BANCO DE MÉXICO®

# Executive Summary

## Quarterly Report October - December 2022

## Summary

During the fourth quarter of 2022 and the first months of 2023, Banco de México continued facing a complex and uncertain environment for the conduction of monetary policy. At the global level, some inflationary shocks have shown signs of easing and headline inflation has declined in several economies. However, it still remains at levels above central banks' targets. In addition, core inflation has continued to be subject to pressures from the accumulated shocks of the pandemic and the military conflict. Several central banks have moderated the pace of reference rate increases. Some of them have even paused their hiking cycles. However, their communication indicates that in order for inflation to converge to its target, high rates are required for an extended period. At the domestic level, headline inflation has decreased given reductions in the non-core component. Nevertheless, core inflation has surprised to the upside, it remains at high levels, and does not show a clear downward trend. The balance of risks for inflation over the forecast horizon remains biased to the upside. In this context, during the reported period, Banco de México increased the reference rate, although at a slower pace, further strengthening the monetary policy stance. The monetary policy actions implemented during the current period of inflationary pressures have contributed to maintaining inflation expectations anchored. They have also aided in fostering an orderly performance of domestic financial markets. Going forward, Banco de México will remain firmly committed to fulfilling its mandate in an environment that is foreseen to be challenging throughout the entire forecast horizon.

Delving into the external environment, the moderation of headline inflation in a large number of major economies between September and December 2022 was largely due to lower pressures on energy prices. In some cases, lower levels of food price inflation and in the core component, particularly in goods, have also been observed. The mitigated imbalance between global supply and demand in some markets has contributed to the decline in inflation, partly due to lesser disruptions on supply chains. Furthermore, the prices of some commodities have decreased. Financial markets performed favorably and a certain easing in tightening conditions was observed. This was partly supported by the more favorable development of headline inflation, as well as by the moderation in the pace of monetary tightening in some of the major economies, and the lifting of some restrictions to tackle COVID-19 in China.

The box *Importance of the Formation of Inflation Expectations in a Wage Growth Model for the US* estimates a Phillips curve in which wage growth depends on slack conditions in the labor market and short- and long-term inflation expectations. Results suggest that, even if the expectation formation process in that country does not seem to be affected, the weight of short-term expectations marginally increased relative to that of long-term expectations. This, coupled with a tight labor market, could potentially increase wage inflation persistence going forward.

Despite the aforementioned, the international environment continues to be characterized by a still high global inflation and tight monetary and financial conditions, as well as by high uncertainty regarding the evolution of the pandemic, mainly in China, and the military conflict between Russia and Ukraine. In this context, global economic growth moderated during the fourth quarter of 2022. Nevertheless, heterogeneity continued to be observed across countries. In the United States, GDP growth slowed down in the last quarter of the year. Other major advanced economies exhibited a lack of dynamism, while some of the main emerging economies weakened. In addition, the growth outlook, as perceived by international organizations, points to a reduction in the pace of expansion of world economic activity during 2023 and a gradual recovery for 2024.

In this context of lower economic dynamism at the global level, during the fourth quarter of 2022 economic activity in Mexico slowed down with respect to the dynamism registered in the first three quarters of the year. This performance was the result of a weakening in industrial production and, especially, in tertiary activities. The Mexican economy is expected to continue facing a complex and highly uncertain global economic environment that is foreseen to lessen the dynamism of domestic economic activity in the coming quarters.

During the fourth quarter of 2022 and the first months of 2023, domestic financial markets overall maintained a favorable performance. In particular, the exchange rate appreciated against the US dollar, preserving a more resilient behavior with respect to that exhibited by currencies of other emerging economies. Regarding interest rates, short-term ones increased as a result of the hikes in the reference rate implemented by Banco de México. In turn, medium- and long-term ones fell.

