BANCO DE MÉXICO®

Executive Summary

Quarterly Report July - September 2022

Summary

The environment under which Banco de México has conducted monetary policy remains complex and uncertain. At the global level, inflation remained high and a large number of central banks continued raising their reference rates. As a result, international financial conditions have tightened. In particular, interest rates have tended to increase globally, exhibiting volatility, while the US dollar has continued gaining strength. In this context, the outlook for global economic activity has deteriorated. In Mexico, the inflationary outlook remains a major challenge for the central bank. Annual headline inflation and its core component have continued to be affected by the shocks of the pandemic and the military conflict in Ukraine. In view of greater-than-anticipated inflationary shocks and the outlook that their effects will take longer to fade, Banco de México has been adjusting its monetary policy stance, seeking to foster an orderly adjustment of domestic financial markets, as well as to maintain the anchoring of longer-term inflation expectations. Considering the forcefulness of the measures adopted during the reported period, the monetary policy stance located in restrictive territory.

Regarding the external environment, world economic activity showed heterogeneity across countries. For the third quarter of the year, a moderate recovery is expected with respect to the previous quarter, mainly reflecting the reopening of economic activities in China and the rebound of growth in the United States, after having contracted for two quarters. However, other economies are likely to have shown a moderation in their pace of growth. In addition, forward-looking indicators point to a deterioration ahead. This occurred in view of the effects of the tightening of global financing conditions and Russia's invasion of Ukraine. Thus, while the growth outlook for the global economy for 2022 remained unchanged, for 2023 it has continued to be revised downwards, anticipating a greater slowdown than that forecasted a few months ago.

Global inflation remained high in both advanced and emerging economies, in some reaching levels unseen in decades, and, in most of them, above their respective central banks' targets. In some economies, energy-related pressures on headline inflation have moderated. However, core inflation continued rising in most cases, reflecting price increases in a wide range of categories.

In this context, most central banks continued raising their reference rates. Although the increases have been of significant magnitude, some central banks have already moderated the pace of adjustment. However, these central banks have indicated that additional hikes are still likely to be required going forward and that they remain firm in their commitment to achieve their inflation targets. In financial markets, interest rates trended upwards, yet with volatility, financial conditions tightened, and the strengthening of the US dollar continued.

In Mexico, economic activity continued recovering during the third quarter of 2022, reaching levels similar to those of the fourth quarter of 2019, prior to the health emergency. The favorable performance during the quarter reflected the continuing reactivation of services and the upward trend in manufacturing. Looking ahead, the Mexican economy is expected to continue facing an environment of greater economic weakness and high uncertainty at the global level.

In a highly complex and uncertain international environment, domestic financial markets maintained, in general, an orderly performance. In particular, the exchange rate remained more resilient than other emerging economies' currencies. This occurred despite the strength of the US dollar. As for interest rates, short-term ones increased as a result of Banco de México's upward adjustments in the reference rate. Medium- and long-term rates rose to a lesser extent, exhibiting some volatility.

During 2022, the US dollar has shown a generalized appreciation against a large number of currencies. However, a heterogeneous behavior has also been observed between the exchange rates of different countries, among which the Mexican peso stands out, showing resilience in view of this episode of dollar appreciation. The box *Recent Evolution of Exchange Rates in Emerging Economies in Light of Global Monetary Policy Normalization* reviews the factors that may be contributing to explain the differences in currency behavior. It is shown that both interest rate spreads and the relative soundness of the macroeconomic framework have been relevant factors in explaining the relative performance of the different currencies against the US dollar.

During the reported quarter, inflation in Mexico continued to be affected mainly by the cumulative effects of the shocks from the COVID-19 pandemic and the military conflict between Russia and Ukraine. These effects have turned out to be deeper and longer-lasting than anticipated. They have also affected the prices of goods and services that comprise the basket of Mexico's Consumer Price Index (INPC, for its acronym in Spanish) in a generalized manner. Thus, annual headline inflation increased from 7.77 to 8.52% between the second and third quarters of 2022, reaching 8.14% in the first fortnight of November. Annual core inflation remained on the upward trajectory registered since December 2020, increasing from 7.33 to 7.99% between the second and third quarters of 2022, and standing at 8.66% in the first fortnight of November. This behavior was influenced by the continued increase in annual food merchandise inflation, although non-food and services inflation also rose. In turn, annual non-core inflation went up from 9.10 to 10.08% between the referred quarters, reaching 6.62% in the first fortnight of November.

