



# INFLATION REPORT

*June 2022*

**Recent trends  
and macroeconomic  
forecasts  
2022-2023**

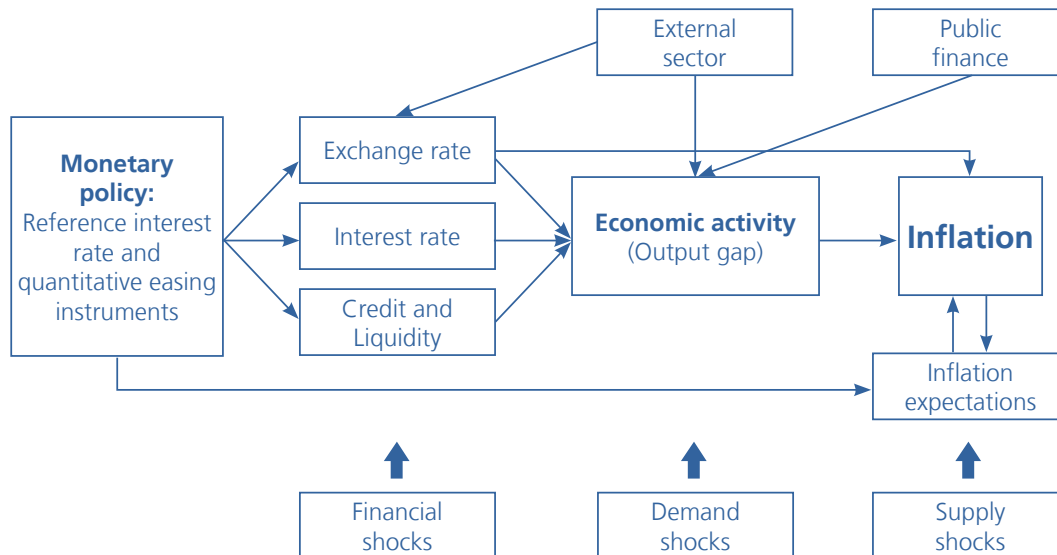


CENTRAL RESERVE BANK OF PERU  
100 YEARS | 1922 - 2022

# INFLATION REPORT

## Recent Trends and Macroeconomic Forecasts 2022 - 2023

*June 2022*



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## **INFLATION REPORT**

Recent trends and macroeconomic forecasts

CENTRAL RESERVE BANK OF PERU

# INFLATION REPORT:

## Recent Trends and Macroeconomic Forecasts 2022 - 2023

June 2022

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This **Inflation Report** has been prepared using data on the balance of payments and the gross domestic product as of the first quarter of 2022, data on the trade balance, monthly GDP, and monetary accounts as of April 2022, and data on the operations of the non-financial public sector, inflation, financial markets and the exchange rate as of May 2022.



## Foreword

- According to the Constitution of Peru, the Central Reserve Bank of Peru (BCRP) is a public autonomous entity whose role is to preserve monetary stability. Its main functions are regulating the money supply and credit in the financial system, managing the country's international reserves, and reporting on the nation's finances.
- In order to consolidate this goal, the Bank's monetary policy is based on an inflation targeting scheme, with an inflation target between 1 and 3 percent. The Central Bank's inflation target is aimed at anchoring inflation expectations at a similar level to the inflation rate observed in developed economies and reflects the BCRP's permanent commitment with monetary stability.
- Since 2003, the Board of BCRP sets a benchmark rate for the interbank lending market each month, according to a previously announced schedule. In March and April of 2020, the benchmark rate was modified outside of this schedule due to the economic contraction generated by the confinement measures taken because of the COVID-19 pandemic. Since this interest rate, which is the monetary operational target, affects the rate of inflation through several channels with time lags, this rate is set on the basis of inflation forecasts and inflation determinants.
- Inflation may transitorily deviate from the target range due to shocks that may temporarily affect the supply of goods and services. It should be pointed out that the effectiveness of monetary policy is assessed in terms of the success in maintaining inflation expectations within the target range and in returning them to this range within a reasonable timeframe if deviations are observed as a result of some economic shock.
- Additionally, the Central Bank implements preventive actions to preserve financial stability and monetary policy transmission mechanisms. Thus, the mechanism of the benchmark interest rate is complemented through other monetary policy instruments such as injection and sterilization operations, reserve requirements, and interventions in the foreign exchange market to ensure the proper operation of markets, reduce excessive volatility in the exchange rate, and prevent excessive variations in the volume and composition of credit in the financial system by currencies and terms.
- This Report includes the macroeconomic projections for 2022-2023 that support the monetary policy decisions of BCRP as well as an analysis of the risk factors that can modify such projections.
- This Inflation Report was approved by the Board of Directors of BCRP on June 9, 2022.
- The following Inflation Report will be published on Friday, September 16, 2022.





## Summary

- i. The risks outlined in the March Report, related to higher energy and food prices and difficulties in supply chains, have materialized due to the prolongation of the conflict between Russia and Ukraine and to strict confinement measures in China. These events are expected to imply lower **global growth**, particularly in the second quarter of the year, as well as higher **global inflation**, which may lead to further increases in monetary policy interest rates. Therefore, a global growth rate of 3.0 percent is forecast for 2022 and 2023 (previously, 3.8 percent and 3.2 percent, respectively).
- ii. The **terms of trade** remain high, but declined 1.5 percent year-on-year in the first quarter of 2022 due to higher import prices –especially the prices of oil, industrial inputs, and food– relative to the increase in export prices. These events were associated with the contraction in the supply of some commodities and with increased uncertainty stemming from the conflict between Russia and Ukraine.

Compared to the previous Report, the terms of trade are expected to register a further contraction in 2022, from -1.4 to -6.3 percent, due to the persistent rise in fuel and food prices, which would be higher than the increase in export prices. On the other hand, a partial downward correction in average export and import prices is expected for 2023 once supply chain shocks and geopolitical events dissipate.

- iii. The **current account** balance accumulated in the last four quarters went from a deficit of 2.3 percent of GDP in 2021 to a deficit of 3.0 percent in the first quarter of 2022, reflecting the increase in imports, higher profits of companies with foreign direct investment (FDI) in the country, and the high deficit in the services account (low exports of tourism services and high import freight rates). These factors are expected to lead to a current account deficit equivalent to 3.4 percent of GDP in 2022. In contrast, following a correction in freight rates and import prices, the deficit is expected to narrow to 1.1 percent of output in 2023, with a strong balance of payments position being maintained.
- iv. **Economic activity** in the first quarter of 2022 registered a year-on-year growth rate of 3.8 percent, this result being explained by a low comparative base due to the February 2021 quarantine, and the easing of sanitary measures following the progress achieved in the vaccination process, both locally and globally. These effects were offset in part by the contraction in public investment, lower mining production, and the slowdown in private investment due to low levels of business confidence.

The economy would grow 3.1 percent in 2022 and 3.2 percent in 2023, which implies a downward revision for 2022 with respect to the previous Report (3.4 percent). The main reasons for this revision are lower production in the primary sectors, especially in mining (due to the stoppage of operations at Las Bambas and Southern) and agriculture (due to the impact of higher fertilizer prices on production). On the expenditure side, this is expected to translate into lower growth in the volume of exports. In addition, the rate of expansion of public investment is also revised down given the lower execution observed so far this year.







An environment in which an adequate business environment is fostered and macroeconomic and financial stability is preserved to stimulate the execution of private investment projects and the creation of new jobs is assumed for the rest of the forecast horizon. The projection also considers a scenario of continuity in the growth of public investment, taking into account an efficient training of the new sub-national authorities and a strong participation of infrastructure projects under the responsibility of the National Government.

- v. Maintaining the downward trend that began in February 2021, the cumulative **fiscal deficit** over the last twelve months registered a rate equivalent to 0.9 percent of output in May 2022. This lower deficit reflects the increase in current revenues of the General Government and lower non-financial expenditures. The deficit is projected to stand at 1.9 percent of output at the end of 2022 and to decline to 1.8 percent in 2023.

The **gross debt** of the Non-Financial Public Sector is projected to fall from 35.9 to 34.3 percent of GDP between 2021 and 2022, and to 33.2 percent in 2023. Non-Financial Public Sector **debt net** of deposits is expected to decrease from 21.8 to 21.2 percent of GDP between 2021 and 2022, and then increase slightly to 21.3 percent of output in 2023, which is explained by a higher use of deposits.

- vi. From March to June 2022, the BCRP Board of Directors continued with the normalization of the monetary policy stance initiated in August 2021. Thus, the BCRP Board decided to raise the benchmark monetary policy interest rate to 5.50 percent in June 2022, accumulating eleven rate increases in total to date. After reaching a historic low in August 2021, the real benchmark interest rate is slightly positive today (0.61 percent in June 2022).

The balance of **liquidity injection operations** in domestic currency decreased from S/ 56.7 billion at the end of December 2021 to S/ 50.2 billion as of June 13, 2022. In comparative terms, the total balance is 6.4 times higher than the maximum balance of these operations registered during the 2008-2009 international financial crisis (S/ 7.9 billion) and 1.6 times the balance reached during the period of falling commodity prices (2013-2016) and the de-dollarization program (S/ 31.8 billion).

- vii. The growth of **credit to the private sector** accelerated from a year-on-year rate of 4.4 percent in December 2021 to 6.7 percent in April 2022. Moreover, credit to the private sector is expected to slow to 4.5 percent in 2022 and then to accelerate to 5.4 percent in 2023.
- viii. Year-on-year **inflation** rose to 8.09 percent in May from 6.15 percent in February, driven mainly by higher food and fuel prices. Inflation excluding food and energy rose from 3.26 to 4.26 percent in the same period, above the target range. The different indicators of trend inflation are also above the target range

Based on the information available today and taking into account the gradual recovery of economic activity and the persistence of rising international energy and food prices, year-on-year inflation is projected to return to the target range in the second half of 2023. This projection assumes the reversal of the effect of transitory factors on the inflation rate (exchange rate, the international prices of fuel, fertilizers and grains) in a context in which the output gap closes gradually while the gradual withdrawal of

monetary stimulus continues and inflation expectations return to the target range in the following months.

- ix. The **balance of risks in the inflation projection** maintains an upward bias. The following main risks and contingencies are considered in the projection: (i) increase in international food and fuel prices due to production and supply problems; (ii) persistence of global inflation and its possible impact on inflation expectations and global economic growth; (iii) a lower level of local activity if business and consumer confidence do not recover, and if there are delays in the execution of public spending, and (iv) upward pressures on the exchange rate, capital outflows and greater volatility in financial markets due to episodes of greater political uncertainty, disruptions in economic growth and indebtedness, or a faster withdrawal of monetary stimulus in developed countries.





## SUMMARY OF INFLATION REPORT FORECAST

	2021	2022 <sup>1/</sup>		2023 <sup>1/</sup>	
		IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>Real % change</b>					
1. Gross Domestic Product	13.5	3.4	3.1	3.2	3.2
2. Domestic demand	14.6	3.0	2.8	3.0	3.0
a. Private consumption	11.7	4.1	4.1	3.5	3.5
b. Public consumption	10.6	1.5	1.5	2.0	2.0
c. Fixed private investment	37.4	0.0	0.0	2.0	2.0
d. Public investment	24.9	4.0	2.1	1.6	1.6
3. Exports (good and services)	13.7	7.5	6.1	7.6	7.7
4. Imports (good and services)	18.6	5.6	4.5	6.7	6.7
5. Global economic growth	6.0	3.8	3.0	3.2	3.0
<b>Memo:</b>					
Output gap <sup>2/</sup> (%)	-3.5	-5.5 ; 0.5	-3.5 ; 0.5	-5.0 ; 1.0	-3.0 ; 1.0
<b>% chg.</b>					
6. Inflation	6.4	3.6	6.4	2.1	2.5
7. Expected inflation <sup>3/</sup>	3.5	3.9	5.8	3.0	3.7
8. Expected depreciation <sup>3/</sup>	12.1	-3.5	-5.4	-0.3	0.7
9. Terms of trade	11.8	-1.4	-6.3	0.6	0.0
a. Export prices	30.3	6.6	8.0	-0.9	-1.6
b. Import prices	16.6	8.1	15.3	-1.5	-1.6
<b>% chg.</b>					
10. Currency in circulation	16.0	3.0	2.5	1.5	1.5
11. Credit to the private sector	4.4	4.5	4.5	5.5	5.4
<b>% GDP</b>					
12. Gross fixed investment	25.2	24.6	25.0	24.1	24.3
13. Current account of the balance of payments	-2.3	-1.6	-3.4	-0.6	-1.1
14. Trade balance	6.6	6.7	5.4	6.8	5.3
15. Long-term external financing of the private sector <sup>4/</sup>	7.4	0.4	2.8	0.0	0.5
16. Current revenue of the general government	21.0	20.7	21.6	20.7	21.1
17. Non-financial expenditure of the general government	22.2	21.8	22.0	21.3	21.4
18. Overall balance of the non-financial public sector	-2.5	-2.5	-1.9	-2.2	-1.8
19. Balance of total public debt	35.9	35.2	34.3	34.8	33.2
20. Balance of net public debt	21.8	22.4	21.2	23.0	21.3

IR: Inflation Report

1/ Forecast.

2/ Differential between GDP and trend GDP (in % of trend GDP).

3/ Survey on expectations to the analysts and financial entities carried out at the time of publication of the respective Inflation Report. Data observed in the case of depreciation for 2021, and the average of expectations throughout year in case of inflation has been considered.

4/ Includes net direct investment, foreign assets investment from residents (AFP), foreign net portfolio investment, and private sector's long term disbursement. Positive sign means net inflow of foreign capital.

# I. External Sector

1. Global economic activity has been affected by the persistence and worsening of the shocks outlined in the March Inflation Report. The increase in energy and food prices and the problems in supply chains have intensified as a result of the prolongation of the conflict in Ukraine and the imposition of mobility restrictions in China in response to COVID-19 infections. These events are affecting growth in the second quarter as well as the outlook for global economic activity in the forecast horizon.

Coupled with an expansion in demand and a tight labor market, these shocks have contributed to keeping inflation up in most developed economies. In the United States and the United Kingdom, inflation is at 40-year highs, and in the Eurozone it is at a record high, while in the emerging economies, particularly in the emerging economies of the Americas and Europe, it shows a marked upward trend. Because of this and because of the risks of seeing a de-anchoring of inflation expectations, central banks have made more monetary policy adjustments than expected at the beginning of the year.

Prospects of lower global growth and tighter international financial conditions have been affecting emerging economies: commodity prices, with the exception of the prices of energy and grains, have registered downward corrections and, in the particular case of copper, its price shows levels below those observed at the end of 2021. Moreover, capital flows to emerging economies have decreased and even recorded a net outflow over the past three months.

In this context, global growth projections have been revised down again, from 3.8 to 3.0 percent for 2022 and from 3.2 to 3.0 percent for 2023. Furthermore, the risks of a stagflation scenario –with high inflation rates and low growth rates– have increased, with their occurrence depending largely on the implementation of additional sanctions on Russia (in particular, the ban on Russian gas imports by the European Union) and on the evolution of COVID-19 contagions (in particular in China).

## Recent developments in global economic activity

2. **Supply shocks have not only persisted since March, but have even worsened because of the intensifying conflict in Ukraine and the measures taken by China to curb COVID-19 expansion.**

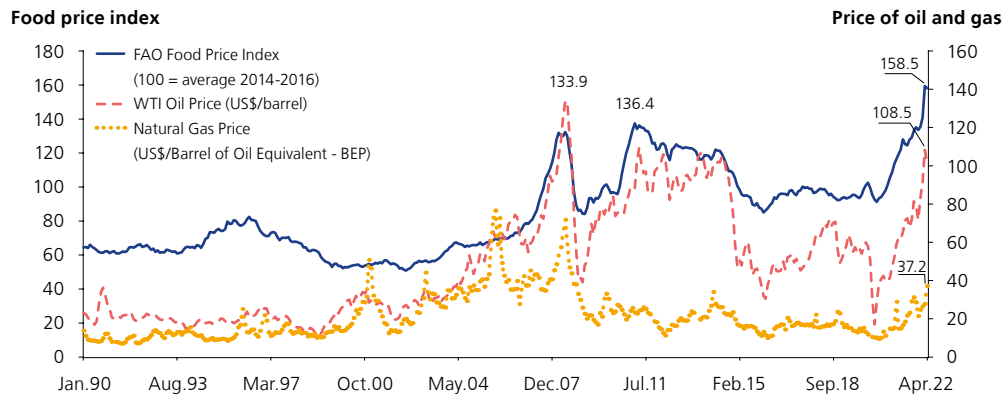




As pointed out in the March Report, the persistence of the conflict in Ukraine has affected the global economy through several transmission channels. Of particular note are the direct impact on energy and food prices and the effects on the supply chain.

As regards the former, food and energy prices have followed an upward trend despite the fact that the global economic slowdown generated downward pressures on the prices of most commodities. In the case of food prices, the FAO food index registered a record high in March due to the impact of the Russia-Ukraine conflict on the supply of maize, wheat and sunflower oil and because of the restrictions imposed on exports of a number of food products, such as palm oil (by Indonesia) and sugar and wheat (by India). The price of oil, on the other hand, rose in view of the lower supply available on the world market due to US and UK sanctions on Russian exports, along with a weak production response by OPEC+ countries. In the case of gas, the market continues to be affected by restrictions on the partial supply to Europe and by low global inventory levels.

Graph 1  
PRICES OF FOOD, OIL, AND GAS

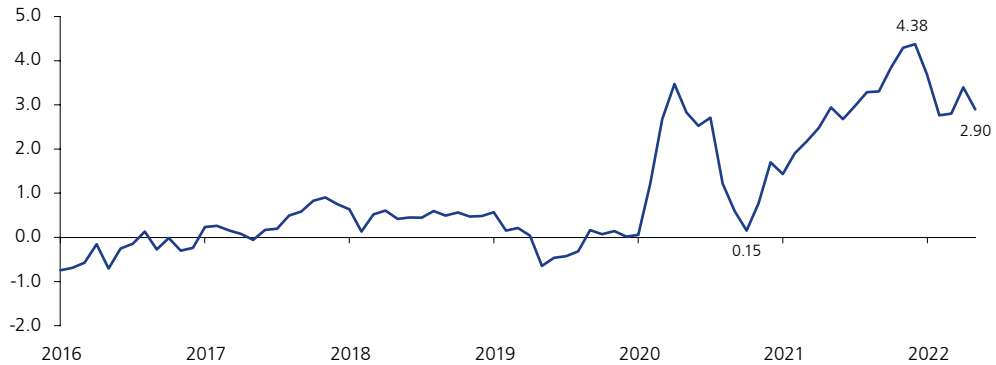


Source: FAO and Reuters.