Between the third and fourth quarters of 2022, annual headline inflation in Mexico decreased from 8.52 to 8.01%, reaching 7.76% in the first fortnight of February 2023. As mentioned, the fall in headline inflation was due to the reduction in the non-core component, while core inflation continued facing upward pressures. The latter went from 7.99 to 8.43% between the aforementioned quarters. Although in December 2022, when it reached 8.35%, core inflation interrupted the upward trend it had been following for 24 consecutive months, this indicator still does not show a downward trend, since in January it rose again to 8.45%, while in the first fortnight of February it registered 8.38%. Annual non-core inflation decreased from 10.08 to 6.77% in the same quarterly period and registered 5.93% in the first fortnight of February.

Monetary policy decisions during the reported period must be understood within the complex inflationary environment. After raising the reference rate by 75 basis points at its meeting of November 2022, Banco de México increased it by 50 basis points at its December meeting. This reflected a delicate balance. The inflation outlook had slightly improved due to the moderation of certain inflationary shocks. However, it remained complex and uncertain. In this context, with the December policy decision, despite the reduction in the pace of increases, the monetary policy stance was tightened even further. In addition, given the complex environment, the corresponding statement indicated that an additional increase in the reference rate was deemed necessary for the following meeting. Subsequently, at the February 2023 meeting, Banco de México faced a more complicated scenario than anticipated. This, in view of the dynamics of core inflation and its components, which resulted in the forecast that it would decline more slowly than previously anticipated. In this context, it determined that, on this occasion, it was necessary to continue with the magnitude of the reference rate adjustment of the previous policy meeting and increase it by 50 basis points to reach a level of 11%. This, in order to be in a better position to tackle a still complex environment.

The box *Behavior of Long-Term Inflation Expectations in the Context of Inflationary Pressures* delves into the evolution of said expectations, given its relevance for monetary policymaking. To this end, information from the survey conducted by Banco de México among private sector forecasters is used. Descriptive and econometric analyses show that, in the current period of inflationary pressures, long-term inflation expectations have remained anchored around their historical levels. However, challenges remain as said expectations are above the inflation target and their distribution has shown a bias towards higher levels of inflation.

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. The latter, 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. The Board considers that given the monetary policy stance already attained and depending on the evolution of incoming data, for its next policy meeting, the upward adjustment to the reference rate could be of lower magnitude.

As for Banco de México's macroeconomic outlook, the following stands out:

**Growth of the national economy:** For 2023, GDP growth is expected to be between 0.8 and 2.4%, with a central estimate of 1.6%. For 2024, economic growth is expected to be between 0.8 and 2.8%, with a central estimate of 1.8% (Table 1). The point-wise forecasts for 2023 and 2024 compare with those of the previous Report of 1.8 and 2.1% for each year.

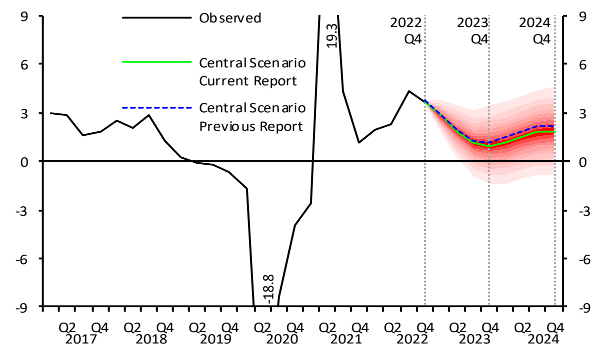
**Table 1**
**Forecasts for GDP Growth**
Annual Percent

| Year | Central | Interval |
|---|---|---|
| **2023** | 1.6 | Between 0.8 and 2.4 |
| **2024** | 1.8 | Between 0.8 and 2.8 |

