing the source of inflationary pressures and potential risks to the economy. By understanding the nature and magnitude of different types of shocks, policymakers can then design appropriate monetary policy responses to mitigate the negative impact of adverse shocks and leverage the benefits of positive shocks.

Taxonomy of Scenarios: Q1 2024

Table E.2: Taxonomy of Scenarios: Q1 2024

Case A-Type Considerations	Case B-Type Considerations
• Amid sustained and robust demand-driven growth, an overheated labor market, and stickiness in prices and wages, the Fed would maintain a tighter (than what is currently priced in markets) policy stance of "higher for longer" in order to bring inflation sustainably back to target. This would result in tighter global financial conditions, with implications for financial flows to emerging countries, including Armenia. • The potential for further escalation and worsening of the Middle East and Red Sea crises creates risk in terms of disrupting global supply chains (including oil extraction and shipping) that can feed through to higher global inflation. This could result in, on the one hand, a tighter-than-expected policy stance in advanced economies, and on the other hand, higher prices being transmitted to the domestic economy through the imported goods channel. • Continued conflict between Russia and Ukraine and sustained sanctions against Russia poses risks for further flows of international visitors to Armenia, representing new waves of external demand for Armenian goods and services that could generate excess demand and inflationary pressures in the Armenian economy. • Both inflation expectations and uncertainty regarding underlying inflation in Armenia continue to remain elevated. In an environment of positive aggregate demand conditions, these factors could impact consumer behavior, contributing to a further expansion of aggregate demand and increasing inflationary risks. • Sustained border tensions, recent events in Nagorno-Karabakh, and uncertainty regarding the outlook for regional geopolitical tensions serve as a source of upside risk, with potential implications including the upward reassessment of the country premium, greater volatility in financial markets, de-anchoring of inflation expectations, and potential capital and labor outflows. While the latter would primarily have inflationary impacts, declines in aggregate demand could serve as a counterweight. *(Continued on the following page)*	• Risks of weak economic growth translating to a serious contraction persist in the global economy, especially in the European Union and China. If existing problems in the Chinese real estate sector were to cascade into broader financial problems and a deep economic recession, it would result in a sharp contraction in global demand, seriously hurting demand for oil and commodities. Considering China's position in the global economy, this could result in a substantial drop in oil and commodity prices and sharply impact global demand (Case Y-type scenario). • Despite growth in Russia remaining at high levels (driven in part by high military-related expenditures), there nevertheless exist risks related to the sustainability of such growth. Any potential sharp slowdown in economic activity could have negative implications on Armenia, including slowdowns in inflows of remittances to Armenia as well as general contractionary impacts on external demand for goods and services in the Armenian economy. • Continued overheating in the real estate market poses risks to the growth outlook in the construction sector as well as real estate prices, with the potential for deceleration in the construction sector to have negative spillovers on other sectors of the economy, leading to deceleration and domestic demand-driven disinflation. • Given growth in private and public investments, as well as growth in potential output (driven by increases in labor supply, IT sector productivity, etc.), any possible slowdown in output and demand would place the economy in a sharp disequilibrium, resulting in a negative output gap and creating significant downward price pressures. • Headline inflation remains persistently below the target, which could lead to sharp and sustained decline in long-term inflation expectations and contribute to restrained consumption patterns. • Longer-term demographic trends, such as the gradual aging of the population, could drive an increase in the savings rate over time, posing risks to demand and contributing to a deflationary environment over the long run. *(Continued on the following page)*

Case A-Type Considerations (continued)	Case B-Type Considerations (continued)
- Sustained excess demand scenarios: - While inflation remains below target, some measures of core inflation continue to remain at higher levels than headline (including non-traded sticky price inflation), suggesting that generalized excess demand conditions may persist and grow. - Private consumption (and resulting inflationary pressures) could accelerate on the back of accumulated private savings, the continued high growth of consumer loans, strong wage growth, and income growth driven by positive developments in the export sector. - The potential for fiscal spending to orient more toward current than capital expenditures can hurt medium- and long-term potential output, while also generating inflationary pressures in the near term. - In the near and medium term, the economic impact of forcibly-displaced persons from Nagorno-Karabakh is likely to have a greater impact on aggregate demand than supply, creating the potential for additional inflationary pressures.	- Growth in labor supply could bring the labor market back to equilibrium, generate excess supply, and contribute to declines in wages, meaningfully weakening inflationary pressures in the economy. This could be driven by a number of factors, including: - the sustained surge in migrant labor to Armenia, particularly from countries such as India, - a sharp reduction in Armenian migrant workers going abroad to Russia (given narrowing wage gaps between the two countries in key sectors, as well as the impacts of potential taxes on income earned abroad, which could push seasonal workers to participate in the Armenian labor market), - a faster integration of forcibly-displaced persons from Nagorno-Karabakh, - the sharp acceleration in wages in recent years, the reduction in the role of remittances, as well as the structure of economic growth (which has enabled the absorption of workers of all types of skill levels into the labor market) could facilitate those outside of the labor force to quickly integrate into the labor force, thus easing inflationary pressures. - Relatively tight domestic monetary and fiscal conditions (including an appreciated real exchange rate) could potentially be having a restrictive effect on the domestic economy in terms of investments, labor inflows, external demand for goods and services, as well as the medium-term outlook for export-oriented sectors. This could contribute to more muted demand and a low inflationary environment persisting for longer. - Uncertainty about the structure of economic growth raises questions about the long-term outlook of the Armenian economy. In particular, recent high growth has been largely concentrated in a few specific sectors, but there is uncertainty about the potential development in sectors that contribute to the overall productive capacity of the economy. If these types of trends persist into the future, this would testify to the tightness of financial conditions in the economy and the relatively restrained state of long-term demand factors, which is rife with deflationary risks over the medium-term.

F. Monetary Policy Outlook

To facilitate the policy discussion and the communication of the underlying, policy-relevant uncertainties and risks described in the Taxonomy of Scenarios (Section 3.E), Section F presents two scenarios that reflect illustrative future paths of the economy that would require either a higher path for the policy rate (Case A) or a lower path of the policy rate (Case B) relative to current market expectations. The Case A and B scenarios are created by the staff after reviewing individual submissions by the Board members, which, obviously, cannot all be included within one or two scenarios in a coherent, macro-consistent manner. Importantly, neither scenario is intended to represent a most-likely future or assign weight or probability to outcomes, nor can it include the entire universe of present risks. Rather, from the perspective of communications, these illustrative scenarios help demonstrate the CBA's commitment to act prudently and sufficiently aggressively to adjust the policy stance and path in response to any number of risks and uncertainties that may imperil sustainably achieving the price stability objective in the medium term.

Case A: Interest Rates above Market Expectations

High Inflation Expectations Continue with Consumption-Driven Growth
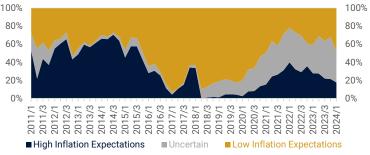
Inflation expectations are an important factor in monetary policy decisions. While short-term inflation expectations may fluctuate in response to economic disturbances, central banks are particularly concerned about long-term inflation expectations, which serve as important indicators of central bank credibility. In highly dollarized emerging market economies, where central bank credibility is perhaps less well-established, policymakers are also attentive to short-term inflation expectations, which can affect long-term inflation expectations and result in notable trade-offs between stabilizing inflation and output. Of course, any measure of inflation expectations—whether inferred from surveys, markets, or the behavior of economic agents—is inherently uncertain, creating challenges for policymakers as they seek to achieve their price stability objective and ensure that expectations remain well-anchored. Acknowledging the limitations associated with each of these measures, the CBA conducts research to support a more comprehensive picture of underlying inflation dynamics and inflation expectations. One aspect of this research involves the development of Non-Traded Sticky Price Inflation, or NTSPI (See box 3). As prices that are set infrequently, sticky prices inherently contain some information regarding future expectations of inflation.

Both survey-based measures of inflation expectations over the next twelve months and NTSPI indicate (see Figure F.1.1) that inflation expectations have progressively decreased over the past year as the overall inflationary environment has softened, as reflected in below-target headline inflation since April 2023 and diminishing inflationary pressures coming from the external environment. At the same time, uncertainty about expected inflation remains significant and continues to grow, indicating that market participants and the public at large may still remain concerned about excess demand and hot economic conditions despite low headline inflation. Moreover, concerns exist that the upward shift of the yield curve in the fourth quarter of 2023 (see Figure 3.D.2) was driven at least in part by

expectations of higher future inflation by market participants.

The illustrative Case A scenario is motivated by the risk of higher and entrenched inflation expectations that might be masked by lower inflation, while might contain significant risk for price stability for the medium term. In such a scenario, lower real interest rates would reduce incentives to save and boosts consumption, adding to already accumulated demand pressures in the economy. Such developments could result in a quick acceleration of inflation as the current exogenous deflationary forces gradually fade out. Thus, in such scenario, , a tighter policy stance relative to current market expectations would be needed to anchor inflation expectations to the target and guarantee the price stability objective.

