banco central Chile

MONETARY POLICY REPORT

DECEMBER 2023

SANTA CRUZ - VALLE DE COLCHAGUA
Región del Libertador General Bernardo O'Higgins

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The Central Bank of Chile's Monetary Policy

Money plays a fundamental role in the proper functioning of any economy. To preserve such role, the monetary policy of the Central Bank of Chile (CBCh) must protect the value of the national currency —the peso—, in its quest to keep inflation low and stable. Achieving this fosters the population's wellbeing by safeguarding their income's purchasing power and making the economy function better. When inflation is low and stable, monetary policy can also moderate fluctuations in employment and production.

The inflation target and the monetary policy interest rate (MPR)

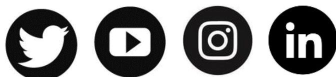
The Bank conducts its monetary policy seeking that, irrespective of the current level of inflation, its forecast for a two-year horizon will be 3%. This is similar to the practice of other countries in the world that have, as does Chile, a floating exchange rate; this is the so-called inflation targeting scheme.

The MPR is the main instrument used by the Bank to achieve the inflation target. Its level is decided at the Monetary Policy Meeting, which is held eight times a year. In practice, the MPR is a reference interest rate to determine the cost of money and other financial prices, such as the exchange rate, and longer-term interest rates, among others. In turn, these variables affect the demand for goods and services and, thereby, prices and inflation. Monetary policy decisions take several quarters to be fully reflected in the economy, which warrants that monetary policy be made from a forward-looking point of view, having as its primary focus the inflation projection two years ahead, and not just today's inflation.

Communication, transparency and the Monetary Policy Report

Since the Central Bank makes its monetary policy decisions autonomously, it must constantly account for them and their results to the general public. This is so not only because it is a government agency within a democratic society, but also because a credible monetary policy, understood by the people, helps to keep inflation low and stable. Through the Monetary Policy Report (MP Report), the Bank communicates to the general public its view of the recent evolution of the economy, its projections for the coming years and the way in which, in this context, it will conduct monetary policy in order to meet the inflation target.

The MP Report is published four times a year (every March, June, September, and December) and is put together by a team of around 60 persons.



Cover picture: Santa Cruz - Valle de Colchagua, Región del Libertador General Bernardo O'Higgins.

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ISSN: 0716-2219

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*/ This Report incorporates the monetary policy decision of 19 December. For the central scenario construction purposes, the statistical cut-off date is 13 December. This document was originally written in Spanish. In case of discrepancy or difference in interpretation, the Spanish version prevails.

SUMMARY

Overall, the Chilean economy has evolved in line with forecasts in the September Report. Inflation has continued to recede amid the resolution of macroeconomic imbalances, including the closing of the activity gap, the normalization of aggregate demand and the easing of the cost shocks of the past few years. On the external front, the main economies have performed better than expected and global growth prospects have increased, with inflation declining in most countries. International financial conditions have improved in recent weeks, returning to the levels at the beginning of the year. In this context, estimates are that Chile's GDP will close this year with zero growth, and that it will grow by 1.25%-2.25% in 2024 and 2%-3% in 2025. Headline inflation will continue to decline and will converge to 3% in the second half of 2024. The monetary policy interest rate (MPR) has accumulated a reduction of 300 basis points (bp) since July and stands at 8.25%. The Board considers that, in line with the central scenario of this Report, the convergence of inflation to the target will require further cuts in the MPR. Its magnitude and timing will take into account the evolution of the macroeconomic scenario and its implications for the trajectory of inflation.

Inflation has been declining further and is on track to reach the 3% target in the second half of 2024. As of November, the annual variations of headline and core CPI stood at 4.8% and 6.0%, respectively. The core part has led the decline in total inflation in recent months, especially in its goods component. In contrast, annual inflation of some volatile items has risen somewhat since the previous Report, including fuels and some foodstuffs. Volatile items also accounted for a large part of the high monthly CPI variation in November. At the same time, two-year inflation expectations are at 3% and the different measures show an earlier convergence to the target than in the September Report.

The decline in inflation from its 2022 peak has occurred in a context of a gradual resolution of macroeconomic imbalances. The moderation of spending, as well as the closing of the activity gap —which would have been completed during the third quarter— have allowed mitigating the inflationary pressures coming from our economy which for a long time grew above its capacity.

The process of inflationary convergence has also been sustained by the relief of the cost shocks of previous years. This takes into account the resolution of the pandemic-related logistical problems and the reversal of the significant increase in commodity and food prices caused by the war in Ukraine. Added to this is the impact of the appreciation of the real exchange rate (RER) from the peaks it reached in mid-2022, which has occurred in conjunction with a reduction in local uncertainty indices.

In this context, the local economy resumed slightly positive quarterly expansion rates, although there is still some heterogeneity among sectors. In seasonally adjusted terms, non-mining activity grew 0.2% in the third quarter (0.5% monthly according to the October Imacec). The resilience of the services sectors and the somewhat more favorable performance of wholesale and retail trade and electric power generation stand out, while construction remains weak.

On the demand side, third-quarter data show an incipient increase in private consumption. This occurs after a sharp contraction of this spending component between tthe end of 2022 and the beginning of this year, mainly in goods. The rebound of some durable goods stands out, while spending on services maintains positive growth rates.

The evolution of consumption has been accompanied by an improvement in real household incomes. The decline in inflation is supporting real wage growth and has eased its adverse impact on people's financial spending. In the labor market, job creation remains sluggish, with demand for labor still weak, in line with the evolution of the economic cycle. The unemployment rate continues to stand above its historical average.

Gross fixed capital formation (GFCF) has been marked by the volatility that its machinery and equipment component has been dragging for several quarters. The latter contracted in the third quarter, which results in a further reduction in projected investment for this year. In any case, indicators such as wholesale sales of this goods category suggest that the decline has been reversing. On the other hand, investment in construction has continued to fall, coinciding with the pessimism in the perceptions of this sector.

About the external scenario, the main economies performed better in recent months, most notably the U.S. and China. In the U.S., the resilience of the labor market and consumption continues to provide support to the economy. In China, the boost came from the lagged effects of the post-pandemic reopening and the fall in savings, in addition to the reactivating measures implemented by the Chinese government. However, the problems of the Chinese real estate sector persist.

International financial conditions have behaved more favorably in recent weeks, returning to levels around those observed at the beginning of the year. Markets have been highly reactive to different types of events, including economic indicators that differ from expectations or communication from monetary authorities. This behavior peaked during part of October and November, when an episode of high volatility and global financial tightness occurred. Thus, during the fourth quarter the U.S. 10-year rate reached values close to 5%, the dollar appreciated and stock markets fell across the board. This reaction is due to different factors, including concerns about the fiscal policy in the U.S., uncertainty associated with a more complex geopolitical environment, and apprehensions about the medium-term saving-investment equilibrium. Add to this the evolution of monetary policy in the developed world.

The Chilean market has followed the movements of its external counterparts. In that period of October and November, the peso had an important depreciation and the long-term interest rate also followed international movements, showing a significant increase that was later undone. The October Monetary Policy Meeting was held in the midst of this volatile financial scenario. At it, the Board decided that it was necessary to continue with the cycle of MPR cuts, although this time around it was advisable to slow the pace down somewhat and reduce the rate by 50bp. Moreover, as a precautionary measure, they agreed to suspend the reserve replenishment program and the gradual reduction of its forward position.

The recent improvement in global financial conditions comes amid somewhat less restrictive communication from the Federal Reserve. Particularly at its last meeting, expectations arose of an additional cut in the U.S. policy rate during 2024. Rates have fallen globally, the dollar has depreciated and stock markets have risen. In Chile, the BCP10 rate is slightly above its level at the beginning of 2023. For its part, the peso has accumulated a depreciation of around 8% since mid-year, which is reduced to 1.5% when comparing the statistical cut-off of this Report and that of September.

Domestic short-term financial conditions for firms and households have been easing, supported by the MPR cuts. Mortgage rates, beyond a decrease in the margin, are at levels above those of a couple of months ago. Going forward, its trajectory is subject to several factors, among others, the movements of long-term rates and term premiums. Regarding credit performance, both its growth and demand remain weak in most portfolios.

Structural parameters

Trend non-mining GDP growth is assumed to slow over the next few years to average 1.9% in the period 2024-2033. This compares with the estimate of 2.2% for the 2023-2032 period in the December 2022 Report. This lower figure responds mainly to adjustments in the calculation resulting from the change in the reference decade covered by each average, and does not imply a substantive change in the projected path. Thus, the estimate again considers low growth in total factor productivity and that a good part of the recovery of labor participation to pre-pandemic levels has already occurred (Box II.1).

The nominal neutral MPR is estimated at 4% (+25bp with respect to the previous estimate). This is consistent with the increase in neutral monetary policy rates in other economies (Box II.2).

Projections

The central scenario assumes that headline inflation will converge to the 3% target in the second half of 2024, with the outlook remaining largely unchanged from September. This trajectory combines a core component that will approach 3% faster than expected, with a less favorable performance for the prices of fuels and other volatile items. In core inflation, the lower outlook for the core component of goods stands out, influenced by the greater decline accumulated in recent months. The central scenario assumes that the RER will remain around current levels across the projection horizon, in a context of high volatility of the nominal parity and a limited depreciation with respect to the previous statistical cut-off.

Activity and demand projections have few corrections. For 2023, zero GDP growth is anticipated. In addition to the upward revision of the figures for the first three quarters of 2023, the estimate considers a somewhat better outlook for year-end non-mining GDP, given the incipient improvement in sector data —such as in wholesale and retail trade and manufacturing.

For 2024 and 2025, the GDP growth ranges remain at 1.25%-2.25% and 2%-3%, respectively. In this projection, non-mining GDP will continue to show positive quarterly variations, gradually approaching rates in line with its trend growth. Mining activity will make an important contribution to the expansion of the economy in 2024, aided by the recent entry into operation of new mines and the development of other ores (Box I.1).

The activity gap is around zero and is estimated to remain close to that level throughout the projection horizon. Adjustments since the last Report are limited and include the revision of structural parameters and the improved outlook for non-mining GDP in the coming quarters.

Domestic demand is still expected to resume positive growth rates in 2024. Private consumption levels are marginally revised upward for the next two years. It is estimated to expand 2.1% in 2024 and 1.8% in 2025. The recovery of households' disposable income will continue to support its performance, largely sustained by the inflation convergence process. The impact of the MPR cuts on credit conditions relevant to consumption is added.

In 2024 and 2025, GFCF will reach levels in line with those foreseen in the last Report, two years in which it will accumulate positive growth. This projection considers the improved outlook of investment surveys, particularly for the mining and energy sectors, and high frequency data.

Projections for the current-account deficit are 3.3% for this year and around 4% for the following two. As of the third quarter, it continued to decrease, accumulating 3.5% of GDP in the last moving year. This is coinciding with the gradual recovery of national savings —with a noteworthy increase in its private component—, whose improvement will continue to contribute to the equilibrium between national savings and investment.

The Chilean economy will be favored by greater growth expected for trading partners in the short term. It is estimated that this will average 3.1% between 2023 and 2024 (2.7% in September). On the one hand, there are better projections for the U.S., based mainly on the strength of consumption. On the other hand, there is the greater impulse provided by fiscal measures in China, which will anyway maintain expansion rates below historical averages. In addition, the copper price forecast for the next two years will remain at around US$3.8 per pound, which explains much of the upward revision to the terms of trade.

Monetary policy

The MPR has accumulated a reduction of 300bp since July and stands at 8.25%. The Board considers that, in line with the central scenario of this Report, the convergence of inflation to the target will require further cuts in the MPR. Its magnitude and timing will take into account the evolution of the macroeconomic scenario and its implications for the trajectory of inflation. The Board reaffirms its commitment to act with flexibility in the event that any of the internal or external risks materialize and macroeconomic conditions so require.

In the sensitivity scenarios, the upper bound is defined by situations where inflation takes longer to complete its convergence to the target. Such would be the case if the Chilean economy were to receive a greater than expected external boost, for example because the resilience of the U.S. is prolonged and enhances the dynamism of the world economy. This would have positive effects on the local economy. On the one hand, due to greater external demand and improvements in the prices of different commodities, including copper, but would also affect the expectations channel, which could become more optimistic and encourage domestic spending. The inflationary consequences of this scenario could lead to more gradual cuts in the MPR than assumed in the central scenario.

The lower bound reflects scenarios in which inflation declines faster. These are especially associated with situations where the impact on the local economy of the recent months' increase in long rates exceeds expectations. This could reduce the dynamism of consumption and investment, leading to a decrease in inflationary pressures that would require accelerating the monetary easing process.

Regarding risks, the evolution of the external scenario continues to be subject to important sources of uncertainty. The fragility of the Chinese real-estate sector, doubts about the fiscal situation of the U.S., and a more complex geopolitical environment with new armed conflicts are just some examples. The implications of these scenarios on monetary policy will depend on how the combination and magnitude of these elements ultimately affect the medium-term outlook for the convergence of inflation.

TABLE 1: INFLATION (1)
(annual change, percent)

	2021	2022	2023 (f)		2024 (f)		2025 (f)	
			MP Rep. Sep.23	MP Rep. Dec.23	MP Rep. Sep.23	MP Rep. Dec.23	MP Rep. Sep.23	MP Rep. Dec.23
Average CPI	4.5	11.6	7.6	7.6	3.5	3.5	3.0	3.0
December CPI	7.2	12.8	4.3	4.5	3.0	2.9	3.0	3.0
CPI in around 2 years (2)							3.0	3.0
Average core CPI	3.8	9.3	8.7	8.5	3.8	3.5	3.0	3.1
December core CPI	5.2	10.7	6.3	5.8	3.1	3.2	3.0	3.0
Core CPI around 2 years (2)							3.0	3.0

(1) Core inflation is measured using the CPI without volatiles.
(2) For September 2023 MP Report corresponds to inflation forecast for the third quarter of 2025, for December 2023 MP Report to inflation forecast for the fourth quarter of 2025.
(f) Forecast.
Sources: Central Bank of Chile and National Statistics Institute (INE).

TABLE 2: INTERNATIONAL BASELINE SCENARIO ASSUMPTIONS

	2021	2022	2023 (f)		2024 (f)		2025 (f)	
			MP Rep. Sep.23	MP Rep. Dec.23	MP Rep. Sep.23	MP Rep. Dec.23	MP Rep. Sep.23	MP Rep. Dec.23
	(annual change, percent)							
Terms of trade	11.9	-7.7	1.9	1.5	-2.9	-1.5	-1.6	0.2
Trading partners	6.8	2.8	3.1	3.4	2.3	2.7	2.9	2.5
World GDP at PPP	6.3	3.3	2.9	3.1	2.2	2.6	3.0	2.6
Developed GDP at PPP	5.5	2.6	1.3	1.5	0.1	0.5	1.7	1.2
Emerging GDP at PPP	7.5	3.8	3.8	4.1	3.5	3.8	3.7	3.4
	(levels)							
LME copper price (US$cent/pound)	423	400	385	385	370	380	355	380
Oil price, average WTI-Brent (US$/barrel)	69	97	79	80	78	75	73	72

(f) Forecast.
Source: Central Bank of Chile.