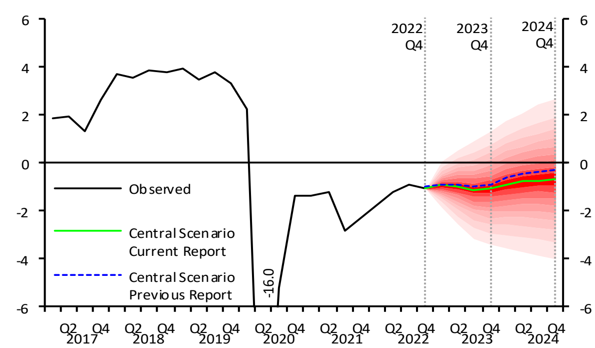
Note: Not seasonally adjusted forecasts. The central estimates for 2023 and 2024 compare with the previous Report's forecasts of 1.8 and 2.1% for each year. Intervals compare to those published in the previous Report of 1.0 and 2.6% for 2023 and 1.1 and 3.1% for 2024. Mexico's GDP increased 3.1% in 2022 with figures that are not seasonally adjusted.
Source: Banco de México.

The lower growth expected for 2023 and 2024 compared with the previous report's forecast is mainly explained by a deterioration in the expected growth of the US economy, especially, in its industrial activity. Over the forecast horizon, the weakness foreseen for that country in 2023 is expected to be reflected in a reduction in Mexico's external demand and in a slowdown in Mexican productive activity during that period. Domestic demand, nevertheless, is anticipated to continue supporting Mexico's economic activity. Subsequently, in line with the expected reactivation of the US economy in 2024, the growth rate of the Mexican economy is anticipated to gradually improve during that same year (Chart 1a). It should be noted that the high uncertainty that prevails regarding the performance of the US economy over the forecast horizon implies, in turn, high uncertainty regarding the performance of Mexico's external demand. Regarding the cyclical position of the economy, in the scenario described above, the estimate of the negative output gap is expected to be slightly larger than previously anticipated. Said output gap would continue narrowing over the forecast horizon, although at a slower pace than previously anticipated (Chart 1b).

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




**b) 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 Q1 2023. In the central scenario of the previous Report, it started in Q4 2022.
Source: a) INEGI and Banco de México. b) Banco de México.

**Employment and current account:** Based on the forecasts for economic activity, and on the most recent information on the number of IMSS-insured jobs and external account balances, Table 2 presents forecasts for IMSS-insured jobs and Table 3 shows forecasts for the trade balance and the current account.

**Table 2**
**Forecasts for the number of IMSS-insured jobs**
Annual change in thousands of jobs

| Year | Interval |
|---|---|
| **2023** | Between 420 and 620 |
| **2024** | Between 540 and 740 |

Note: These forecasts compare with the previous Report's forecasts of 450 to 650 thousand jobs for 2023 and 600 to 800 thousand jobs for 2024.
Source: Banco de México.

**Table 3**
**Forecasts for the Trade Balance and Current Account**

| Year | 2023 | 2024 |
|---|---|---|
| **Trade Balance** | | |
| **Billions of dollars** | Between -24.2 and -18.2 | Between -27.1 and -19.1 |
| **% of GDP** | Between -1.5 and -1.1 | Between -1.7 and -1.2 |
| **Current account** | | |
| **Billions of dollars** | Between -14.1 and -4.1 | Between -18.9 and -6.9 |
| **% of GDP** | Between -0.9 and -0.3 | Between -1.2 and -0.4 |

Note: Figures for 2023 compare with those of the previous Report of 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). Figures for 2024 compare with the previous Report's figures of 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).
Source: Banco de México.

The box *Recent Evolution of the Agri-business Trade Balance* shows how the pandemic and the military conflict in Eastern Europe have resulted in a deterioration in the terms of trade of Mexico's processed and unprocessed food products. This resulted from an increase in Mexico's import prices for these types of goods that has been of greater magnitude than that for exported goods. Although the above has been partially compensated by a rise in exported volumes of processed goods, the net effect has led to a decrease in the agri-business balance surplus over the last two years.