Figure 3.F.1: Inflation Expectations
Panel A. CBA Survey of Household Inflation Expectations
% of respondents

Source: CBA

Panel B. Non-Traded Sticky Price Inflation and Model-Based 1-Year Ahead Inflation Expectations
Y-o-Y Change, %

Source: CBA

Case B: Interest Rates below Market Expectations

Labor Supply Expansion Meaningfully Softens Labor Market Conditions, Generating Excess Supply Conditions in Economy

The Case B scenario extrapolates an acceleration of existing developments in the labor market, where successive increases in labor supply from several sources could generate a significant cooldown in the labor market, resulting in broad deflationary forces throughout the economy. In the second half (and, particularly, in the fourth quarter) of 2023, the overall supply of labor increased thanks to a number of developments. First, while the data remains uncertain, declines in overall remittances from Russia suggest that the number of Armenian migrant workers going to Russia for seasonal work declined, given narrowing wage gaps between Armenia and Russia in key sectors (e.g. construction, driven by a booming domestic construction market and the Dram's appreciation relative to the Ruble). Second, labor force participation in Armenia increased. Strong GDP growth coupled with robust wage growth over the last two years incetivised those who were previously non-employed or not seeking job entering the labor force; this might also include former seasonal migrant workers who are now working in the domestic economy instead of going abroad, as well as previously non-active Armenian residents entering (or re-entering) the labor market. Third, the economy experienced a surge in inflows of migrant workers from India, who have been largely concentrated in a number of sectors facing acute labor shortages. Finally, forcibly displaced persons from Nagorno-Karabakh are gradually being integrated into the labor market.

While these factors contributed to an increase in labor supply in 2023, this has not yet fed through to the overall labor market, with unemployment continuing to remain at a historically low level, and wage growth staying robust, according to official data. The Case B scenario is built on the assumption that the trends observed in 2023 would continue through 2024 and 2025 at an accelerated pace, with the resulting expansion of labor supply being sufficiently strong to generate a broad cooldown in the labor market that feeds through to the overall economy.

This further expansion of labor supply would be driven by a persistence and deepening of trends that drove labor supply expansion from each source group in 2023.

In the case B scenario, this broad expansion of labor supply (representing approximately 9.3% of existing labor supply) would have a positive impact on potential output, resulting in an approximately 4.6% percentage point increase in annual potential output over the medium-term horizon. This growth in potential would result in a slightly negative output gap and some excess supply conditions. Moreover, the substantial expansion of labor supply would be expected to generate a softening in wages, with the impact on wages most pronounced in low-skilled sectors. This softening of wages would materially constrain inflationary forces originating from the labor market, though the additional deflationary impacts on the overall economy would be more limited. Given this type of Case B scenario, where labor supply expansions result in higher potential output, a slightly negative output gap, and decelerating wages, the policy rate would need to follow a more rapid and aggressive downward path than what is currently priced in markets in order to sustainably bring inflation to target in the medium-term horizon.

Table 3.F.2: Estimates of Scale of Labor Supply Expansion

	2023 (Est)	2024	2025	Cumulative Share of Existing Labor Force
Nagorno-Karabakh Integration	7,500 – 15,000	10,000 – 15,000	5,000 – 7,500	2.0% - 3.0%
Migrant Workers from India	10,000 – 16,000	10,000 – 20,000	10,000 – 20,000	2.5% – 5.0%
Armenian Migrant Workers to Russia	5,000 – 15,000	5,000 – 15,000	5,000 – 15,000	1.5% - 3.0%
Total Impact	**22,500 – 46,000**	**25,000 – 50,000**	**20,000 – 42,500**	**6.0% - 11.0%**

Source: CBA

Summary of Illustrative Case A & Case B Macroeconomic Projections

Figure 3.F.3: Endogenous Interest Rate Path, %

Figure 3.F.6: Non-Traded Sticky Price Inflation, Y-o-Y %
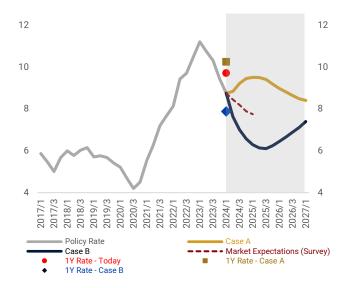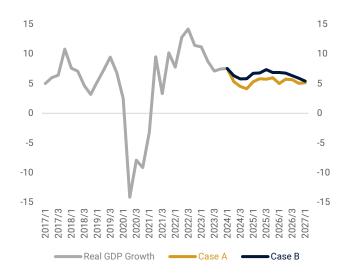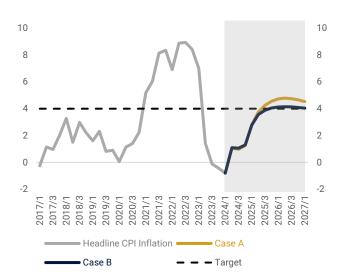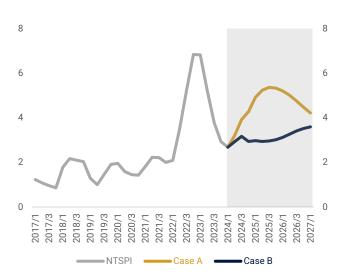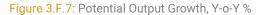
Figure 3.F.4: Real GDP Growth, Y-o-Y %

Figure 3.F.7: Potential Output Growth, Y-o-Y %

Figure 3.F.5: Headline CPI Inflation, Y-o-Y %
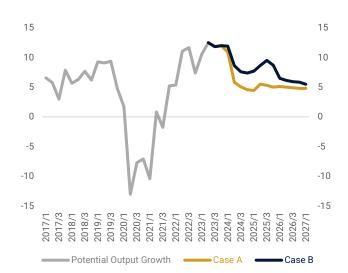
Figure 3.F.8: Output Gap, %
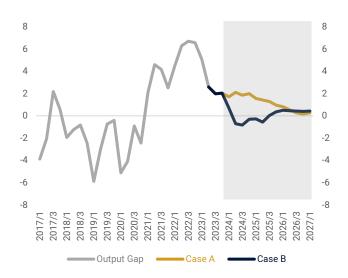
Figure 3.F.9: Real Interest Rate, %

Figure 3.F.11: Real Effective Exchange Rate, Index

Figure 3.F.10: Nominal Effective Exchange Rate, Index
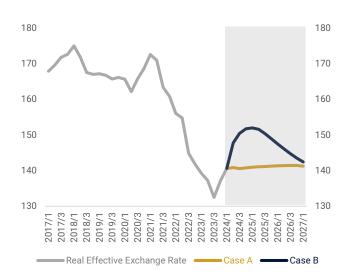
Figure 3.F.12: Model-Based 1-Year Ahead Inflation Expectations, Y-o-Y %

Table 3.F.1: Summary of Illustrative Macroeconomic Projections
Historical Data and Illustrative Case A & B Scenario Projections

		2021	2022	2023	2024		2025		2026	
		Actual	Actual	Actual	Case A	Case B	Case A	Case B	Case A	Case B
Global Economy										
USA economic growth	real growth, %	5.8	2.0	2.6	1.9	1.9	2.0	2.0	2.6	2.6
Eurozone economic growth	real growth, %	5.2	3.2	0.4	-0.5	-0.5	0.2	0.2	1.2	1.2
Russia economic growth	real growth, %	5.5	-2.0	3.0	0.1	0.1	-0.3	-0.3	0.4	0.4
USA inflation	average, %	4.6	7.7	4.0	3.0	3.0	2.8	2.8	2.5	2.5
EU inflation	average, %	2.5	8.0	5.4	2.4	2.4	2.3	2.3	2.2	2.2
Russia inflation	average, %	6.5	12.9	5.5	8.8	8.8	6.7	6.7	5.0	5.0
Oil price	dollar/barrel	71.0	99.5	82.6	81.5	81.5	81.6	81.6	81.9	81.9
Copper price	dollar/metric ton	9288.1	8956.0	8472.1	8076.9	8076.9	8335.9	8335.9	8602.3	8602.3
FAO food price index	index	125.7	143.5	124.1	122.7	122.7	127.9	127.9	130.6	130.6
Domestic Economy										
Inflation										
Inflation	Y-o-Y, %, end of period	7.7	8.3	-0.6	1.3	1.3	4.6	4.1	4.7	4.1
CPI inflation	Y-o-Y, %, average	6.9	8.3	2.0	0.6	0.7	3.8	3.6	4.7	4.1
Non-traded sticky price inflation	Y-o-Y, %, average	2.1	4.5	4.8	3.5	2.9	5.2	3.0	4.9	3.3
Gross Income										
GDP	billion dram	6983.0	8496.8	9502.8	10398.2	10510.3	11430.5	11663.0	12529.7	12905.8
GDP	real growth, %	5.7	12.6	8.7	5.3	6.4	5.7	6.7	5.4	6.4
Supply										
Industry	real growth, %	3.5	6.3	1.7	5.7	6.2	6.1	7.6	5.5	7.3
Agriculture	real growth, %	-0.6	-0.7	0.2	2.5	2.5	2.9	4.4	2.9	4.0
Construction	real growth, %	3.1	19.1	15.7	10.8	12.8	8.9	11.3	7.0	9.8
Services	real growth, %	7.9	18.1	11.4	5.4	5.7	5.8	6.2	5.5	6.0
Net taxes	real growth, %	7.4	8.2	11.0	5.3	6.7	6.2	6.8	5.5	6.3