The conflict has also accentuated the problem in the supply chain when one considers the sanctions imposed on Russian companies, the logistical and infrastructure problems derived from the conflict, and Russia's participation in the production and foreign trade of some products (refined metals, platinum, and palladium, among others). Notwithstanding, the greatest impact on the supply chain is due to the measures taken in China following the increase in cases of COVID-19, particularly in the cities of Shanghai and Beijing, where quarantine measures were put in place for several weeks, leading to the closure of a number of industrial and port activities.

These developments are reflected in the indicator of the U.S. Federal Reserve (Fed), constructed on the basis of shipping and air transport costs and some components of the PMI indices of the major economies. After declining in the first quarter, as from May this indicator shows levels similar to the peaks recorded at the beginning of the pandemic.

Graph 2  
**GSCPI INDEX: PRESSURES ON THE GLOBAL SUPPLY CHAIN\***  
 (In standard deviations from the mean value)

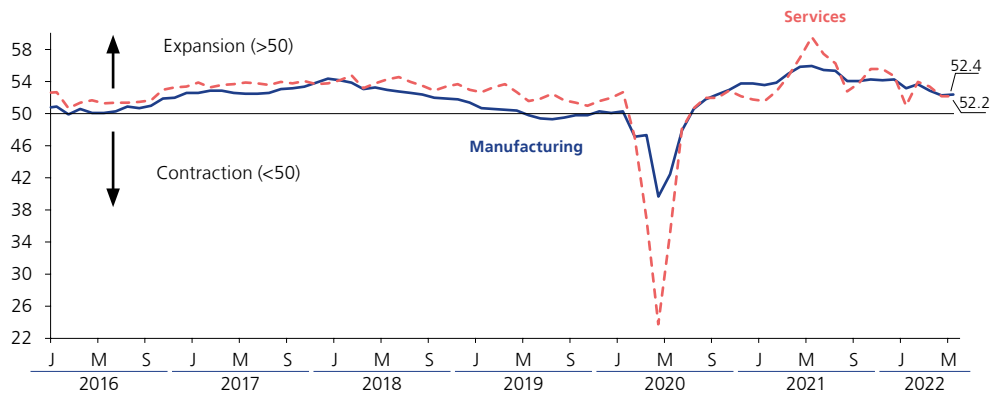


\*The GSCPI is built from transportation costs (Baltic Dry Index, Harpex Index, and BLS Air Freight Cost Indices) and PMI components of the United States, China, Eurozone, Japan, United Kingdom, South Korea and Taiwan. Data as of May 2022.  
 Source: New York Federal Reserve.

3. **These events have affected economic growth since the end of the first quarter.** The positive impact of the reopening of several developed economies, following the lifting of restrictions imposed in the wake of the increase in COVID-19 contagions, was offset by the supply shocks noted above and by rising inflation.

The indices of overall production –of both manufacturing and services– reflect this trend, with both indices showing a decline between March and May. It should be pointed out that items linked to production and new orders showed an unfavorable evolution within these indices, while items linked to input costs and goods prices registered above-average levels.

Graph 3  
**GLOBAL PMI: WORLD ECONOMIC ACTIVITY INDEX FOR MANUFACTURING AND SERVICES SECTORS**  
 (Diffusion index)



Source: JPMorgan.

However, this behavior is not uniform across countries. In the developed economies, the United States recorded a GDP contraction of 0.4 percent in the first quarter of the





year –equivalent to an annualized rate of 1.5 percent– as a result of the contraction of real estate investment, the deterioration of the trade balance (affected by the appreciation of the dollar), and the deaccumulation of inventories. Recent indicators show that the deterioration of the real estate market has continued in the second quarter, in a context of rising mortgage interest rates and high construction costs, and that the dynamism of consumption is offset by the fall in consumer confidence and the increase in prices.

Table 1  
JP MORGAN GLOBAL ACTIVITY INDEX: MAIN ECONOMIES

I. Services												
	Mar.20	Jun.20	Sep.20	Dec.20	Mar.21	Jun.21	Sep.21	Oct.21	Nov.21	Dec.21	Mar.22	May.22
<b>Global</b>	36.8	48.1	52.0	51.8	54.7	57.4	53.8	55.6	55.6	54.7	53.4	52.2
USA (Markit)	39.8	47.9	54.6	54.8	60.4	64.6	54.9	58.7	58.0	57.6	58.0	53.4
China (Caixin)	43.0	58.3	54.8	56.3	54.3	50.3	53.4	53.8	52.1	53.1	42.0	41.4
Eurozone	26.4	48.3	48.0	46.4	49.6	58.3	56.4	54.6	55.9	53.1	55.6	56.1
United Kingdom	34.5	47.1	56.1	49.4	56.3	62.4	55.4	59.1	58.5	53.6	62.6	51.8
Japan	33.8	45.0	46.9	47.7	48.3	48.0	47.8	50.7	53.0	52.1	49.4	52.6
II. Manufacturing												
	Mar.20	Jun.20	Sep.20	Dec.20	Mar.21	Jun.21	Sep.21	Oct.21	Nov.21	Dec.21	Mar.22	May.22
<b>Global</b>	<b>47.3</b>	<b>47.9</b>	<b>52.4</b>	<b>53.8</b>	<b>55.0</b>	<b>55.5</b>	<b>54.1</b>	<b>54.3</b>	<b>54.2</b>	<b>54.3</b>	<b>52.9</b>	<b>52.4</b>
USA (Markit)	48.5	49.8	53.2	57.1	59.1	62.1	60.7	58.4	58.3	57.7	58.8	57.0
China (Caixin)	50.1	51.2	53.0	53.0	50.6	51.3	50.0	50.6	49.9	50.9	48.1	48.1
Eurozone	44.5	47.4	53.7	55.2	62.5	63.4	58.6	58.3	58.4	58.0	56.2	54.6
United Kingdom	47.8	50.1	54.1	57.5	58.9	63.9	57.1	57.8	58.1	57.9	55.2	54.6
Japan	44.8	40.1	47.7	50.0	52.7	52.4	51.5	53.2	54.5	54.3	54.1	53.3

Source: JP Morgan.

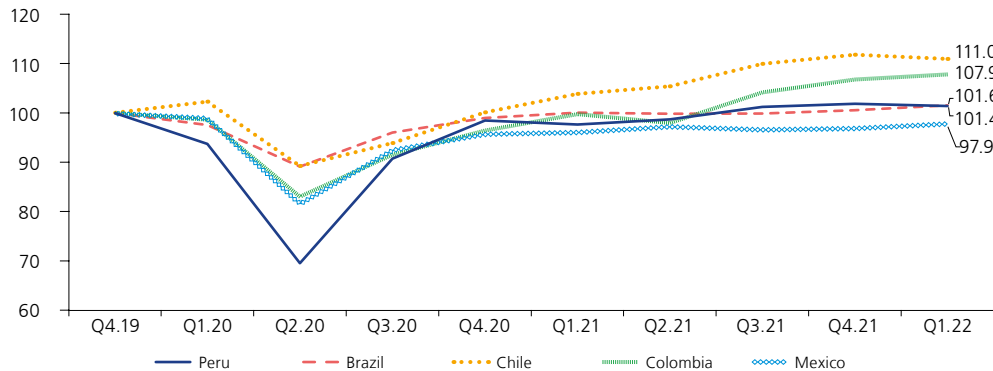
In the **Eurozone**, growth in the first quarter (0.6 percent) reflects the dynamism of net exports and the contraction of private consumption. A positive growth rate is expected for the second quarter, but this rate is expected to be lower than forecast in the March Report, reflecting the persistence of high energy prices, the lower dynamism of the export sector (highly linked to the Chinese economy), and the deterioration of consumer and investor confidence, among other factors.

In the case of **China**, the slowdown in the export and real estate sectors is compounded by the containment measures reflected in the “zero tolerance” plan implemented in several cities, particularly in Shanghai and Beijing. Thus, after recording a 1.3 percent growth rate in the first quarter, the economy is expected to register a contraction in activity during the April-June period. It should be pointed out that, in this context and considering that inflationary pressures remain moderate, a series of countercyclical measures have been taken. These measures include the reduction of the five-year prime lending rate (a benchmark for mortgage rates) and the announcement of a fiscal package comprising tax breaks, the deferral of credit payments, and urban renewal and energy projects, among other measures, in addition to those announced in the first quarter (interest rate reduction and new infrastructure programs).

In **Latin America**, economic growth has been decelerating in the first quarter. In some cases, such as Chile, this slowdown follows a strong expansion of domestic demand

during 2021. Colombia and Mexico show positive growth rates in the first quarter, favored by high oil prices. Monthly frequency indicators suggest that this slowdown will continue in April and May as a result of the impact of high inflation on consumption, lower fiscal and monetary stimulus, and the recent deterioration of the international environment.

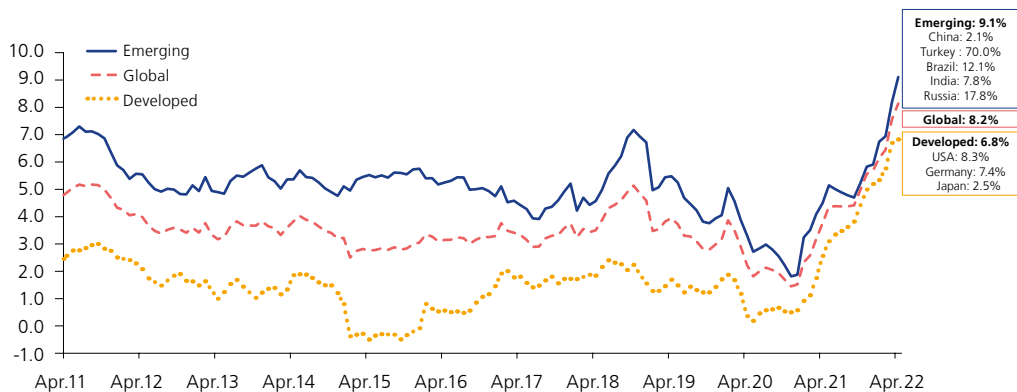
Graph 4  
**LATIN AMERICA: QUARTERLY GDP\***  
 (Index 100 = Q4.19)



\* Seasonally adjusted series.  
 Source: Statistical institutes and central banks.

- Maintaining the trend outlined in previous Reports, inflationary pressures continued to rise globally.** Both developed economies and emerging economies registered an inflation upward trend, in line with the aforementioned supply shocks and, in some cases, demand pressures associated with higher public and private sector spending. This trend was observed for both total inflation and the core component.

Graph 5  
**GLOBAL INFLATION: DEVELOPED AND EMERGING ECONOMIES**  
 (Annual % change)



Source: Statistical institutes and central banks.

In the developed economies, the upward trend has been generalized between April and June. Apart from the supply shocks mentioned above, there are demand pressures associated with the favorable evolution of employment, the impact of the monetary and fiscal policies adopted in 2020 and 2021, and the excess of private savings generated during the pandemic that has been allocated to spending. The cases of the United

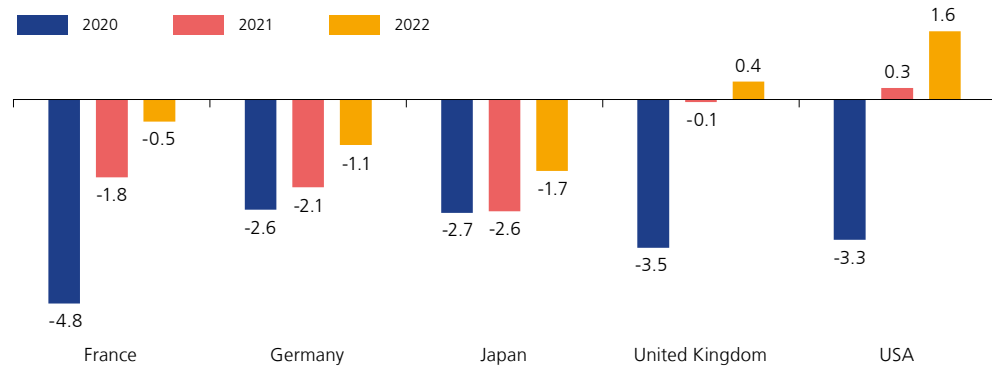






States and the United Kingdom stand out, where, according to IMF estimates, output is expected to be above its potential level in 2022.

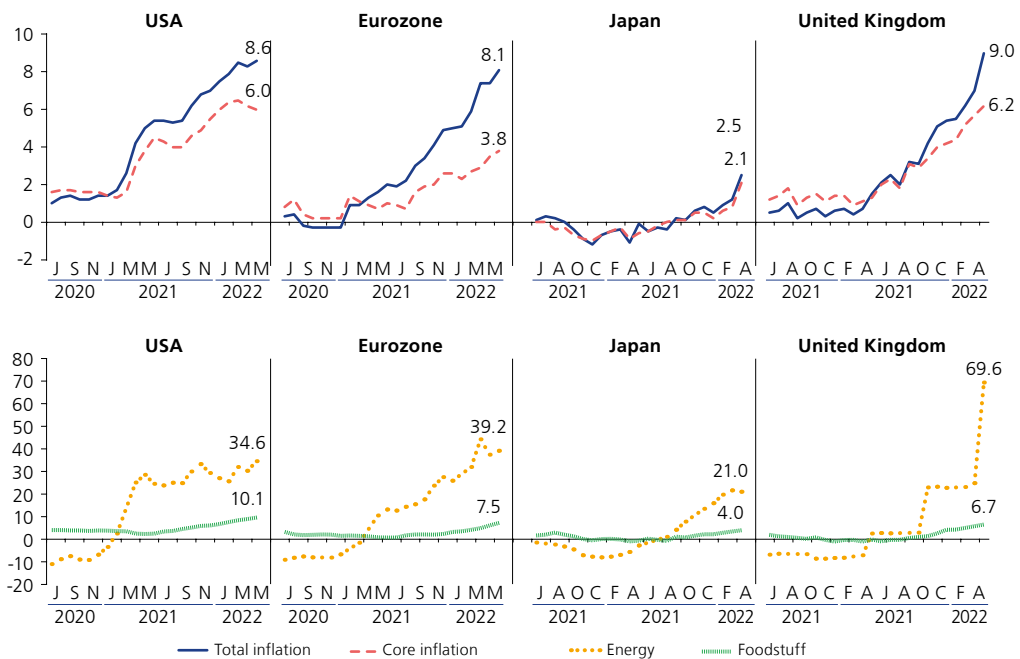
Graph 6  
**OUTPUT GAP: DEVELOPED ECONOMIES**  
(In % of Potential GDP)



Source: IMF.

In the United States, the 8.6 percent inflation rate recorded in May was the highest since December 1981, with the increase in the prices of energy, food and services being particularly noteworthy. Core inflation, on the other hand, decreased from 6.5 percent in March to 6.0 percent in May. A deceleration was observed in April in inflation associated with personal consumption expenditures (PCE) –an indicator monitored by the Fed–, both in the total component (from 6.6 to 6.3 percent) and in the core component (5.2 to 4.9 percent), although both remain well above the 2 percent target.

Graph 7  
**INFLATION IN DEVELOPED ECONOMIES 2020-2022**  
(12-months % chg.)

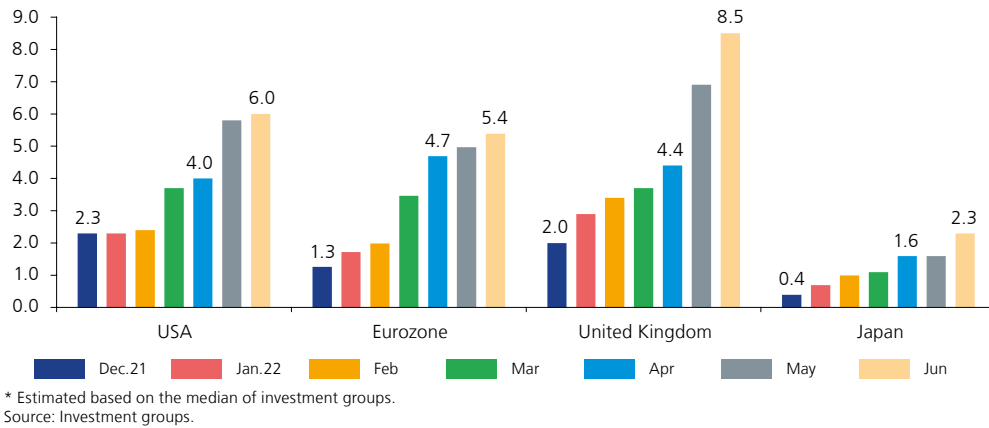


Source: Central banks and statistical institutes.

In the United Kingdom, April’s inflation rate of 9.0 percent –the highest since 1982– was strongly influenced by the price of energy and fuels, although the core component also showed increases and reached a level of 6.2 percent, well above the 2 percent target. In the Eurozone, the inflation rate of 8.1 percent in May represented a new all-time high.