**Risks to growth:** Given the complex environment expected for the global economy, the balance of risks for the outlook of 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. Tighter-than-expected financial conditions and/or episodes of volatility in international financial markets that affect financial flows to emerging economies.
iii. The prolongation or intensification of trade disruptions and bottleneck problems in global supply chains.
iv. That new waves of the COVID-19 pandemic occur, adversely affecting supply and demand conditions in the economy.
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 further increase uncertainty, to the detriment of investment.
vi. That severe 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.

ii. That the Mexican economy shows greater resilience than expected in light of the difficult international environment and the weakness of anticipated global economic growth.

**Inflation:** The environment for inflation in Mexico continues to be complex given the deep, widespread and long-lasting shocks it has experienced due to the pandemic and the military conflict in Ukraine. In this context, forecasts for headline and core inflation have undergone revisions. In contrast with the last Quarterly Report, in the Monetary Policy Statement of December 15, 2022, while the path of headline and core inflation was revised only marginally and even downwards in the short term, core inflation was adjusted upwards to some extent (Chart 2). In the Monetary Policy Statement of February 9, 2023, an additional and more notorious upward revision was made to the paths of both indicators for the entire forecast horizon. In this Quarterly Report, the latter forecast remains unchanged.

The upward revision in the trajectory of headline inflation between the previous Quarterly Report and the current one is mainly due to the fact that core inflation has not shown a favorable dynamic and remains more persistent than expected. It has remained at higher-than-anticipated levels and still does not show a clear downward trend as it was expected to happen from the end of 2022. However, its evolution suggests that the disinflation process will be slower than expected in the previous Report. It also indicates that external pressures may be taking longer to fade, while other domestic pressures may be becoming more noticeable.

In particular, the rate of change in food merchandise prices has declined at a slower pace than expected and remains at high levels. This is possibly reflecting pressures from the sharp increases that various inputs have registered since the pandemic, and which have exacerbated due to the military conflict in Ukraine. Although some of these shocks have partially reversed, the international references of food and energy products remain at high levels and show volatility. Moreover, it is possible that food merchandise prices do not respond downwards to the easing of the shocks with the same sensitivity as when they were subject to upward pressures. In this regard, the presence of downward asymmetries could be contributing to a slower-than-anticipated decline. Also, although the functioning of supply chains has improved, it has not completely normalized. Meanwhile, the rates of change in services prices have been higher than expected due to the diversity of the shocks they continue facing. The prices of this component have been affected by cost-related pressures from higher food and energy prices and, more recently, may also be facing relatively higher pressures from labor costs. This, along with the fact that after the lockdown their demand has increased, is possibly allowing a greater pass-through of these costs relative to what had been observed at earlier stages of the pandemic. Higher housing inflation has also exerted pressures on services inflation. This could be reflecting lesser slack conditions in the economy and the high levels of headline inflation, as the latter is used, at least partly, as a reference for its price setting.

The box *Description of the Evolution of Merchandise and Service Prices Using Trend Measures and Item Groups* illustrates how, at the beginning of the pandemic, the significant price changes in some items account for a large part of the development of both merchandise and services inflation. Between 2021 and 2022, inflationary pressures became more generalized. The incidence of most of the items' inflation increased. More recently, inflationary pressures continue to be generalized, although on merchandise prices these pressures appear to be easing even though they remain at high levels. In turn, on services prices these pressures do not show yet a change towards a downward trend.

The box *Business Opinion Regarding Factors that Have Affected Wage Revisions* shows that, according to firms surveyed by Banco de México, up to now their operating costs have been mainly affected by pressures stemming from input prices, although firms consider that the relative importance of pressures stemming from labor costs could increase going forward. Regarding wage growth, the business contacts mention that, in general, the magnitude of wage revisions responds to multiple elements, suggesting that the concurrence of several factors has influenced wage dynamics.

The forecast revision thus includes the deviation in data observed at the beginning of the year and the fact that these indicate that merchandise inflation will decrease more slowly than anticipated while services inflation will be subject to more pressures than expected. The latest information points to a still complicated environment, which indicates that core inflation dynamics is such that it would remain at high levels for a longer period. Notably, higher levels of inflation than those anticipated, in light of an environment of persistent core inflation, would imply higher levels going forward.