		2021	2022	2023	2024		2025		2026	
		Actual	Actual	Actual	Case A	Case B	Case A	Case B	Case A	Case B
Demand										
Consumption	real growth, %	4.2	7.7	8.3	5.3	6.4	5.6	6.2	5.3	5.7
Public consumption	real growth, %	8.4	6.5	17.9	4.6	4.6	4.6	4.6	5.1	5.1
Private consumption	real growth, %	3.4	8.0	6.4	5.5	6.7	5.8	6.4	5.3	5.8
Gross accum. of fixed assets*	real growth, %	6.3	9.5	14.0	9.8	13.5	5.6	8.3	5.1	8.5
Public investment**	real growth, %	-9.9	41.1	28.9	21.1	20.5	4.2	4.2	3.5	3.5
Gross accumulation of private fixed assets	real growth, %	11.2	1.9	10.1	6.3	11.3	6.1	9.8	5.8	8.8
Export of goods and services	real growth, %	16.6	54.4	28.7	-11.0	-7.8	-3.6	-1.1	3.2	4.6
Import of goods and services	real growth, %	12.9	33.8	28.3	-3.2	-7.5	-2.8	-2.6	3.3	3.3
Current Account										
Balance of trade	million USD	-1504.8	-1859.2	-2340.6	-2794.4	-2103.8	-2902.8	-1963.8	-2949.6	-2536.9
Balance of services	million USD	396.9	1711.0	2167.9	1550.9	1955.3	1511.2	1818.1	1484.0	1803.7
Money transfers	million USD	1274.0	1538.3	988.5	907.2	772.2	865.3	606.8	866.8	546.1
Current account	million USD	-483.0	151.0	-476.7	-1142.3	-182.3	-1292.3	-304.9	-1364.8	-953.1
Balance of trade	share of GDP, %	-7.9	-0.8	-0.7	-4.8	-0.6	-4.7	-0.6	-4.5	-2.6
Balance of services	share of GDP, %	2.8	8.7	8.8	6.0	8.4	5.1	7.1	4.6	6.4
Money transfers	share of GDP, %	9.1	7.9	4.0	3.5	3.3	2.9	2.4	2.7	1.9
Current account	share of GDP, %	-3.5	0.8	-1.9	-4.5	-0.8	-4.4	-1.2	-4.2	-3.4
Public sector***										
Revenues and grants	billion dram	1683.8	2046.0	2358.6	2651.6	2651.6	3033.7	3033.7	3461	3461.0
Tax revenue	billion dram	1586.9	1926.0	2221.9	2541.6	2541.6	2944.2	2944.2	3374.8	3374.8
Expenditures	billion dram	2004.3	2243.5	2550.2	3134.5	3134.5	3353.4	3353.4	3795.5	3795.5
Deficit	billion dram	-320.5	-197.5	-191.6	-482.9	-482.9	-319.7	-319.7	-334.5	-334.5
Revenues and grants	share of GDP, %	24.1	24.1	24.8	25.5	25.2	26.5	26.0	27.6	26.8
Tax revenue	share of GDP, %	22.7	22.7	23.4	24.4	24.2	25.8	25.2	26.9	26.1
Expenditures	share of GDP, %	28.7	26.4	26.8	30.1	29.8	29.3	28.8	30.3	29.4
Deficit	share of GDP, %	-4.6	-2.3	-2.0	-4.6	-4.6	-2.8	-2.7	-2.7	-2.6

* The Central Bank only presents the indicator of gross fixed asset accumulation instead of gross accumulation, since the change in tangible working capital inventories is calculated by Armenia's Statistics Committee as a balancing item and it does not show the true level of gross accumulation. See https://www.armstat.am/file/article/sv_04_19a_112.pdf.
** Actual indicators of public investment are the capital expenditures of the consolidated budget, and the estimates are based on a revised macro-framework, 2024-2026, available at the time.
*** The 2023 budget indicators are the Central Bank of Armenia estimate. The 2024-2026 indicators are presented from the state Mid-Term Expenditures

Monetary Policy Chart Pack

2024 Q1

Table of contents

Current Economic Conditions

1.1 Global Economy

United States: Main Economic Indicators

US Annual Real GDP Growth and Projections

Annual Real Growth Rate, %

● Actual GDP Growth ● IMF (Jan 24) ● Consensus (Feb 24)

Year	IMF (Jan 24)	OECD (Feb 24)	WB (Jan 24)	Fed (Dec 23)	Consensus (Feb 24)
2024	1.5	2.1	1.6	1.4	1.6
2025	1.8	1.7	1.7	1.8	1.7

Contribution to US Real GDP Growth

Percentage Points, QoQ Annualized Change, %

● Imports ● Exports ● Internal Demand ● GDP

Source: Fred, IMF, OECD, WB, Bureau of Economic Analysis, FED, Bloomberg Consensus Forecasts
Note: The last point on left-hand side chart is 2025. The last point on right-hand side chart is 2023 Q4.

United States: Main Economic Indicators

Underlying Inflation Measures

YoY growth, %

● Core CPI ● Core PCE ● Sticky CPI

Underlying Inflation Measures

YoY growth, %

Year	Month	Core CPI	Core PCE	Sticky CPI
2023	January	5.5	4.9	6.7
2023	February	5.5	4.8	6.7
2023	March	5.6	4.8	6.6
2023	April	5.5	4.8	6.5
2023	May	5.3	4.7	6.1
2023	June	4.9	4.3	5.8
2023	July	4.7	4.2	5.6
2023	August	4.4	3.7	5.3
2023	September	4.1	3.6	5.1
2023	October	4.0	3.4	4.9
2023	November	4.0	3.2	4.7
2023	December	3.9	2.9	4.6
2024	January	3.9	2.9	4.6

Source: Bureau of Economic Analysis
Note: The last point on the chart is January 2024

Euro Area: Main Economic Indicators

EU Annual Real GDP Growth and Projections

Annual Real Growth Rate, %

● Actual GDP growth ● IMF (Jan 24) ● Consensus (Feb 24)

Year	IMF(Jan 24)	OECD(Feb 24)	WB (Jan 24)	ECB (Dec 23)	Consensus (Feb 24)
2024	1.5	0.8	0.9	1.1	1.0
2025	1.5	0.8	0.9	1.1	1.0

Contribution to EU Real GDP Growth

Percentage Points, QoQ Annualized Change, %

● Exports ● Imports ● Internal Demand ● GDP Growth
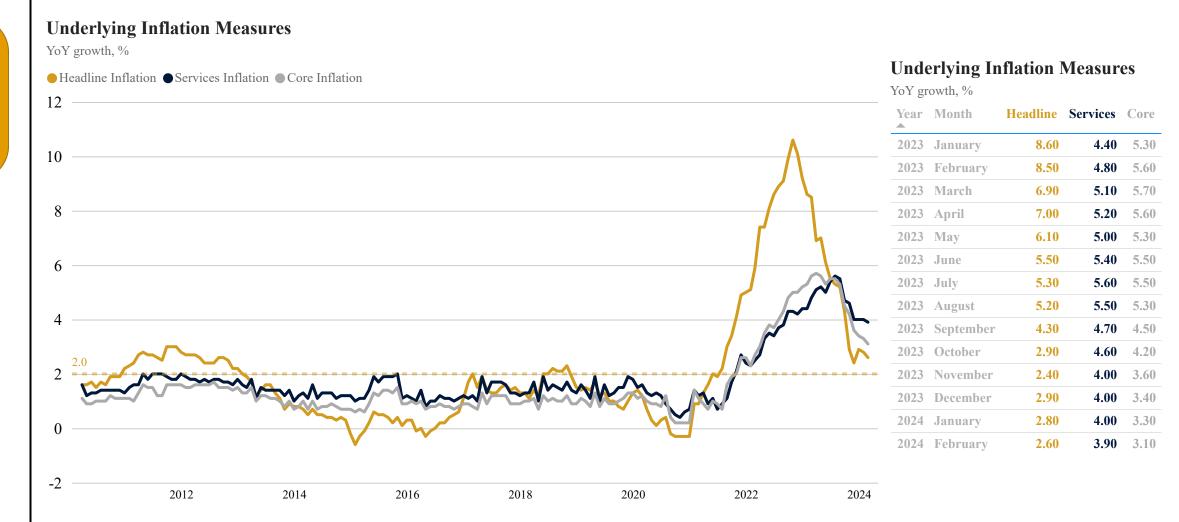
Source: Fred, IMF, OECD, WB, Eurostat, ECB, Bloomberg Consensus Forecasts
Note: The last point on left-hand side chart is 2025. The last point on right-hand side chart is 2023 Q4.