In this complex and uncertain environment for inflation, during the reporting period, Banco de México implemented forceful monetary policy actions and provided forward guidance on its subsequent decisions. In particular, at the August, September and November 2022 meetings, Banco de México's Governing Board decided to raise the target for the Overnight Interbank Interest Rate by 75 basis points in each meeting, bringing it currently to a level of 10.00%. At those meetings, the Governing Board evaluated the magnitude and diversity of the shocks that have affected inflation and its determinants, along with the evolution of medium- and long-term inflation expectations and the price formation process. It also considered the increasing challenges for monetary policy stemming from the ongoing tightening of global financial conditions, the environment of significant uncertainty, the inflationary pressures accumulated as a result of the pandemic and the geopolitical conflict, and the possibility of greater effects on inflation. In the November decision, the Governing Board also stated that it has assessed the monetary policy stance already attained in this hiking cycle.

The Board will thoroughly monitor inflationary pressures as well as all factors that have an incidence on the foreseen path for inflation and its expectations. This, in order to set a policy rate that is consistent at all times with both the orderly and sustained convergence of headline inflation to the 3% target within the time frame in which monetary policy operates, as well as with an adequate adjustment of the economy and financial markets. In its next meetings, the Board will assess the magnitude of the upward adjustments to the reference rate based on the prevailing conditions.

The box *Transmission of Macroeconomic Shocks from the United States to Mexico and the Monetary Policy Response* illustrates, using an autoregressive vector model, that the co-movement between the reference rates of these two countries is consistent with shocks that affect aggregate demand in the United States and, therefore, inflation in both countries. In contrast, after a monetary policy shock in the United

States, the co-movement between the reference rates of Mexico and its northern neighbor is far less clear. This is because economic activity and inflation in Mexico are less affected by this type of shocks in comparison with aggregate demand shocks.

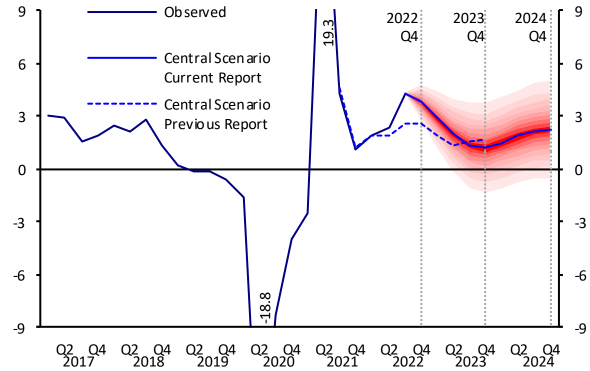
As for Banco de México's macroeconomic outlook:

Growth of the national economy: For 2022, GDP growth is expected to be between 2.8 and 3.2%, with a central estimate of 3.0%. For 2023, growth is expected to be between 1.0 and 2.6%, with a central estimate of 1.8%. Finally, for 2024, the economy is expected to grow between 1.1 and 3.1%, with a central estimate of 2.1% (Chart 1). The central estimates for 2022 and 2023 compare with the previous Report's forecasts of 2.2 and 1.6 % for each year.[1]

The revision for 2022 responds mainly to the dynamism that the national economy has been showing throughout the year, which was reflected in a higher-than-anticipated growth during the third quarter. The higher level of economic activity currently expected for the second half of 2022, in turn, results in a higher base for growth in 2023. However, Mexico is also anticipated to face lower external demand in 2023, which partially offsets the arithmetic upward effect of the higher base of growth. Indeed, the prevailing complex external environment has continued to deteriorate forecasts for global growth in 2023, including that of the United States and its industrial activity. This is expected to result in a lower dynamism of economic growth in Mexico during 2023. Finally, the expectation for 2024 assumes a recovery in external demand, in line with the better performance of the global economy that is expected that year, and the continued growth of internal demand.