Considering the complicated environment for inflation and that the easing of certain external-related pressures has not been reflected in a more clear reduction in core inflation, the decline in inflation is expected to be slower and from higher levels than anticipated. In the current forecast, headline inflation is thus expected to reach levels close to its target by the fourth quarter of 2024, one quarter later than expected in the previous report (Table 4 and Chart 3). As for core inflation, it is anticipated to reach levels close to said figure also by the fourth quarter of 2024. In this regard, the monetary policy actions that Banco de México has been implementing, along with the fading of shocks, will allow to both headline and core inflation to decrease in this year and in the following one.

Table 4 and Chart 4 show the annual rate of change and the seasonally adjusted quarterly rate of change in annual terms of the headline and core indexes for the forecast horizon. The seasonally adjusted annualized quarterly rates of both headline and core indexes are expected to decline in the following quarters, to around 3% at the beginning of 2024. Since annual rates are influenced for 12 months by the short-term shocks that affected inflation, they decline at a slower pace than the seasonally adjusted rates. As a result, the annual variations of the headline and core indexes are above those seasonally adjusted in the stage in which the shocks on inflation are assimilated.

As mentioned above, in a still complex environment, inflation continues being affected by the shocks it has been facing. As a result, the possibility that the effects of these shocks on inflation may last longer than expected, that they may intensify, or that additional shocks arise and exert upward pressures on inflation cannot be ruled out yet. Thus, it is still likely to observe non-linearities possibly associated with the high levels that inflation still presents. This would imply an even more adverse scenario for inflation than expected.

Although headline inflation has declined from its peak in September, it still remains at high levels and faces considerable pressures in the core component. In this context, the balance of risks for the expected trajectory of inflation over the forecast horizon is considered to remain biased to the upside.

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

i. Persistence of core inflation at high levels.
ii. Although the international reference prices of some food and energy products have somewhat declined recently, new upward pressures on these prices could arise from the geopolitical conflict or from domestic pressures associated with the volatility of fruits and vegetables prices, and with the phytosanitary conditions in livestock products.
iii. External inflationary pressures associated with the evolution of the pandemic or the reopening of the Chinese economy.
iv. Episodes of exchange rate depreciation, possibly as a result of volatility in international financial markets.
v. Pressures due to higher costs that could be passed on to consumer prices.

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

i. That a greater-than-anticipated deceleration of world economic activity and that of Mexico leads to lower pressures on inflation in our country.
ii. That a reduction in the intensity of the military conflict between Russia and Ukraine leads to lower pressures on inflation.
iii. That production and distribution chains return to an efficient operation, allowing to ease major pressures on prices.
iv. That the pass-through of cost-related pressures 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.

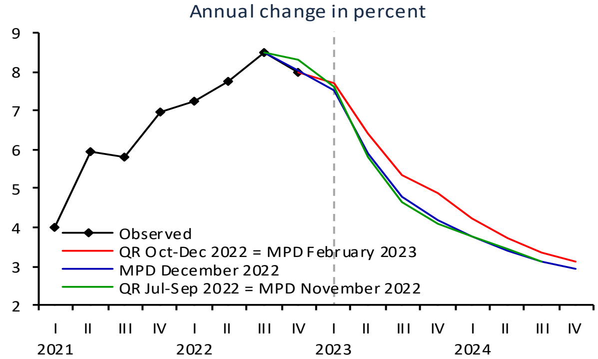
**Table 4**
**Forecasts for Headline and Core Inflation**
Annual percentage change of quarterly average indices