TABLE 3: INTERNAL SCENARIO
(annual change, percent)

	2021	2022	2023 (f)		2024 (f)		2025 (f)	
			MP Rep. Sep.23	MP Rep. Dec.23	MP Rep. Sep.23	MP Rep. Dec.23	MP Rep. Sep.23	MP Rep. Dec.23
GDP	11.7	2.4	-0.5 / 0.0	0.0	1.25 - 2.25	1.25 - 2.25	2.0 - 3.0	2.0 - 3.0
Domestic demand	21.7	2.3	-4.3	-4.6	1.5	2.0	2.2	2.7
Domestic demand (w/o inventory	18.5	3.0	-3.1	-3.0	1.1	1.5	2.0	1.9
Gross fixed capital form	15.7	2.8	-1.2	-1.9	-0.6	0.0	2.4	2.4
Total consumption	19.3	3.1	-3.7	-3.3	1.6	2.0	1.9	1.8
Private consumption	20.8	2.9	-4.9	-4.6	1.7	2.1	1.9	1.8
Goods and services exports	-1.4	1.4	0.9	1.0	4.0	3.4	2.4	1.9
Goods and services imports	31.8	0.9	-9.8	-11.1	3.1	4.3	1.2	2.9
Current account (% of GDP)	-7.5	-9.0	-3.4	-3.3	-4.0	-4.0	-4.0	-3.9
Gross national saving (% of GDP)	17.0	16.4	19.3	18.8	19.0	18.4	19.1	19.1
Gross fixed capital formation (% of nominal GDP)	23.1	24.8	23.3	23.3	23.1	23.1	23.1	23.0

(f) Forecast.
Source: Central Bank of Chile.

I. RECENT EVOLUTION OF THE MACROECONOMIC SCENARIO

In the external scenario, third-quarter activity was more resilient than anticipated, especially in the United States and China, which has raised the outlook for world growth in the short term. In general, inflation has continued to decline, although expectations are still high in several economies. Global financing conditions have improved in recent weeks and have returned to levels of early this year, in the midst of a slightly less contractionary communication by the Federal Reserve (Fed). Worth noting is the high volatility in financial markets, particularly of long-term interest rates, which has had a local impact via the cost of long-term borrowing. At home, inflation has continued to decline, especially its core measure. The economy has behaved in line with expectations, but with heterogeneous performance among economic sectors. On the demand side, household consumption is showing an incipient increase, while in investment, beyond the recent ups and downs, there has been a relatively weaker performance in construction linked to the housing and real-estate segment. Domestic financial conditions have eased in some portfolios, particularly due to the fall in interest rates for short-term loans, supported by the process of normalization of the monetary policy rate (MPR), which has accumulated a cut of 300 basis points (bp) from July to date. However, other interest rates remain high, particularly in the mortgage segment.

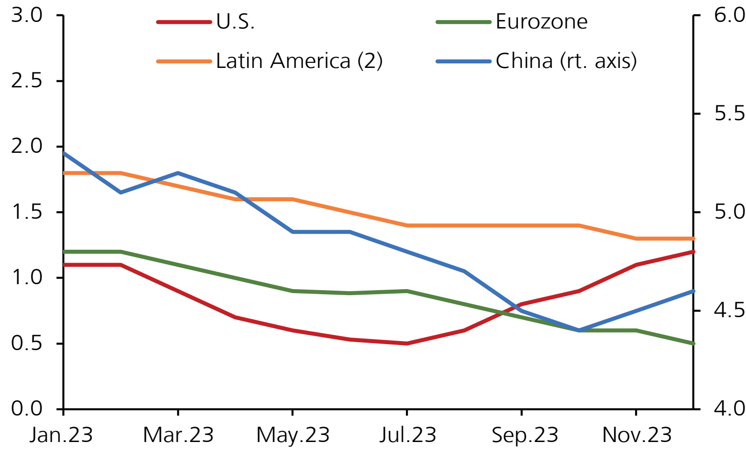
THE INTERNATIONAL SCENARIO

During the third quarter, activity improved in several of the main economies. Particularly significant was the reacceleration of consumption and GDP in the U.S. This, in a context where the labor market continued to show signs of tightness and government spending had increased. In China, activity also gained momentum in the third quarter, with consumption benefiting from the lagged effects of the post-pandemic reopening. This contrasts with still sluggish foreign trade and investment, especially in residential properties. Meanwhile, in the Eurozone the main economies recorded a slight quarterly contraction in activity, affected by global demand that remains subdued and by the impact of monetary policy tightening. In Latin America, activity has continued to moderate, largely due to the tightening of global financial conditions. Mexico has been the exception, with a more favorable performance linked to investment and the industrial sector.

In this context, short-term growth prospects for the U.S. and China have improved (figure I.1). The U.S. economy is influenced by actual data and expectations that consumption will remain strong, while the labor market has been losing dynamism at the margin, but still shows signs of tightness. In China, the announcement of a series of fiscal spending measures foreshadows a better performance in the coming quarters. However, there are still several areas of weakness in the Chinese economy, such as the fragile situation in the real estate sector —which has dampened expectations for residential investment— consumers' pessimism and low expectations for a stronger external sector.

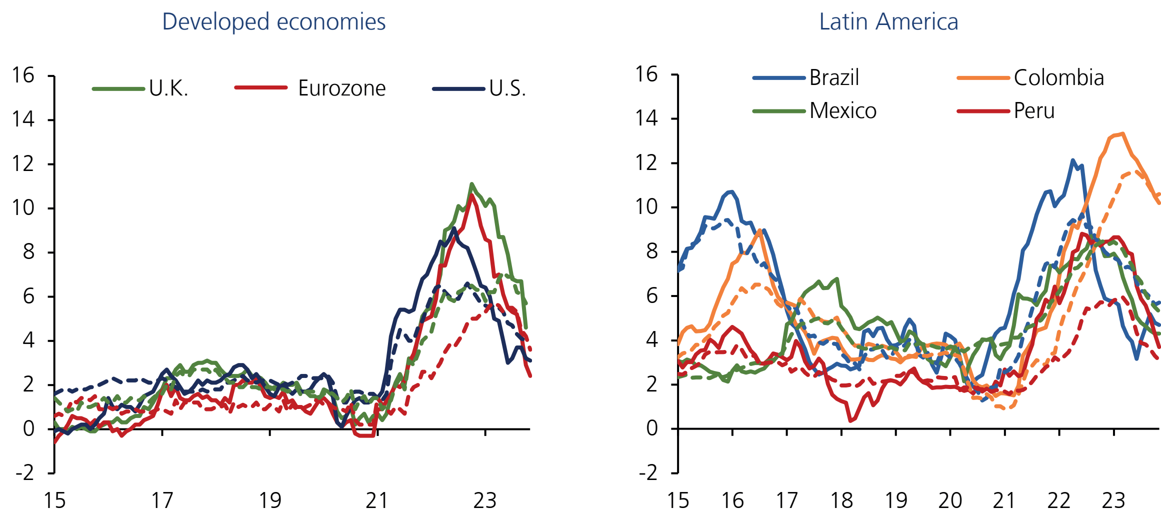
Inflation has been falling in many economies, although differences persist in the evolution of its components (figure I.2). In the U.S., core inflation continues to moderate at a slower pace than the headline measure and remains still high, influenced by services prices. In the Eurozone, inflation has continued to fall, with declines in both goods and services. This evolution of the different measures is consistent with the dissipation of the supply shocks of previous years and with the weakness of activity in the bloc. In Latin America, the fall in total inflation in Peru and Mexico contrasts with a slower decline in Colombia.

FIGURE I.1 GROWTH FORECAST FOR 2024 (1)
(percent)



(1) The latest information available at the close of this Report refers to the month of December 2023. (2) Considers Brazil, Argentina, Peru, Colombia and Mexico. PPP-weighted growth; shares of each economy according to WEO (IMF).
Sources: Consensus Forecasts and IMF.

FIGURE I.2 WORLD INFLATION (1) (2)
(annual change, percent)

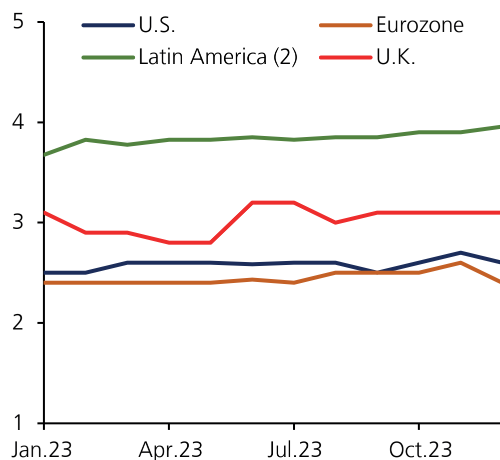


(1) Dashed lines show core inflation. (2) Core figures exclude foods and energy.
Source: Bloomberg.

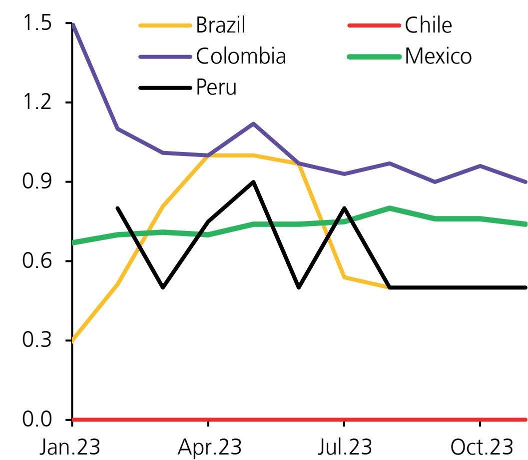
Monetary policy remains in contractionary territory around the world, while the inflation outlook remains high in several countries (figure I.3). In the U.S., monetary policy expectations point to a lesser tightening than expected a few months ago (figure I.4). The Fed held its benchmark rate unchanged at its most recent meetings. However, the dots published by the FOMC at its December meeting suggest a less contractionary path than the one communicated in September. For its part, the European Central Bank (ECB) raised its benchmark rate by 25 bp at its September meeting, and then maintained it at subsequent ones. The ECB has not yet signaled the end of the hiking cycle and its future decisions will continue to be analyzed based on the evolution of the economic scenario. In Latin America, several countries have either initiated or continued with the process of rate cuts, including Chile, Brazil and Peru. However, the markets' outlook is that monetary policy will remain tight for several more months, amid high financial volatility and expectations of above-target inflation in several economies in the region (figure I.3).

FIGURE I.3

Inflation forecasts for 2024 (1)
(average annual change, percent)

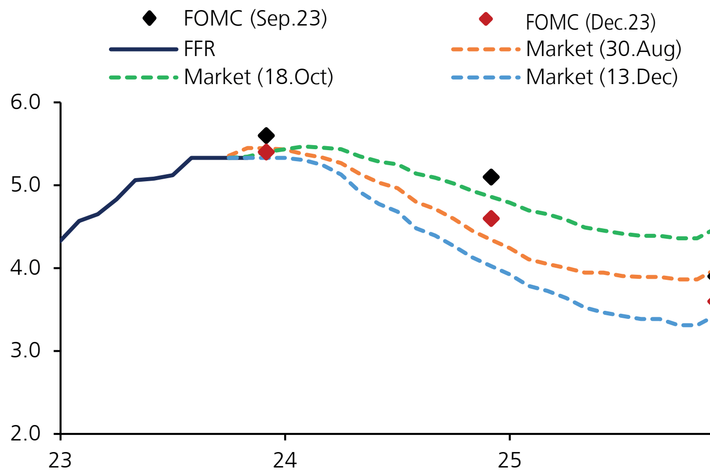


Inflation target deviations at end-of 2025 in Latin America (3)
(difference with respect to the target, percent)



(1) Consensus Forecasts projections; the latest information available at the close of this Report is for December 2023. (2) Simple average of annual inflation at December 2024 for Mexico, Colombia, Brazil and Peru. (3) Based on surveys of economic expectations conducted by central banks. Corresponds to the difference between the expected annual variation expected as of December 2025, and the inflation target reported by the respective institutions.
Sources: Consensus Forecasts and Central Bank of Chile based on said central banks' data.

FIGURE I.4 FED FUNDS RATE (*)
(percentage points)



(*) FOMC projections correspond to the mid-range of the fed funds rate presented in September and December 2023; market projections are for the mid-range of the fed funds rate of futures at the closing date of the September Report (30 Aug), at its peak (18 October) and at the statistical close of this Report (13 December).
Sources: Bloomberg and U.S. Federal Reserve.

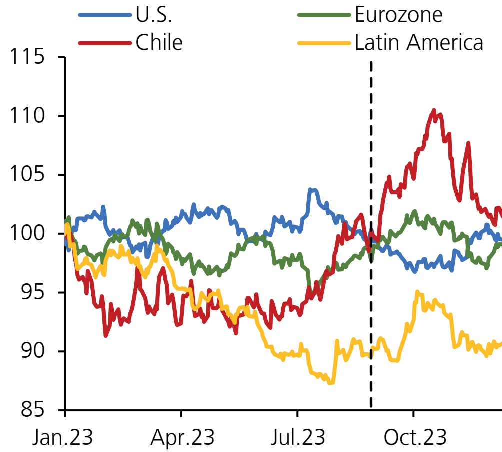
Contractionary monetary policies in the developed world and the occurrence of episodes of high financial volatility keep global financing conditions tight (figure I.5). Markets have been highly sensitive to the publication of new data and statements by monetary authorities, along with a series of sources of uncertainty, such as concerns about the U.S. fiscal situation and the uncertain geopolitical scenario.

Towards the end of October, a scenario of lower global risk appetite took shape, which increased volatility and significantly tightened global financial conditions. In that period, U.S. 10-year rates rose significantly, approaching 5% —levels not seen since 2007— which also affected long rates in other countries. Moreover, stock markets had fallen and the dollar had appreciated globally (figure I.5).

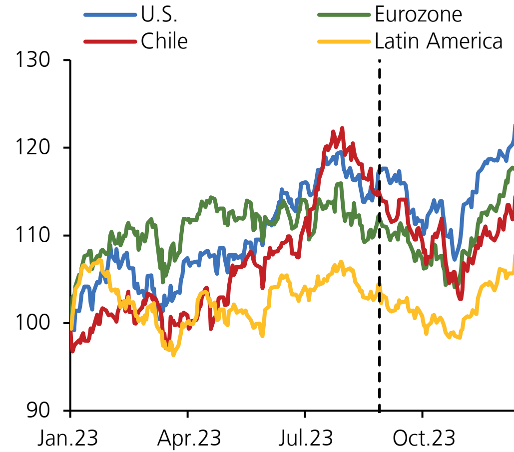
Financial conditions have been more favorable in recent weeks, returning to values around those observed early this year. This was mainly explained by news coming from the U.S. (figure I.5). Market agents' perception of a less restrictive Fed rate path —after the November FOMC statement and, in particular, the dots published in December— have modified the outlook for the fed funds rate and have contained risk aversion. Accordingly, long-term rates have retreated worldwide. In recent weeks, short-term rates have also fallen, the dollar has depreciated against the other currencies and stock markets have rallied.