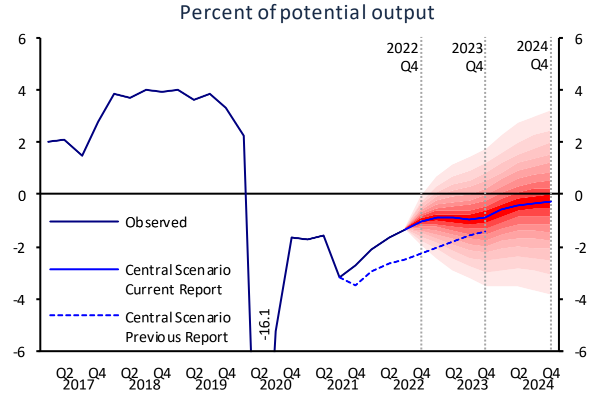
Regarding the cyclical position of the economy, slack conditions are expected to continue diminishing throughout the forecast horizon, in line with the expected development of economic activity (Chart 2).

Chart 1
Fan Chart: GDP Growth, s.a.
Annual percent



s.a./ Seasonally adjusted figures.
Note: In the base scenario of the present Report, the forecast begins in Q4 2022. In the central scenario of the previous Report, it started in Q3 2022.
Source: INEGI and Banco de México.

Chart 2
Fan Chart: Output Gap Estimate, s.a.
Percent of potential output



s.a./ Seasonally adjusted figures.
Note: In the base scenario of the present Report, the forecast begins in Q4 2022. In the central scenario of the previous Report, it started in Q3 2022.
Source: Banco de México.

Employment: Based on the forecasts for economic activity and most recent information on the number of IMSS-insured jobs, a growth of between 740 and 840 thousand jobs is anticipated for 2022. For 2023, a variation of between 450 and 650 thousand jobs is expected.[2] For 2024, a variation of between 600 and 800 thousand jobs is anticipated.

[1] Intervals compare to those published in the previous Report of 1.7 and 2.7% for 2022 and 0.8 and 2.4% for 2023.

[2] These forecasts compare with the previous Report's forecasts of 640 to 800 thousand jobs for 2022 and 420 to 620 thousand jobs for 2023.

The box *Sectoral Differences in the Evolution of Nominal Wages of IMSS-insured Workers* illustrates that the recent higher percentage annual changes in the average base contribution wage (SBC, for its acronym in Spanish) respond to generalized wage increases across sectors, although with higher contributions from particular sectors. It also shows that average SBC growth rates have been similar for men and women, albeit with some differences in terms of sectoral contributions that reflect differences in the composition of employment between the two groups.

Current account: For 2022, the trade balance is expected to be between -33.5 and -29.5 billion dollars (-2.4 and -2.1% of GDP) and the current account balance is expected to be between -21.9 and -13.9 billion dollars (-1.5 and -1.0% of GDP). For 2023, a trade balance of between -21.9 and -15.9 billion dollars (-1.4 and -1.0% of GDP) and a current account balance of between -10.8 and -0.8 billion dollars (-0.7 and -0.1% of GDP) are estimated. For 2024, a trade balance of between -26.9 and -18.9 billion dollars (-1.7 and -1.2% of GDP) and a current account balance of between -15.8 and -3.8 billion dollars (-1.0 and -0.2% of GDP) are expected.[3]

The box *Analysis of the Long-term Relationship between Mexico's Non-oil Exports and Imports of Intermediate Goods* shows statistical evidence of a stable long-run relationship that implies a close co-movement between these variables. This relationship suggests that, in the event of lower levels of external demand, Mexico's non-oil trade balance would show bounded movements.