Euro Area: Main Economic Indicators

Underlying Inflation Measures

YoY growth, %

● Headline Inflation ● Services Inflation ● Core Inflation

Underlying Inflation Measures

YoY growth, %

Year	Month	Headline	Services	Core
2023	January	8.60	4.40	5.30
2023	February	8.50	4.80	5.60
2023	March	6.90	5.10	5.70
2023	April	7.00	5.20	5.60
2023	May	6.10	5.00	5.30
2023	June	5.50	5.40	5.50
2023	July	5.30	5.60	5.50
2023	August	5.20	5.50	5.30
2023	September	4.30	4.70	4.50
2023	October	2.90	4.60	4.20
2023	November	2.40	4.00	3.60
2023	December	2.90	4.00	3.40
2024	January	2.80	4.00	3.30
2024	February	2.60	3.90	3.10
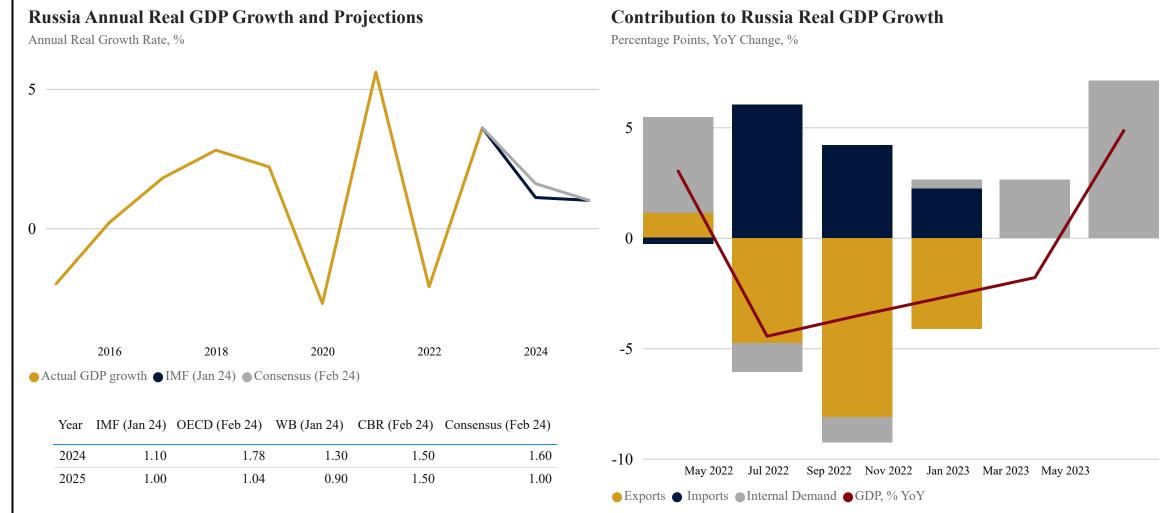
Source: Eurostat
Note: The last point on the chart is February 2024

Russia: Main Economic Indicators

Russia Annual Real GDP Growth and Projections

Annual Real Growth Rate, %

● Actual GDP growth ● IMF (Jan 24) ● Consensus (Feb 24)

Year	IMF (Jan 24)	OECD (Feb 24)	WB (Jan 24)	CBR (Feb 24)	Consensus (Feb 24)
2024	1.10	1.78	1.30	1.50	1.60
2025	1.00	1.04	0.90	1.50	1.00

Contribution to Russia Real GDP Growth

Percentage Points, YoY Change, %

● Exports ● Imports ● Internal Demand ● GDP, % YoY
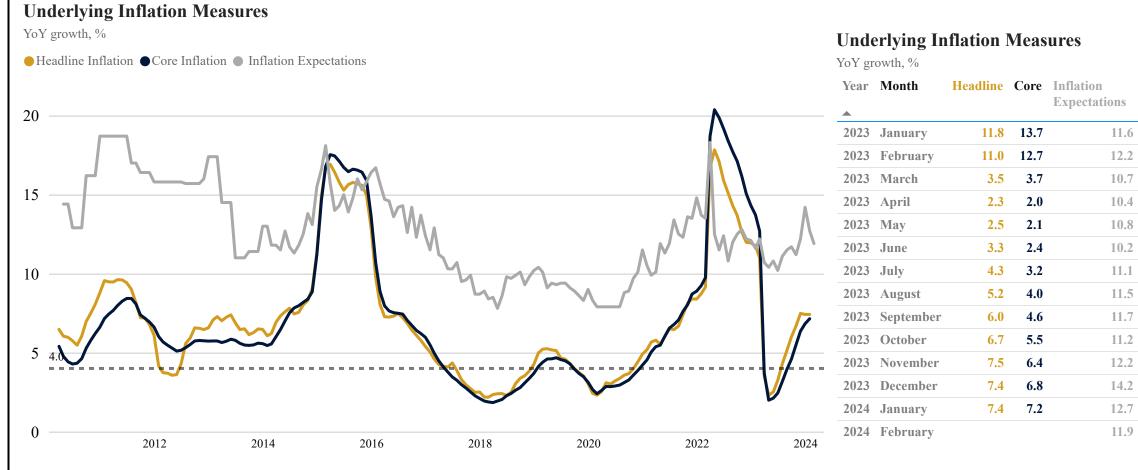
Source: Fred, IMF, OECD, WB, Rosstat, CBR, Bloomberg Consensus Forecasts
Note: The last point on left-hand side chart is 2025. The last point on right-hand side chart is 2023 Q3.

Russia: Main Economic Indicators

Underlying Inflation Measures

YoY growth, %

● Headline Inflation ● Core Inflation ● Inflation Expectations

Underlying Inflation Measures

YoY growth, %

Year	Month	Headline	Core	Inflation Expectations
2023	January	11.8	13.7	11.6
2023	February	11.0	12.7	12.2
2023	March	3.5	3.7	10.7
2023	April	2.3	2.0	10.4
2023	May	2.5	2.1	10.8
2023	June	3.3	2.4	10.2
2023	July	4.3	3.2	11.1
2023	August	5.2	4.0	11.5
2023	September	6.0	4.6	11.7
2023	October	6.7	5.5	11.2
2023	November	7.5	6.4	12.2
2023	December	7.4	6.8	14.2
2024	January	7.4	7.2	12.7
2024	February			11.9

Source: Central Bank of Russia, Rosstat
Note: The last point on the chart is February 2024
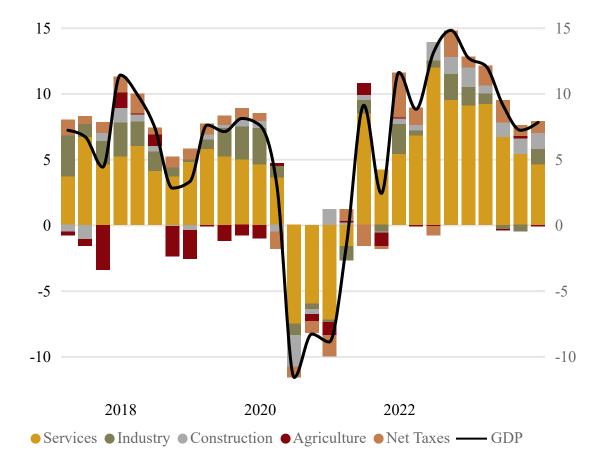
Current Economic Conditions

1.2 Domestic Economy

GDP by Production Approach

Contribution to GDP Growth
Percentage Points, Real Growth Rate, YoY, %

● Services ● Industry ● Construction ● Agriculture ● Net Taxes ▬ GDP

Contribution to GDP Growth
Percentage Points, Real Growth Rate, YoY, %

Date	Services	Industry	Construction	Agriculture	Net Taxes	GDP
2022/Q3	9.5	2.0	1.3	0.0	2.0	14.8
2022/Q4	9.1	1.4	1.5	0.0	0.8	12.7
2023/Q1	9.2	0.8	0.6	0.0	1.5	12.1
2023/Q2	6.7	-0.3	1.1	-0.1	1.7	9.1
2023/Q3	5.4	-0.5	1.2	0.2	0.8	7.2
2023/Q4	4.6	1.2	1.2	-0.1	0.9	7.8

Growth Rates By Sector
Real Growth Rate, YoY, %

Date	Services	Industry	Construction	Agriculture	Net Taxes	GDP
2022/Q3	19.2	10.4	19.8	-0.1	19.0	14.8
2022/Q4	20.5	4.4	16.5	-0.4	6.4	12.7
2023/Q1	16.0	3.9	15.2	0.6	12.2	12.1
2023/Q2	11.4	-2.9	21.6	-0.6	26.3	9.1
2023/Q3	10.5	-2.6	17.4	1.4	7.1	7.2
2023/Q4	9.1	7.2	12.7	-1.0	7.2	7.8

Source: Statistical Committee of RA, CBA calculations
Note: The last point on the chart is 2023Q4.
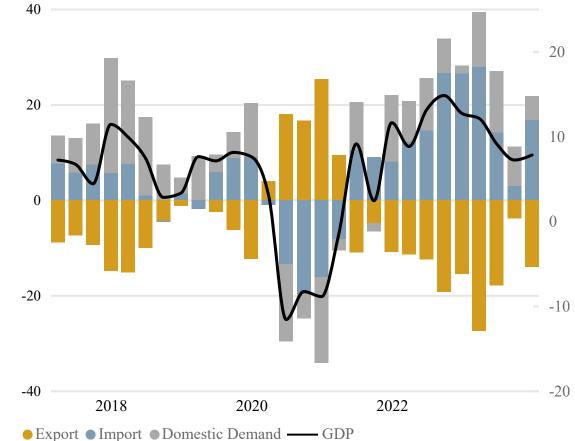
GDP by Expenditure Approach

Contribution to GDP Growth

Percentage Points, Real Growth Rate, YoY, %

● Export ● Import ● Domestic Demand — GDP

Contribution to GDP Growth

Percentage Points, Real Growth Rate, YoY, %

Date	Private Consumption	Public Consumption	Investment	Export	Import	GDP
2022/Q3	7.5	0.6	-0.9	26.6	-19.3	14.8
2022/Q4	-1.9	2.5	1.1	26.5	-15.5	12.7
2023/Q1	5.1	1.4	5.0	27.9	-27.4	12.1
2023/Q2	7.1	2.2	3.5	14.2	-17.9	9.1
2023/Q3	3.1	3.0	2.1	2.9	-3.9	7.2
2023/Q4	2.9	2.2	-0.2	16.8	-14.0	7.8