FIGURE I.5 FINANCIAL CONDITIONS

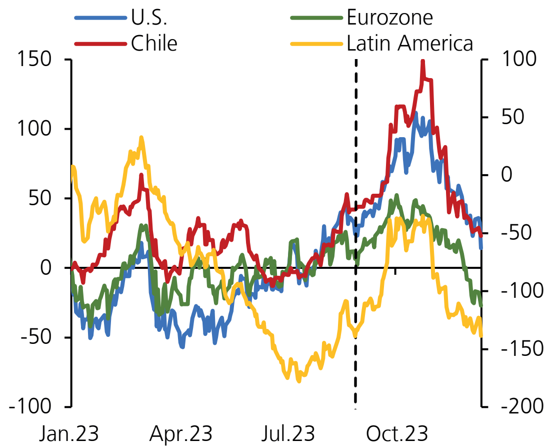
Currencies (1) (2) (3)
(index, 2.Jan.23=100)



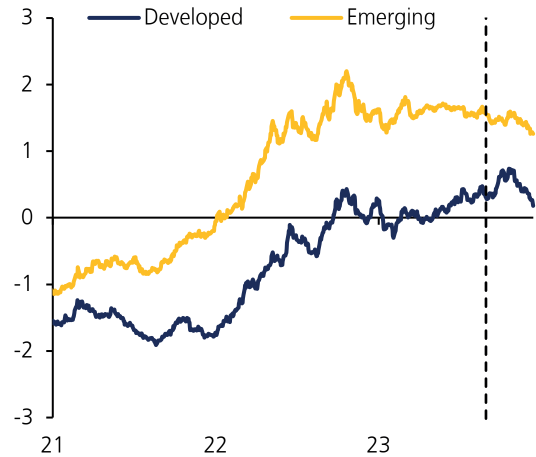
Stock markets (1) (2)
(index, 2.Jan.23=100)



Interest rates on nominal 10-year bonds (1) (2) (4)
(difference with respect to 2.Jan.23, basis points)



Goldman Sachs financial conditions index (1) (5)
(standard deviations)

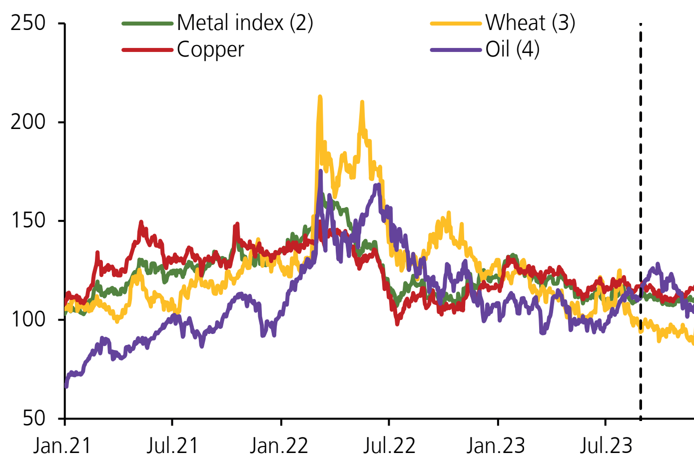


(1) Dashed vertical line marks statistical close of September 2023 Report. (2) For Latin America, considers the simple average of Brazil, Mexico, Colombia and Peru. (3) An increase in the index indicates a currency depreciation, and vice versa. For the U.S., uses multilateral exchange rate. (4) For Latin America, it corresponds to the right axis. (5) Standardized with mean and standard deviation between 2010 and 2019. For developed countries, simple average of U.S., Eurozone, U.K., Canada, Australia, New Zealand, Norway and Sweden. For Emerging markets, simple average of Thailand, Malaysia, Indonesia, Philippines, South Africa, Hungary, Poland, Brazil, Mexico and Chile.
Sources: Bloomberg and Goldman Sachs.

Domestic financial market movements have followed international trends (figure I.5). During part of October and in November, the Chilean peso depreciated significantly, a trend that was reversed in recent weeks. At the statistical close of this Report, it stands slightly above its September close (+1.5%). This has been influenced by external volatility and the differential between the monetary policy outlook in Chile with respect to other economies, mainly developed ones, which has also affected other emerging currencies. Nominal 10-year interest rates rose significantly towards the end of October, hitting values of around 6.8%, an adjustment that has been reversed lately. As a result, they show no major variations between the current and last statistical cutoff dates. In the same period, considering the average of the 10 days prior to the close of each Report, the 1- and 2-year overnight index swap (OIS) rates fell around 60 bp and 50 bp, respectively, while the IPSA accumulated losses of nearly 3%.

Among commodities, the highly fluctuating price of oil stands out (figure I.6). On the one hand, its behavior has been affected by production cuts announced by Saudi Arabia and the escalating geopolitical conflicts in the Middle East. On the other hand, there are the doubts regarding the world economic situation and the improvements in global supply outside OPEC+ countries, particularly in the U.S. The copper price has also fluctuated, in the face of Chinese demand that has been underpinned by its use in the energy transition and historically depleted inventories. At the close of this Report, the price of a barrel of oil stood at US$74 (-11% since the September Report for the WTI-Brent average) and the price of a pound of copper at US$3.8, quite stable respect to the September Report statistical close. Overall, food prices have continued to decline, although the increase in certain production costs and the effects of the El Niño phenomenon continue to pose upside risks. The November FAO price index fell 3% from the July index (the last known figure at the close of the September Report).

FIGURE I.6 COMMODITY PRICES (1)
(index, 2010-2023 average =100)



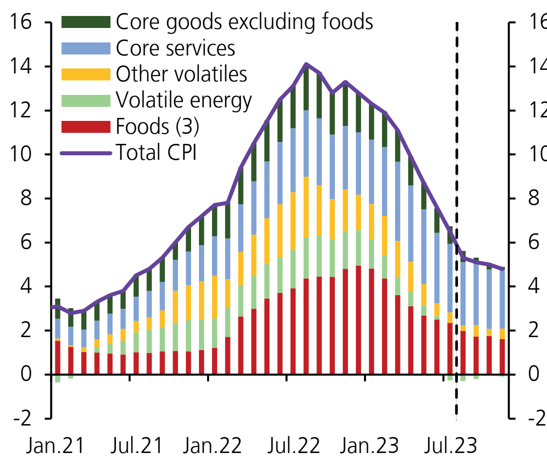
(1) Dashed vertical line marks statistical close of September 2023 Report. (2) S&P GSCI Industrial Metals. (3) Prices of futures one-month ahead. (4) WTI-Brent average.
Source: Bloomberg.

THE DOMESTIC SCENARIO

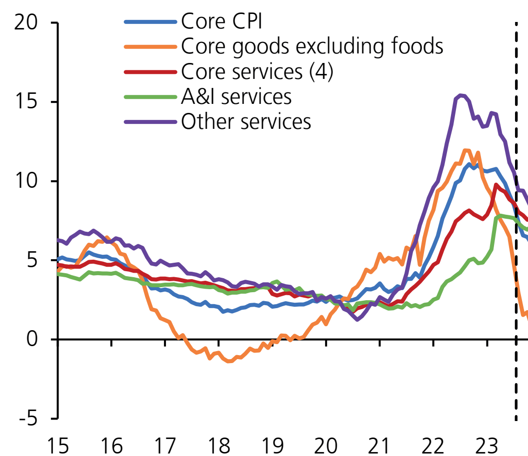
Headline inflation has continued to decline, particularly in its core component (figure I.7). These measures stood at 4.8% and 6.0% annually in November, respectively (6.5% and 8.5% in July, the latest figures known at the close of our last Report). The drop in core inflation is mainly explained by the fall in the goods indicator, in a context of highly volatile exchange rate and in which a significant number of businesses find it difficult to pass on the increase in some of their costs to prices. According to the November Business Perceptions Report (IPN), this is largely due to low sales (figure I.8). Meanwhile, services inflation has continued to decline, with annual drops in both its administered and indexed (A&I) and other services components. Regarding the most volatile prices in the basket, fuel, some fruits & vegetables and other items have risen the most in recent months.

FIGURE I.7

Inflation indicators (1) (2)
(contributions to annual change, percentage points)



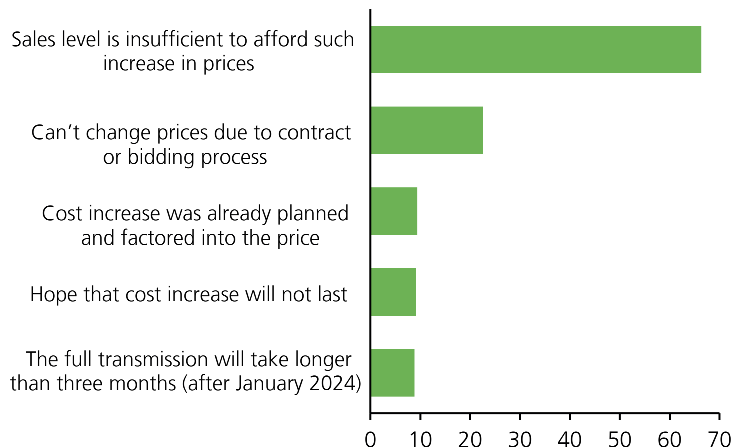
Core inflation (1)
(annual change, percent)



(1) Dashed vertical line marks statistical close of September 2023 Report. (2) For details on the different groupings and their shares in the total CPI basket, see box IV.1 in December 2019 MP Report, Carlomagno and Sansone (2019) and Economic Glossary. (3) Sum of volatile and non-volatile food items. (4) Sum of administered and indexed utilities (A&I). and Other services.
Sources: Central Bank of Chile and National Statistics Institute.

FIGURE I.8

EPN: Reasons why you have not and will not pass on your full cost increase in the next three months
(percent of firms whose costs have risen in the past three months)

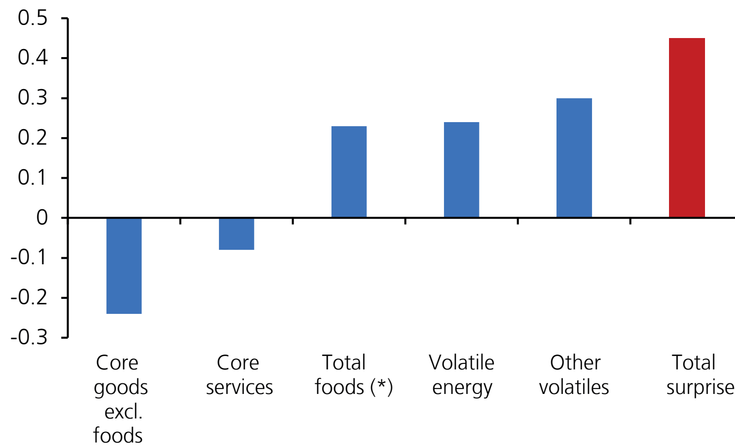


Source: Business Perceptions Survey (EPN), Central Bank of Chile.

Monthly inflation data have seen high volatility in recent months, accumulating higher-than-expected headline inflation but lower core inflation (figure I.9). Between August and November, total cumulative inflation was +0.45 pp above the forecast. In this difference with respect to the projection, volatile prices contributed +0.74 pp, explained by fuels, fruits & vegetables and certain items classified as other volatiles. In the case of fuels, the difference with respect to the projection was explained by the world price increase and the pass-through of the exchange rate depreciation to this item. In the rest of the volatile items, sudden increases were seen in tourist packages and air travel services, two groups whose variation tends to show high dispersion. In contrast, the incidence of core inflation was 0.3 pp lower than projected, largely due to the underlying component of goods —excluding foods— which accumulated an incidence of -0.24pp with respect to the forecast. Household equipment and automobiles were among the products that had the greatest downward impact.

The decline in inflation occurs in a scenario in which the supply shocks accumulated in previous years have dissipated. The resolution of the global logistical problems generated during the pandemic, as well as the reversal of the sharp increases in prices of commodities and foodstuffs caused by the war in Ukraine, have contributed to easing the cost pressures associated with these events.

FIGURE I.9 CUMULATIVE INFLATIONARY SURPRISE SINCE SEPTEMBER 2023 MP REPORT
(percentage points)



(*) Sum of volatile and non-volatile food items.
Sources: Central Bank of Chile and National Statistics Institute.

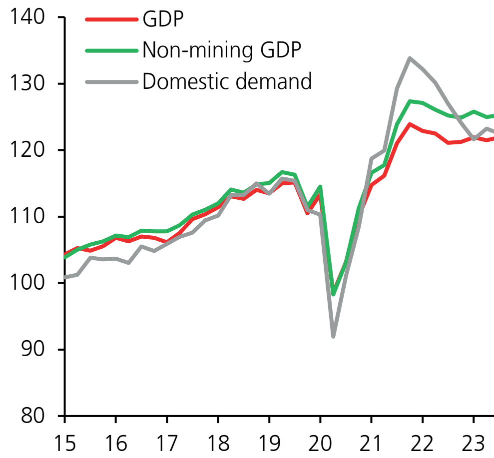
The drop in inflation has also responded to the resolution of the economic imbalances accumulated in previous years. Thus, on aggregate, activity resumed slightly positive quarterly growth rates (figure I.10). Third-quarter activity was slightly above the projection in the last Report, with a non-mining GDP growth of 0.2% quarter-on-quarter (q/q) in its seasonally adjusted series. Partial information for the fourth quarter also shows an increase in non-mining activity in October, with a monthly variation of the non-mining Imacec of 0.5%. In turn, the trajectory of domestic demand has been in line with September forecasts, as it recorded a fall of 0.6% q/q in the third quarter.

In any case, activity has shown a heterogeneous behavior across sectors (figure I.10). Some sectors show a slight rebound, such as trade —especially wholesale and car sales— and some industrial branches. Added to this is the dynamism in the electric power generation due to increased water supply, and the resilience of service activities. This contrasts with the persistent weakness of construction. Mining showed an improvement during the third quarter, linked to the entry of a new investment project and the boost in lithium production, although the latest monthly figure shows a marginal drop (box I.1).

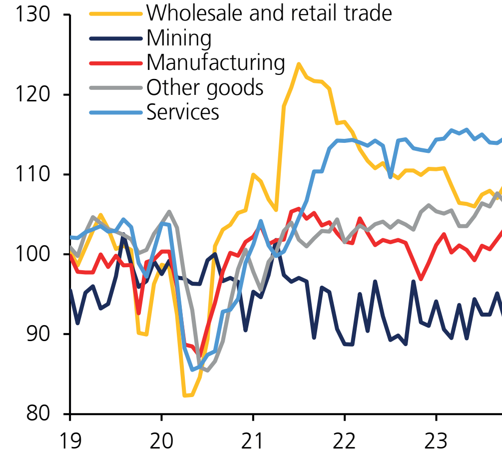
The trajectory of private consumption is also showing an incipient increase (figure I.11). The seasonally adjusted series of private consumption expanded 1.2% q/q in the third quarter, with the increase in the sale of durable goods such as cars and tech products standing out. Although not as much, regular consumption, which includes non-durable goods and services, also improved. These results are confirmed by the most recent evolution of indicators such as the retail trade activity index (IACM), automobile sales (ANAC), and digital invoice data. Meanwhile, government consumption grew by 0.9% q/q in the third quarter, due to higher spending on both goods and services.

FIGURE I.10

Activity
(index, 2013.Q1 = 100, real seasonally-adjusted series)

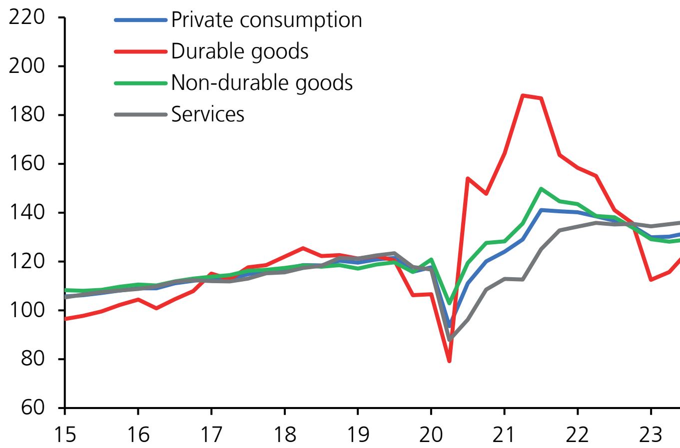


Imacec by sectors
(index, 2018 average = 100, real seasonally-adjusted series)



Source: Central Bank of Chile.