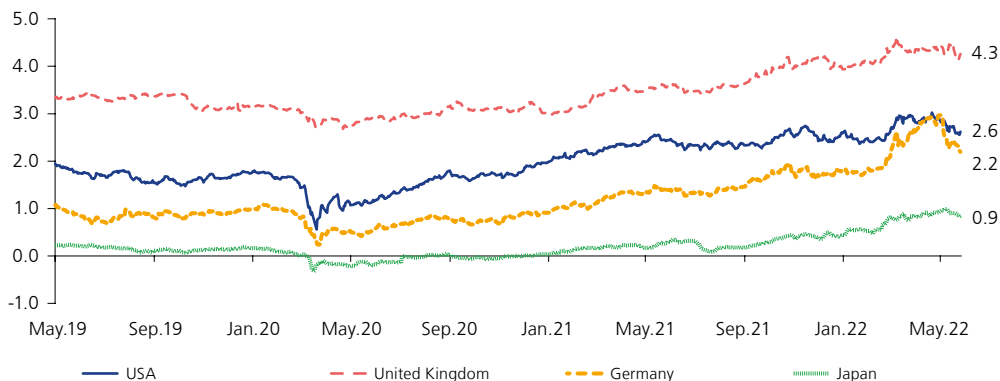
The upward trend in inflation was reflected in an increase in inflation expectations for the end of 2022. According to the projections of banks and investment houses, expected inflation –measured through the medians of the projections– has had a sustained upward trend in line with the increase in observed inflation.

**Graph 8**  
**EXPECTATION ON INFLATION FOR THE END OF 2022\***  
(12-months % change)



However, expectations of inflation in the medium and long-terms have not shown a similar upward trend. Breakeven inflation, estimated based on the difference between nominal and inflation-indexed yields, shows that expected long-term rates are below current levels and in line with central bank targets, except in the cases of the United Kingdom and Japan. Long-term expectations in the UK are above 4 percent, above the target of 2 percent, while expectations in Japan are below the target.

**Graph 9**  
**BREAKEVEN INFLATION RATES (10-YEAR)**





5. **In the economies with inflation targeting, the year-on-year inflation rates have remained above the target range in most cases**, this evidence being observed in both developed and emerging economies. At the regional level, the highest inflation rates are observed in Europe and the Americas, but in Asia most countries are facing an upward trend that places inflation above the upper limit of their target range.

Table 2  
**INFLATION**  
(12-months % chg.)

Región / Country	Dec.20	Dec.21	Mar.22	Apr.22	May.22	Target (%)	Maximum from:
<b>America</b>							
United States	1.4	7.0	8.5	8.3	<b>8.6</b>	2.0	Dec-81
Canada	0.7	4.8	6.7	6.8	<b>n.a.</b>	2.0+/-1.0	Jan-91
Uruguay	9.4	8.0	9.4	10.0	<b>9.4</b>	3.0-7.0	Dec-20
Colombia	1.6	5.6	8.5	9.2	<b>9.1</b>	3.0+/-1.0	Jul-00
Chile	3.0	7.2	9.4	10.5	<b>11.5</b>	3.0+/-1.0	Jul-94
Mexico	3.2	7.4	7.5	7.7	<b>7.7</b>	3.0+/-1.0	Jan-01
Brazil	4.5	10.1	11.3	12.1	<b>11.7</b>	3.75+/-1.5	Oct-03
Peru	2.0	6.4	6.8	8.0	<b>8.8</b>	2.0+/-1.0	Jul-97
<b>Asia</b>							
Indonesia	1.7	1.9	2.6	3.5	<b>3.6</b>	3.0+/-1.0	Aug-19
India	4.6	4.9	7.0	7.8	<b>7.8</b>	4.0+/-2.0	May-14
Philippines	3.3	3.2	4.0	4.9	<b>5.4</b>	3.0+/-1.0	Oct-21
Korea	0.5	3.7	4.1	4.8	<b>5.4</b>	2.0	Aug-08
Thailand	-0.3	2.2	5.7	4.7	<b>7.1</b>	2.5+/-1.5	Sep-08
Israel	-0.7	2.8	3.5	4.0	<b>4.1</b>	1.0-3.0	Jun-11
<b>Europe</b>							
Eurozone	-0.3	5.0	7.4	7.4	<b>8.1</b>	2.0	Record
Germany	-0.3	5.3	7.3	7.4	<b>7.9</b>	2.0	Dec-73
France	0.0	2.8	4.5	4.8	<b>5.2</b>	2.0	Sep-85
Italy	-0.2	3.9	6.5	6.2	<b>6.9</b>	2.0	Nov-90
Spain	-0.5	6.7	9.8	8.4	<b>8.7</b>	2.0	May-85
Serbia	1.3	7.9	9.1	9.6	<b>n.a.</b>	3.0+/-1.5	Jun-13
Hungary	2.7	7.4	8.5	9.5	<b>10.7</b>	3.0+/-1.0	Jun-01
Norway	1.4	5.3	4.5	5.4	<b>n.a.</b>	2.5	Oct-08
Czech Republic	2.3	6.6	12.7	14.2	<b>n.a.</b>	2.0+/-1.0	Dec-93
United Kingdom	0.6	5.4	7.0	9.0	<b>n.a.</b>	2.0	1982
Russia	4.9	8.4	16.7	17.8	<b>17.3</b>	4.0	Jan-02
Poland	2.4	8.6	10.9	12.4	<b>13.9</b>	2.5+/-1.0	Dec-97
Iceland	3.6	5.1	6.7	7.2	<b>n.a.</b>	2.5	Mar-10
Sweden	0.5	3.9	6.0	6.4	<b>7.3</b>	2.0	Dec-91
Turkey	14.6	36.1	61.1	70.0	<b>73.5</b>	5.0+/-2.0	Oct-98
Romania	2.1	8.2	10.2	13.8	<b>n.a.</b>	2.5+/-1.0	Feb-04
Switzerland	-0.8	1.5	2.4	2.5	<b>n.a.</b>	<,2.0	Oct-08
<b>Africa</b>							
South Africa	3.1	5.9	5.9	5.9	<b>n.a.</b>	3.0-6.0	Mar-17
Ghana	10.4	12.6	19.4	23.6	<b>27.6</b>	8.0 +/-2.0	Jan-04
<b>Oceania</b>							
Australia *	0.9	3.5	5.1	n.a.	<b>n.a.</b>	2.0-3.0	Jun-01
New Zealand *	1.4	5.9	5.9	n.a.	<b>n.a.</b>	2.0+/-1.0	Q2 1990

Memo: Includes countries with an inflation target range, as well as economies with a target inflation level. The column of the date of the maximum data for Spain refers to the data for March 2022, while for Uruguay, Colombia, Brazil and Russia they refer to the data for April 2022.

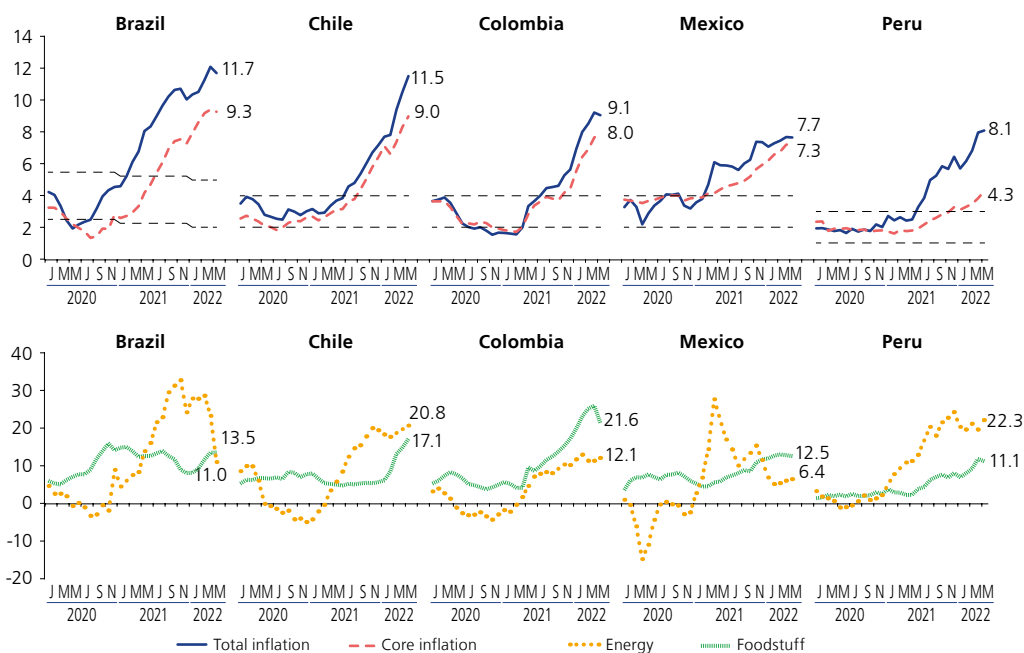
n.a.: not available.

\* Quarterly data.

Source: Central banks and statistical institutes.

In the economies of the Latin American region, inflation continued its upward trend and remained above the upper limit of the target range. Although showing lower rates, core inflation followed a similar trend. Inflation rates are influenced by the strong growth of food and energy prices (which show above-average rates, with the exception of energy in Mexico) and by the recovery of domestic demand associated with the favorable epidemiological evolution.

Graph 10  
**INFLATION IN LATIN AMERICA**  
 (12-months % change)



Memo: Data as of April, except for Peru (May). In case of Brazil, this refers to the energy component inside home. Food indices in Brazil and Peru they include the subgroup of meals outside the home.  
 Source: Central banks and national statistical institutes.

6. **In this context of inflationary pressures, most central banks have continued with the withdrawal of monetary stimulus and have reaffirmed their commitment to control inflation.**

The main central banks of developed economies, with the exception of Japan, have continued to withdraw the monetary stimulus program initiated towards the end of last year. This withdrawal has been taking the form of an increase in interest rates or a reduction in asset purchases.

In the United States, the Fed raised the monetary policy rate by 50 bps (a rate hike not observed since 2000) in May and announced that it would reduce the size of its balance sheet by up to US\$ 47.5 billion per month between June and August and by US\$ 95.0 billion in the following three months. In June, it raised the rate again, this time by 75 bps (a magnitude not seen since 1994), and also revised inflation projections upwards and growth projections downwards.





Table 3  
**FED PROJECTIONS\***

	2022		2023		2024		Long term	
	Mar.22	Jun.22	Mar.22	Jun.22	Mar.22	Jun.22	Mar.22	Jun.22
Growth	2.8	1.7	2.2	1.7	2.0	1.9	1.8	1.8
Unemployment rate	3.5	3.7	3.5	3.9	3.6	4.1	4.0	4.0
Inflation (PCE)	4.3	5.2	2.7	2.6	2.3	2.2	2.0	2.0
Core inflation (core PCE)	4.1	4.3	2.6	2.7	2.3	2.3	-	-
Memo: Core PCE excludes food and energy.								
Interest rate (%)	1.9	3.4	2.8	3.8	2.8	3.4	2.4	2.5
Interest rate range (%)	1.4-3.1	3.1-3.9	2.1-3.6	2.9-4.4	2.1-3.6	2.1-4.1	2.0-3.0	2.0-3.0

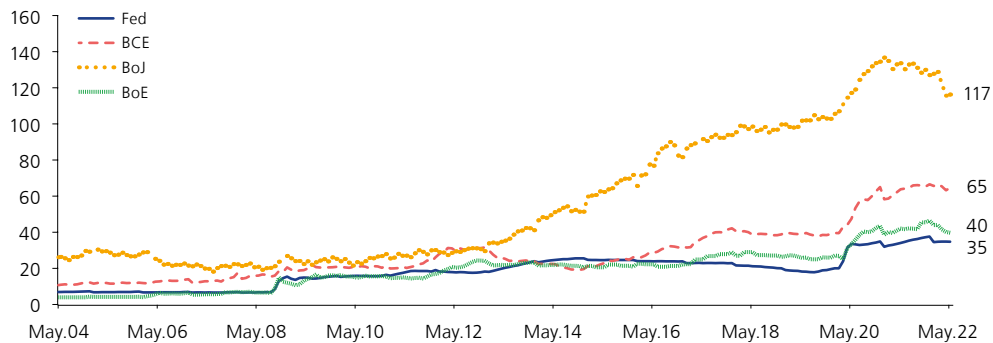
\* Includes 18 data from the individual projections of the members of the Fed at the end of the period.  
Source: FED.

The UK, on its side, continued with the adjustment started at the end of 2021 and made the fourth and fifth consecutive hikes, raising the rate from 0.75 to 1.0 percent in May and from 1.0 to 1.25 percent in June. Switzerland, on the other hand, raised its rate from record lows of -0.75 percent (set since 2015) to -0.25 percent.

In the case of the European Central Bank (ECB), statements from officials, aligned with market expectations, lead to anticipate a rate increase in July and additional ones in the following meetings. With this, the ECB's deposit rate, currently at -0.5 percent, would move into positive territory by the end of 2022. The ECB's asset purchase program is also expected to end around the third quarter.

The exception to this trend is Japan, whose central bank has maintained its monetary policy rate at -0.1 percent and reaffirmed its asset purchase policy in order to prevent 10-year sovereign bond yields from exceeding 0.25 percent.

Graph 11  
**CENTRAL BANKS: TOTAL ASSETS**  
(% GDP)



Memo: Fed (United States Federal Reserve), ECB (European Central Bank), BoJ (Bank of Japan) and BoE (Bank of England).  
Source: Central banks and IMF.

Similarly, most central banks in the emerging economies have raised their interest rates. In the second quarter, Latin American and European economies continued to adjust rates, while some Asian economies (such as the Philippines, Malaysia and India) made the first rate increase since their rates reached record lows during the pandemic. In Latin America, interest rates rose between 50 and 150 bps between March and

June. It is worth pointing out that, with the exception of Mexico, policy rates in the countries of the region are above the levels observed before the pandemic (December 2019).

Table 4  
**MONETARY POLICY INTEREST RATES**  
(%)

	Interest rate					Chg. Jun.22 in pbs, w.r to:	
	Dec.19	Dec.20	Dec.21	Mar.22	Jun.22	Mar.22	Dec.21
<b>Developed economies</b>							
USA	1.75	0.25	0.25	0.50	1.75	125	150
Canada	1.75	0.25	0.25	0.50	1.50	100	125
Eurozone	0.00	0.00	0.00	0.00	0.00	0	0
United Kingdom	0.75	0.10	0.25	0.75	1.25	50	100
Sweden	0.00	0.00	0.00	0.00	0.25	25	25
Switzerland	-0.75	-0.75	-0.75	-0.75	-0.25	50	50
Norway	1.50	0.00	0.50	0.75	0.75	0	25
Japan	-0.10	-0.10	-0.10	-0.10	-0.10	0	0
South Korea	1.25	0.50	1.00	1.25	1.75	50	75
New Zealand	1.00	0.25	0.75	1.00	2.00	100	125
Australia	0.75	0.10	0.10	0.10	0.85	75	75
<b>Latin America</b>							
Brazil	4.50	2.00	9.25	11.75	13.25	150	400
Colombia	4.25	1.75	3.00	5.00	6.00	100	300
Peru	2.25	0.25	2.50	4.00	5.50	150	300
Chile	1.75	0.50	4.00	7.00	9.00	200	500
Mexico	7.25	4.25	5.50	6.50	7.00	50	150
Uruguay	--	4.50	5.75	7.25	9.25	200	350
<b>Asia</b>							
Philippines	4.00	2.00	2.00	2.00	2.25	25	25
Malaysia	3.00	1.75	1.75	1.75	2.00	25	25
India	5.15	4.00	4.00	4.00	4.90	90	90
Thailand	1.25	0.50	0.50	0.50	0.50	0	0
Indonesia	5.00	3.75	3.50	3.50	3.50	0	0
Israel	0.25	0.10	0.10	0.10	0.75	65	65
Taiwan	1.38	1.13	1.13	1.38	1.50	13	38
<b>Europe</b>							
Czech Republic	2.0	0.25	3.75	5.00	5.75	75	200
Poland	1.50	0.10	1.75	3.50	6.00	250	425
Ukraine	13.50	6.00	9.00	10.00	25.00	1,500	1,600
Russia	6.25	4.25	8.50	20.00	9.50	-1,050	100
Iceland	3.00	0.75	2.00	2.75	3.75	100	175
Serbia	2.25	1.00	1.00	1.00	2.50	150	150
Romania	2.50	1.50	1.75	2.50	3.75	125	200
Hungary	0.90	0.60	2.40	4.40	5.90	150	350
<b>Africa</b>							
South Africa	6.50	3.50	3.75	4.25	4.75	0	100

Memo: Data as of June 16.

Source: Central banks and national statistical institutes.

On the other hand, higher inflationary pressures have reduced expectations for the implementation of expansionary **fiscal policies** in the main developed economies. In the United States, for example, there are still delays in the approval by Congress of the spending package proposed by the executive branch. In the Eurozone, finance ministers agreed in May to shift the fiscal policy stance to a neutral position. Nonetheless, it is likely that high energy and food prices, as well as the economic slowdown, will lead to the implementation of measures to support the most affected sectors through higher spending (subsidies) or lower taxes (tax exemptions).





## Global economic outlook

7. **Global growth in 2022 (3.0 percent) is expected to be below the level projected in the March Report (3.8 percent).** This downward revision is explained by the fact that two of the risks outlined in the March Report have materialized. On the one hand, the conflict between Ukraine and Russia has worsened and its duration has exceeded initial forecasts. On the other hand, China's "zero tolerance" policy has had a greater impact than initially expected, given the extent of the restrictions imposed. Moreover, the growth projection for 2023 has been revised slightly downward, from 3.2 to 3.0 percent.