Risks to growth: Given the complex environment for the global economy, the balance of risks to economic activity is considered to remain biased to the downside. Among the risks to the downside in the forecast horizon, the following stand out:

i. A lower external demand to the detriment of economic activity in Mexico, particularly in the event of a deep and lasting recession in the United States.

ii. The prolongation or intensification of trade disruptions and bottleneck problems in global supply chains, that have created shortages of inputs for some sectors in Mexico. Also, that such effects lead to higher input and production costs in various sectors of the economy.

iii. Tighter-than-expected financial conditions and/or episodes of volatility in international financial markets that could affect financial flows to emerging economies.

iv. Disruptions in energy markets, particularly in Europe. This could result in lower external demand in Mexico due to lower production activity in certain regions or in disruptions in certain supply chains.

v. A lower-than-expected or insufficient recovery of investment spending to support the reactivation process and long-term growth of the economy. In this regard, that the dispute settlement consultations associated with the USMCA contribute to increase uncertainty further, to the detriment of investment.

vi. That new waves of the COVID-19 pandemic occur, adversely affecting supply and demand conditions in the economy.

vii. That extreme weather phenomena such as extreme temperatures or cyclones adversely impact national economic activity.

Among the risks to the upside in the forecast horizon, the following stand out:

i. That, within the USMCA framework, Mexico becomes an attractive investment destination in light of a global reconfiguration of production processes, benefitting its economic activity and productivity.

[3] Figures for 2022 compare with those of the previous Report of a trade balance of between -26.1 and -20.1 billion dollars (-1.8 and -1.4% of GDP) and a current account balance of between -19.0 and -9.0 billion dollars (-1.3 and -0.6% of GDP). Figures for 2023 compare with the previous Report's figures of a trade balance of between -18.4 and -10.4 billion dollars (-1.2 and -0.7% of GDP) and a current account balance of between -12.1 and -0.1 billion dollars (-0.8 and 0.0% of GDP).

ii. That global financial conditions are more conducive to economic growth than expected.

iii. That the economy's adaptation to the conditions imposed by the pandemic enables a more vigorous recovery, particularly in those sectors where recovery has lagged most.

Inflation: Inflation in Mexico continues facing a complex environment. The effects of the shocks derived from the pandemic and the military conflict between Russia and Ukraine have been deeper, lasted longer than expected, and continue exerting pressure on production costs, in a context of a persistent high global demand. In this complicated context, and in the face of inflationary shocks of a greater magnitude than anticipated and the outlook that their effects will take longer to fade, Banco de México adjusted its inflation forecasts significantly in the Monetary Policy Statement of September 29. These forecasts were slightly revised in the November 10 statement, with the latter remaining valid for the case of the present Report.

Thus, with respect to the forecast published in the Report for the second quarter, the current Report revises upwards the trajectory for headline inflation throughout the entire forecast horizon. This revision derives from greater-than-expected pressures on core inflation, since pressures on non-core inflation decreased due to more moderate increases in energy prices than previously expected. In particular, the upward adjustment in the trajectory of core inflation reflects deeper and longer-lasting shocks to merchandise prices, mainly of food and services.

As such, it is expected that annual headline inflation declines starting in the fourth quarter of 2022, and that it shows more notable decrements throughout 2023. While the previous Report anticipated that inflation would reach levels close to 3% in the first quarter of 2024, in the most recent forecasts, inflation is expected to converge to the target in the third quarter of 2024 (Chart 3). Core inflation is expected to start declining in the first quarter of 2023 and reach 3% in the third quarter of 2024 (Table 1 and Chart 4). These downward trajectories reflect the monetary policy actions that Banco de México has been implementing. They also consider the foresight that the effects of the shocks related to the pandemic and the military conflict on inflation fade away gradually, so that the imbalance between supply and demand that has been driving the high levels of inflation continues to be resolved.

The box *Asymmetric Effect of Changes in International Food Commodity Prices on Consumer Prices in Mexico* shows that the pass-through of changes in international food commodity prices to consumer prices in Mexico occurs with a lag and is of greater magnitude in the case of increases in comparison with decreases in these reference prices. A simple simulation exercise illustrates that it will take time for decreases in international commodity prices to be reflected in consumer prices.