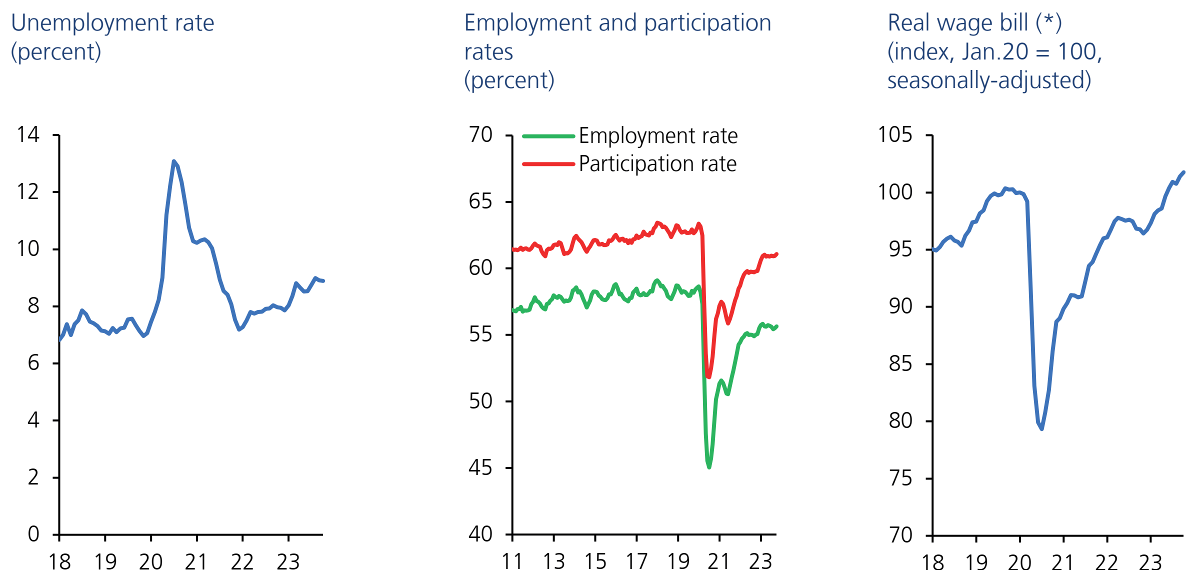
FIGURE I.11 PRIVATE CONSUMPTION BY COMPONENTS
(index, 2013.Q1 = 100, real seasonally-adjusted series)



Source: Central Bank of Chile.

The labor market has behaved in tune with the state of the business cycle. Labor supply and demand remain with limited dynamism. The unemployment rate for the moving quarter ending in October reached 8.9%, with no big changes compared to previous data, but almost 1pp above its level one year ago (figure I.12). The employment and participation rates have remained stable in recent months, although they are still low by historical standards for people who are near or at their retirement age. On the demand side, the Internet Job Ad Index (IALI) continues at low levels. Employment expectations in the Monthly Business Confidence Indicator (IMCE) are deteriorating in every sector except mining. All in all, real labor income has continued to normalize, favored by the decline in inflation.

FIGURE I.12

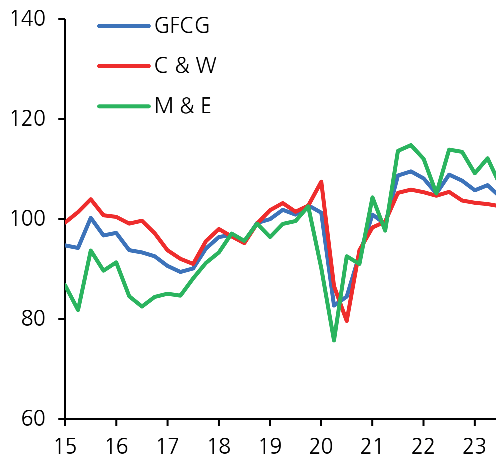


(*) Calculated using seasonally-adjusted real labor cost series, usual hours worked, and employment.
Sources: Central Bank of Chile and National Statistics Institute.

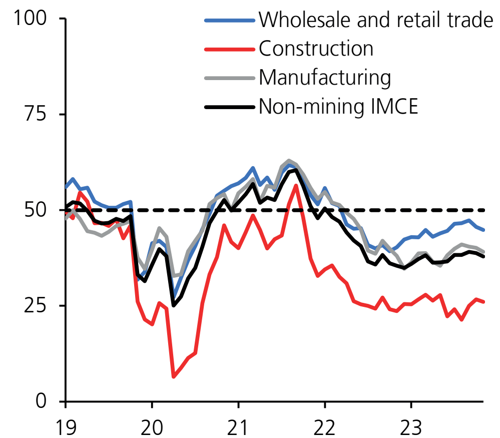
Investment growth is still showing volatility, mainly linked to the machinery and equipment component (figure I.13). The contraction of the latter determined the result of gross fixed capital formation (GFCF) in the third quarter, which was -2.2% q/q in its deseasonalized series. In any case, this component has been very volatile in the most recent period. Investment in construction and other works has kept gradually declining, especially due to the deterioration of the housing and real estate segment. Sectoral expectations are negative. On the one hand, the IMCE has been in contractionary territory for several months. On the other hand, the Business Perceptions Report (IPN) for November showed that only one third of companies plan to invest in 2024, very similar to what was reported in 2021 and 2022. In that report, companies linked the weak performance of investment mainly with uncertainty about the state of the economy.

FIGURE I.13

Gross fixed capital formation (GFCF)
(index, 2013.Q1 = 100, real seasonally-adjusted series)



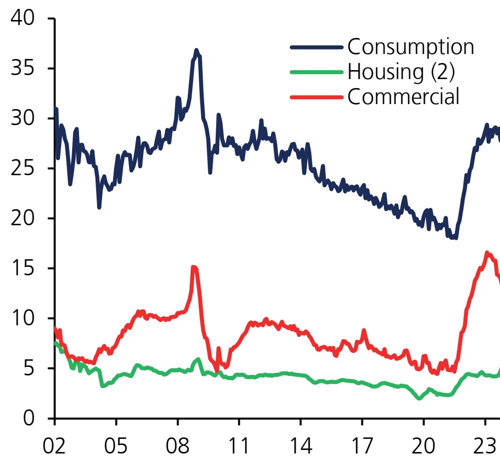
IMCE (*)
(diffusion index)

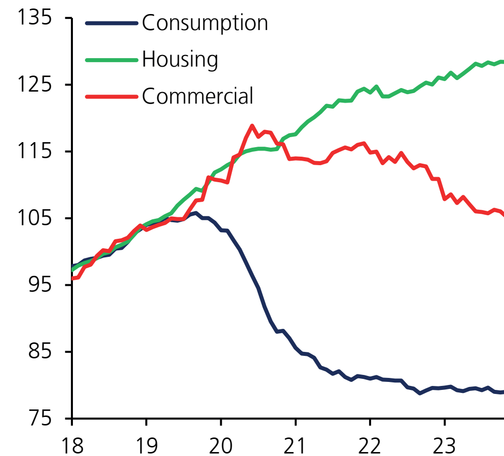


(*) Value above (below) 50 denotes optimism (pessimism).
Sources: Central Bank of Chile and ICARE/Universidad Adolfo Ibañez.

Short-term financial conditions have somewhat eased, while long-term ones remain tight in historical perspective (figure I.14). Interest rates on commercial and consumer loans, which are more linked to monetary policy, have continued to fall in recent months, reflecting the pass-through of the cuts in the monetary policy rate (MPR). By contrast, mortgage rates, which are more related to long-term financing conditions, have risen since our September Report. This is explained by the increase in long-term rates that was seen internationally and locally until early November—which risks were assessed in the Financial Stability Report (FSR) for the second half of 2023—and has endured despite the reversal of the long-term rates trajectory in the past few weeks. In turn, the stock of real loans remains low in all three portfolios. The Bank Lending Survey (BLS) for the third quarter of 2023 shows that credit supply has become more flexible in the consumer segment but remains unchanged in housing and restrictive for SMEs. Consumer credit demand has recently strengthened, but the other portfolios continue to deteriorate. Among the reasons expressed by IPN interviewees in November 2023 were the perception that interest rates are still high compared to previous years, the deterioration of economic expectations, high uncertainty and the perception of more stringent requirements from financial institutions when applying for a loan in some cases.

FIGURE I.14





(1) Weighted average rates of all operations performed in each month in the Metropolitan Region. (2) UF-denominated loans. (3) Real data built with spliced CPI in 2018 annual base.
Source: Central Bank of Chile.

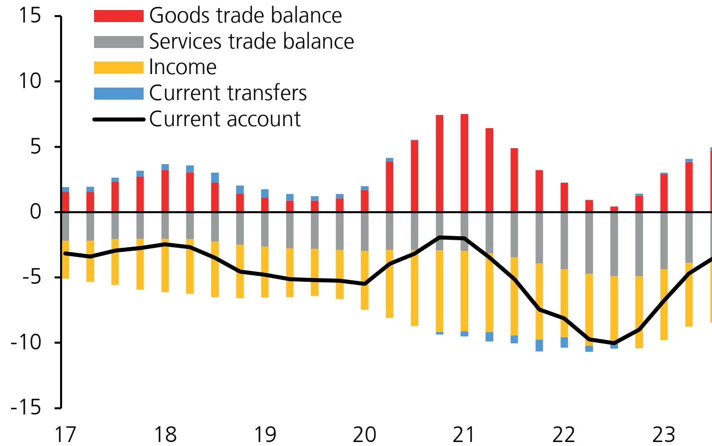
The current-account deficit narrowed further during the third quarter and reached a cumulative balance in a moving year of 3.5% of GDP (figure I.15). Private savings continued to rebound and, more recently, have even compensated for the fall in government savings to sustain the recovery of total national savings. By components, the improvement in the current account from the previous quarter (-4.7% of GDP) is explained by the surplus in the trade balance of goods —especially due to lower imports of intermediate and consumer goods— and net transfers. In turn, the services trade balance and income registered deficits.

Inflation expectations within the monetary policy horizon remain around the target (figure I.16). The December Economic Expectations Survey (EES), the Financial Traders Survey (FTS) prior to the December Monetary Policy Meeting and the expectations inferred from breakeven inflation are around 3% at two years. At one year, the EES and the FTS are also close to 3%. At the statistical closing, and considering the 10-days average prior to it, the implicit outlook in inflation insurances had fallen significantly, largely influenced by low inflation expectations for November, which have tended reverse after the November inflation turned out to be higher than expected. Finally, the Survey of Price Determinants and Expectations (EDEP) for the moving quarter ending in October maintains two-year inflation expectations at 4%.

Market expectations for economic growth this and next year remain in line with the central scenario of the previous Report. This year's growth forecast reported by the EES slightly improved to -0.1%, while that of Consensus Forecasts remains at -0.3%, same figure reported at the statistical closing of the previous Report. For 2024, growth expectations are slightly below 2% (1.7% and 1.8% in the EES and Consensus Forecasts, respectively).

The MPR trajectory expected by the market and specialists suggests that the process of monetary policy normalization will continue its course. Towards the end of the monetary policy horizon, different projections place the MPR between 4.25 and 4.5%.

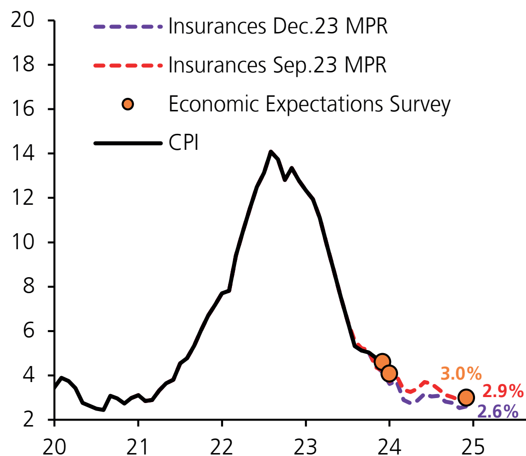
FIGURE I.15 CURRENT ACCOUNT AND CONTRIBUTIONS BY COMPONENT
(percent of GDP, moving annual sum)



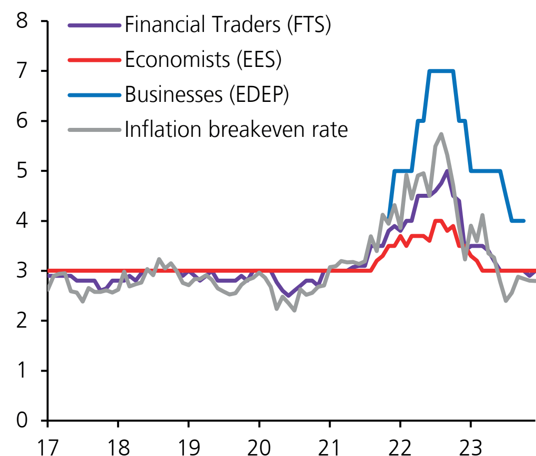
Source: Central Bank of Chile.

FIGURE I.16

Actual and expected annual inflation (1)
(annual change, percent)



Two-year inflation expectations (2)(3)(4)
(annual change, percent)



(1) Inflation insurances consider the average prices of 10 days at the statistical closure of each MPR (August 30th for September; December 13th for December). (2) Shows median responses. (3) The FTS considers the survey of the first half of each month up to January 2018. From February 2018 onwards, it considers the last survey published in the month, including the one prior to the December 2023 monetary policy meeting. In the months where no survey is published, the latest available one is used. (4) Breakeven inflation considers averaged prices of the last 10 days of each month. For December 2023 it takes into account the average of the last 10 days prior to the statistical closure of this Report.
Source: Central Bank of Chile.

BOX I.1:

Mining activity's recent evolution and outlook

Mining was the sector that contributed the most to GDP growth in the third quarter of this year, after expanding 4.6% annually. The sector's performance was explained by higher copper grades, the entry into operation of an important investment project and the growing boost of lithium production. In the central scenario of this Report, mining will increase 1.1% this year and 3.3% next year, explaining around a quarter of GDP growth in 2024. However, there are risks that could affect expected investment and the foreseen output increase. This box describes the recent evolution of mining, its impact on the other sectors, and its outlook.

Recent developments

The copper industry has seen declines in recent years. Among other factors, this has been a reflection of various operational problems, lower ore grades and difficulties associated with the water shortage that has affected the country. More recently, copper production has recovered,[1]/ while lithium production — which is part of "other mining activities"— has been highly dynamic. The latter sub-activity has grown around 10% annually in the last three years and has doubled its share in the mining GDP. As for lithium, its weight in the export basket of goods has increased sevenfold.