Table 5  
**GLOBAL GDP GROWTH**  
(Annual % change)

	PPP*	2021**	2022		2023	
			IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>Developed economies</b>	<b>42.2</b>	<b>5.2</b>	<b>3.4</b>	<b>2.6</b>	<b>2.2</b>	<b>1.8</b>
<i>Of which</i>						
1. USA	15.9	5.7	3.2	2.3	2.4	2.0
2. Eurozone	12.0	5.3	3.7	2.7	1.9	1.8
3. Japan	3.9	1.6	2.8	2.0	1.7	1.7
4. United Kingdom	2.3	7.4	4.4	3.7	1.0	1.0
5. Canada	1.4	4.6	4.0	3.9	2.8	2.8
6. Other	6.8	5.0	3.1	2.8	2.6	2.4
<b>Emerging economies</b>	<b>57.5</b>	<b>6.7</b>	<b>4.1</b>	<b>3.3</b>	<b>4.0</b>	<b>4.0</b>
<i>Of which</i>						
1. China	18.7	8.1	5.0	3.8	5.2	5.2
2. India	7.0	8.9	8.0	7.6	6.3	6.2
3. Russia	3.1	4.7	-5.0	-10.0	-0.3	-0.9
4. Latin America and the Caribbean	7.3	6.0	1.9	2.0	2.3	2.1
Argentina	0.7	10.3	2.3	2.5	1.8	1.8
Brazil	2.4	4.6	0.5	0.8	2.0	1.4
Chile	0.4	11.7	2.5	2.0	1.5	1.0
Colombia	0.6	10.6	4.0	4.8	3.1	3.1
Mexico	1.9	4.8	2.5	2.0	2.0	1.9
Peru	0.3	13.3	3.4	3.1	3.2	3.2
5. Other	17.9	5.3	4.6	4.7	4.3	4.4
<b>World Economy</b>	<b>100.0</b>	<b>6.0</b>	<b>3.8</b>	<b>3.0</b>	<b>3.2</b>	<b>3.0</b>

\* Base 2021

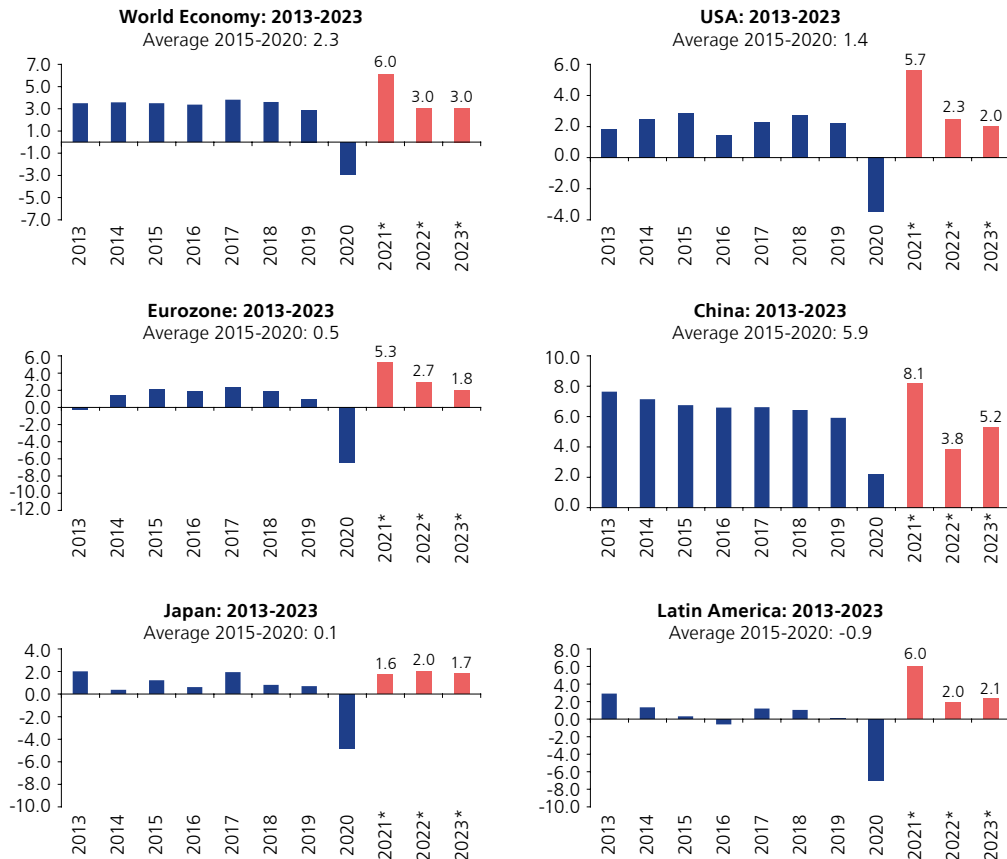
\*\* Preliminary

Source: IMF, Consensus Forecast, and BCRP.

This downward revision is observed in the vast majority of developed economies and in the largest emerging economies. Among the former, the Eurozone's growth projection is revised down by 1 percentage point, given its greater exposure to the conflict in Ukraine and its strong trade exposure to China. Among the latter, China's growth projection for 2022 is revised down by 1.2 percentage points due to recent developments associated with the pandemic, to the slowdown observed in the real estate market, and to lower dynamism in its export sector.

This baseline scenario assumes that tensions in the Russia-Ukraine conflict will not escalate and that eventual COVID-19 flare-ups will not lead to measures that would affect growth significantly. It also estimates that the upward trend in food and energy prices reverses over the projection horizon.

Graph 12  
**GDP GROWTH**  
(Real % change)



\* Forecast. Preliminary data for 2021.  
Source: IMF and Consensus Forecast.

Thus, the growth projections consider mostly downside risks, while the probability of a stagflation scenario has increased significantly due to the likelihood that supply shocks will persist and be more pronounced than envisaged in this baseline scenario. In addition, the implementation of additional sanctions on Russia (especially the European Union’s ban on Russian gas imports) could generate a significant drop in global growth and reinforce upward pressures on inflation.

A similar impact could be seen if further adjustments are observed in the food market, not only in grains and oil, but also in a wide variety of products due to the higher costs of fertilizers and inputs. This situation could be accentuated if the protectionist measures implemented in recent months, which restrict global trade, become more widespread. The impact on international prices would particularly affect lower-income countries, where food accounts for a higher proportion of consumer spending.

Similarly, the evolution of COVID-19 contagions (particularly in China) remains a factor of uncertainty in the projection horizon.



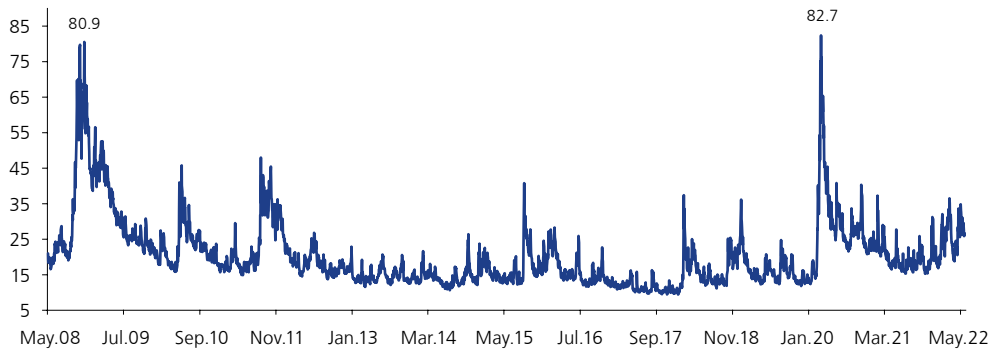




### International financial markets

8. Since the last Report, **financial markets** have been affected by the factors mentioned above: the conflict in Ukraine, tensions between the European Union and Russia, the confinements in China following the resurgence of COVID-19 infections, and the withdrawal of stimuli by the Fed and other central banks to combat high inflation. All of these factors have created a scenario of slower economic growth that have also had a negative impact on financial markets.

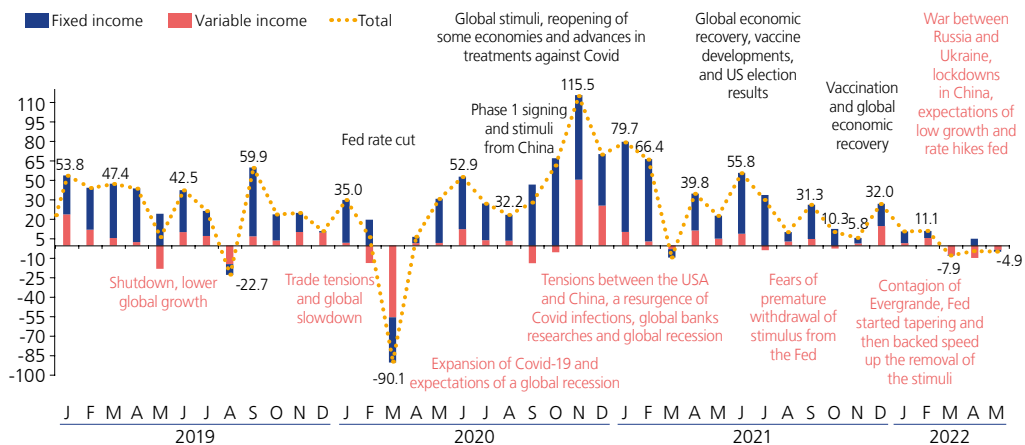
Graph 13  
**VIX INDEX: VOLATILITY OF THE US STOCK MARKET**



Source: Reuters.

This context of increased risk aversion, particularly during April and the first half of May, led investors to liquidate riskier assets in favor of safe assets. This was reflected in the fall of most stock markets, commodities and emerging currencies. At the same time, global sovereign yields rose following the implementation of more contractionary monetary policies in an environment of high inflation, while capital flows recorded net outflows from emerging economies in recent months.

Graph 14  
**CAPITAL FLOWS FROM NON-RESIDENTS TO EMERGING MARKETS**  
(Billion US\$)

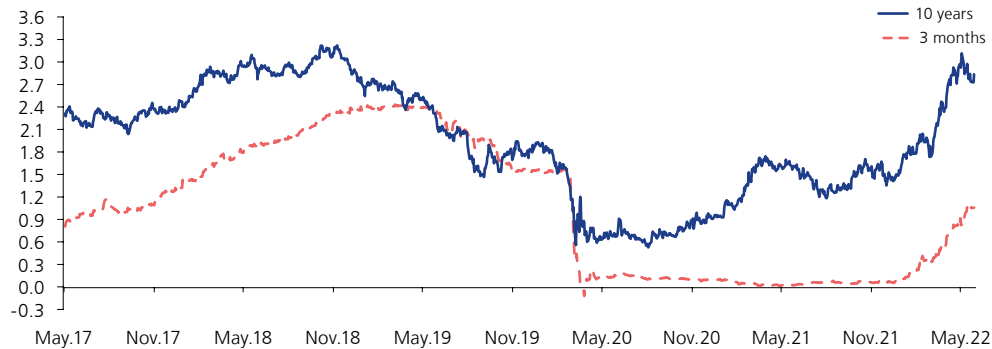


Source: IIF.

9. In **fixed income markets**, long-term sovereign yields rose in line with rate hikes and cuts in central bank asset purchases to curb inflation. In the United States, the

yield of the 10-year sovereign bonds even reached 3.13 percentage points on May 5, the highest yield since November 2018. Similar trends were observed in Europe where long-term sovereign yields also rose, in line with the ECB's comments in favor of raising rates from the third quarter and ending its asset purchase program this year.

Graph 15  
YIELD ON THE US SOVEREIGN BONDS, 2017-2022  
(%)



Source: Reuters.

The rise in emerging economies' sovereign bond yields is explained by prospects that the central banks of developed economies will withdraw monetary stimulus. The only exception to this upward trend was Russia, whose bonds recovered after the sharp fall they registered during the first weeks of the conflict with Ukraine.

Table 6  
YIELDS ON 10-YEAR SOVEREIGN BONDS  
(%)

	Dec.21 (a)	Mar.22 (b)	May.22 (c)	Differences (bps)	
				(c) - (b)	(c) - (a)
USA	1.51	2.34	2.85	51	134
Germany	-0.18	0.55	1.12	58	130
France	0.20	0.98	1.64	66	144
Italy	1.17	2.04	3.12	108	195
Spain	0.56	1.43	2.22	79	166
Greece	1.32	2.65	3.56	91	225
United Kingdom	0.97	1.61	2.10	49	113
Japan	0.07	0.21	0.24	3	17
Brazil	10.84	11.61	12.56	95	172
Colombia	8.19	9.73	11.08	135	288
Chile	5.65	6.20	6.27	8	62
Mexico	7.56	8.25	8.63	38	107
<b>Peru</b>	<b>5.90</b>	<b>6.57</b>	<b>7.53</b>	<b>96</b>	<b>163</b>
South Africa	9.80	9.96	10.26	30	46
India	6.45	6.84	7.42	58	96
Turkey	23.54	24.30	20.39	-391	-315
Russia	8.29	11.43	9.52	-191	123
China	2.78	2.79	2.80	1	2
South Korea	2.26	2.97	3.33	37	108
Indonesia	6.36	6.73	7.03	30	67
Thailand	1.89	2.25	2.85	60	96
Malaysia	3.59	3.86	4.19	33	60
Philippines	4.71	5.68	6.50	82	178

\* Elaborated as of May 31, 2022.  
Source: Reuters.





10. In **equity markets**, most developed stock markets fell, influenced by profit-taking after central banks withdrew stimulus, as well as by new sanctions on Russia and confinements in China. This trend was offset only in part by mostly positive first quarter 2022 corporate results.

Stock markets within the region also declined, but by a larger magnitude due to the correction of various commodity prices (particularly basic metals). It should be noted that the Russian stock market recovered from its initial setback.

Table 7  
**STOCK EXCHANGE\***  
(Indices)

		Dec.21 (a)	Mar.22 (b)	May.22 (c)	% chg.	
					(c) / (b)	(c) / (a)
VIX**	S&P 500	17.22	20.56	26.19	5.6	9.0
USA	Dow Jones	28,538	32,977	32,990	0.0	15.6
USA	S&P 500	4,766	4,530	4,132	-8.8	-13.3
Germany	DAX	15,885	14,415	14,388	-0.2	-9.4
France	CAC 40	7,153	6,660	6,469	-2.9	-9.6
Italy	FTSE MIB	27,347	25,021	24,505	-2.1	-10.4
Spain	IBEX 35	8,714	8,445	8,852	4.8	1.6
Greece	ASE	893	879	891	1.3	-0.3
United Kingdom	FTSE 100	7,385	7,516	7,608	1.2	3.0
Japan	Nikkei 225	28,792	27,821	27,280	-1.9	-5.3
Brazil	Ibovespa	104,822	119,999	111,351	-7.2	6.2
Colombia	COLCAP	1,411	1,616	1,603	-0.8	13.6
Chile	IPSA	4,308	4,937	5,350	8.4	24.2
Mexico	IPC	53,272	56,537	51,753	-8.5	-2.9
Argentina	Merval	83,500	90,960	92,288	1.5	10.5
<b>Peru</b>	<b>Ind. Gral.</b>	<b>21,112</b>	<b>24,916</b>	<b>20,719</b>	<b>-16.8</b>	<b>-1.9</b>
South Africa	JSE	73,709	75,497	72,095	-4.5	-2.2
India	Nifty 50	17,354	17,465	16,585	-5.0	-4.4
Turkey	XU100	1,858	2,233	2,547	14.1	37.1
Russia	RTS	1,596	1,021	1,208	18.3	-24.3
China	Shanghai C.	3,640	3,252	3,186	-2.0	-12.5
South Korea	KOSPI	2,978	2,758	2,686	-2.6	-9.8
Indonesia	JCI	6,581	7,071	7,149	1.1	8.6
Thailand	SET	1,658	1,695	1,663	-1.9	0.3
Malaysia	KLCI	1,568	1,587	1,570	-1.1	0.2
Philippines	Psei	7,123	7,203	6,775	-6.0	-4.9

\* Elaborated as of May 31, 2022.

\*\* Data and variations are expressed in points.

Source: Reuters.

11. As for **foreign exchange markets**, the dollar appreciated against the main currencies due to the Fed's stricter stance on fighting inflation and greater risk aversion in the period under analysis. As a result, the euro, the pound sterling and the yen continued showing the depreciation trend of the first quarter. The higher rate of depreciation of the yen stands out, this being explained by the Bank of Japan's continued expansionary monetary policies.

In the emerging economies, most currencies followed the global trend, with the exception of the Russian ruble, which recovered from the fall it registered at the beginning of the conflict.

Table 8  
**EXCHANGE RATE\***

(In monetary units per dollar, except for euro and pound sterling)

		Dec.21 (a)	Mar.22 (b)	May.22 (c)	% chg. **	
					(c) / (b)	(c) / (a)
Dollar Index***	US Dollar Index	95.97	98.31	101.75	3.5	6.0
Euro	Euro	1.137	1.107	1.073	-3.0	-5.6
United Kingdom	Pound sterling	1.353	1.313	1.260	-4.1	-6.9
Japan	Yen	1,115.08	121.66	128.68	5.8	11.8
Brazil	Real	5.570	4.739	4.732	-0.2	-15.1
Colombia	Peso	4,065	3,768	3,761	-0.2	-7.5
Chile	Peso	851	786	823	4.8	-3.3
Mexico	Peso	20.49	19.85	19.65	-1.0	-4.1
Argentina	Peso	102.68	111.00	120.19	8.3	17.1
<b>Peru</b>	<b>Sol</b>	<b>3.991</b>	<b>3.680</b>	<b>3.715</b>	<b>1.0</b>	<b>-6.9</b>
South Africa	Rand	15.99	14.60	15.63	7.0	-2.3
India	Ruppe	74.47	75.90	77.57	2.2	4.2
Turkey	Lira	13.32	14.67	16.37	11.6	23.0
Russia	Ruble	74.56	79.25	60.25	-24.0	-19.2
China	Yuan (onshore)	6.352	6.339	6.672	5.2	5.0
South Korea	Won	1,188	1,214	1,242	2.3	4.6
Indonesia	Rupee	14,250	14,368	14,580	1.5	2.3
Thailand	Bath	33.23	33.28	34.30	3.1	3.2
Malaysia	Ringgit	4.164	4.203	4.377	4.1	5.1
Philippines	Peso	50.99	51.71	52.44	1.4	2.8

\* Elaborated as of May 31, 2022.

\*\* An increase (fall) in the index means an appreciation (depreciation) of the US dollar, except in the euro and the pound.