The annual rate of change and the seasonally adjusted annualized quarterly variation for the forecast horizon are presented in Table 1 and Chart 5. Seasonally adjusted and annualized quarterly rates of headline inflation are expected to decline in the following quarters, registering lower levels in 2023 than in 2022 and reaching around 3% at the beginning of 2024. In the case of core inflation, its seasonally adjusted annualized quarterly rates would also decline in the following quarters, reaching around 3% in the fourth quarter of 2023. Since annual rates are affected by short-term shocks to inflation over a period of 12 months, their reduction is slower than that of seasonally adjusted rates. As a result, annual variations are above seasonally adjusted changes at the stage when shocks to inflation are assimilated for most of the forecast horizon, for both headline and core inflation.

In an environment of high uncertainty such as the one currently faced, the possibility that the effects of the shocks on inflation continue for a longer period than expected, that they worsen or that additional shocks drive inflation upwards cannot be ruled out. Therefore, the possibility of non-linearities possibly associated with high levels of inflation still persists. This would imply an even more adverse scenario for inflation than forecasted.

Nevertheless, some signs have started to emerge that could suggest a certain improvement in the functioning of production and distribution chains. The prices of certain raw materials have somewhat declined, although they still exhibit volatility and remain at high levels. On the other hand, although global demand remains high, the economic stimuli granted in advanced economies have already started to be withdrawn. Thus, although a certain mitigation of inflationary risks is perceived with respect to the previous Report's assessment, the balance of risks to the expected trajectory of inflation over the forecast horizon continues to be biased to the upside.

Among the upside risks in the forecast horizon, the following stand out:

i. Persistence of core inflation at high levels.

ii. External inflationary pressures associated with the evolution of the pandemic.

iii. Although the international reference prices of some food and energy prices have somewhat declined recently, the geopolitical conflict could exert new upward pressures on these prices.

iv. Episodes of exchange rate depreciation, possibly as a result of volatility in international financial markets.

v. Pressures due to higher costs associated with hiring conditions or wages that could be passed on to consumer prices.

Among the downside risks, the following stand out:

i. That a greater-than-anticipated deceleration of world economic activity leads to lower inflation levels at the global level, which could reduce inflationary pressures in Mexico.

ii. That a decrease in the intensity of the military conflict between Russia and Ukraine leads to lower pressures on inflation.

iii. That the control of the pandemic results in production and distribution chains resuming an efficient operation, thus allowing to diminish stronger pressures on prices.

iv. That the pass-through of cost-related pressures and labor hiring conditions onto prices is limited.

v. That the measures implemented by the Federal Government to mitigate price increases of certain goods and services have a greater-than-anticipated effect.

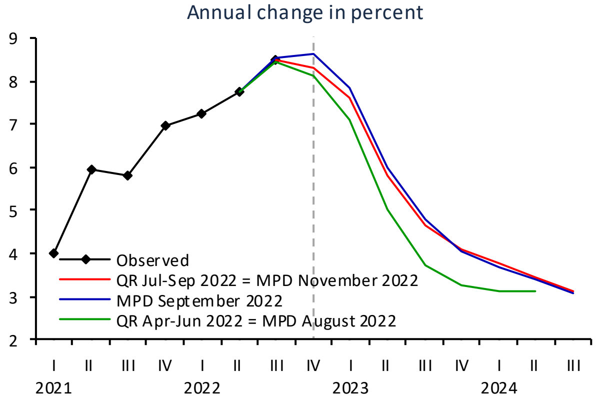
Table 1
Forecasts for Headline and Core Inflation
Annual percentage change of quarterly average indices