Growth Rates By Sector

Real Growth Rate, YoY, %
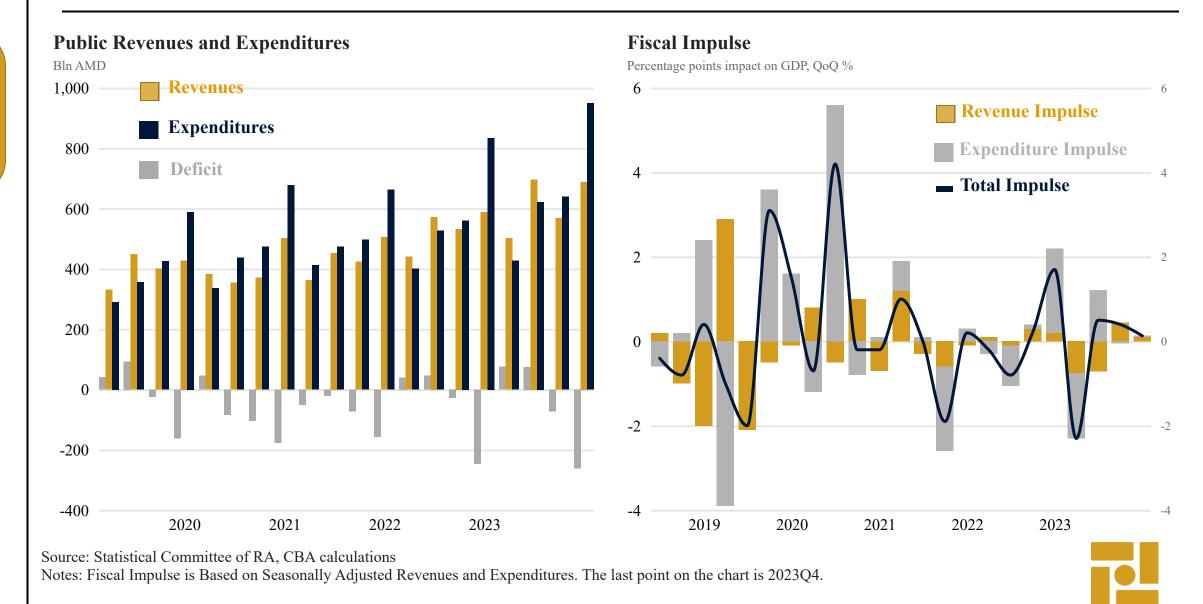
Date	Private Consumption	Public Consumption	Investment	Export	Import	GDP
2022/Q3	11.1	4.6	-3.9	71.4	46.3	14.8
2022/Q4	-2.9	18.0	3.4	82.7	35.7	12.7
2023/Q1	6.4	13.0	28.9	64.9	55.4	12.1
2023/Q2	9.7	17.1	18.7	29.2	34.2	9.1
2023/Q3	4.8	24.6	10.8	5.3	7.6	7.2
2023/Q4	5.2	15.6	-0.6	33.4	28.0	7.8

Source: Statistical Committee of RA, CBA calculations
Note: The last point on the chart is 2023Q4.

Fiscal Policy

Public Revenues and Expenditures

Bln AMD

- Revenues
- Expenditures
- Deficit

Fiscal Impulse

Percentage points impact on GDP, QoQ %

- Revenue Impulse
- Expenditure Impulse
- Total Impulse

Source: Statistical Committee of RA, CBA calculations
Notes: Fiscal Impulse is Based on Seasonally Adjusted Revenues and Expenditures. The last point on the chart is 2023Q4.

Current Account Developments

Nominal Imports in USD

mln USD

- **Other Goods**
- **Capital Goods**
- **Intermediate Cons Goods**
- **Final Cons. Goods**
- **Total Import of Goods**

Nominal Exports in USD

mln USD

- **Other Goods**
- **Capital Goods**
- **Intermediate Cons Goods**
- **Final Cons. Goods**
- **Total Export of Goods**

Source: Statistical Committee of RA, CBA calculations
Note: The last point on the chart is 2023Q4.

Current Account

Current Account

mln, USD

● Goods Balance ● Income Balance ● Services Balance ● Transfers (including official) ● Current account

Source: Statistical Committee of RA, CBA
Note: The last point on the chart is 2023Q4

Inflow of Non-Commercial Transfers

Inflow of Non-Commercial Transfers by Countries

Nominal, mln USD

● USA ● Russia ● Other ● Total

Inflow of Non-Commercial Transfers by Countries

Nominal, mln USD

Date	USA	Russia	Other	Total
2023/07	26	69	22	117
2023/08	27	58	23	108
2023/09	25	46	22	94
2023/10	28	48	23	99
2023/11	26	36	25	88
2023/12	32	44	26	102
2024/01	23	29	18	70

Non-Commercial Transfers By Countries
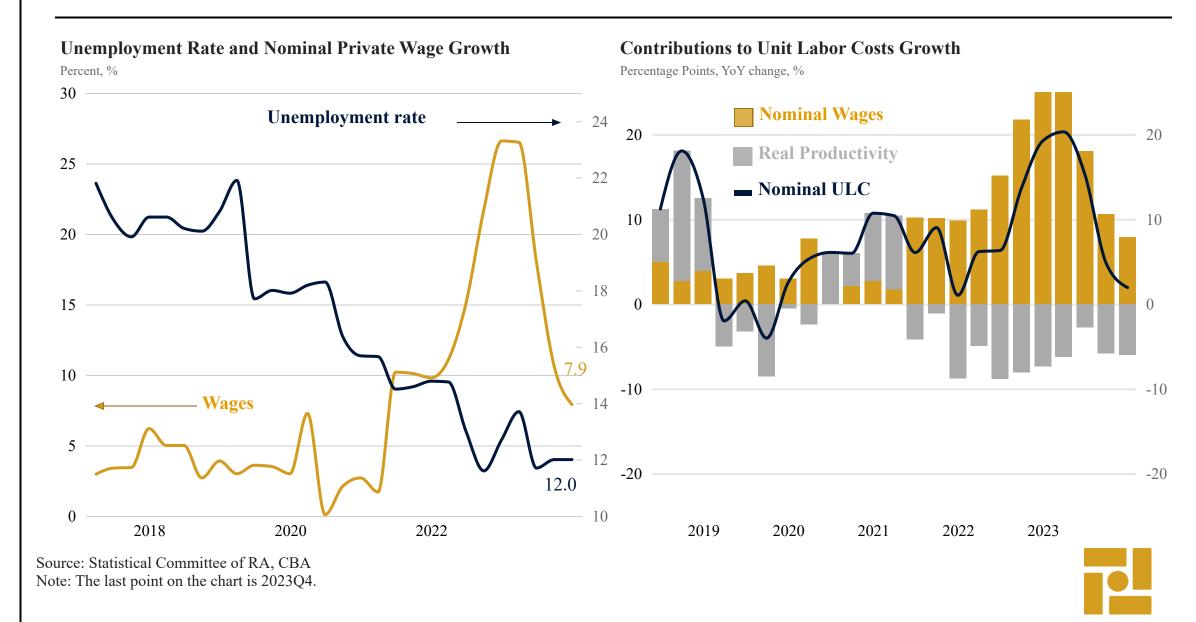
Inflow, YoY change, %

Date	USA	Russia	Other	Total
2023/07	3.3	-60.3	5.6	-46.9
2023/08	2.0	-61.0	-2.0	-45.5
2023/09	3.1	-69.0	7.1	-51.6
2023/10	16.7	-64.8	15.8	-44.9
2023/11	5.1	-71.5	16.7	-49.4
2023/12	4.1	-63.4	8.7	-41.6
2024/01	12.4	-56.3	5.5	-32.5

Source: Statistical Committee of RA, CBA calculations
Note: The last point on the chart is January 2024.

Labor Market Indicators

Unemployment Rate and Nominal Private Wage Growth

Percent, %

Unemployment rate

Wages

7.9

12.0

Contributions to Unit Labor Costs Growth

Percentage Points, YoY change, %

Nominal Wages

Real Productivity

Nominal ULC

Source: Statistical Committee of RA, CBA
Note: The last point on the chart is 2023Q4.
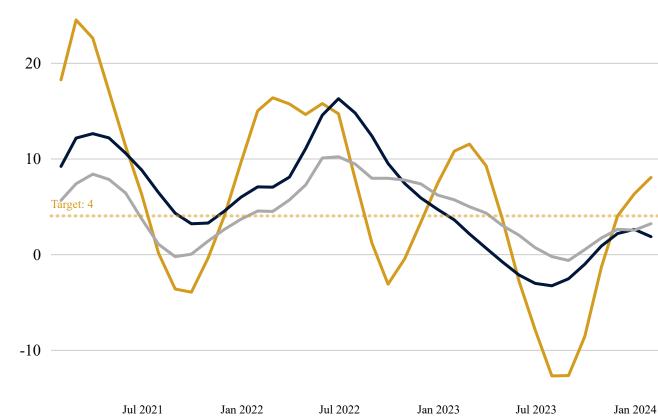
Conventional Measures of Underlying Inflation, 3m-o-3m

CPI and Core inflation

3m-o-3m annualized change, %

● CPI ● Core Inflation ● CPI w/o Food and Energy

Target: 4

CPI and Core inflation

3m-o-3m annualized growth rate, %

Date	CPI	Core	CPI w/o Food and Energy
2022/12	7.4	4.7	6.2
2023/01	10.8	3.6	5.7
2023/02	11.5	2.1	5.0
2023/03	9.2	0.6	4.3
2023/04	3.7	-0.8	3.0
2023/05	-2.8	-2.2	2.0
2023/06	-7.9	-3.1	0.7
2023/07	-12.7	-3.3	-0.3
2023/08	-12.7	-2.6	-0.7
2023/09	-8.6	-1.1	0.5
2023/10	-1.3	0.9	1.7
2023/11	4.0	2.2	2.6
2023/12	6.3	2.6	2.5
2024/01	8.0	1.8	3.2