Mining linkages with other sectors

The increase in mining output has multiplier effects on the rest of the economy. One way to measure them is through the input-output matrix, which allows estimating their indirect impact via the mining sector's demand for intermediate goods. According to its latest publication (2020), a 3.3% growth in mining GDP would generate an increase of 0.59pp in total output, considering the direct (0.46pp) and indirect (0.12pp) impacts on non-mining sectors, the latter concentrated in entrepreneurial services, manufacturing industry, and wholesale and retail trade. In the case of the lithium industry, entrepreneurial services is the sector that would expand the most from an increase in this mineral production, showing a greater indirect impact in relative terms than copper mining.[2]/

Alternatively, the multiplier effect of mining is estimated using a networks methods on firm-level microdata.[3]/ This analysis suggests a broader linkage of mining with the rest of the economy, since it not only considers its effect through intermediate purchases but also in investment expenditures linked to the construction sector (figure I.17a). Along these lines, previous estimates suggest that an increase in construction via increased mining investment has an even greater indirect impact, in relative terms, on total GDP than that shown by mining production.[4]/

Mining production and investment outlook

The projected increase for mining production responds mainly to the entry of new copper projects, such as the start up of Quebrada Blanca, Phase II. In turn, according to Cochilco's information and the latest cadastre of the Capital Goods Corporation, the average annual mining investment for the three-year period 2024-2026 is expected to be between 30% and 40% higher than that of 2023 (figure I.17b). Yet, and in contrast to the last five-year periods, it is expected that mining will have a significant impact on economic growth during the 2023-2025 period (table I.1), consistent with the increase in copper and lithium production, as well as the positive outlook for investment.

[1]/ Although mining contracted by 4% annually in October 2023, this was due to one-off problems at some mine sites

[2]/ For details, see the Bank's publication Importancia reciente del litio en la economía chilena.

[3]/ Guzmán et al., (2023) explain the application of the GLASSO methodology for mining.

[4]/ Previous estimates indicate that a 3.5% increase in the construction sector via mining investment would generate an annual increase of around 0.5 pp of GDP (box III.2, December 2018 MP Report).

Final remarks

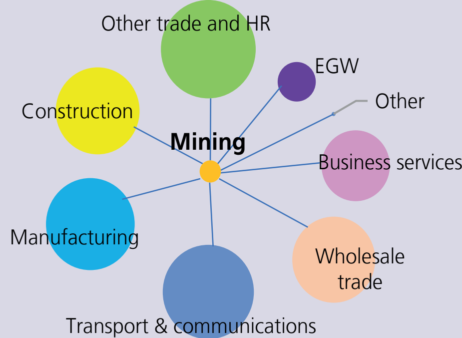
While the outlook is favorable, there are several risks that could negatively affect production and investment in the sector. As regards international factors, the weakness of real-estate industry in China, the strong dollar, and tighter global financial conditions are some of the factors that could influence the copper price and companies' investment plans.

At the same time, there is high uncertainty regarding the timeframe in which companies will meet their investment schedules. According to the Office of Major Projects (OGP), 58% of the current initiatives that have a planned operation date for 2023-2026 and have applied for environmental permits, are still going through the formalities phase, which is characterized by a higher probability of delays and rescheduling. It cannot be ruled out either that investment will end up being more positive than expected. In particular, the OGP information also includes other large-scale mining projects that could be incorporated in the short term and thus boost investment.

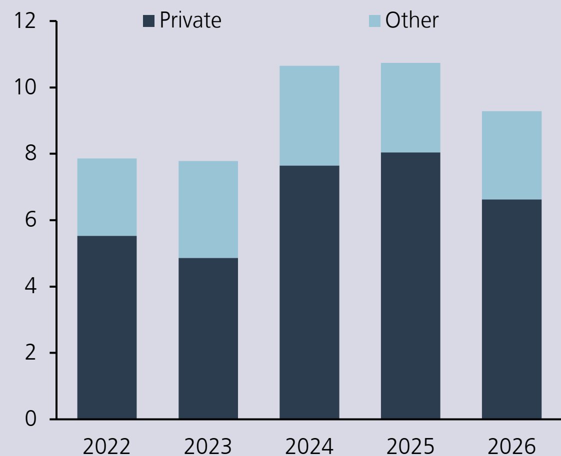
Finally, the energy transition linked to climate change mitigation represents a potential additional source of growth. This is so because the sector is expected to play a fundamental role in the global energy transition, due to the use of both copper and lithium in the generation of renewable energies and electromobility.

FIGURE I.17

(a) Mining linkages across sectors according to microdata
(partial correlations with purchases in the rest of the economy)



(b) Mining investment expectations
(billions of dollars)



Sources: Central Bank of Chile, Cochilco (2022), Environment Evaluation Service and the Tax Administration (SII).

TABLE I.1 MINING AND TOTAL GDP
(annual change, percent)

	2000 - 04	2005 - 09	2010 - 14	2015 - 19	2020 - 22	MPR Dec.23		
						2023 (f)	2024 (f)	2025 (f)
Mining GDP	0.6	-1.8	1.6	-0.8	-1.7	1.1	3.3	3.5
Total GDP	4.5	3.9	4.7	2.0	2.7	0.0	1.25 - 2.25	2.0 - 3.0

(f) Forecast.
Source: Central Bank of Chile.

BOX I.2:

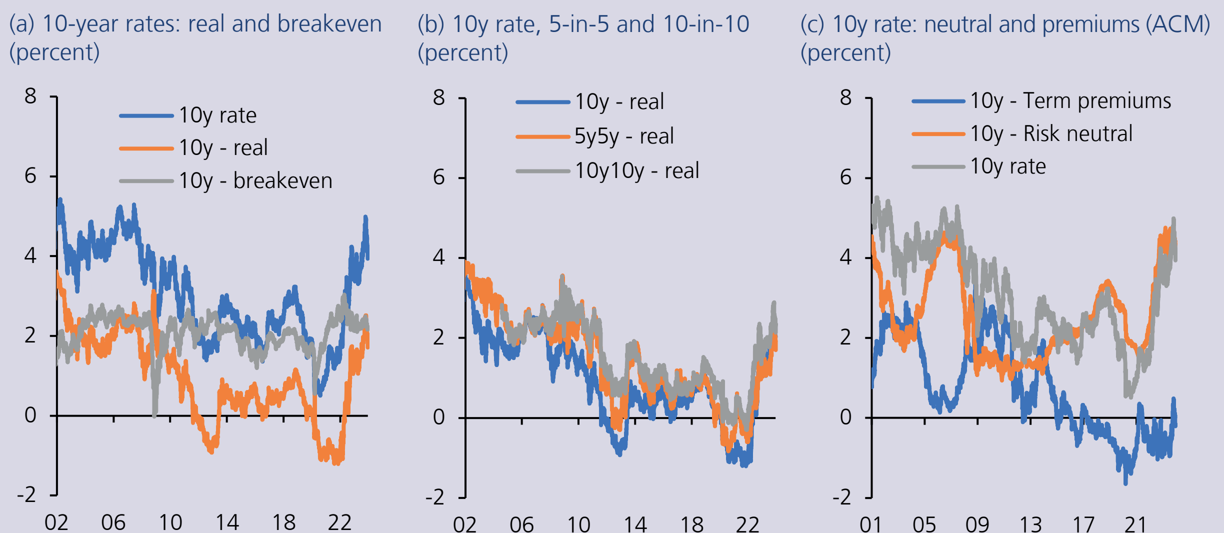
Recent movements in long-term rates and their impact on investment

In general, long-term interest rates depend on the expected path of monetary policy and a set of premiums that compensate for the risks associated with investing in instruments with maturities far in time. There is also the influence of expectations and external premiums, mainly those of the U.S., which tend to be partially passed on to local rates. Long-term interest rates, both global and local, rose significantly during the fourth quarter, which stressed financial conditions globally. Although this was a transitory phenomenon, the volatility of long-term rates has increased and remains a significant risk element of both the external and the domestic macro framework. This box analyzes the recent movements of long rates in the U.S. and Chile and their impact on local investment.

External factors

Compared to the beginning of 2022, the 10-year nominal interest rate on U.S. Treasury bonds has increased by about 200 basis points (bp), mainly due to changes in the real interest rate (+250bp) (figure I.18a). Part of this increase responds to the Fed's monetary tightening, which has raised the fed funds rate by 525bp since March last year. In addition, the longer tranches of the yield curve —not influenced by short-term monetary policy— also posted considerable increases. For example, the real 5-in-5 and 10-in-10 rates have risen by about 190bp (figure I.18b). Such movements would be associated both with expectations of a higher long-term neutral interest rate and with greater uncertainty about its level[1]. Considering the time span between early 2022 and mid-2023, various statistical models indicate that the expectations component would have played a more important role than uncertainty for the bulk of the increase in that period (figure I.18c).

FIGURE I.18 LONG-TERM RATES ON U.S. TREASURY BONDS



Sources: Adrian, Crump and Moench (2013) and Bloomberg.

[1]/ Models that decompose rates into a risk-neutral rate and term premiums (see Adrian, Crump and Moench (2013); Christensen and Rudebusch (2012); Kim and Wright (2005)) suggest that the U.S. 10-year rate has risen primarily because of the rise in the neutral rate, although more recently premiums have also increased. Multiple reasons have been put forward for the increase in the long-term neutral rate, including the long-term fiscal situation in the U.S., investment needs for the energy transition, demographic changes, and potential geopolitical conflicts, among other explanations.

Taking into account the most recent period, particularly the fourth quarter, risk premiums are estimated to have played an important role in the high volatility of the U.S. 10-year rate (figure I.18c). Then, the rate climbed to around 5%, before returning to lower values towards the statistical cut-off of this Report (Chapter I). This reflects the market's high sensitivity to incoming news, given the high uncertainty regarding the short- and medium-term macro evolution, including the Fed's arrival rate. In fact, the possibility that long-term rates may again show abrupt movements of significant magnitude is an important source of risk for the international and local macroeconomic scenarios.

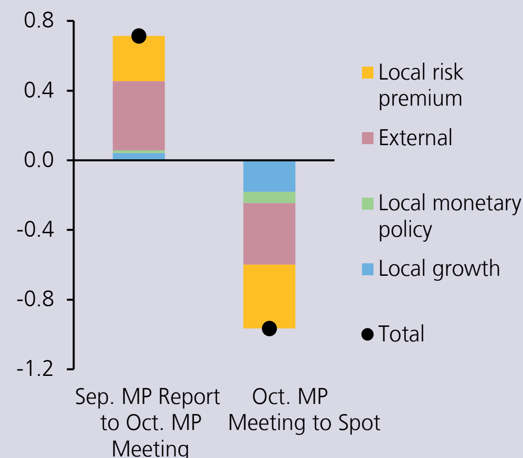
Long rates in Chile and their impact on the local economy

The volatility of long rates in the U.S. was also evidenced locally. Between early August and the end of October, the benchmark long-term rate —measured by the BTP-10— rose by around 150bp, a rise that was reversed in the last month. A structural decomposition of the movements of this rate suggests that lately these have been attributed mainly to local and external risk factors (figure I.19a).

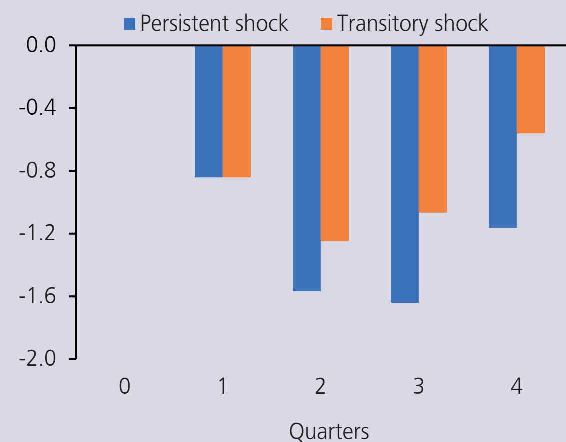
As has been analyzed in previous Reports[2]/, increases in the long rate associated with risk shocks have contractionary effects on the economy, especially on investment. Based on these analyses, it is estimated that an external and local risk premium shock of similar magnitude and duration to the recent episode (30bp of local and 40bp of external premiums for two to three months) has cumulative negative effects on one-year-ahead investment of around 0.5pp of lower growth. If rates had remained high instead of falling as they did, the negative impact on investment would have been twice as large (figure I.19b).

FIGURE I.19 MOVEMENT OF CHILEAN LONG RATES AND ESTIMATED IMPACT ON GFCF

(a) Structural decomposition of the zero swap 10-year rate (1)
(percent)



(b) GFCF response to a risk shock such as the recent one in the long-term interest rate (2)
(percent)

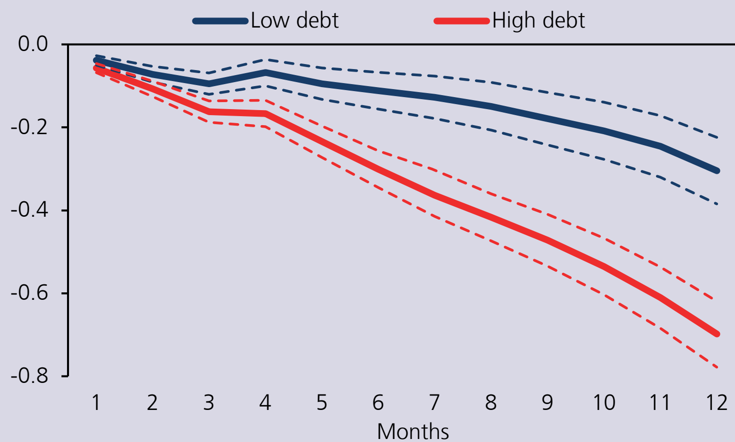


(1) Structural decomposition based on Eterovic and Eterovic (2022). Spot data corresponds to 12/12/2023. For more details, see box V.1 IPoM December 2021. (2) Impulse response function of a Bayesian autoregressive model (BVAR) with zero and sign restrictions, calibrated with pure risk shocks based on Eterovic and Eterovic (2022). For details, see box V.1 in December 2021 Report.
Sources: Central Bank of Chile and RiskAmerica.

[2]/ See Box V.1 in December 2021 MP Report.

External and local risk premium shocks may have a heterogeneous impact between firms, with indebtedness level being one of the variables that may determine the differences. A microdata-based analysis[3]/ indicates that a risk premium shock of the observed magnitude has significantly greater effects on the investment decision of firms with high levels of indebtedness[4]/. For these, the negative impact on investment is 0.7pp of lower growth in one year, which drops to 0.3pp for firms with low indebtedness (figure I.20). It should be noted that this heterogeneity is mainly associated with a differentiated response to the external risk shock and not so much to local risk.

FIGURE I.20 INVESTMENT RESPONSE AT THE FIRM LEVEL TO LONG RATE SHOCKS SIMILAR TO THE RECENT ONE (*)
(percent)



(*) The figure shows the percentage change in the investment of high- and low-leveraged firms in response to risk shocks, which generate an aggregate fall of 0.5pp. Confidence intervals of 90% (Andalaft *et al.*, 2023).
Sources: Central Bank of Chile, CMF, Risk America and SII.

Conclusions

This analysis suggests that long-term rate movements of the magnitude and duration experienced in recent months may have important effects on investment and, consequently, on activity. The sharp increases between September and the end of October were a transitory phenomenon, which has been assigned a negative, yet limited, impact on investment in the coming quarters. Its partial effect on one-year investment projections —which consider multiple elements besides long rates— is of the order of half a percentage point. However, the high volatility shown by long rates in response to macroeconomic news of different nature transforms this element into a considerable source of risk in the global macro framework and for the Chilean economy.

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[3]/ A company is considered large only if its annual sales are above the median in the universe of firms with more than five employees, and the financial sector is excluded.