	2022			2023				2024		
	II	III	IV	I	II	III	IV	I	II	III
CPI										
Current Report = Monetary Policy Statement of November 2022[1/]	7.8	8.5	8.3	7.6	5.8	4.7	4.1	3.8	3.4	3.1
Previous Report = Monetary Policy Statement of August 2022[2/]	7.8	8.5	8.1	7.1	5.0	3.7	3.2	3.1	3.1	
Core										
Current Report = Monetary Policy Statement of November 2022[1/]	7.3	8.0	8.3	7.5	6.4	5.2	4.1	3.6	3.2	3.0
Previous Report = Monetary Policy Statement of August 2022[2/]	7.3	7.9	7.6	6.5	5.1	3.8	3.2	3.1	3.0	
Memo										
Annualized seasonally adjusted quarterly variation in percent[3/]										
Current Report = Monetary Policy Statement of November 2022[1/]										
CPI	10.6	8.7	6.6	4.6	3.4	4.1	4.1	3.3	2.2	2.9
Core	8.7	8.5	7.8	5.1	4.2	3.7	3.2	3.2	2.9	2.6

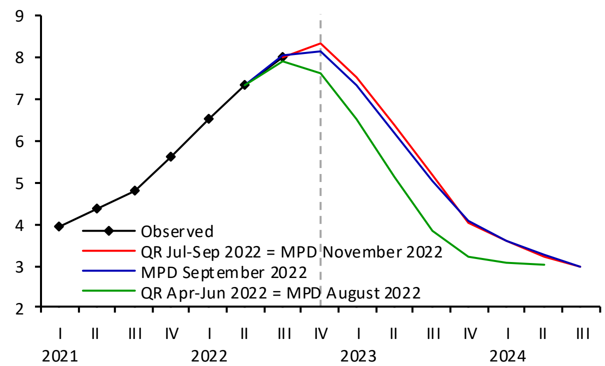
1/ Forecast starting November 2022. It corresponds to the forecast publised in the Monetary Policy Statement of November 10th 2022.
2/ Forecast starting August 2022. It corresponds to the forecast published in the Monetary Policy Statement of August 11th 2022.
3/ See methodological note on seasonal adjustment process.
Source: INEGI for observed annual variation figures and Banco de México for seasonally adjusted figures and forecasts.

Chart 3

Headline Inflation Forecasts
Annual change in percent



Core Inflation Forecasts
Annual change in percent

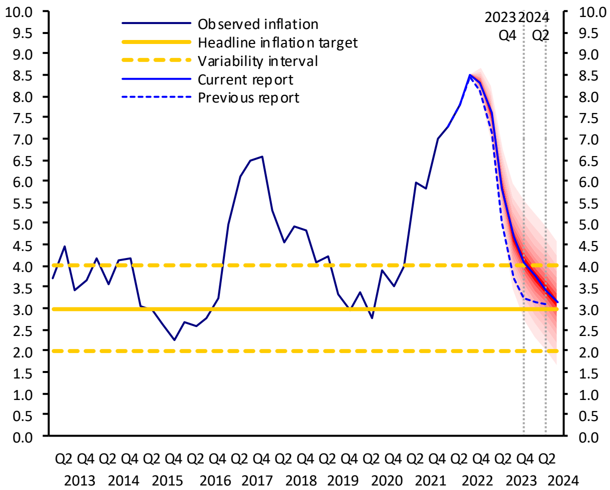


Note: QR refers to Quarterly Report and MPD refers to Monetary Policy Decision. Vertical line corresponds to fourth quarter of 2022.
Source: Banco de México and INEGI.

Chart 4

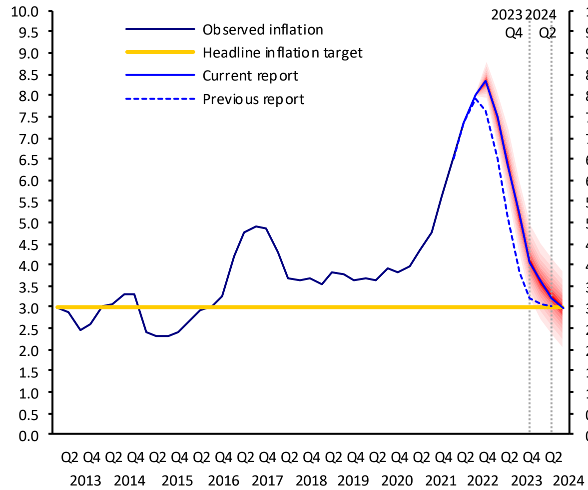
a) Fan Chart: Annual Headline Inflation 1/