| | 2022 | | 2023 | | | | 2024 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | III | IV | I | II | III | IV | I | II | III | IV |
| **CPI** | | | | | | | | | | |
| Current Report = Monetary Policy Statement of February 2023 1/ | 8.5 | 8.0 | 7.7 | 6.4 | 5.3 | 4.9 | 4.2 | 3.7 | 3.4 | 3.1 |
| Previous Report = Monetary Policy Statement of November 2022 2/ | 8.5 | 8.3 | 7.6 | 5.8 | 4.7 | 4.1 | 3.8 | 3.4 | 3.1 | |
| **Core** | | | | | | | | | | |
| Current Report = Monetary Policy Statement of February 2023 1/ | 8.0 | 8.4 | 8.2 | 7.3 | 6.2 | 5.0 | 4.1 | 3.5 | 3.2 | 3.1 |
| Previous Report = Monetary Policy Statement of November 2022 2/ | 8.0 | 8.3 | 7.5 | 6.4 | 5.2 | 4.1 | 3.6 | 3.2 | 3.0 | |
| **Memo** | | | | | | | | | | |
| **Annualized seasonally adjusted quarterly variation in percent 3/** | | | | | | | | | | |
| **Current Report = Monetary Policy Statement of February 2023 1/** | | | | | | | | | | |
| **CPI** | 8.7 | 6.4 | 5.8 | 4.8 | 4.4 | 4.6 | 3.2 | 2.7 | 3.0 | 3.5 |
| **Core** | 8.8 | 8.4 | 7.0 | 5.2 | 4.3 | 3.5 | 3.4 | 3.0 | 2.8 | 3.1 |

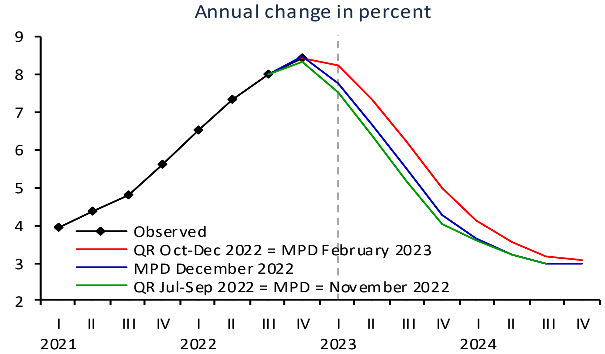
1/ Forecast starting February 2023. It corresponds to the forecast published in the Monetary Policy Statement of February 9th 2023.
2/ Forecast starting November 2022. It corresponds to the forecast published in the Monetary Policy Statement of November 10th 2022.
3/ See methodological note on seasonal adjustment process.
Source: INEGI for observed annual variation figures and Banco de México for seasonally adjusted figures and forecasts.