[4]/ Highly indebted companies refers to those that are above the median leverage —debt over sales— for each year.

BOX I.3:

The annual Conference of the Central Bank of Chile

The twenty-sixth Annual Conference of the Central Bank of Chile was held on 27-28 November and focused on the implications of climate change and the degradation of ecosystemic services for macroeconomic and financial stability. Maximilian Aufhammer (University of California at Berkeley) co-organized the event, with the participation of leading international experts in related literature who, together with researchers from the Central Bank of Chile, presented a series of papers written for the occasion. The opening speech given by the Bank's Governor Rosanna Costa, discussed the relevance of these issues for a better understanding of the macroeconomy and its future evolution. She also emphasized the Bank's role in measuring the country's natural capital and the importance of introducing environmental aspects in modeling for macroeconomic forecasting purposes, as well as taking them into consideration when quantifying financial risks. Finally, she stressed that, although mitigation and adaptation policies associated with climate change and the degradation of ecosystemic services are not within the Bank's competence, the quantification of their effects on the economy and the provision of these analyses to enrich public discussion are[1]/.

Some aspects discussed during the Conference were the mitigation of the effects of climate change and adaptation to a changing environment. In this sense, the energy transition that allows a significant reduction in CO2 emissions is one of the main objectives of the policies that governments should incentivize in the short term. This was the subject of a speech by Philippe Aghion, professor at the College de France and the London School of Economics, and an expert on economic growth and innovation. Professor Aghion highlighted the role of public policies in encouraging investment in clean technologies, accelerating the energy transition to avoid higher future costs, and helping to internalize the externalities of pollution and know-how associated with this transition.

During the panel discussion on the macroeconomic effects of climate change and the degradation of ecosystemic services, the participants pointed out that the negative consequences of climate change would be particularly relevant for developed and emerging economies and, especially, for Latin American countries that are naturally more prone to extreme weather events. The specialists argued that the benefits of moving towards clean production technologies are multiple, in terms of both their contribution to the global reduction of CO2 emissions and its effects on climate change mitigation and their immediate effects on health due to less environmental pollution. Finally, during the discussion it was pointed out that the spillover effects of investments associated with the energy transition can be very significant since they demand goods and services from other economic sectors, and in turn encourage investments and efforts in research and development that could potentially lead to increases in aggregate productivity.

[1]/ All Conference presentations can be accessed on the Central Bank of Chile's website and YouTube page.

As the conference concluded, there was a panel discussion on the financial stability impacts of climate change. Different approaches that a growing number of central banks have adopted to include climate issues in their financial stability modeling and monitoring were discussed, in line with their mandates and objectives. The main challenges of implementing this type of consideration were also addressed, from the production of statistics to the analytical tools needed to factor climatic elements into macro-financial models. Finally, it was emphasized that big challenges still lie ahead in understanding the different channels through which climate change is passed through to financial systems.

The task of proper measurement, evaluation, and understanding of the impacts of climate change and the degradation of ecosystem services is a priority given its impact on macroeconomic and financial stability. The Bank, in its constant quest to improve its understanding of the Chilean economy, will be making efforts directed toward this task as part of its 2023–2027 five-year strategic plan.

II. FUTURE EVOLUTION OF MONETARY POLICY

In general terms, the macroeconomic scenario has evolved in line with forecasts in the September MP Report: inflation has continued to recede and will reach the 3% target in the second half of 2024 quarters. Activity resumed slightly positive quarterly expansion rates, although some heterogeneity remains both in the performance of the different economic sectors and in domestic demand, which shows somewhat more private consumption and less investment. The world economy has performed better than expected in recent months, particularly the US and China. This, added to the resilience that consumption has shown in the first economy and the announcement of fiscal measures in the second, increases the expected growth of the main trading partners and positively affects the external boost that the Chilean economy will receive in the next two years. Higher terms of trade are added, due to better prospects for the copper price. External financial conditions have improved in recent weeks and have returned to the levels at the beginning of the year, with outlooks that have also improved. In this context, the Chilean economy will end this year with zero growth, to show positive growth rates in 2024 and 2025: between 1.25 and 2.25% and between 2 and 3%, respectively. Total inflation is projected to continue to decline, to reach 3% in the second half of 2024, while the convergence for core inflation —CPI without volatiles— is anticipated for the first semester of next year. Since July, the Monetary Policy Rate (MPR) has accumulated a decrease of 300 basis points (bp). The Board considers that, in line with the central scenario of this MP Report, the convergence of inflation to the target will require further cuts in the MPR. Its magnitude and timing will take into account the evolution of the macroeconomic scenario and its implications for inflationary path. However, the process of inflationary convergence is not free of risks, which remain linked mainly to the external outlook.

STRUCTURAL PARAMETERS

In this MP Report, the Board updated its estimates for the structural parameters used in the medium-term projections.

Non-mining trend GDP growth will follow a decreasing path over the coming years, to average 1.9% in the 2024-2033 period. This value is compared to the previous estimate made in the December 2022 MP Report, which resulted in 2.2% for the period 2023-2032. This lower figure is mainly justified by the adjustment of the reference decade that each average covers and does not imply a significant change in the projected path. Furthermore, the estimate considers that labor participation has already recovered a good part of its pre-pandemic levels and once again incorporates low growth in total factor productivity. For the purposes of calculating the medium-term projections of this MP Report, the average non-mining trend GDP growth for the five-year period 2024-2028 is used, which corresponds to 2.3% (Box II.1).

The nominal neutral MPR (NMPR) increases by 25bps compared to the previous estimate, up to 4%. This is consistent with the increase in estimates for neutral monetary policy rates in other economies (Box II.2).

ACTIVITY AND DEMAND PROJECTIONS IN THE CENTRAL SCENARIO

Activity in the third quarter was somewhat above expectations. Mainly, this responded to a better performance of non-mining activity, where the rise in wholesale and retail trade, some manufacturing branches and the electricity, gas and water (EGA) sector stood out. The added value of the latter continued to be driven by greater hydroelectric generation at the expense of thermal sources.

Internal demand performed in line with what was projected, although with dissimilar behavior among its components. On the one hand, private consumption exceeded expectations and even grew in the third quarter in its seasonally adjusted series compared to the previous quarter, favored by higher sales of durable goods, mainly automobiles and technological products. Added to this was greater government consumption, due to increased spending on some services and goods. Partial indicators for the fourth quarter—such as retail sales (IACM), new automobile sales (ANAC) and electronic ticket sales figures—confirm these trends. For its part, in a context of high volatility in investment data (Gross Fixed Capital Formation, GFCF), the third quarter result was lower than expected due to a greater contraction in the machinery and equipment component.

Regarding projections, it is estimated that 2023 will close with zero growth in activity, and falls of 4.6 and 1.9% annually in private consumption and GFCF, respectively (-4.9 and -1.2 % in September, in each case). The performance of the activity improves compared to what was expected in September, since the upward revision of the GDP—both mining and non-mining—for the first three quarters of the year is incorporated after the publication of the National Accounts, to which is added a positive result in the October Imacec, particularly in the wholesale and retail trade and manufacturing industry sectors. In the case of demand, discounting variations in inventories, an annual drop that is somewhat smaller than expected is projected for this year (3.0 versus 3.1% in September), reflecting lower imports of goods.

Projected GDP growth ranges remain at 1.25-2.25% for 2024 and 2-3% for 2025. This considers that non-mining GDP will continue to present positive quarterly variations, gradually approaching rates in line with its trend growth. In the case of mining activity, an important contribution is projected to the GDP expansion next year, both due to the recent entry into operation of new copper mines and the growing momentum of lithium production. This, beyond the recent announcements of production cuts (Box I.1). Regarding domestic demand, it is expected to return to positive growth rates next year (table II.1, figures II.1 and II.2).

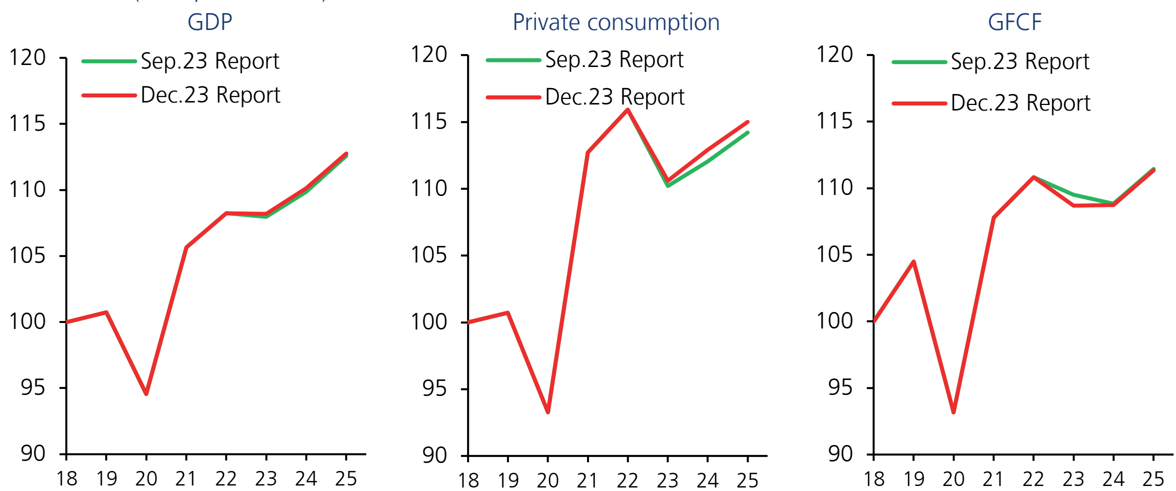
Regarding the next two years, in the central scenario, private consumption growth is revised upwards for 2024 and remains unchanged in 2025 (table II.1; figures II.1 and II.2). The growth of labor income plays an important role in this, reflecting that the real wage bill has been helped by lower inflation. This, in the context of a labor market that maintains slow job creation and a still weak demand for labor, which is consistent with the evolution of the economic cycle. Furthermore, the unemployment rate remains above its historical average. Added to this are the improvement in credit conditions relevant to consumption—consistent with the transmission of the MPR cuts—, and the impact of lower inflation on people's financial burden.

TABLE II.1 ECONOMIC GROWTH AND CURRENT ACCOUNT

	2022	2023 (f)	2024 (f)	2025 (f)
	(annual change, percent)			
GDP	2.4	0.0	1.25-2.25	2.0-3.0
National income	1.5	1.3	1.9	2.9
Domestic demand	2.3	-4.6	2.0	2.7
Domestic demand (w/o inventory change)	3.0	-3.0	1.5	1.9
Gross fixed capital form	2.8	-1.9	0.0	2.4
Total consumption	3.1	-3.3	2.0	1.8
Private consumption	2.9	-4.6	2.1	1.8
Goods and services exports	1.4	1.0	3.4	1.9
Goods and services imports	0.9	-11.1	4.3	2.9
Current account (% of GDP)	-9.0	-3.3	-4.0	-3.9
Gross national saving (% of GDP)	16.4	18.8	18.4	19.1
Gross national investment (% of GDP)	25.4	22.1	22.4	23.1
GFCF (% of nominal GDP)	24.8	23.3	23.1	23.0
GFCF (% of real GDP)	23.6	23.2	22.8	22.8
	(US$ million)			
Current account	-27,102	-10,600	-13,500	-14,400
Trade balance	3,807	14,700	11,100	10,000
Exports	98,548	95,000	96,700	102,300
Imports	94,741	80,300	85,600	92,300
Services	-14,824	-10,200	-10,000	-10,100
Rent	-16,520	-15,800	-15,300	-15,000
Current transfers	434	700	700	700

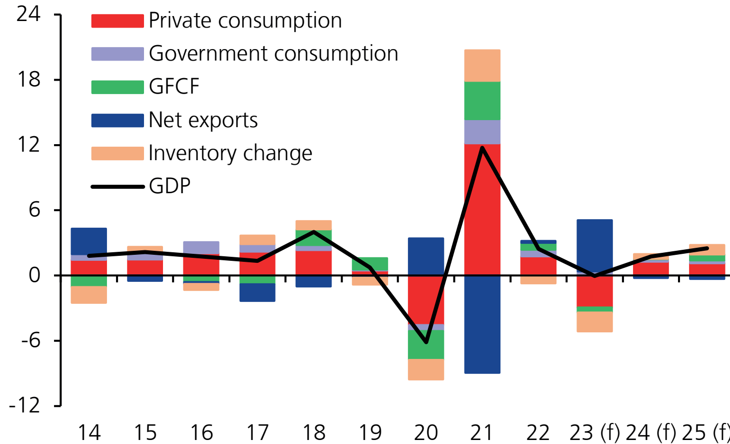
(f) Forecast.
Source: Central Bank of Chile.

FIGURE II.1 ACTIVITY, PRIVATE CONSUMPTION AND GFCF (*)
(index, 2018 =100)



(*) For 2023, 2024 and 2025 correspond to the forecast contained in this MP Report. For 2024 and 2025 consider the midpoint of the projected GDP growth ranges. Source: Central Bank of Chile.

FIGURE II.2 GDP GROWTH AND AGGREGATE DEMAND COMPONENTS CONTRIBUTIONS (*)
(annual change, percentage points)

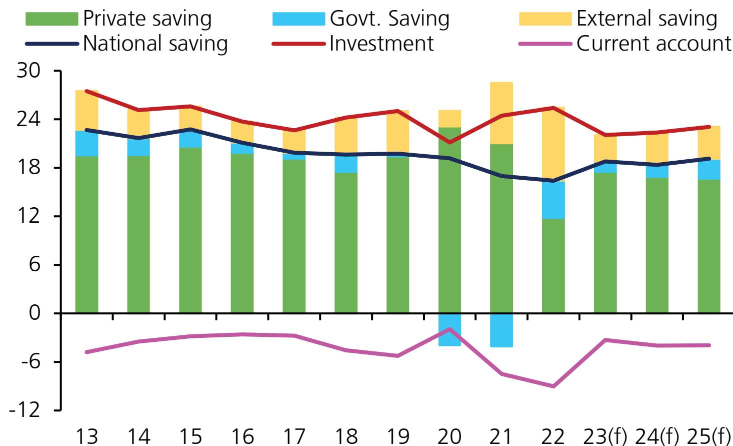


(*) For 2024 and 2025, the projections consider the midpoint of the forecast ranges of this MP Report. (f) Forecast.
Source: Central Bank of Chile.

The GFCF is projected to have zero growth in 2024 and will expand again in 2025, with a relevant boost to the development of engineering works. The expected performance considers the best prospects of the investment cadastres for the coming years (CBC and OGP), particularly in the mining and energy sectors. In contrast, financial conditions have remained unfavorable globally for several quarters, to which was added the episode of financial tension that occurred in October and which has been reversed in recent weeks. It is estimated that, in the case of Chile, a risk premium shock similar to the recent event would subtract about 0.5 percentage points from GFCF growth between 2023 and 2024 (Box I.2). Thus, the GFCF is expected to expand 0 and 2.4% in 2024 and 2025, respectively (-0.6 and 2.4% in September) (table II.1; figures II.1 and II.2).

The projection for the current account deficit for this and the next two years does not undergo major changes compared to September Report. The central scenario continues to project that this year it will be at 3.3% of GDP, to be around 4% in 2024 and 2025. This continues to contemplate the recomposition of the balance between savings and investment, supported by the recovery that has shown private savings (table II.1 and figure II.3).