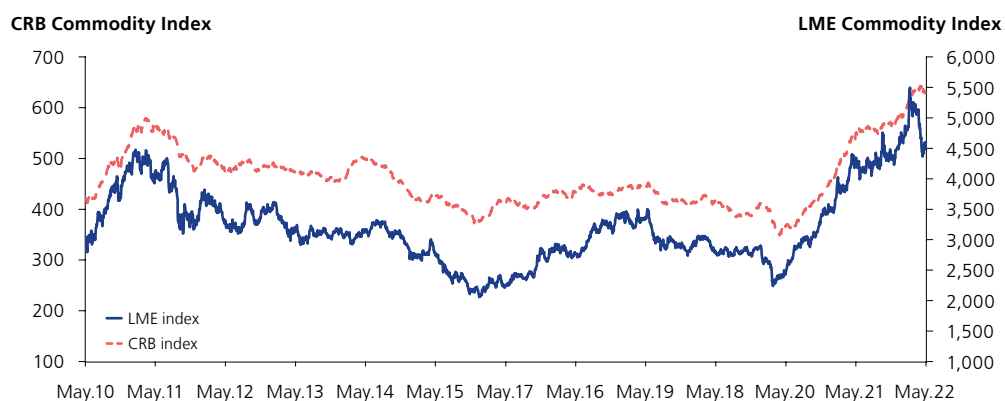
\*\*\* An increase (fall) in the index means an appreciation (depreciation) of the US dollar against a currency basket (made up by the euro, yen, the pound, the Canadian dollar, Swedish krona and the Swiss franc).

Source: Reuters.

## Commodity prices

- The prices of most industrial commodities decreased with respect to the levels they had in the period analyzed in the March Inflation Report. Fears of a lower dynamism in China –the main consumer of commodities– have been accentuated in recent months and global growth prospects have been revised steadily down. Expectations of a more accelerated withdrawal of monetary stimulus by the Fed also affected prices through the appreciation of the dollar and the reduction of non-commercial positions in most commodities.

Graph 16  
**LME AND CRB COMMODITY INDEX**



Source: Reuters.





Despite this, however, prices found some support from supply constraints. As noted, these constraints are mainly associated with supply chain disruptions, which have been exacerbated by the new wave of COVID-19 in China, the war in Ukraine and sanctions on Russia. More particularly, the worsening of tensions between Russia and Ukraine have had, even in the short term, a significant impact on commodities such as grains and energy (where these countries' share of global trade is significant). The rise in energy prices, in turn, has implied higher refining costs, which have affected the supply of some metals.

## Copper

13. In the last two months, the price of copper fell 8 percent, from US\$ 4.64 per pound in March to US\$ 4.26 per pound in May, reversing the rise of the first quarter and accumulating a 2 percent drop so far this year.

Table 9  
**SUPPLY AND DEMAND FOR REFINED COPPER**  
(Thousand metric tons)

	2018	2019	2020	2021	2020	2023	% chg. 2022/2021	% chg. 2023/2022
Global Mining Production	20,579	20,630	20,662	21,156	22,246	23,315	5.1%	4.8%
Global Refining Production (Primary + Secondary)	24,063	24,088	24,547	24,825	25,883	26,826	4.3%	3.6%
Global Use of Refined Copper	24,462	24,350	24,963	25,264	25,742	26,474	1.9%	2.8%
Refined Balance 1/	-399	-262	-415	-439	142	352	--	--

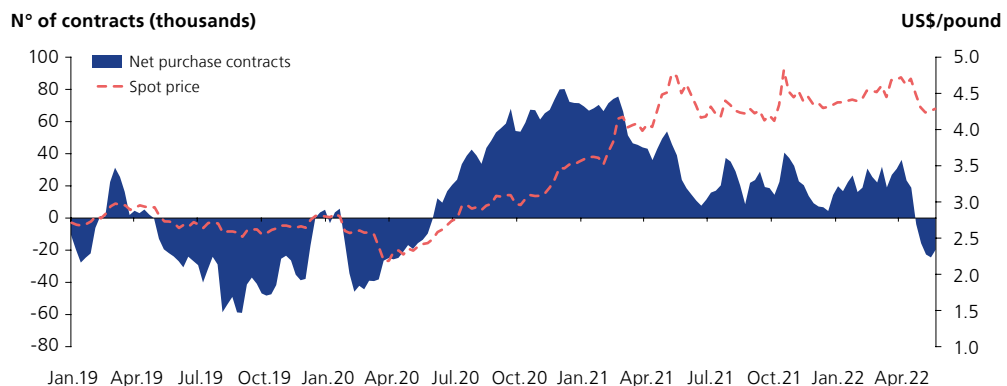
1/ The balance of refined products is calculated as the global production of refined products (supply) minus their use (demand).

2/ ICSG report for May 2022 and Copper Market Forecast 2022/2023.

Source: The International Copper Study Group (ICSG).

The average price of copper decreased in the last two months due to the deterioration of global demand outlook associated with the conflict in Ukraine, which has intensified by the negative impact of the COVID-19 zero tolerance policy on copper demand in China (reflected in the contraction of industrial activity to its lowest level since February 2020). Other factors that have contributed to the fall were the appreciation of the dollar, particularly against the yuan, and the increase in copper inventories at the London Metal Exchange.

Graph 17  
**COPPER: NON-COMERCIAL CONTRACTS**



Memo: The Copper Speculative Net Positions of the Commodities Futures Trading Commission (Commodity Futures Trading Commission) are reported weekly and reflect the difference between the total volume of the long position (or purchase) and short position (or sale) in the market and opened by non-commercial operators (speculative). This report only includes the future markets in the USA (Chicago and New York Stock Exchanges).

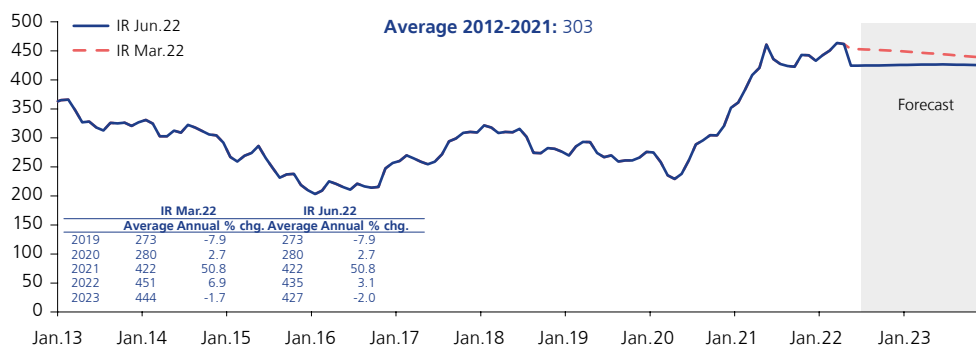
Source: Comex.

Moreover, these events have coincided with a contraction in non-commercial demand. The number of non-commercial net purchase contracts for copper turned negative since the end of April for the first time since the beginning of June 2020, reflecting the change in speculative investors’ attitude about the market outlook.

In line with this, the copper price projection has been revised down with respect to the March Inflation Report estimate. This revision reflects the change in the outlook for world growth, particularly in China and the Eurozone, as well as an increase in the supply of concentrates in the projection horizon.

Uncertainty factors that may also affect the price of this metal include the future course of the Russia-Ukraine conflict, the evolution of COVID-19 in China, and monetary policy decisions by major central banks in response to inflation. Other uncertainty factors include the potential inflow of new supply capacity and the stimulus policies that China will adopt to boost the recovery of its economy.

Graph 18  
**COPPER: JANUARY 2013 - DECEMBER 2023**  
 (US\$. cents/pd.)



Source: Reuters and BCRP.

## Zinc

- The average international price of zinc price fell to US\$ 1.73 a pound in May 2022, 4 percent below the level recorded in March 2022, but still 11 percent above the December 2021 level. It is worth mentioning that zinc prices declined in recent weeks after the price reached its highest level since December 2006 on April 19.

Although the factors explaining the downward pressures are similar to those affecting the price of copper, in the case of zinc the market is affected by increased supply constraints due to lower refined production, following the impact of high energy prices on production costs. Further supported by the conflict in Ukraine, high energy prices have particularly affected Europe (a region that accounts for around 15 percent of global refining capacity). In addition, there are also delays in the new concentrate production line. In this context, the International Zinc and Lead Study Group (ILZSG) estimates

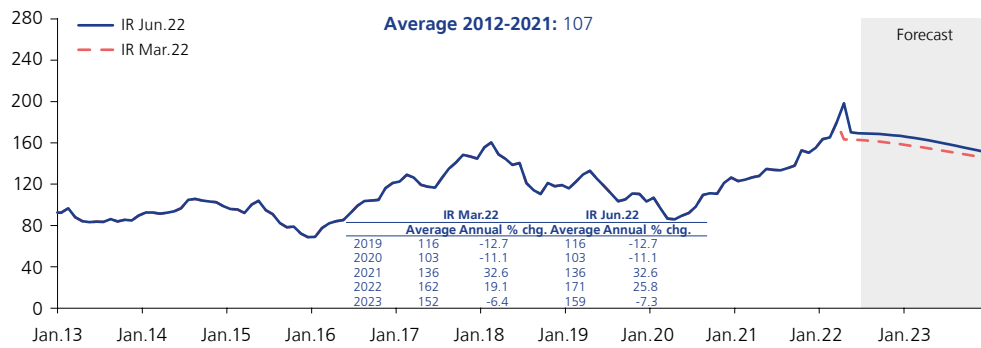




that the global zinc market will record a supply deficit for the second consecutive year.

Therefore, zinc prices are expected to correct downwards in the forecast horizon, although they would be slightly higher than the levels observed in the March Inflation Report. Supply is expected to remain tight in the coming months, although it is possible that, in the medium term, the normalization of production and the increase in mine supply will generate downward pressure on the price. The main factor of uncertainty in this projection lies in the future evolution of energy prices, which may come under upward pressure if Europe imposes similar sanctions on Russian oil and gas consumption to those imposed by the United States.

Graph 19  
ZINC: JANUARY 2013 - DECEMBER 2023  
(US\$ cents/pd.)



Source: Reuters and BCRP.

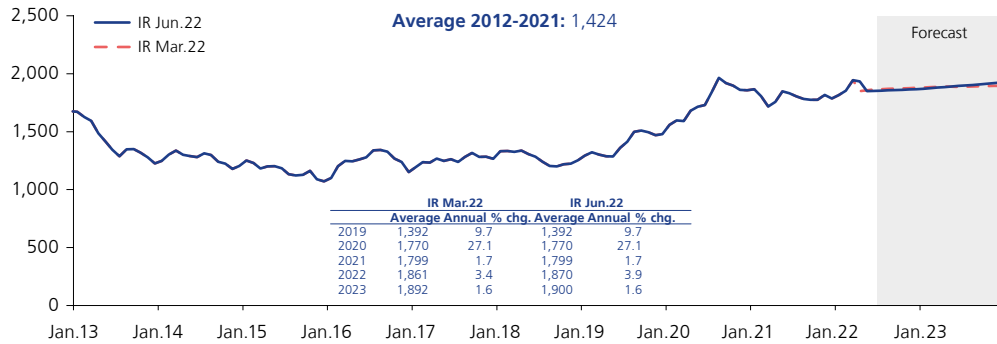
## Gold

- 15. In May, the average price of gold was US\$ 1,849 per troy ounce, lower than in March, but 3 percent higher than in December 2021.

The price of gold decreased due to lower investor demand associated with the beginning of the Fed's withdrawal of monetary stimulus, which led to a strengthening of the dollar globally. Thus, May saw a significant reduction in gold holdings by Exchange-Traded Funds (ETFs) after the strong demand seen in the first quarter of the year (due to increased demand for safe-haven assets following the war in Ukraine). This trend was also influenced by the slowdown in China, which reduced demand for jewelry, bullion and coins.

Despite this, however, the gold price projection for 2023 is revised slightly up from the March Report, considering the risk factors foreseen. The main factors of uncertainty are the evolution of inflation in developed economies, the pace of the Fed's stimulus reduction and geopolitical events (particularly those linked to the conflict between Russia and Ukraine).

Graph 20  
**GOLD: JANUARY 2013 - DECEMBER 2023**  
 (US\$/tr. ounce)



Source: Reuters and BCRP.

## Natural gas

16. Prices in the **natural gas** market showed different evolutions depending on the market. In the case of the European (UK BNP) and Asian (Japan Korean market) markets –where prices rose 530 and 472 percent, respectively, between March 2021 and March 2022–, prices reversed the upward trend and decreased in the last two months (71 and 39 percent, respectively). In contrast, the average Henry Hub natural gas price increased 66 percent with respect to March. It should be pointed out that prices in the European and Asian markets remain well above those recorded in the North American market.

The price of Henry Hub natural gas increased due to higher external demand for U.S. gas due to the growing supply shortage in the world market, reflected in the difficulty to replenish inventories in the main consuming regions. Inventories in the United States are below the level recorded in 2021 and below the average of the last five years, due to higher LNG exports to Europe. In addition, the difficulty of expanding coal capacity in the United States prevents the substitution of natural gas consumption. This was compounded by temporary production stoppages in the United States due to frost in some regions.

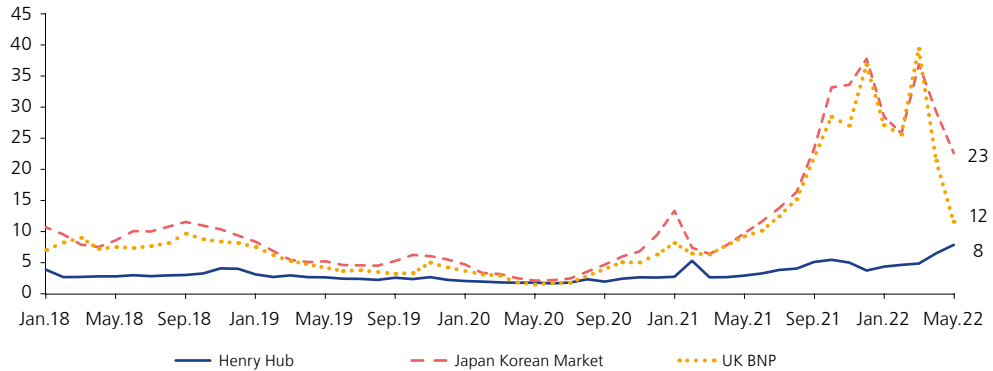
The situation in Europe contrasts sharply with that observed in the United States. Prices in that region have fallen, favored by a reduction in consumption due to the change of season and the European Union’s decision to seek other sources of supply, including record LNG imports from the United States. This has offset partial natural gas cuts to Russia (via Ukraine) and allowed inventories to recover after the sharp drop in 2021. Nonetheless, prices remain at levels above those recorded a year ago.







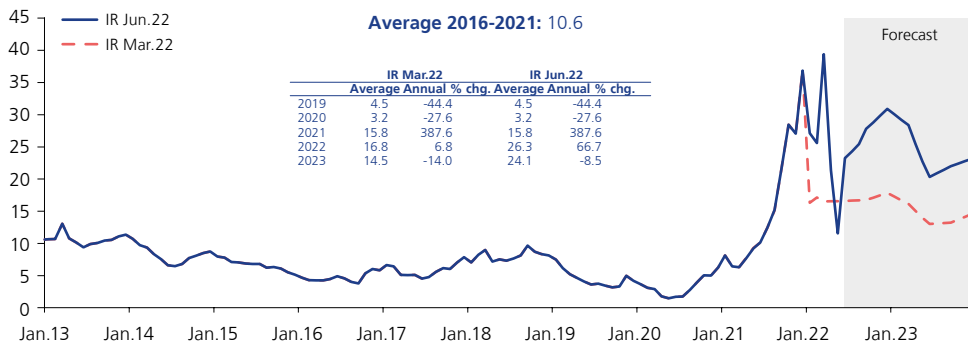
Graph 21  
**NATURAL GAS PRICES**  
 (US\$/Mbtu)



Source: Reuters.

The average Henry Hub natural gas price estimated for the projection horizon has been revised up, in line with a tighter global market than forecast in the March Report. It should be pointed out that the gas price corresponding to the European market is expected to be under upward pressure in the short term due to recent geopolitical events, although the forecast scenario assumes a gradual normalization in European supply during 2023. Likewise, it should be noted that the UK natural gas price is more volatile in part because it is a less liquid market than the North American market (Henry Hub).

Graph 22  
**NATURAL GAS UNITED KINGDOM: JANUARY 2013 - DECEMBER 2023**  
 (US\$/Mbtu)



Source: Reuters and BCRP.

Therefore, the worsening of geopolitical tensions continues to be the main factor of uncertainty.

**Crude oil**

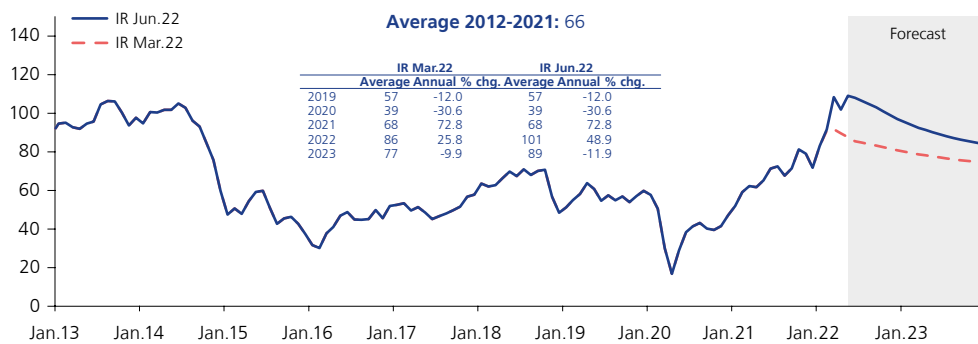
- 17. In May 2022, the average price of **WTI oil** increased 1 percent compared to March 2021, reaching a monthly average price of US\$ 110 per barrel. With this, it accumulated an increase of 53 percent in comparison with the price in December 2021.

The price of oil increased slightly from the already elevated levels it had in the period analyzed in the previous Inflation Report, mainly due to the impact of sanctions on Russia, especially on the energy sector, which is its main economic driver. The main sanctions imposed by Western economies included a ban on the export of oil and energy technology to Russia, as well as a series of financial measures that make it difficult to import oil from that country. This was compounded by OPEC+'s difficulties in meeting its announced production targets. In fact, these commitments, which have not been fulfilled, implied a gradual increase in production below what was expected by the consuming countries in order to balance the market. These events resulted in global oil inventories falling to their lowest levels since April 2014.

It is worth pointing out that upward pressures on oil prices were offset by growing fears of lower global economic growth due to both the strict restrictions imposed by China to control COVID-19 outbreaks, as well as due to the impact of a tighter than initially expected Fed monetary policy.