Source: Statistical Committee of RA, CBA calculations
Note: The last point on the chart is January 2024.
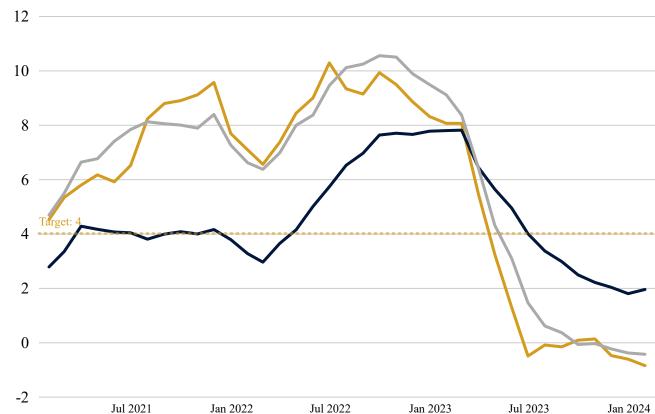
Conventional Measures of Underlying Inflation, YoY

CPI and Core inflation

YoY change, %

● CPI ● CPI w/o Food and Energy ● Core Inflation

CPI and Core inflation

YoY Change, %

Date	Core Inflation	CPI	CPI w/o Food and Energy
2022/12	9.48	8.30	7.76
2023/01	9.10	8.05	7.79
2023/02	8.36	8.05	7.80
2023/03	6.41	5.45	6.43
2023/04	4.30	3.24	5.63
2023/05	3.09	1.29	4.94
2023/06	1.45	-0.51	3.99
2023/07	0.60	-0.10	3.36
2023/08	0.35	-0.17	2.97
2023/09	-0.08	0.08	2.48
2023/10	-0.05	0.12	2.20
2023/11	-0.24	-0.49	2.02
2023/12	-0.39	-0.62	1.79
2024/01	-0.44	-0.86	1.94

Source: Statistical Committee of RA, CBA calculations
Note: The last point on the chart is January 2024.

Non-traded Sticky Prices

Non-traded Sticky Prices and Flexible Prices

YoY change, %

● NTSPI ● Flexible inflation

Non-traded Sticky Prices and Flexible Prices

Change, %

Date	Flexible inflation YoY	NTSPI, YoY	NTSPI, 3m-o-3m	Flexible price, 3m-o-3m
2022/12	8.5	7.2	7.4	7.4
2023/01	8.2	7.4	5.5	11.8
2023/02	8.2	7.3	3.7	13.0
2023/03	5.2	6.5	3.9	10.2
2023/04	2.8	5.6	3.5	3.7
2023/05	0.5	5.5	3.0	-3.9
2023/06	-1.6	5.0	2.0	-9.8
2023/07	-0.9	4.3	2.0	-15.5
2023/08	-1.0	4.0	1.5	-15.4
2023/09	-0.6	3.4	2.0	-10.6
2023/10	-0.5	3.1	2.8	-2.1
2023/11	-1.1	2.9	4.3	3.9
2023/12	-1.3	2.9	3.9	6.8
2024/01	-1.6	3.0	3.2	8.9

Source: Statistical Committee of RA, CBA calculations
Notes: The last point on the chart is January 2024.
"Non-Tradeable Sticky Price Inflation: Developing Better Concepts for Monetary Policy Analysis", Papikyan, Avetisyan, Laxton et al, 2023
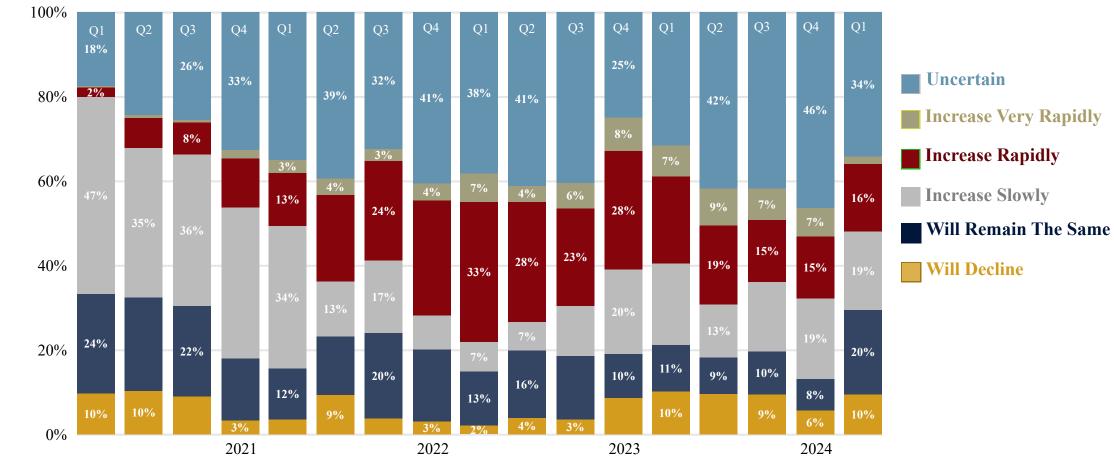
Survey of Inflation Expectations

Survey of Households on Inflation Expectations

Share of Total Answers, %
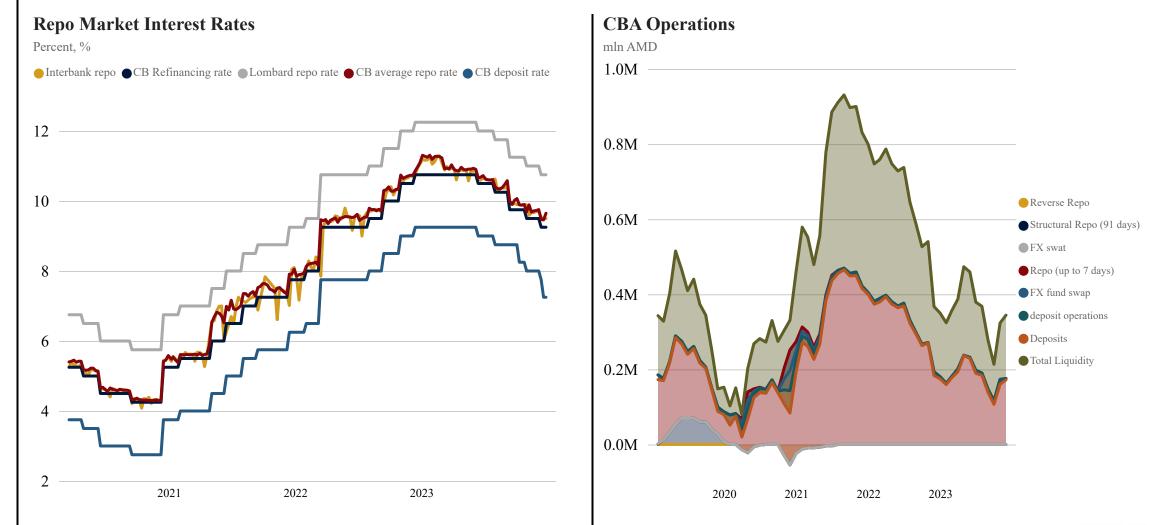
Source: Statistical Committee of RA, CBA calculations
Notes: The last point on the chart is Q1 2024.

Open Market Operations and Money Market Rates

Repo Market Interest Rates

Percent, %

● Interbank repo ● CB Refinancing rate ● Lombard repo rate ● CB average repo rate ● CB deposit rate

CBA Operations

mln AMD

● Reverse Repo
● Structural Repo (91 days)
● FX swat
● Repo (up to 7 days)
● FX fund swap
● deposit operations
● Deposits
● Total Liquidity
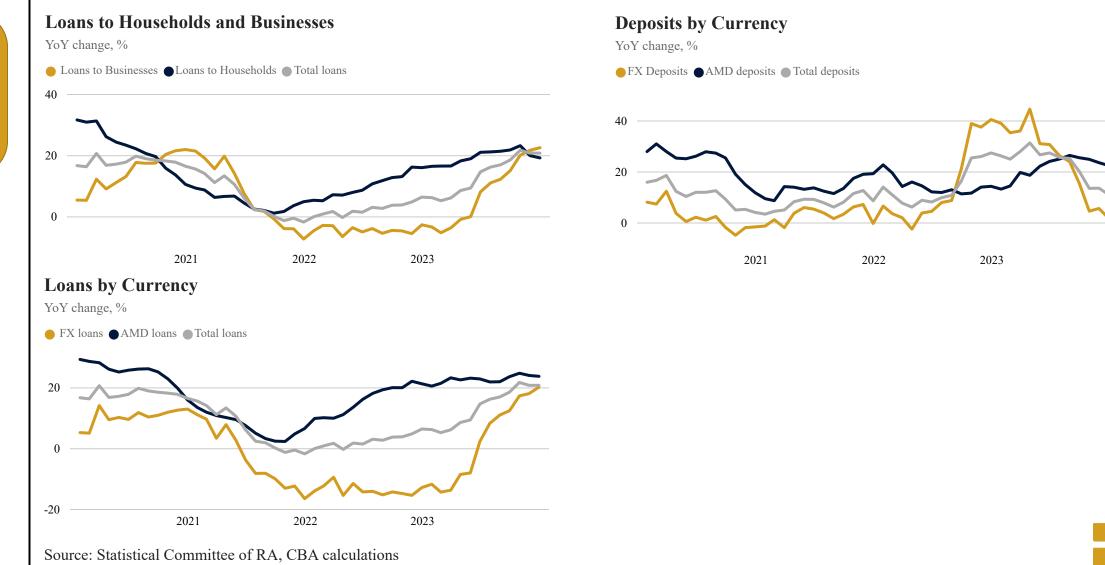
Source: CBA
Notes: The last point on the charts is December 2023.