FIGURE II.3 CURRENT ACCOUNT: SAVINGS AND INVESTMENT (*)
(percentage of annual GDP)

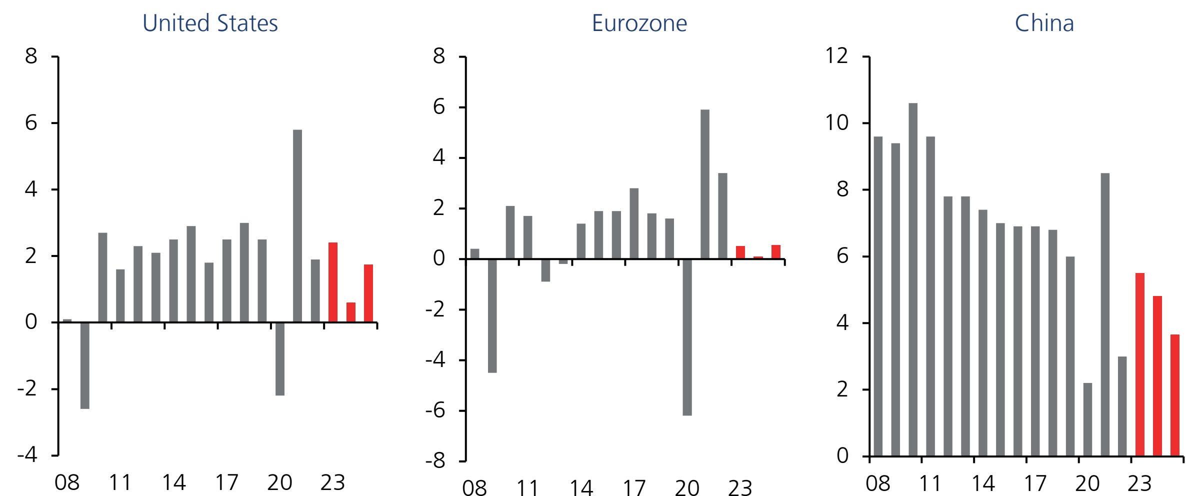


(*) The government saving component considers the general government balance as effective data until 2022; for 2023 to 2025, government saving from the central government balance are used as a projection. (f) Forecast. Source: Central Bank of Chile.

The central scenario contemplates a trajectory of public spending consistent with the budget approved for 2024 and the latest Public Finance Report (IFP). In this way, public spending will increase 2.2% real annually this year, and then grow around 3.5% real annually in 2024. For its part, this year the structural balance will have a more deficit position than previously contemplated (-2.6% versus -2.1% in the previous IFP), although it is expected to reduce in 2024 and 2025 (to -1.9 and -1.1% of GDP, respectively).

The external boost that the Chilean economy will receive will be greater than expected in September Report, as greater growth is expected from trading partners in the short term, particularly the US and China. In the first case, consider the best actual data and the strength that consumption has shown, in the midst of a labor market that has been adjusting, although it remains tight. In China, it is based on the fiscal measures announced a few weeks ago, which will provide a greater boost to the economy. In any case, its growth rates will remain below their historical averages and there are still risks in its economy (Chapter I)[1]/. This scenario will favor the external demand that different sectors will face at the local level. All in all, trade partners will grow on average 3.0% between 2023 and 2024 (2.7% in September). For 2025, however, a smaller expansion is expected than that forecast in September Report (2.5% versus 2.9% in September) (figure II.4 and table II.2).

FIGURE II.4 TRADING PARTNERS GROWTH PROJECTIONS (*)
(annual change, percent)



(*) Red bars correspond to the projections of the central scenario of this MP Report.
Source: Central Bank of Chile.

Added to the above is the upward revision of the terms of trade projected for 2024 and 2025, justified mainly by the better prospects for the copper price (figure II.5 and table II.3). The better short-term projection for China and the greater demand that copper will face due to the energy transition are the main factors behind this review. Thus, it is expected to remain around US$3.80 per pound for the next two years. For oil and food, the price projection does not undergo major changes and it is still expected that they will decrease within the projection horizon. With this, the price of a barrel of oil (Brent-WTI average) is expected to average US$80 in 2023 and drop to US$72 in 2025.

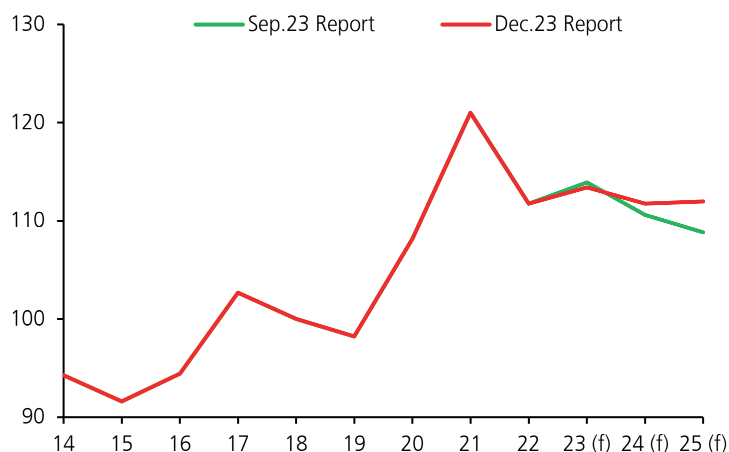
[1]/ For more details about the situation facing the real estate sector in China, see Sector inmobiliario en China - Banco Central de Chile (bcentral.cl)

TABLE II.2 WORLD GROWTH (*)
(annual change, percent)

	Aveg. 10-20	2021	2022 (e)	2023 (f)	2024 (f)	2025 (f)
World GDP at PPP	3.1	6.3	3.3	3.1	2.6	2.6
World GDP at market exchange rate	2.8	6.4	2.9	2.7	2.0	2.2
Trading partners	3.4	6.8	2.8	3.4	2.7	2.5
United States	2.0	5.8	1.9	2.4	0.6	1.7
Eurozone	0.7	5.9	3.4	0.5	0.1	0.6
Japan	0.7	2.3	0.9	1.7	1.1	0.9
China	7.2	8.5	3.0	5.5	4.8	3.7
India	5.8	9.1	7.2	6.3	6.0	5.8
Rest de Asia	3.8	4.4	4.2	3.0	3.7	3.5
Latin America (excl. Chile)	0.9	6.8	3.9	2.0	0.8	1.5
Commodity exp.	1.7	5.0	3.2	1.2	0.6	1.8

(*) For definition, see Glossary of economics terms. (f) Forecast. (e) Estimate.
Source: Central Bank of Chile based on a sample of investment banks, Consensus Forecasts, the IMF, and statistics bureaus of respective countries.

FIGURE II.5 TERMS OF TRADE
(level, 2018=100)



(f) Forecast.
Source: Central Bank of Chile.

External financial conditions have been more favorable in recent weeks and have returned to levels similar to those at the beginning of the year. Its prospects have also improved following recent announcements (table II.3 and figure II.6). This improvement has been more noticeable after the last two meetings of the Federal Reserve, mainly the one in December, from which expectations arose of an additional cut in its monetary policy rate during 2024, which has reduced the market's perspectives on

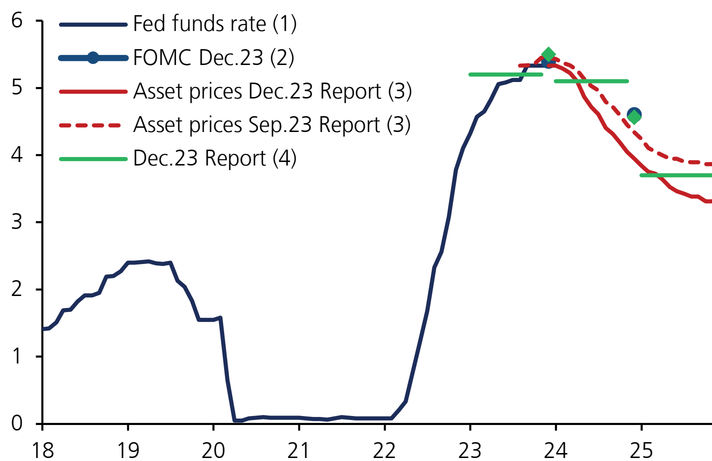
its future trajectory. This has reduced risk aversion, which has favored the decline that long-term interest rates had begun to show globally, which have returned to levels similar to those at the beginning of the year. The lower risk aversion has also driven the depreciation of the dollar against the rest of the currencies and the rebound in global stock markets. In any case, there are still risks associated with fiscal questions in the US, the increase in geopolitical conflicts, doubts about the long-term savings-investment balance and higher external neutral rates.

TABLE II.3 INTERNATIONAL BASELINE SCENARIO ASSUMPTIONS

	Aveg. 10-20	2021	2022	2023 (f)	2024 (f)	2025 (f)
			(annual change, percent)			
Terms of trade	1.8	11.9	-7.7	1.5	-1.5	0.2
External prices (in US$)	0.5	9.3	4.4	-0.4	0.8	5.8
			(levels)			
LME copper price (US$cent/pound)	304	423	400	385	380	380
WTI oil price (US$/barrel)	69	68	94	78	73	70
Brent oil price (US$/barrel)	76	70	100	83	77	75
Gasoline parity price(US$/m3) (*)	585	579	850	722	604	578
US Federal Funds Rate (%)	0.7	0.3	1.9	5.2	5.1	3.7

(*) For definition, see Glossary of economics terms. (f) Forecast. (e) Estimate.
Source: Central Bank of Chile.

FIGURE II.6 EVOLUTION AND FORECASTS FOR THE FED FUNDS RATE
(percentage points)

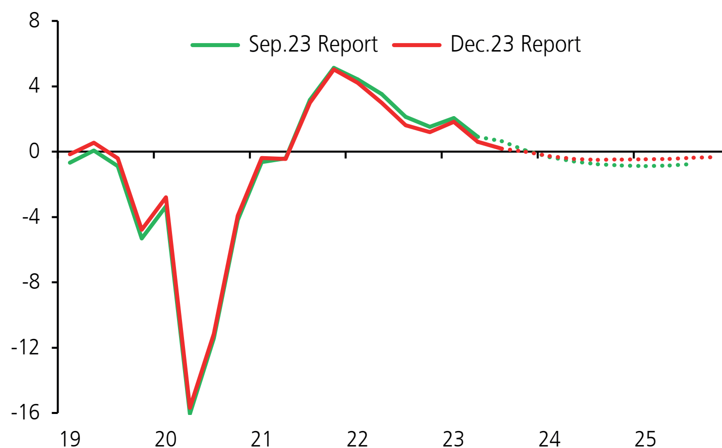


(1) Effective Fed funds rate (FFR). Consider information as of December 2023.
(2) Forecast by the the Federal Open Market Committee (FOMC) at the indicated meeting.
(3) Asset prices consider the statistical cut-off dates of each MP Report.
(4) Annual average for the Fed funds rate in 2023, 2024 and 2025, according to the central scenario of this MP Report (upper range). Diamonds correspond to the average FFR for the fourth quarter of 2023, 2024 and 2025.
Sources: Bloomberg and Federal Reserve.

ACTIVITY GAP AND INFLATION'S CONVERGENCE TO THE TARGET

The activity gap is around zero and is estimated to remain close to that level throughout the projection horizon (figure II.7). Going forward, the greater external impulse and the better prospects for non-mining GDP in the coming quarters suggest that the gap will be closer to that value during the projection horizon, although it will remain negative. This also considers the usual reestimation of potential growth, which is assumed to be 2.4% for 2023 and 2.3% in the following years (2024-2025)[2]/.

FIGURE II.7 ACTIVITY GAP (1) (2)
(level, percentage points)



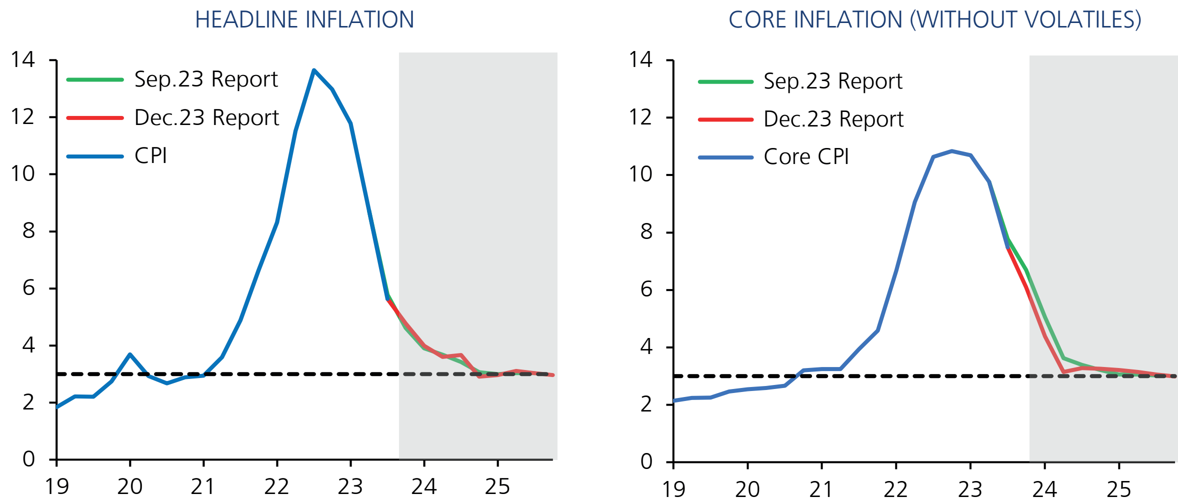
(1) Dotted lines show forecast.
(2) Forecast assumes structural paramenters updated in December 2023 MP Report (trend GDP).
Source: Central Bank of Chile.

In the central scenario, it is still considered that total inflation will converge to the target in the second half of 2024. The core component will dapproach 3% faster than expected in September, in the first semester of next year (figure II.8 and table II.4). The above responds mainly to the effective evolution of the prices of the goods included in the core CPI, whose annual inflation has had a faster decline than expected in September Report (Chapter I). This, in a context where the transfer of costs to sales prices has been limited by the low dynamism of consumption, in accordance with the information provided by the November 2023 Business Perceptions Report. In this sense, the projection assumes a limited transfer of the exchange rate depreciation of recent months, with a trajectory of the real exchange rate (RER) that will remain around current levels in the next two years.

Volatile inflation will decline slower than projected in September Report. This considers actual data above what was expected in food, energy and other volatile items (Chapter I). Added to this are the depreciation of the exchange rate in recent months and a slower than expected fall in the prices of fuel and other volatile items.

[2]/ The concept of potential growth refers to the level of GDP consistent with stable inflation and is therefore appropriate for measuring the activity gap associated with short-term inflationary pressures. For more information, see (Bauducco *et al.* 2023).

FIGURE II.8 INFLATION FORECAST (*)
(annual change, percent)



(*) Gray area, as from the fourth quarter of 2023, shows forecast.
Sources: Central Bank of Chile and National Statistics Institute (INE).