Prices are expected to decline in the forecast horizon, albeit at levels above those estimated in the March Inflation Report, as tensions between the West and Russia ease and normalization toward pre-pandemic levels continues. The recent announcement made by OPEC+ member countries about their decision to increase crude oil extraction by 648,000 barrels per day in July and August is also a factor taken into account in the price correction. Notwithstanding, there are high levels of uncertainty as a result of a variety of components, including sanctions affecting oil production in Russia, the speed at which U.S. oil and natural gas producers are increasing their output, and the likely return of some production from Iran and Venezuela.

Graph 23  
WTI OIL: JANUARY 2013 - DECEMBER 2023  
(US\$/b)



Source: Reuters and BCRP.

**Food**

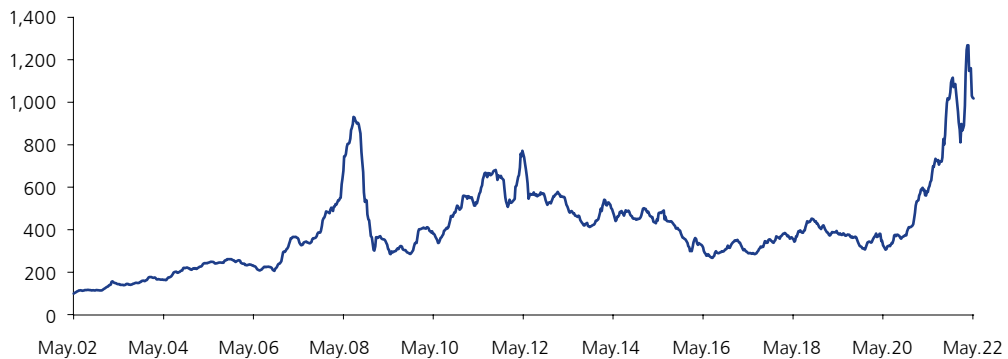
- 18. Food prices intensified their upward trend and reached record highs. The war in Ukraine has had a strong impact on the global supply of wheat, maize, and vegetable oils due to the withdrawal of a significant volume of these food products from the





world market. The grain market had already been tightened by the negative impact of the La Niña event on crops in the main export markets, as well as by the increase in oil prices, the rise in fertilizer prices, and bottlenecks in the supply chain. The latter makes it difficult for farmers to obtain inputs, spare parts and equipment in the time and quantities needed for the production process and raises the cost of crops.

Graph 24  
**FERTILIZER PRICES IN GREEN MARKETS NORTH AMERICA**  
(Index, 07 Jan.2002 = 100)



Source: Reuters.

Moreover, the lower food supply has led many countries to impose restrictions on their food exports, which has exacerbated upward price pressures. The likelihood of a global food crisis is considered one of the downside risks to global growth.

- (a) The price of **maize** increased 7 percent in the last two months, reaching a monthly average price of US\$ 304 per MT in May 2022 after accumulating an increase of 33 percent in comparison with December 2021.

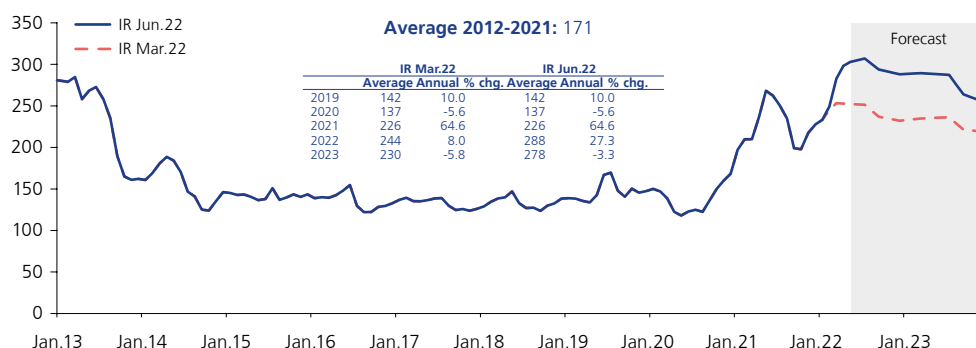
The price of maize increased due to a still-tight global market and fears generated by dry weather in South America in the first quarter of the year. These upward price pressures were intensified by the Russian invasion of Ukraine, which created uncertainty about the duration of Ukraine's absence from the global market. In addition, this was compounded by the substantial drop in plantings in Ukraine for the 2022/23 season, which increased the likelihood of a supply crisis even after the end of the war. Moreover, prospects of a lower-than-expected planted area in the United States due to delayed plantings because of adverse weather added more upward pressures.

Furthermore, another factor that also contributed to the rise in maize prices was the fear that higher fertilizer costs would restrict planting decisions for the 2022/23 crop year. This was compounded by high oil prices (which improved profit margins for the ethanol industry) and the increase in the price of wheat which operates as a substitute grain in the livestock feed industry.

In line with these developments, the average price of maize projected for 2022 and 2023 is revised upward. The world market remains tight, with inventories in major exporting countries at historically low levels (despite the recovery recorded in the 2021/22 season).

The main upside risks to the price projection are that the La Niña episode will continue beyond expectations and that the conflict between Russia and Ukraine will continue and affect Ukraine’s production for a longer period of time. The projection faces high uncertainty as the damage to infrastructure in Ukraine, including grain storage facilities, is unknown, and it is not known whether the inventories accumulated during the conflict can be exported.

Graph 25  
**MAIZE: JANUARY 2013 - DECEMBER 2023**  
 (US\$/ton)



Source: Reuters and BCRP.

- (b) Since March, when our last Report was published, the price of **wheat** has increased 18 percent and reached a monthly average price of US\$ 480 the MT in May 2022, accumulating an increase of 35 percent in comparison with December 2021.

The rising trend in wheat prices was accentuated in recent months by the supply shock caused by the conflict in Ukraine and there is a risk that the conflict between Russia and Ukraine will cause significant disruption to global trade. According to the United States Department of Agriculture (USDA), the two countries’ share of world exports will decline from 28 percent in the 2020/2021 cycle to 24 percent in the upcoming 2022/2023 marketing year. It is worth mentioning that wheat inventories in the main exporting countries were already tight prior to the conflict, especially in the United States, where the crop was affected by drought. The next farming season begins with fears of additional trade disruptions after the Indian government banned wheat exports to address the negative impact of extremely hot and dry weather in this country. Additionally, winter wheat growing conditions in the United States and parts of Europe have deteriorated

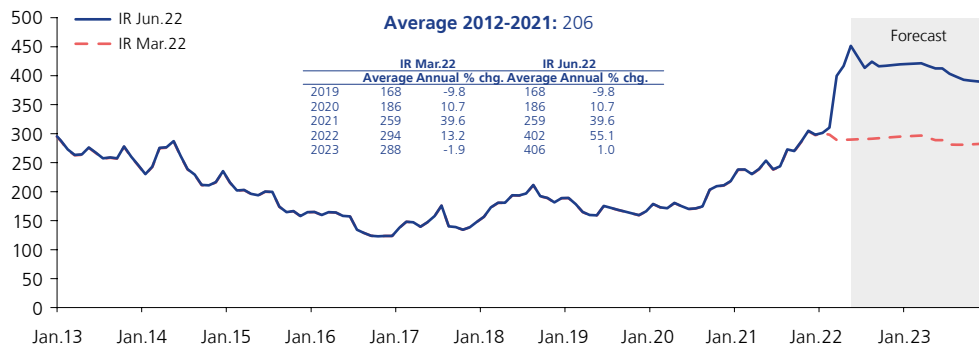




due to adverse weather, while spring wheat planting in the United States has been delayed.

The price of wheat is likely to continue to be subject to the pressure of these factors and, additionally, by tight inventories and the high prices of substitute grains (e.g. maize and soybeans) used as livestock feed. In line with this, the wheat price projection has been revised up from that estimated in the previous Inflation Report.

Graph 26  
**WHEAT: JANUARY 2013 - DECEMBER 2023**  
 (US\$/ton)



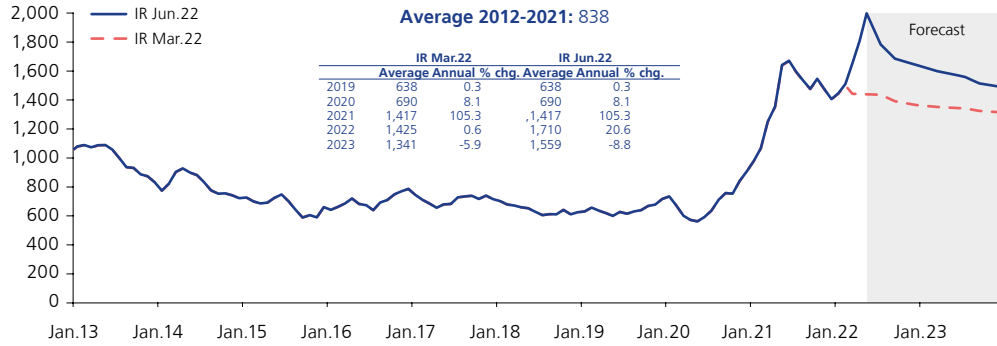
Source: Reuters and BCRP.

- (c) In May, the average price of **soybean oil** was US\$ 1,961 per MT, 16 percent higher than the level in the previous Inflation Report. This rise reinforces the upward trend of the first quarter, with this price accumulating an increase of 39 percent compared to December 2021.

Soybean oil prices recorded a significant increase in the last two months due to an increase in world demand to replace other vegetable oils. The latter is explained by the fact that the war in Ukraine led to a shortage of sunflower oil (Russia and Ukraine account for around 50 percent of world production) and also by the restrictions introduced by the Indonesian government on palm oil exports. In addition, high oil prices improved margins in the biodiesel industry, which boosted demand for biodiesel in the United States and Brazil.

The price of soybean oil had already risen significantly at the beginning of the year due to drought fears in South America. Growing concerns about the impact of La Niña in Latin America led to lower production forecasts for Brazil, Argentina and Paraguay, which together account for 57 percent of world soybean exports and 59 percent of world soybean oil exports in the 2021/22 cycle, according to the USDA.

Graph 27  
**SOYBEAN OIL: JANUARY 2013 - DECEMBER 2023**  
 (US\$/TM)



Source: Reuters and BCRP.

Considering these developments, soybean prices are projected to be above those estimated in the previous report. The main uncertainty in this projection lies in the price of oil, as well as in the protectionist measures that may be adopted by producing countries and in the impact of weather conditions on planting in the United States.





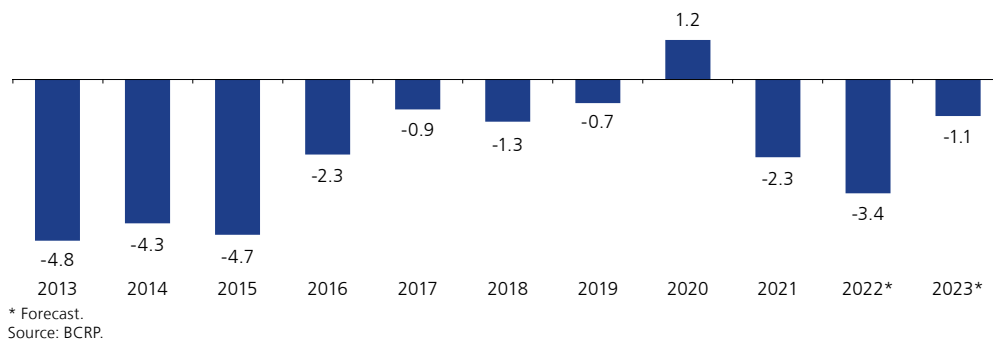
## II. Balance of Payments

### Current account

19. The annualized **balance in the current account** went from a deficit of 2.3 percent of GDP at the end of 2021 to a deficit of 3.0 percent in the first quarter of 2022, reflecting: (i) the higher profits of companies with FDI in the country as a result of high commodity prices; (ii) the higher value of imports, associated with the growth of domestic demand and the higher prices of food, fuel and industrial inputs, as well as the persistence of bottlenecks in global supply chains; and (iii) the widening of the services deficit, explained by high freight costs, accentuated by confinements and strong restrictions in China. These factors offset the higher value of exports, mainly exports of traditional products, as well as the recovery of remittances from abroad.

The aforementioned factors are expected to lead to a current account deficit equivalent to 3.4 percent of GDP in 2022. The projection incorporates, on the one hand, lower mining production and higher import prices due to persistent supply shocks (supply chain problems, geopolitical conflicts, and COVID-19 flare-ups). In 2023, the deficit is projected to be reduced to 1.1 percent of output, after correction for freight costs and import prices. This lower deficit level would be below the historical average (2.5 percent).

Graph 28  
**CURRENT ACCOUNT: 2013-2023**  
(% GDP)



20. The current account deficit of some countries in the region has grown between 2020 and the first quarter of 2022. The cases of Chile and Colombia stand out given that their external accounts have shown similar dynamics to those of Peru: higher payments of profits to companies with FDI (particularly in the mining and oil sectors), an expansion of the deficit in freight transport services, and an increase in the value of imports, following the strong recovery of domestic demand.

Table 10  
**LATIN AMERICA: CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS**  
 (Annualized, in % GDP)

	2019	2020	2021	1T22*	2022**
Brazil	-3.5	-1.7	-1.7	-1.6	0.3
Chile	-5.2	-1.7	-6.6	-7.3	-4.6
Colombia	-4.6	-3.4	-5.7	-6.3	-4.7
Mexico	-0.3	2.5	-0.4	-0.2	-1.0
Peru	-0.7	1.2	-2.3	3.0	-3.4

\* Current account accumulated last 4 quarters as of Q1.2022, except for Brazil, for which the accumulated last is calculated 12 months as of February 2022.

\*\* Forecast. For Brazil, it is approximated using central bank projections in billions dollars for the current account and the 2022 growth for GDP.  
 Source: Central banks of each country.

21. The **financial account** for the first quarter of 2022 showed a net capital inflow of US\$ 1,127 million, equivalent to 2.0 percent of GDP. This is explained by the expansion of long-term private sector financing, mainly due to higher foreign direct investment (FDI) associated with the reinvestment of profits. These inflows were offset by sales of sovereign bonds purchased by non-residents and by purchases of net short-term foreign assets.

Greater direct investment is estimated for 2022, mainly due to reinvestment of profits and to sales of external portfolio assets by the AFPs, associated with the recently approved new withdrawal of pension funds. The projection also considers the acquisitions of short-term external assets observed so far this year, both from banking companies and from the non-financial sector. A more gradual recovery of investment in external assets as well as higher disbursements of long-term loans is assumed for 2023.

Table 11  
**BALANCE OF PAYMENTS**  
 (Million US\$)

	2021	2022*			2023*	
		Q1.22	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>I. CURRENT ACCOUNT BALANCE</b>	<b>-5,273</b>	<b>-3,235</b>	<b>-3,955</b>	<b>-8,571</b>	<b>-1,533</b>	<b>-3,025</b>
% GDP	-2.3	-5.7	-1.6	-3.4	-0.6	-1.1
1. Trade Balance	14,833	4,150	16,395	13,441	17,847	14,521
a. Exports	63,151	16,950	71,104	71,147	74,671	74,330
<i>Of which:</i>						
i) Traditional	46,585	12,492	52,729	52,074	54,916	53,687
ii) Non-Traditional	16,373	4,402	18,151	18,813	19,569	20,427
b. Imports	48,317	12,801	54,709	57,707	56,824	59,810
2. Services	-7,347	-2,151	-8,054	-8,993	-6,716	-7,609
3. Primary income (factor income)	-18,127	-6,551	-16,683	-18,354	-16,931	-15,507
4. Secondary income (transfers)	5,367	1,317	4,387	5,336	4,267	5,571
Of which: Remittances	3,592	927	3,735	3,758	3,885	3,882
<b>II. FINANCIAL ACCOUNT 1/</b>	<b>-15,627</b>	<b>-1,127</b>	<b>-3,954</b>	<b>-7,223</b>	<b>-1,534</b>	<b>-3,025</b>
1. Private Sector	-37	-1,543	-875	-5,293	42	-1,449
a. Long-term	-16,675	-5,811	-875	-6,957	42	-1,449
b. Short-term	16,638	4,268	0	1,664	0	0
2. Public Sector 2/	-15,590	416	-3,079	-1,931	-1,575	-1,575
<b>III. NET ERRORS AND OMISSIONS</b>	<b>-5,944</b>	<b>-438</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>IV. BALANCE OF PAYMENTS</b>	<b>4,410</b>	<b>-2,547</b>	<b>0</b>	<b>-1,347</b>	<b>0</b>	<b>0</b>
IV= (I+III) - II = (1-2)						
1. Change in NIR balance	3,789	-3,172	0	-1,972	0	0
2. Valuation effect	-622	-625	0	-625	0	0

1/ The financial account and its components (private and public sector) are expressed as assets net of liabilities an inflow of external capital. Therefore, a negative sign implies an inflow of foreign capital

2/ Considers the purchase and sale between residents and non-residents of government bonds issued abroad or in the local market.

IR: Inflation Report.

\* Forecast.

In this table, the Balance of Payments and External Assets and Liabilities Position accounts are presented under a new format, due to the adoption of the Sixth Edition of the Manual of the Balance of Payments and External Assets and Liabilities Position.

Source: BCRP.







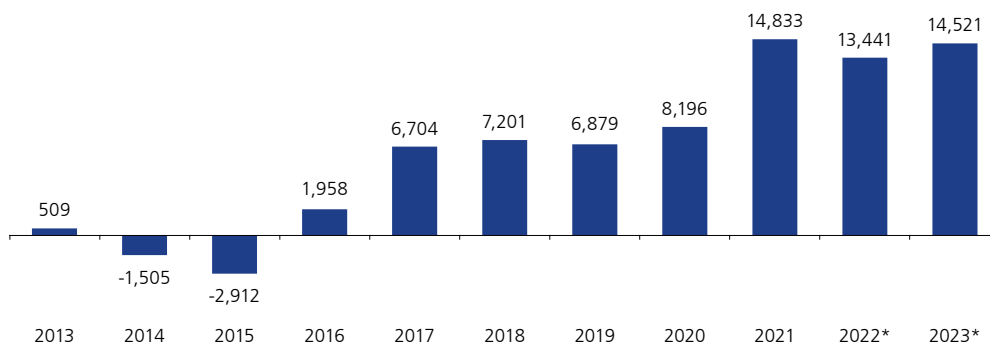
The **goods trade balance** registered a surplus of US\$ 4,150 million in the first quarter of 2022, a balance US\$ 1,382 million higher than the amount recorded in the same period of 2021 (US\$ 2,767 million). The year-on-year increase is explained by higher exports, which increased from US\$ 13,648 million to US\$ 16,950 million. On the other hand, imports increased from US\$ 10,881 million to US\$ 12,801 million.