**Chart 2**

**Headline Inflation Forecasts**
Annual change in percent



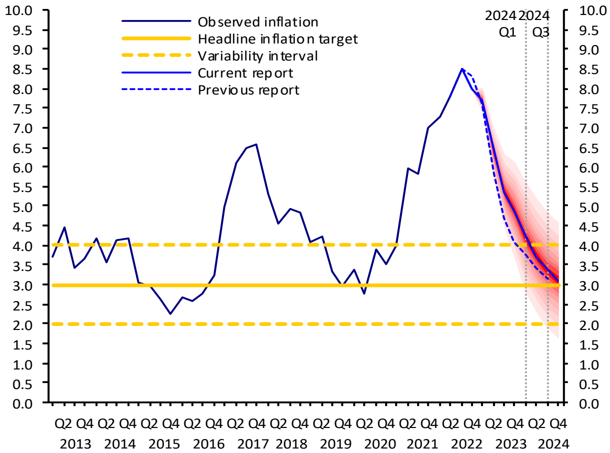

**Core Inflation Forecasts**
Annual change in percent



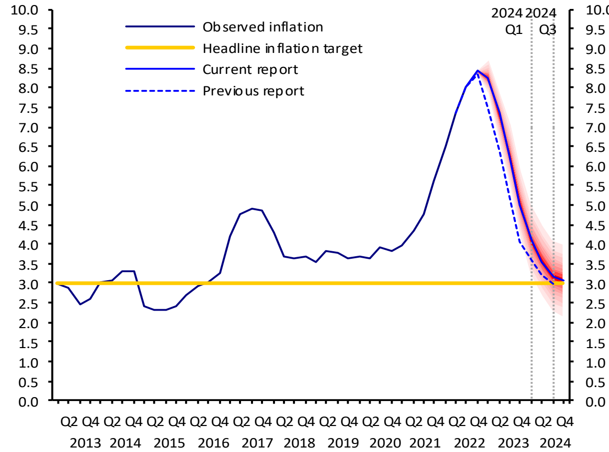

Note: QR refers to Quarterly Report and MPD refers to Monetary Policy Decision. Vertical line corresponds to first quarter of 2023.
Source: Banco de México and INEGI.

**Chart 3**

**a) Fan Chart: Annual Headline Inflation[1/]**
Percent



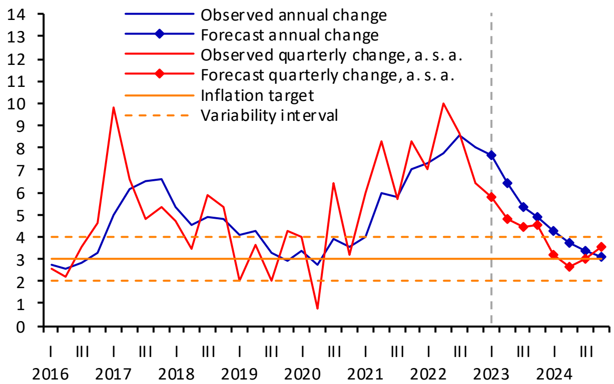

**b) Fan Chart: Annual Core Inflation[1/]**
Percent



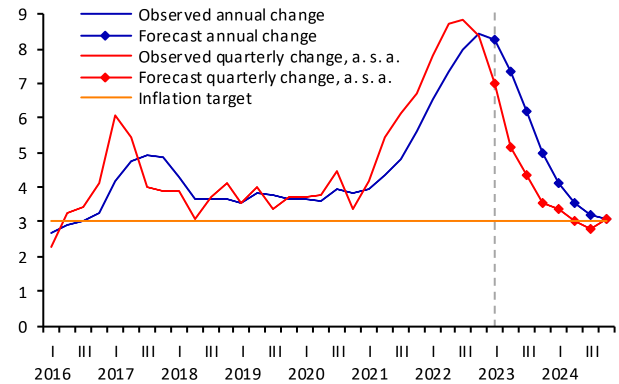

1/ Quarterly average of annual inflation. The next four and six quarters are indicated with vertical lines, using as a reference the first quarter of 2023, that is, the first quarter of 2024 and the third quarter of 2024, respectively, to indicate the time frames in which the transmission channels of monetary policy fully operate.
Source: Banco de México and INEGI.