Deposits and Loans

Loans to Households and Businesses

YoY change, %

● Loans to Businesses ● Loans to Households ● Total loans

Loans by Currency

YoY change, %

● FX loans ● AMD loans ● Total loans

Deposits by Currency

YoY change, %

● FX Deposits ● AMD deposits ● Total deposits
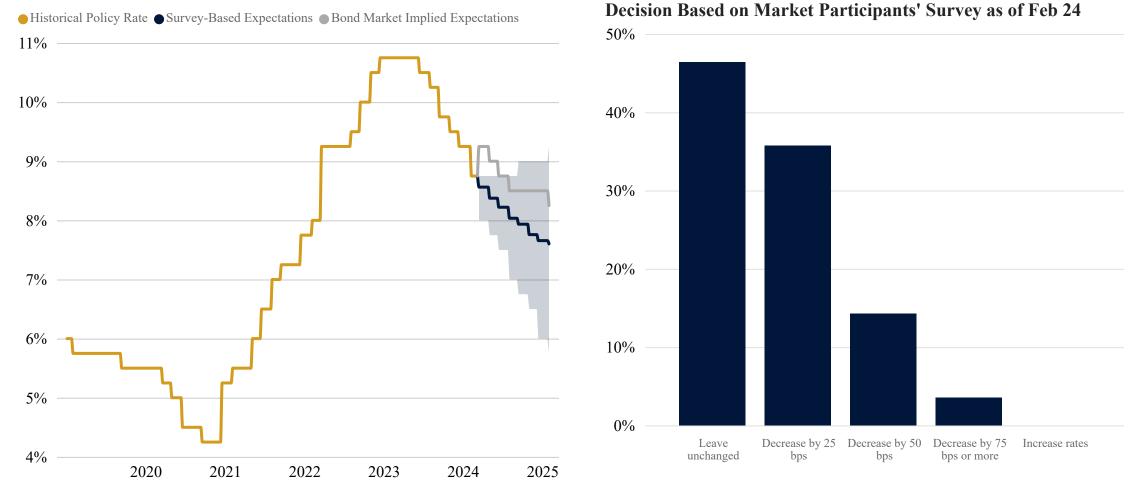
Source: Statistical Committee of RA, CBA calculations
Notes: The last point on the chart is December 2023.

Market Expectations for Policy Rate

Market Expectations of Policy Rate

- ● Historical Policy Rate
- ● Survey-Based Expectations
- ● Bond Market Implied Expectations

Probability of Policy Rate Change for Upcoming March 2024 Decision Based on Market Participants' Survey as of Feb 24
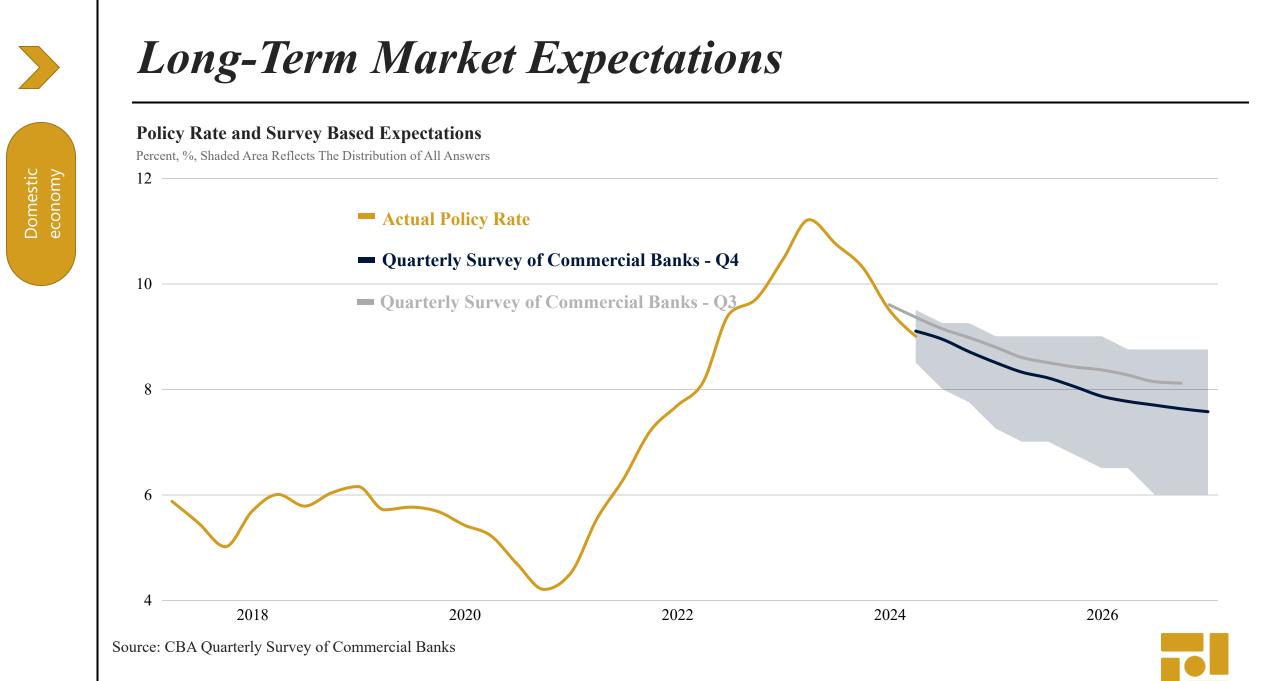
Source: CBA Survey of Market Participants, CBA calculations

Long-Term Market Expectations

Domestic economy

Policy Rate and Survey Based Expectations

Percent, %, Shaded Area Reflects The Distribution of All Answers

- Actual Policy Rate
- Quarterly Survey of Commercial Banks - Q4
- Quarterly Survey of Commercial Banks - Q3

Source: CBA Quarterly Survey of Commercial Banks

General Assumptions and Judgements

Long-Term Growth Potential in Armenia

Contribution to Potential GDP Growth

Percentage points, YoY, %

■ **TFP**
■ **Capital**
■ **Labor**
━━ **Actual GDP Growth**

Range	TFP	Labor	Capital	Potential
2000-2008	**2.8**	0.0	**8.2**	**11.0**
2012-2017	**3.8**	-0.8	**0.8**	**3.8**
2018-2023	**1.8**	0.9	**1.2**	**4.0**
2024-2029*	**3.6**	0.1	**1.5**	**5.2**

Source: CBA calculations

Notes: Estimates are based on Staff Judgements and are subject to Uncertainty

Cyclical Indicators

Output Gap And Inflation
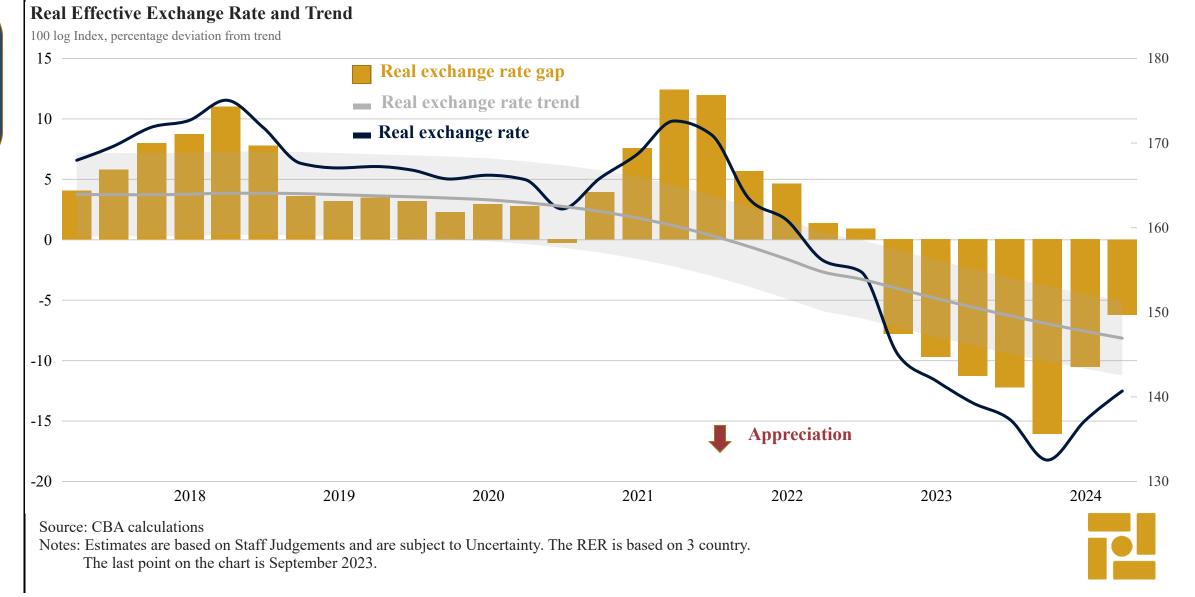
Percent, %, Shaded Area Reflects Uncertainty Around The Output Gap estimates

Source: CBA calculations

Notes: Estimates are based on Staff Judgements and are subject to Uncertainty

The last point on the chart is Q1 2024.