Percent



b) Fan Chart: Annual Core Inflation 1/

Percent



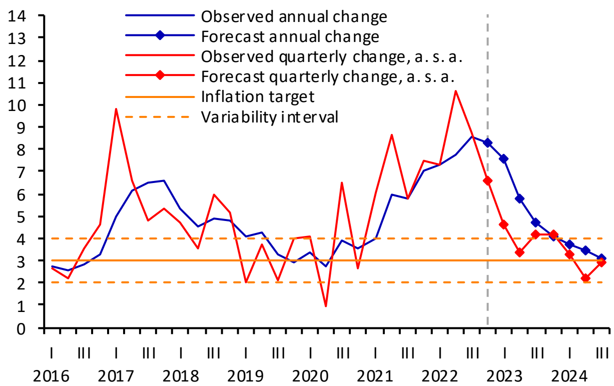
1/ Quarterly average of annual inflation. The next four and six quarters are indicated with vertical lines, using as a reference the fourth quarter of 2022, that is, the fourth quarter of 2023 and the second quarter of 2024, respectively, to indicate the time frames in which the transmission channels of monetary policy fully operate.

Source: Banco de México and INEGI.

Chart 5

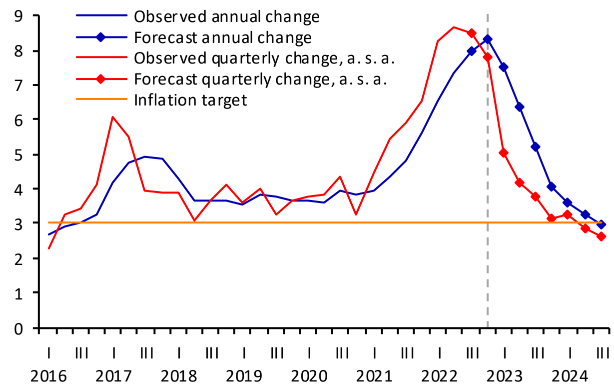
a) Headline Index

Quarterly change, annualized and s.a., and annual change in percent



b) Core Index

Quarterly change, annualized and s.a., and annual change in percent



s.a. seasonally adjusted figures.

a.s.a. annualized seasonally adjusted figures.

Vertical line corresponds to fourth quarter of 2022.

Source: Banco de México and INEGI.

Mexico continues facing a challenging environment for economic activity and inflation. The persistence of inflation has led to tighter monetary policy stances in the main advanced economies, especially in the United States. This, together with the economic effects of the military conflict in Eastern Europe and the uncertainty associated with the evolution of the COVID-19 pandemic, has further deteriorated the world growth outlook and increased risks in international financial markets. To face these challenges, it is imperative to maintain the strength of macroeconomic fundamentals, including fiscal discipline, a sound and resilient financial system, and a monetary policy focused on achieving price stability. In this regard, in view of the complex inflationary scenario prevailing in the world and in the country, Banco de México's Governing Board will continue setting monetary policy with the strong commitment to fostering an orderly adjustment of relative prices, of financial markets and of the economy as a whole, in order to lead inflation to its 3% target and ensure the anchoring of inflation expectations. In addition, given the expectation that Mexico may face lower levels of external demand going forward, it is important to strengthen the domestic sources of growth and foster an environment conducive to generating higher levels of investment, productivity and economic competition. This would allow Mexico to clearly take advantage of the opportunities provided by the reconfiguration of global value chains to attract productive investment with greater added value. Likewise, as emphasized in previous Reports, it is also necessary to continue strengthening the rule of law, as well as to continue fighting insecurity. All of this would contribute to boost higher growth of productive activities, which will not only allow the country to overcome the negative effects of the pandemic, but will also set the foundations for a greater long-term growth and well-being of the Mexican people.

BANCO DE MÉXICO®

November 30, 2022

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