The trade balance is projected to reach a surplus of US\$ 13.4 billion in 2022 and a surplus of US\$ 14.5 billion in 2023, lower balances than those forecast in the March Report, since the current projection incorporates a greater increase in average import prices in 2022, especially in imports of food, oil, and industrial inputs. Although a gradual correction in prices is assumed from 2023 onwards, the price level is expected to remain high relative to 2021.

The projection of **exported volumes** in 2022 incorporates a lower growth of traditional export products (mainly copper, gold, zinc and oil), following the projection of local primary production. In 2023, the volumes of exports would recover with respect to the previous year, with the recovery of traditional exports of mining products (copper and gold) and most of the non-traditional export products standing out. The projection also incorporates the entry into operation of Quellaveco as of 2022. Moreover, expected **import volumes** for 2022 and 2023 are in line with projected domestic demand.

Average **export prices** in 2022 are expected to be higher than those forecast in March as a result of upward pressures on some commodities, most notably natural gas, and to moderate their upward trend towards the end of the projection horizon. On the other hand, **import prices** are revised up in 2022 following the rising trend in the price of oil, the main foodstuffs (maize, wheat and soybean) and industrial inputs, as this trend has been accentuated by geopolitical tensions associated with the invasion of Ukraine and by adverse weather conditions. In 2023, import prices would begin a gradual reversal, falling 1.6 percent from the previous year.

Graph 29  
**GOODS TRADE BALANCE: 2013-2023**  
(Million US\$)



\* Forecast.  
Source: BCRP.

22. **Exports** amounted to US\$16.95 billion in the first quarter of 2022, a balance US\$ 3.302 billion (24.2 percent) higher than the value of exports in the same period in 2021. This increase is due to the higher value of shipments of traditional products (23.9 percent year-on-year), such as mining products and natural gas, and the 25.0 percent year-on-year increase in the value of shipments of non-traditional products. The annual expansion in the value of exports is mainly explained by the 16.1 percent increase in the average price of exports resulting from the rise in commodity prices because of a tight global market, higher energy costs, and the conflict between Russia and Ukraine. The largest increase in export prices was observed in traditional export products (18.6 percent), especially natural gas, coffee, crude oil and derivatives, and mining products such as zinc. In addition, the 7.0 percent increase in the volume shipped, particularly in exports of non-traditional products (non-metallic mining products and agricultural products, iron and steel, and textiles) contributed to the growth in the export value as well.

The value of exports in 2022 is expected to grow at the same rate as projected in the previous report. On the one hand, higher prices are expected for traditional products, mainly natural gas, crude oil and derivatives, coffee, zinc and gold. This revision is in line with a tight market in some metals, as well as with the persistence of bottlenecks in supply chains, with a longer duration of the conflict between Russia and Ukraine, and with high energy costs. On the other hand, the projection of export volumes has been revised down, in line with lower projected primary production.

In 2023, the value of traditional exports is expected to grow less than foreseen in the previous report, mainly because of a correction in commodity prices.

23. **Imports** totaled US\$ 12,801 million in the first quarter of 2022, which represents an increase of US\$ 1,920 million (17.6 percent) compared to the total of imports in the same period of 2021. This result is in line with the growth in domestic demand and with the rise in the international prices of oil, industrial inputs and grains, which intensified after the conflict in Ukraine. Average import prices have risen by 17.9 percent.

Table 12  
**TRADE BALANCE**  
(% change)

	2021	2022*			2023*	
		Q1.22	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>1. Value:</b>						
Exports	47.2	24.2	12.7	12.7	5.0	4.5
<i>Traditional products</i>	55.2	23.9	13.3	11.8	4.1	3.1
<i>Non-traditional products</i>	28.2	25.0	10.9	14.9	7.8	8.6
Imports	39.2	17.6	13.3	19.4	3.9	3.6
<b>2. Volume:</b>						
Exports	12.9	7.0	5.7	4.3	5.9	6.2
<i>Traditional products</i>	10.5	4.4	5.5	3.2	6.4	6.7
<i>Non-traditional products</i>	20.2	14.9	6.4	7.3	5.0	5.0
Imports	19.4	-0.2	4.7	3.6	5.4	5.3
<b>3. Price:</b>						
Exports	30.3	16.1	6.6	8.0	-0.9	-1.6
<i>Traditional products</i>	40.5	18.6	7.3	8.3	-2.1	-3.4
<i>Non-traditional products</i>	6.7	8.8	4.2	7.1	2.7	3.4
Imports	16.6	17.9	8.1	15.3	-1.5	-1.6

\* Forecast.  
Source: BCRP.



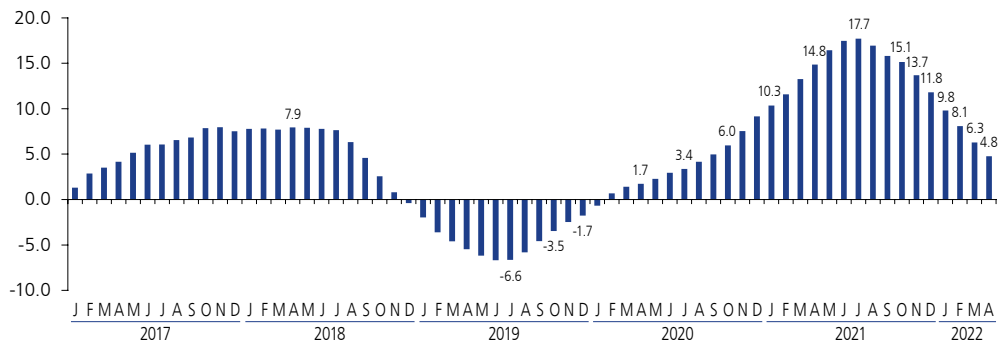


These conditions are expected to remain in place in 2022. A slight price correction is anticipated in 2023, although levels are likely to remain high compared to those observed in 2021.

**Terms of trade**

- 24. The **terms of trade** for goods fell 1.5 percent year-on-year in the first quarter of 2022 since the increase in import prices –especially in the prices for oil, industrial inputs, and food– was higher than that observed in export prices. Food prices (especially the prices of maize, wheat and soybean oil) faced upward pressures due to weather factors that reduced supply, as well as due to higher oil prices and the prolongation of the conflict between Russia and Ukraine. Although the prices of metals and natural gas rose because of supply problems, fears of a global slowdown derived from the war and the confinement in China offset the trend.

Graph 30  
**TERMS OF TRADE**  
(Accumulated 12 months % change)



Source: BCRP.

A 6.3 percent decline in the terms of trade is forecast for **2022**. This decline is higher than that projected in the March Report (-1.4 percent) because of the upward revision of import prices, in line with the increase in the price of grains, such as wheat and maize, and oil prices.

Average export prices are also revised upwards, mainly due to higher projected prices for natural gas. The average National Balancing Point natural gas price (NBP) –the price indicator for the United Kingdom, the main export destination– estimated for the projection horizon has been revised up from the average price expected in the March Report, in line with a tighter global market. While energy prices are expected to be under upward pressure in the short term due to recent geopolitical events, the projection scenario assumes a gradual normalization of these prices.

The prices of some metals, e.g. lead and copper, would be revised downwards because of fears that the economy of the main commodity consumer will register lower dynamism and because the global growth outlook has been revised steadily downwards. The price of copper is expected to decline due to an increase in the supply of concentrates, whereas zinc prices have found some support in higher energy prices (higher refining costs), which would limit supply. Gold is expected to follow a slightly upward trend, in line with the main factors of global uncertainty: the pace of the Fed's withdrawal of stimulus, the evolution of inflation in developed economies, and the development of the war between Russia and Ukraine.

On the other hand, import prices for food (mainly wheat), oil and fertilizers have been revised up due to worsening geopolitical tensions, which remain the main factor of uncertainty, followed by supply issues, such as adverse weather conditions (in the case of food) and lower OPEC+ production. Finally, the prices of industrial inputs are likely to continue to be affected by supply chain disruptions, which have been exacerbated by the new wave of COVID-19 in China.

The change in the terms of trade in **2023** is projected to be zero, in contrast to the 0.6 percent recovery rate projected in the previous Report. Prices of most commodities (metals, grains, and oil) are expected to correct gradually as supply problems dissipate, weather conditions normalize, and the Russia-Ukraine conflict ends.

Table 13  
**TERMS OF TRADE: 2021 - 2023**

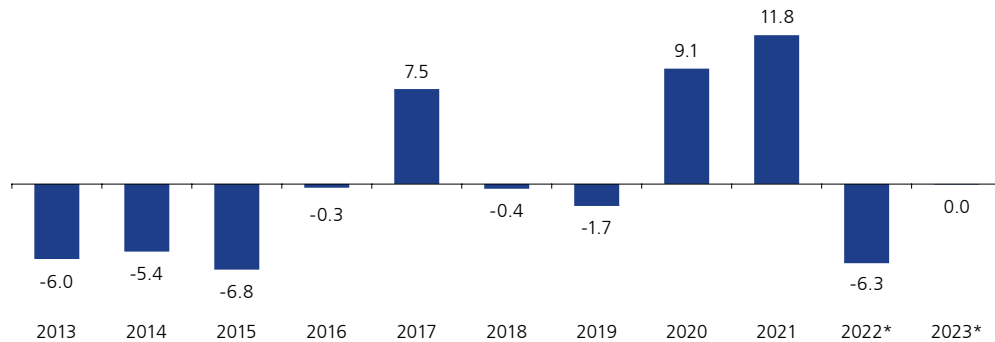
	2021	2022*			2023*	
		Q1.22	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>Terms of Trade</b>						
<i>Annual average % chg.</i>	<b>11.8</b>	<b>-1.5</b>	<b>-1.4</b>	<b>-6.3</b>	<b>0.6</b>	<b>0.0</b>
<b>Price of exports</b>						
<i>Annual average % chg.</i>	<b>30.3</b>	<b>16.1</b>	<b>6.6</b>	<b>8.0</b>	<b>-0.9</b>	<b>-1.6</b>
Copper (US\$ cents per pound)	422	453	451	435	444	427
Zinc (US\$ cents per pound)	136	170	162	171	152	159
Lead (US\$ cents per pound)	100	106	104	100	101	97
Gold (US\$ per troy ounce)	1,799	1,874	1,861	1,870	1,892	1,900
<b>Price of imports</b>						
<i>Annual average % chg.</i>	<b>16.6</b>	<b>17.9</b>	<b>8.1</b>	<b>15.3</b>	<b>-1.5</b>	<b>-1.6</b>
Oil (US\$ per barrel)	68	94	86	101	77	89
Wheat (US\$ per ton)	259	337	294	402	288	406
Maize (US\$ per ton)	226	256	244	288	230	278

\* Forecast.  
Source: BCRP.





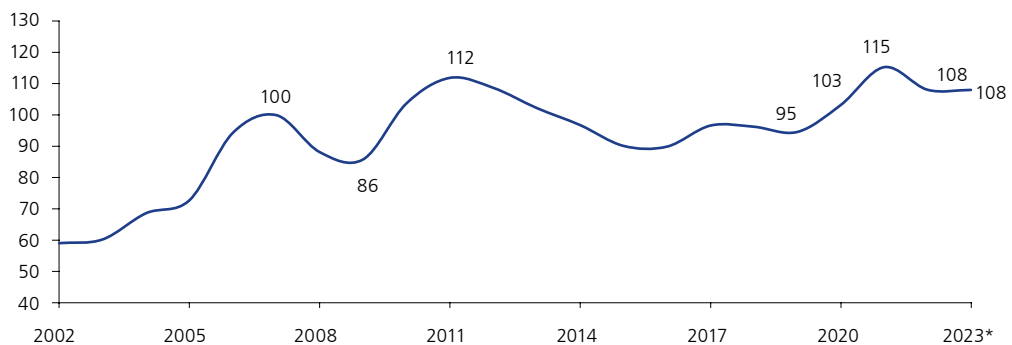
Graph 31  
**TERMS OF TRADE: 2013-2023**  
(Annual average % change)



\* Forecast.  
Source: BCRP.

With the current projection, the average level of the terms of trade between 2021 and 2023 would continue to be the highest level after that observed in 2011.

Graph 32  
**TERMS OF TRADE, 2002-2023**  
(Index 100 = 2007)



\* Forecast.  
Source: BCRP.

## External financing

25. **Long-term external financing to the private sector**, which totaled US\$ 5,811 million in the first quarter of 2022, was US\$ 910 million higher than in the same period of the previous year. This higher balance is explained by higher flows of foreign direct investment and net long-term loans. On the assets side, there was greater portfolio investment abroad.

Higher levels of FDI and net long-term loans than in the previous Report are expected in the long-term financial account of the private sector in 2022, with the foreseen reduction in the net flow of portfolio investments abroad by the PFAs (in order to meet the last authorized withdrawal) supporting this projection. On the other hand, the

current projection incorporates the increase in short-term foreign assets observed so far this year, both in the banking and in the non-financial sectors.

A higher net debit position of the long-term private financial account is also projected for 2023, since a more gradual recovery pace of portfolio investment abroad by the PFAs is assumed, together with higher disbursements of long-term loans.

Table 14  
**FINANCIAL ACCOUNT OF THE PRIVATE SECTOR 1/**  
 (Million US\$)

	2021	2022*			2023*	
		Q1.22	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>Private Sector (A + B)</b>	<b>-37</b>	<b>-1,543</b>	<b>-875</b>	<b>-5,293</b>	<b>42</b>	<b>-1,449</b>
% GDP	0.0	-2.7	-0.4	-2.1	0.0	-0.5
<b>A. Long-term (1 - 2)</b>	<b>-16,675</b>	<b>-5,811</b>	<b>-875</b>	<b>-6,957</b>	<b>42</b>	<b>-1,449</b>
<b>1. ASSETS</b>	<b>-8,731</b>	<b>180</b>	<b>2,616</b>	<b>-1,063</b>	<b>3,991</b>	<b>3,286</b>
Direct investment	1,735	-39	-4	324	-3	144
Portfolio investment 2/	-10,466	219	2,620	-1,387	3,995	3,142
<b>2. LIABILITIES 3/</b>	<b>7,944</b>	<b>5,991</b>	<b>3,491</b>	<b>5,894</b>	<b>3,949</b>	<b>4,735</b>
Direct investment	7,455	5,606	6,037	7,239	6,422	6,445
Portfolio investment 4/	1,097	-361	1,000	593	930	1,078
Long-term loans	-608	746	-3,545	-1,938	-3,403	-2,789
<b>B. Short-term</b>	<b>16,638</b>	<b>4,268</b>	<b>0</b>	<b>1,664</b>	<b>0</b>	<b>0</b>

1/ Expressed in terms of assets net of liabilities. Therefore, an inflow of capital has a negative sign. An increase (a fall) in an external asset has a positive (negative) sign.

2/ Includes equities and other foreign assets of the financial and non-financial sector. Includes financial derivatives.

3/ A positive sign corresponds to an increase in external liabilities.

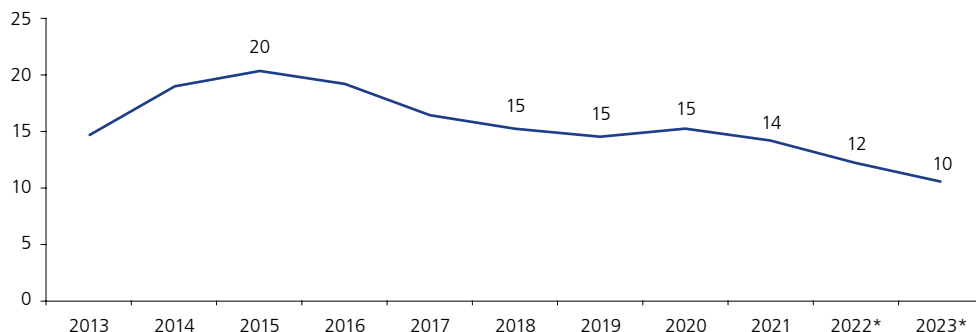
4/ Considers the net purchase of shares by non-residents through the Lima Stock Exchange (BVL), registered by CAVALI. Includes bonds and similar.

\* Forecast.

Source: BCRP.

Moreover, the private sector’s medium- and long-term external debt balance is projected to decline from 14 percent in 2021 to 10 percent of GDP at the end of the projection horizon, reaching its lowest level in the last 10 years.

Graph 33  
**BALANCE OF MEDIUM- AND LONG-TERM PRIVATE EXTERNAL DEBT: 2013 - 2023**  
 (% GDP)



\* Forecast.  
 Source: BCRP.





26. **Public sector external financing** in the first quarter of 2022 was negative by US\$ 416 million, US\$ 5,952 million lower than in the same period of the previous year. The flow in the period is mainly explained by the sale of sovereign bonds by non-residents (US\$ 406 million) due to political uncertainty and the announcement of the new withdrawal of pension funds and, to a lesser extent, by higher amortizations (US\$ 136 million). Compared to the first quarter of 2021, the lower funding is explained by the fact that global bonds in dollars for a total of US\$ 4 billion and global bonds in euros for a total of € 825 million were issued in this period.

The public sector's external financing requirement is expected to decrease over the projection horizon, in line with the reduction of the fiscal deficit. Compared to the previous report, the 2022 public financial account incorporates lower portfolio investment due to the reduction in the flow of non-residents' purchases of sovereign bonds. Net borrowing from international organizations is projected to increase.