TABLE II.4 INFLATION (1)
(annual change, percent)

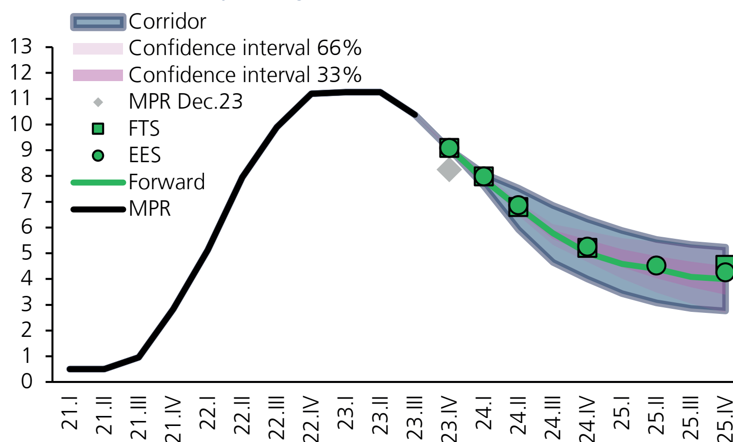
	2022	2023 (f)	2024 (f)	2025 (f)
Average CPI	11.6	7.6	3.5	3.0
December CPI	12.8	4.5	2.9	3.0
CPI in around 2 years (2)				3.0
Average core CPI	9.3	8.5	3.5	3.1
December core CPI	10.7	5.8	3.2	3.0
Core CPI around 2 years (2)				3.0

(1) Core inflation is measured using the CPI without volatiles.
(2) Inflation forecast for the fourth quarter of 2025.
(f) Forecast.
Sources: Central Bank of Chile and National Statistics Institute (INE).

MONETARY POLICY STRATEGY: THE CENTRAL SCENARIO, SENSITIVITIES AND RISKS

The MPR has accumulated a decrease of 300bp since July and stands at 8.25%. The Board considers that, in line with the central scenario of this MP Report, the convergence of inflation to the target will require further cuts in the MPR. Its magnitude and timing will take into account the evolution of the macroeconomic scenario and its implications for the inflationary path. The Board reaffirms its commitment to act with flexibility in the event that any of the internal or external risks materialize and macroeconomic conditions so require.

FIGURE II.9 MPR CORRIDOR (*)
(quarterly average, percent)



(*) The corridor is built by following the methodology described in boxes V.1 of March 2020 Report and V.3 of March 2022 Report. Includes December EES, FTS pre-policy-meeting of December and the average smoothed forward curve of quarter to 13 December. This is calculated by extracting the implicit MPR considering the forward curve on the interest rate swap curve up to 2 years, discounting the fixed rates at every maturity at the simple accrual of the ICP. For the current quarter the surveys and the forwards consider the average daily effective and are completed with the respective sources.
Source: Central Bank of Chile.

As usual, the borders of the MPR corridor reflect sensitivity scenarios where the speed of the inflationary convergence process yields the way to interest rate adjustments other than those considered in the central scenario central (figure II.9).

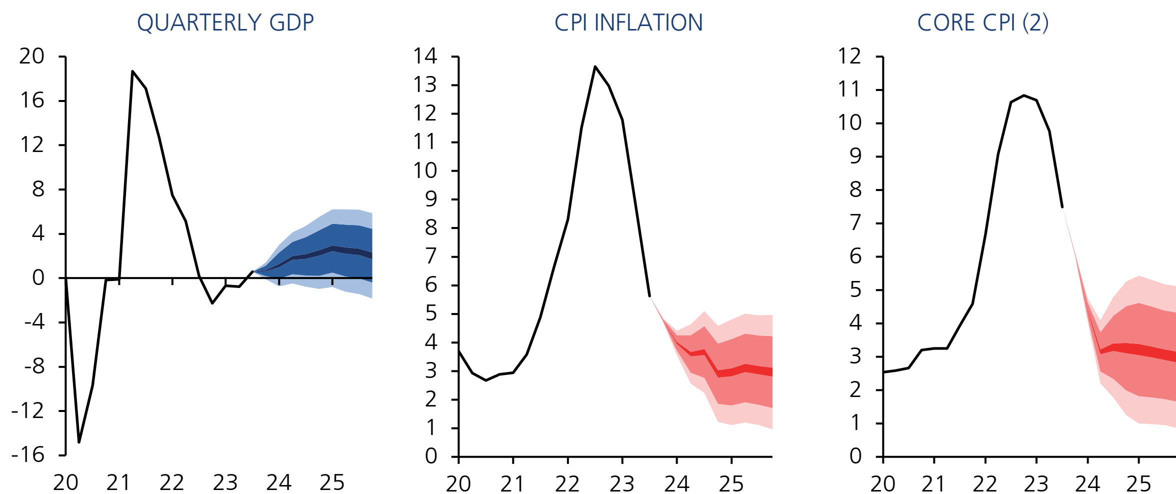
The upper bound is defined by sensitivity scenarios where the inflation convergence process to the 3% target takes longer to complete. Such would be the case if the Chilean economy were to receive a greater than expected external boost, for example because the resilience of the U.S. is prolonged and enhances the dynamism of the world economy. This would have positive effects on the local economy. On the one hand, due to greater external demand and improvements in the prices of different commodities, including copper, but would also affect the expectations channel, which could become more optimistic and encourage domestic spending. The inflationary consequences of this scenario could lead to more gradual cuts in the MPR than assumed in the central scenario.

The lower bound reflects scenarios in which inflation declines faster. These are especially associated with situations where the impact on the local economy of the recent months' increase in long rates exceeds expectations. This could reduce the dynamism of consumption and investment, leading to a decrease in inflationary pressures that would require accelerating the monetary easing process.

In addition to the sensitivity exercises, situations are analyzed in which changes in the economy are more significant and would require a monetary policy response that would exceed the limits of the corridor for the MPR (figures II.9 and II.10).

The Board considers that, as in the last Reports, the main risks continue to be linked to the evolution of the external scenario. Among them are the fragility of the real-estate sector in China, doubts about the fiscal situation of the U.S., and a more complex geopolitical environment with new armed conflicts. If any of these risks materialize, the implications for monetary policy will depend on how the combination and magnitude of those scenarios affect the medium-term outlook for the convergence of inflation.

FIGURE II.10 GROWTH AND INFLATION FORECASTS (1)
(annual change, percent)



(1) The figure shows confidence interval of central projection at the respective horizon (colored area). Confidence intervals of 10%, 70%, and 90% around the baseline scenario are included. Confidence intervals are built using the RMSE of XMAS-MEP models' 2009-2017 average. (2) Measured with the CPI without volatiles.
Sources: Central Bank of Chile and National Statistics Institute (INE).

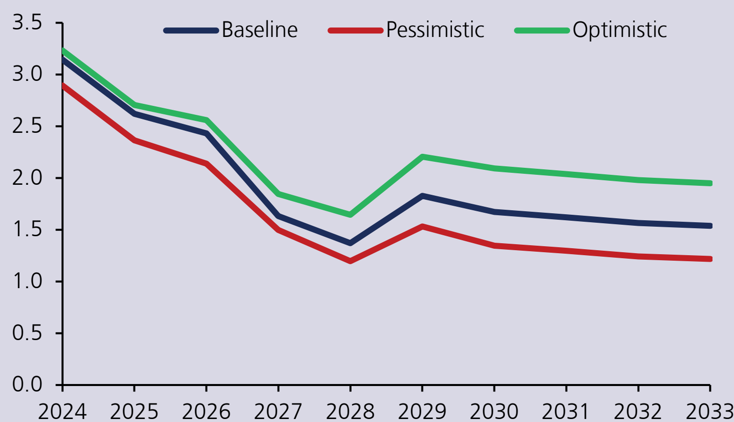
BOX II.1:

Trend GDP

The trend growth variable is related to the economy's medium- and long-term growth capacity[1]. The current estimate does not differ much from that of December 2022. Thus, a downward trend in non-mining GDP growth is estimated for the coming years and an average expansion of 1.9% in the 2024-2033 period (figure II.11). This latter value is 0.3 pp lower than our estimate for the 2023-2032 period, which mainly reflects the one-year passing for the calculation of the relevant average in a context in which non-mining trend growth declines over time due to the gradually moderating incidence of the return of labor force participation to pre-pandemic levels[2].

The estimation considers two alternative scenarios that yield equally downsloping trajectories for non-mining trend growth. The optimistic (pessimistic) scenario considers a more (less) favorable convergence of variables such as hours worked and participation rates to OECD levels.

FIGURE II.11 TREND GROWTH TRAJECTORY OF NON-MINING GDP (percent)



Source: Central Bank of Chile.

As usual, the estimation of trend growth separates GDP between the mining and non-mining sectors. For the non-mining sector, the methodology is based on a Cobb-Douglas type production function, in which trend growth can be decomposed as follows:

$$\Delta Y = \Delta TFP + \alpha \, \Delta L + (1-\alpha) \, \Delta K$$

[1] The concept of trend GDP differs from potential GDP in that the latter refers to the GDP level consistent with stable inflation and, therefore, is the appropriate measure of the activity gap associated with short-term inflationary pressures. Since trend GDP is related to the economy's medium-term growth capacity, the two measures converge to the same number in the long run. However, in the short term, transitory elements that alter productive capacity, such as temporary productivity shocks or factor use limitations, can generate differences between the two measures. Hence the importance of analyzing them separately. For details, see Chapter 1 in Central Bank of Chile (2017).

[2] See Bauducco et al. (2023).

Where ΔY is trend GDP growth, ΔTFP is trend growth of total factor productivity, α is the share of labor in GDP (wich is assumed to equal 0.5 like in previous exercises), ΔL is trend growth in the labor factor —the labor force times hours worked times a human capital index— ans ΔK is capital growth.

In this exercise, the contribution of the labor factor to non-mining GDP growth in the 2024-2033 decade is 0.5pp (table II.5). In relative terms, the contribution of labor is lower than that estimated in 2022 for the 2023-2032 decade. This is mainly due to the smaller incidence of the recovery of labor participation to pre-pandemic levels in the coming years and the somewhat faster reduction in hours worked through the next five years. Meanwhile, the contribution of the capital stock to trend growth is relatively higher than previously estimated. Estimated TFP growth remains at 0.35%.

TABLE II.5 TRENDGROWTH FORECAST (*)
(percent)

	Trend growth			Contributions to non-mining GDP		
	Non-mining GDP	Mining GDP	Total GDP	Capital	Labor	TFP
2024 - 2033	1.9	1.5	1.9	1.1	0.5	0.35

(*) Mining accounts for 12% of total GDP.
Source: Central Bank of Chile.

To obtain trend growth in total GDP, a growth projection is added for the mining sector, which, as in the previous exercise, is estimated to be 1.5% per year in the decade 2024-2033[3]/. With this assumption, total trend GDP growth comes at 1.9% in the aforesaid period.

Finally, for the purposes of calculating the medium-term projections of this Report, the average non-mining trend GDP growth for the five-year period 2024-2028 is used, which is 2.3%. This time horizon is the appropriate one to feed the medium-term projections, because longer horizons correspond to an economy whose productive factors are projected to be significantly different from those relevant for the medium-term projection horizon.

[3]/ The trend growth scenario presented in this box does not consider any material structural changes in the global environment that Chile could face in the coming years. In particular, it does not consider potential effects of the transition to green energy that could affect growth in the mining sector, as their effect is still uncertain. See Bauducco et al. (2022) for details on this estimation.

BOX II.2:

The neutral monetary policy interest rate

The neutral MPR (NMPR) is a key concept for the conduct of monetary policy. It is defined as the value to which the MPR is expected to converge once the short-term effects of shocks have dissipated, consistent with trend GDP on its equilibrium path and inflation at target. Its estimate corresponds to the trend value of a risk-free short-term real rate, thus not including any changes related to the trends of risk or term premiums.

In this update, the NMPR is revised upwards by 25 basis points with respect to our December 2022 estimate, to around 1%, within a range between 0.5% and 1.5% in real terms (table II.6). This update extends the sample to the third quarter of 2023 and adds new methodologies.[1]/ This allows for a more robust estimate of the NMPR, in a context of high global uncertainty regarding the future evolution of its fundamentals. In nominal terms, and given the 3% inflation target, the median of the estimates is around 4%, which is the level chosen by the Board for the new nominal neutral rate.

TABLE II.6 NEUTRAL MONETARY POLICY RATE ESTIMATES
(percent)

Method	Real NMPR
1. Stochastic Trend - BCP10	1.0
2. Stochastic trend - Convenience Yield	0.9
3. Term premium correction	0.6
4. Taylor Rule	1.2
5. Taylor Rule - Expectations	0.6
6. Interest rate parity (dots)	1.5
7. Interest rate parity (U.S. models)	2.3
8. Consumption model with habits	0.0
9. Common stochastic trend model	1.1
10. Reduced-form model (dots)	1.1
11. Reduced-form model (U.S. models)	1.4
Median	**1.1**
Range (*)	**0.6 – 1.5**

(*) Excludes lowest (0.0) and highest (2.3) estimates.
Source: Arias et al. (2023).

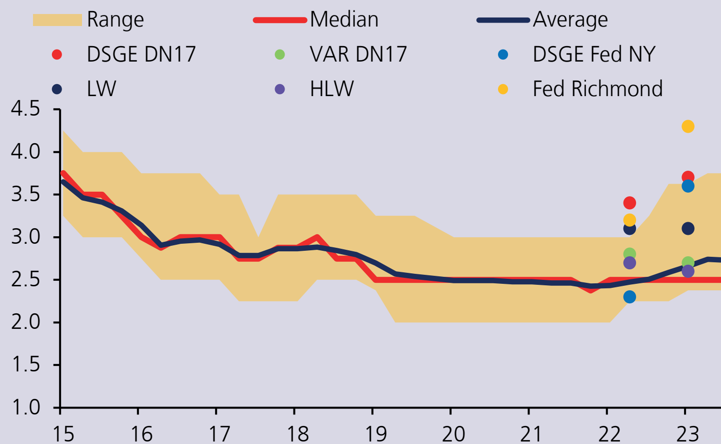
This benchmark rate is affected by low-frequency movements in various factors. For example, a slowdown of productivity or population growth or an increase in the preference for safe and liquid assets, tends to bring down the NMPR. Conversely, an increased supply of risk-free assets —e.g., in case of greater public indebtedness— or a lower demand for long-term savings tends to reduce asset prices, raising their yield, which would tend to push up the NMPR. Finally, changes in the productivity and demographics of other countries may affect the local NMPR in a scenario of integrated financial markets.

In this update, a battery of models was applied that capture these factors.

[1]/ See Arias et al. (2023).

The upward revision of the local neutral rate and its wider range owes mainly to neutral rate increases in other countries (figure II.12). Indeed, methodologies that explicitly include this external background —interest rate parity and reduced-form model— yield higher NMPRs, while other methodologies reported with local rates yield lower estimates, between 0.6% and 1.2% (stochastic trend models, Taylor rules and term premium correction). Among other factors, it partially compensates for the lower trend growth (Arias et al., 2023)./[2]

FIGURE II.12 LONG-TERM LEVEL OF FED FUNDS RATE (*)
(percent)



(*) The range of long-term federal funds rates is constructed using the minimum and maximum reported in the dots FOMC. Vertically stacked dots indicate estimates of the real neutral rate for the U.S. from various available models plus the Fed's 2% inflation target.
Sources: Central Bank of Chile and Bloomberg. U.S. models use information from Del Negro et al. (2017), New York Fed, Laubach and Williams (2003), Holston, Laubach and Williams (2023) and Richmond Fed.

[2]/ Also, changes in the NMPR depend on multiple domestic and international factors and do not necessarily reflect changes in the same direction or of the same magnitude in other relevant rates in the economy, such as ROE (for details, see Fahri and Gourio (2018) and Reis (2022)).

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