Real Effective Exchange Rate

Real Effective Exchange Rate and Trend

100 log Index, percentage deviation from trend

- Real exchange rate gap
- Real exchange rate trend
- Real exchange rate

Appreciation

Source: CBA calculations

Notes: Estimates are based on Staff Judgements and are subject to Uncertainty. The RER is based on 3 country.
The last point on the chart is September 2023.

Monetary Policy and Equilibrium Interest Rate

Nominal Policy Rate and Neutral Rate Estmate

Percent, %, Shaded Area Reflects Uncertainty Around The Neutural Rate Estimate

— Policy Rate

— Neutral Rate

Contribution to Nominal Neutral Interest Rate Estimate

Percent, %

- Inflation Expectations
- RER Trend Appreciation
- US Neutral Real Rate
- Risk Premium
- Neutral Nominal Rate

Source: CBA calculations

Notes: Estimates are based on Staff Judgements and are subject to Uncertainty
The last point on the chart is Q1 2024.

Illustrative Case A & B Scenarios

United States: Main Economic Indicators

Headline Inflation
YoY change, %

Case A
Case B

Target: 2

2018 2020 2022 2024 2026

Projection

Policy Rate
Percent, %

2018 2020 2022 2024 2026

Projection

Real GDP
YoY Change, %

2018 2020 2022 2024 2026

Projection

Exchange Rate
USD/EUR Level

2018 2020 2022 2024 2026

Projection

Source: Bloomberg, CBA calculations
Notes: This is an illustrative market reference scenario, Projections for 3 year medium term horizon.

Euro Area & Russia: Main Economic Indicators

EU: Headline Inflation
YoY change, %

Case A

Case B

Target: 2

10

5

0

2018   2020   2022   2024   2026

Projection

EU: Real GDP
YoY change, %

10

0

-10

2018   2020   2022   2024   2026

Projection

Russia: Headline Inflation
YoY change, %

15

10

5

Target: 4

2018   2020   2022   2024   2026

Projection

Russia: Real GDP
YoY Change, %

10

0

-10

2018   2020   2022   2024   2026

Projection

Source: Bloomberg, CBA calculations
Notes: This is an illustrative market reference scenario, Projections for 3 year medium term horizon.
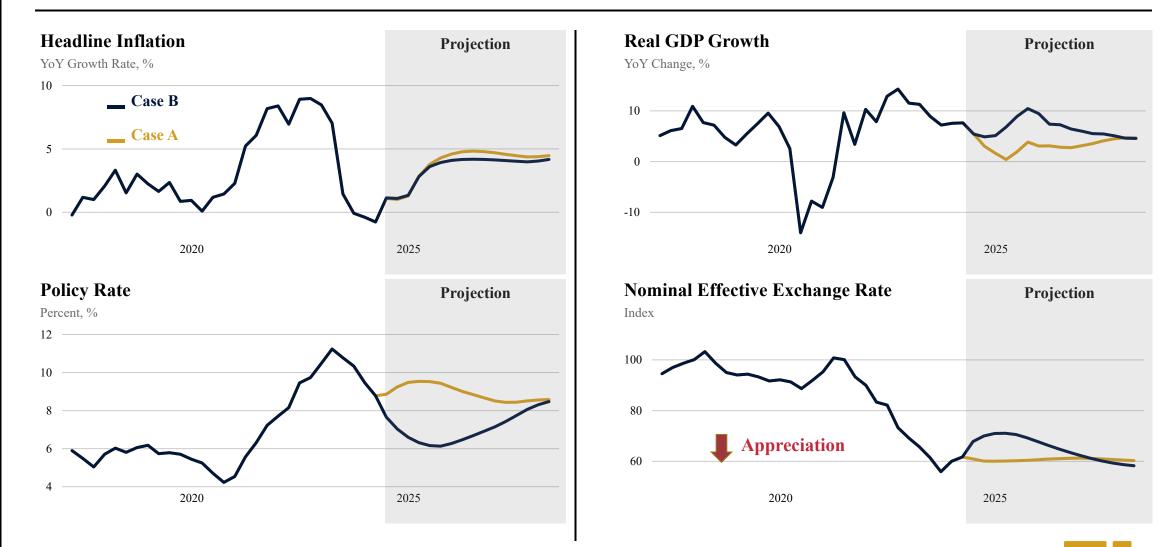
International Food And Commodity Prices

International Food Price (FAO) Index
index, 2014-2016 = 100

Projection

— Case A
— Case B

140
120
100
80

2018   2020   2022   2024   2026

Brent Crude Oil Price
USD per barrel

Projection

100

50

2018   2020   2022   2024   2026

Copper Price
USD per tonne

Projection

10K
8K
6K

2018   2020   2022   2024   2026

Source: Bloomberg, CBA calculations
Notes: This is an illustrative market reference scenario, Projections for 3 year medium term horizon.

Illustrative Case A&B Scenarios

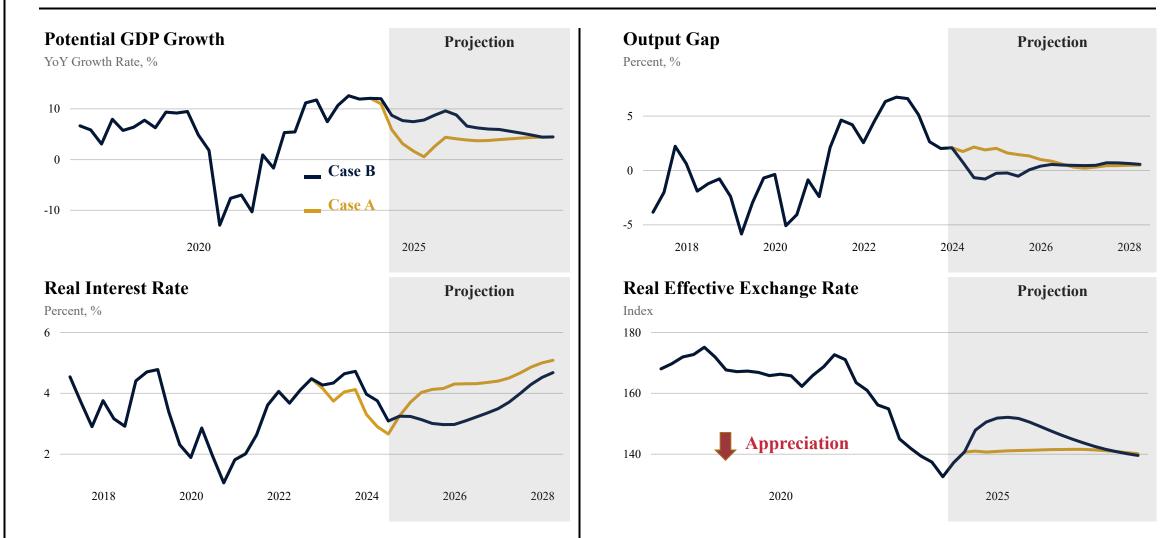## Headline Inflation
YoY Growth Rate, %

Projection

- **Case B**
- **Case A**

10

5

0

2020   2025

Real GDP Growth
YoY Change, %

Projection

10

0

-10

2020   2025

Policy Rate
Percent, %

Projection

12

10

8

6

4

2020   2025

Nominal Effective Exchange Rate
Index

Projection

100

80

↓ Appreciation

60

2020   2025

Source: CBA projections:
Note: This are illustrative Case A & B scenarios, which reflects developments that require higher or lower policy rate path compared to what is priced in the markets. Projections for 3 year medium term horizon.

Illustrative Case A&B Scenarios

Potential GDP Growth
YoY Growth Rate, %

Projection

Case B
Case A

Output Gap
Percent, %

Projection

Real Interest Rate
Percent, %

Projection

Real Effective Exchange Rate
Index
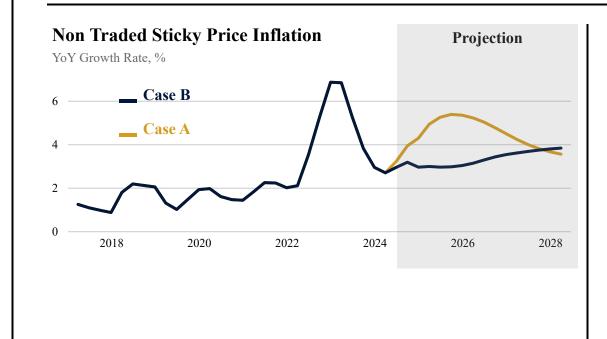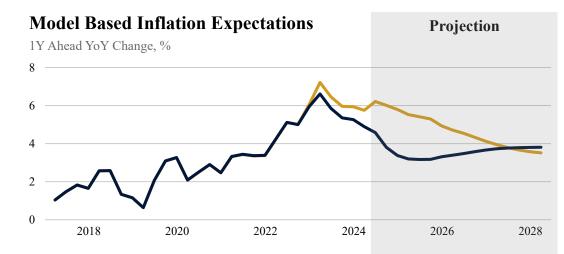

Projection

Appreciation

Source: CBA projections:
Note: This are illustrative Case A & B scenarios, which reflects developments that require higher or lower policy rate path compared to what is priced in the markets. Projections for 3 year medium term horizon.

Illustrative Case A&B Scenarios

Non Traded Sticky Price Inflation

YoY Growth Rate, %

Projection

- Case B
- Case A

Model Based Inflation Expectations

1Y Ahead YoY Change, %

Projection

Source: CBA projections:
Note: This are illustrative Case A & B scenarios, which reflects developments that require higher or lower policy rate path compared to what is priced in the markets. Projections for 3 year medium term horizon.