**Chart 4**

**a) Headline Index**
Quarterly change, annualized and s.a., and annual change in percent

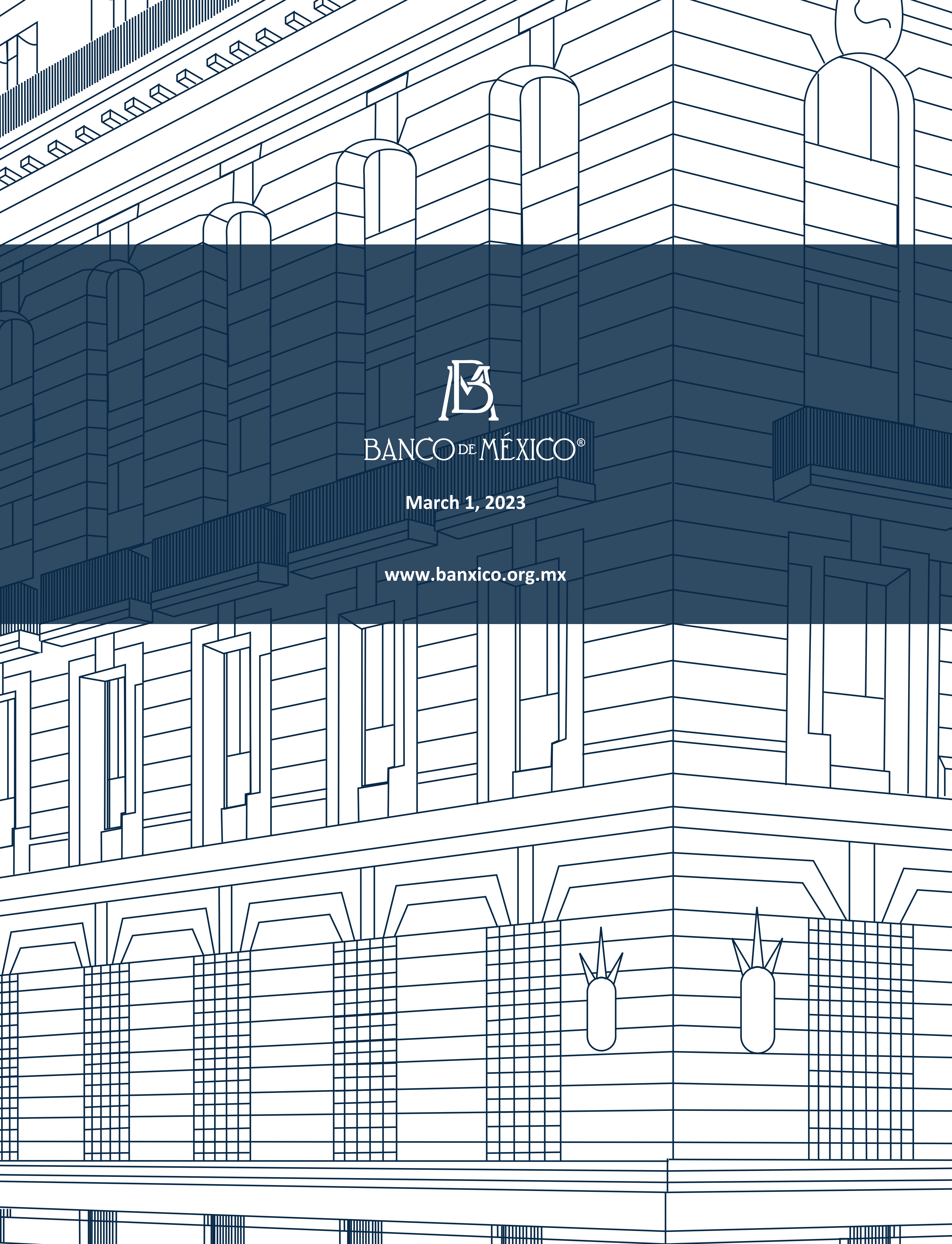



**b) Core Index**
Quarterly change, annualized and s.a., and annual change in percent




s.a. seasonally adjusted figures.
a.s.a. annualized seasonally adjusted figures.
Vertical line corresponds to first quater of 2023.
Source: Banco de México and INEGI.

The year 2023 is expected to be a complex one for the global economy, given the prevailing high levels of inflation, the expectation of a further weakness in economic activity, and the uncertainty surrounding various geopolitical risks. In this challenging external environment for the Mexican economy, 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, Banco de México's Governing Board will continue setting monetary policy with the strong commitment to foster 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. It is also necessary to adopt measures that support domestic growth and foster an environment conducive to generating greater investment and an adequate allocation of resources in order to increase the country's productivity. Part of this effort requires further strengthening the rule of law as well as continuing to fight insecurity. All of this would not only make the national economy more resilient to the anticipated slowdown in external demand, but would also set the foundations for higher long-term economic growth and development that would allow for the greater well-being of the entire population.



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