Table 15  
**FINANCIAL ACCOUNT OF THE PUBLIC SECTOR 1/**  
(Million US\$)

	2021	2022*			2023*	
		Q1.22	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>I. ASSETS</b>	<b>57</b>	<b>-32</b>	<b>88</b>	<b>-103</b>	<b>140</b>	<b>140</b>
<b>II. LIABILITIES (1 + 2 + 3) 2/</b>	<b>15,647</b>	<b>-448</b>	<b>3,167</b>	<b>1,828</b>	<b>1,715</b>	<b>1,715</b>
<b>1. Portfolio investment</b>	<b>11,481</b>	<b>-473</b>	<b>3,417</b>	<b>751</b>	<b>2,030</b>	<b>1,530</b>
Issuance	11,172	0	1,500	600	500	0
Amortizations	0	-136	-136	-627	-650	-650
Other operations (a - b) 3/	310	-337	2,053	778	2,180	2,180
a. Sovereign bonds purchased by non-residents	-316	-406	2,000	668	2,180	2,180
b. Global bonds purchased by residents	-626	-69	-53	-110	0	0
<b>2. Loans</b>	<b>2,354</b>	<b>25</b>	<b>-250</b>	<b>1,077</b>	<b>-315</b>	<b>185</b>
Disbursements	2,789	120	807	2,137	741	1,241
Amortizations	-435	-95	-1,057	-1,060	-1,056	-1,056
<b>3. BCRP: other operations 4/</b>	<b>1,811</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>III. TOTAL (I - II)</b>	<b>-15,590</b>	<b>416</b>	<b>-3,079</b>	<b>-1,931</b>	<b>-1,575</b>	<b>-1,575</b>

1/ Expressed in terms of assets net of liabilities. Therefore, an inflow of capital has a negative sign. An increase (a fall) in an external asset has a positive (negative) sign.

2/ Medium and long-term debt. A positive sign corresponds to an increase in external liabilities.

3/ For the purchase and sale between residents and non-residents of government bonds issued abroad or in the local market.

4/ Includes Special Drawing Rights (SDR) allocations.

\* Forecast

Source: BCRP.

27. The soundness of the country's balance of payments in the face of negative external events can be assessed by considering the position of international reserves in relation to the balance of short-term external liabilities or the sum of these liabilities plus the current account deficit. Additionally, as of May 27, 2022, Peru has a successor arrangement to the IMF's Flexible Credit Line (FCL) for up to approximately US\$ 5.4 billion to face eventual contingencies. The agreement seeks to strengthen the economy's resilience in the face of global uncertainty in the context of the pandemic, the conflict between Russia and Ukraine, and the tighter international financial conditions that have been affecting economic activity and inflation globally.

Table 16  
INTERNATIONAL INDICATORS

	2017	2018	2019	2020	2021*	2022*	2023*
<b>International Reserves as a percentage of:</b>							
a. GDP	29.5	26.5	29.4	36.3	34.8	30.5	28.0
b. Short-term external debt 1/	413	343	498	543	529	489	489
c. Short-term external debt plus current account deficit	367	295	444	657	390	316	410

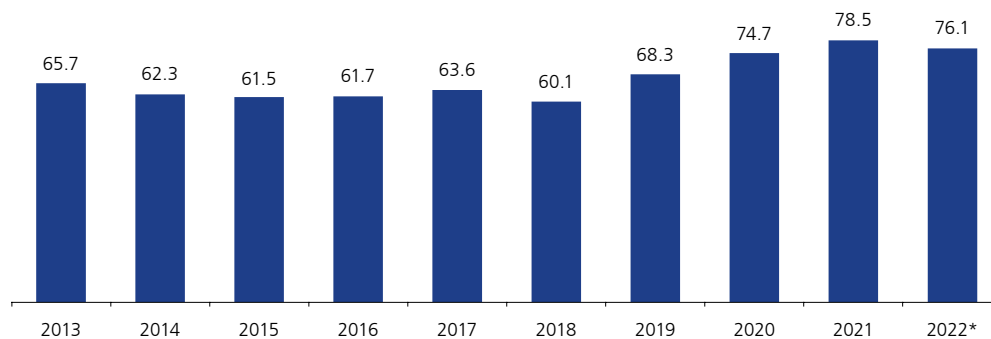
1/ Includes short-term debt balance plus redemption (1-year) of private and public sector.

\* Forecast.

Source: BCRP.

28. At the end of May, **Net International Reserves (NIRs)** had decreased by US\$ 2,341 million compared to the end of last year and amounted to US\$ 76,155 million. This result is mostly explained by foreign exchange operations for a total of US\$ 2,546 million with the public sector (of which US\$ 1,493 million correspond to sales of currency to constitute the Fiscal Stabilization Fund, FSF) and net sales of US\$ 800 million aimed at mitigating the volatility of the exchange rate. This was offset by an increase of US\$ 1,352 million in public sector deposits in the BCRP, plus US\$ 290 million in deposits from financial intermediaries.

Graph 34  
NET INTERNATIONAL RESERVES: 2013 - 2022  
(Billion US\$)



\* As of May 31.

Source: BCRP.







### III. Economic Activity

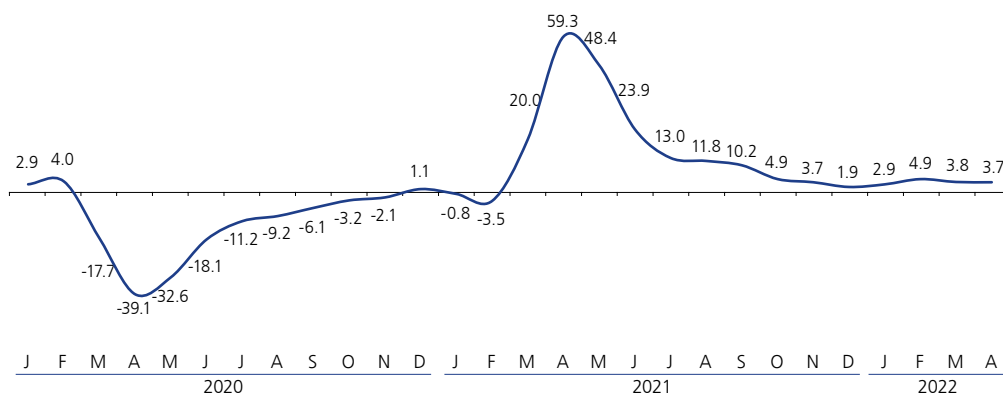
#### Sectoral GDP

29. Economic activity in the first quarter of 2022 grew 3.8 percent year-on-year, this rate being explained mostly by a low comparative base and by the easing of health restrictions following the progress of the vaccination process, both locally and globally. Despite political uncertainty and its negative impact on expectations about the future of the economy, the GDP shows a continuous monthly growth since March 2021.

Economic growth in the first quarter of the year is explained by the dynamism of non-primary sectors such as non-primary manufacturing and services (especially those related to restaurants). Activity in the construction sector declined 0.5 percent in a context of lower public investment and the normalization of household spending habits.

The expansion rate for the quarter was offset by the contraction of primary GDP, as a result of the decline in the sectors of mining, primary manufacturing and fishing. Production in the mining sector contracted due to stoppages and to social problems in some of the main mines while the fishing sector was affected by lower catches of species for human consumption, which in turn affected manufacturing, especially due to lower processing and preservation of fish and seafood products.

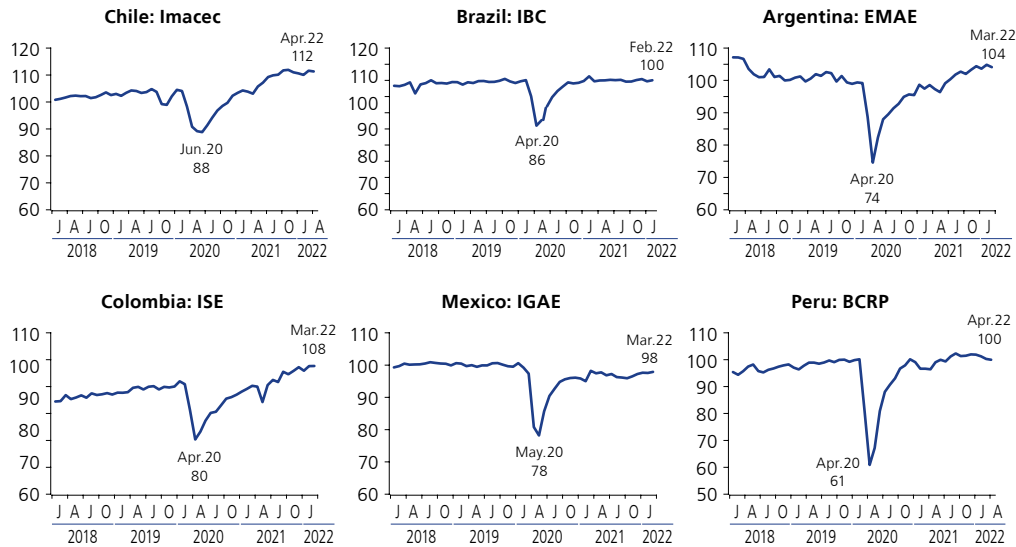
Graph 35  
**REAL GDP**  
(Annual % change)



Source: BCRP and INEI.

30. Since August 2021 the seasonally adjusted GDP index has remained above its pre-pandemic level (Q4-2019). Despite this, however, the indicator has registered negative growth rates in the last four months. Thus, in April it contracted 0.3 percent compared to the previous month, recording a rate 0.3 percent above the level recorded before the crisis.

Graph 36  
**SEASONAL ADJUSTED INDEX OF ECONOMIC ACTIVITY IN THE REGION**  
 (Base=100 Q4.19)



Source: Central banks and national statistical institutes.

Table 17  
**REAL GDP**  
 (Annual % change)

	2021				2022
	Q1	Q2	Q3	Q4	Q1
Germany	-2.7	10.4	2.9	1.8	3.8
France	1.8	19.2	3.0	4.9	4.5
Italy	-0.7	17.0	3.9	6.2	6.2
Spain	-4.1	17.8	3.5	5.5	6.4
Netherlands	-2.2	10.7	5.4	6.5	7.0
United Kingdom	-5.0	24.5	6.9	6.6	8.7
USA	0.5	12.2	4.9	5.5	3.5
Argentina*	2.9	17.9	11.9	8.6	6.2
Brazil	1.3	12.3	4.0	1.6	1.7
Chile	0.0	18.9	17.2	12.0	7.2
Colombia	0.8	17.5	13.5	10.8	8.5
Mexico	-3.8	19.9	4.5	1.1	1.8
Peru	4.5	42.0	11.6	3.4	3.8

\* The data for the first quarter of 2021 is estimated from monthly activity indices.  
 Source: Central banks and national statistical institutes.

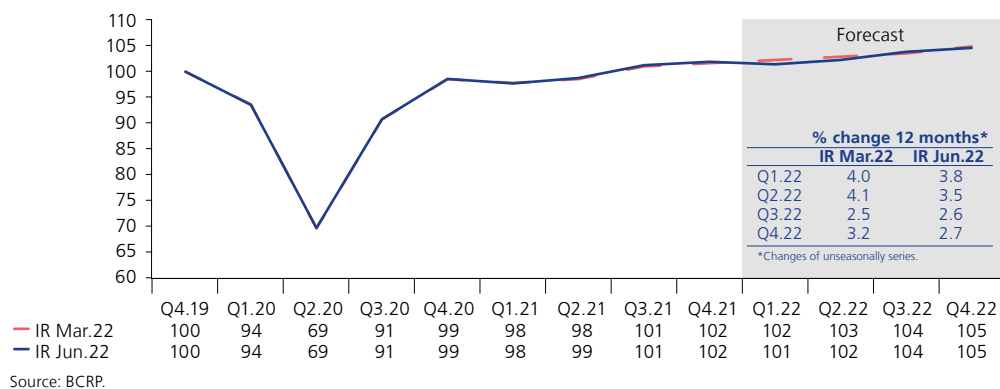
31. The economy is estimated to grow 3.1 percent in 2022 –a lower rate than that projected in the previous report (3.4 percent)– due to a downward revision in the production of primary sectors, especially in metal mining (due to the negative impact of social conflicts) and agriculture (due to the impact of higher fertilizer prices on production for the domestic market).





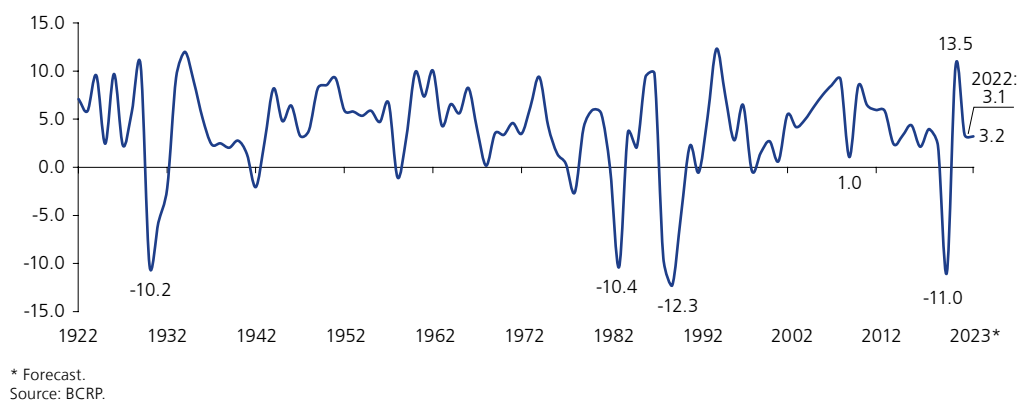
A significant batch of vaccines is expected to arrive in the coming months to administer the third and fourth doses to the population over 12 and 50 years of age, respectively. The progress of the vaccination process and the recovery of the labor market are expected to continue to boost economic activity during the remainder of the first half of the year, particularly in the trade and services sectors. Moreover, normal conditions for fishing are expected this year and the Quellaveco mining project is expected to start operations. All of this should boost the recovery of primary production in the second half of the year.

Graph 37  
FORECAST OF GDP, 2019-2022  
(Seasonally adjusted index Q4.19=100)



- 32. In 2023, the economy would grow 3.2 percent, following the normalization of primary production. The current projection assumes an adequate business environment, in which the preservation of macroeconomic and financial stability will stimulate the execution of investment projects and the creation of new jobs (which, in turn, will drive the expansion of non-primary activity). Based on the expected pace of recovery, tourism and restaurant-related activities are expected to reach pre-crisis levels in 2023.

Graph 38  
TOTAL GDP, 1922-2023  
(Annual % change)



\* Forecast.  
Source: BCRP.

Table 18  
**GDP BY ECONOMIC SECTORS**  
 (Real % change)

	2021	2022*			2023*	
		Jan-Abr	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>Primary GDP</b>	<b>5.8</b>	<b>-0.6</b>	<b>5.3</b>	<b>3.4</b>	<b>5.8</b>	<b>5.8</b>
Agriculture and livestock	4.2	4.0	2.7	2.4	2.8	2.4
Fishing	2.8	-28.8	4.4	3.1	4.4	4.4
Metallic mining	9.8	-1.6	5.9	2.9	8.4	8.4
Hydrocarbons	-4.6	15.0	13.4	12.5	4.0	4.7
Manufacture	3.2	-9.2	4.1	2.4	3.5	4.6
<b>Non-Primary GDP</b>	<b>15.7</b>	<b>5.0</b>	<b>2.9</b>	<b>3.1</b>	<b>2.5</b>	<b>2.5</b>
Manufacture	25.2	6.0	1.4	2.4	3.3	3.3
Electricity and water	8.5	3.2	2.3	2.3	5.0	5.0
Construction	34.5	0.9	0.5	0.5	2.5	2.5
Commerce	17.8	5.1	2.4	2.6	2.5	2.5
Services	11.9	5.3	3.7	3.7	2.3	2.3
<b>GDP</b>	<b>13.5</b>	<b>3.8</b>	<b>3.4</b>	<b>3.1</b>	<b>3.2</b>	<b>3.2</b>

IR: Inflation Report.

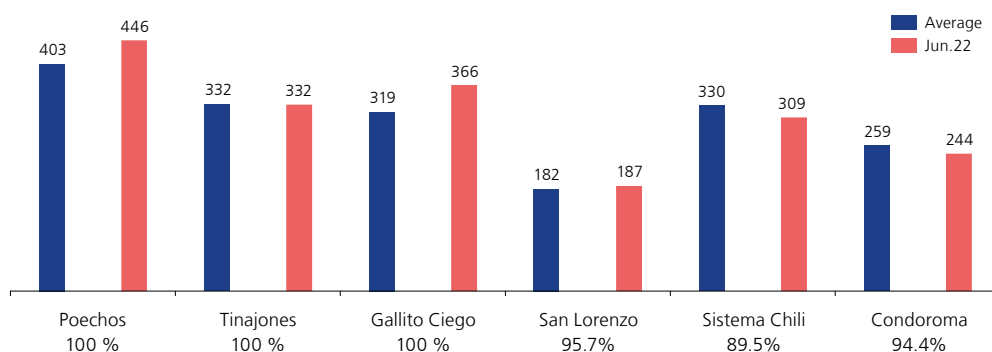
\* The last two columns correspond to the annual projection of the previous and current RI.

Source: BCRP.

- a) The **agricultural sector** accumulated a growth rate of 3.7 percent in the first quarter of 2022. On the agriculture side, more favorable weather conditions than in the previous season stimulated short growing season plantings (potatoes, rice and maize) and allowed higher yields of semi-permanent and permanent crops (e.g. bananas and lemons). Larger harvests of products for the external market (blueberries, grapes, avocado and cocoa) also contributed positively. On the livestock side, there was an increase in poultry meat production.

In addition, water storage as of June 3 is higher in several reservoirs in the country (Poechos, Gallito Ciego, San Lorenzo) than the average level of the last five years. Furthermore, water availability is high with respect to its total useful volume capacity, which favors plantings to be carried out in the short term.

Graph 39  
**STORED VOLUME OF MAIN RESERVOIRS 1/**  
 (MCF)



1/ As of June 3, 2022, average in the last five years (2017-2021) of the same date and percentage with respect to the total useful volume.  
 Source: ANA.



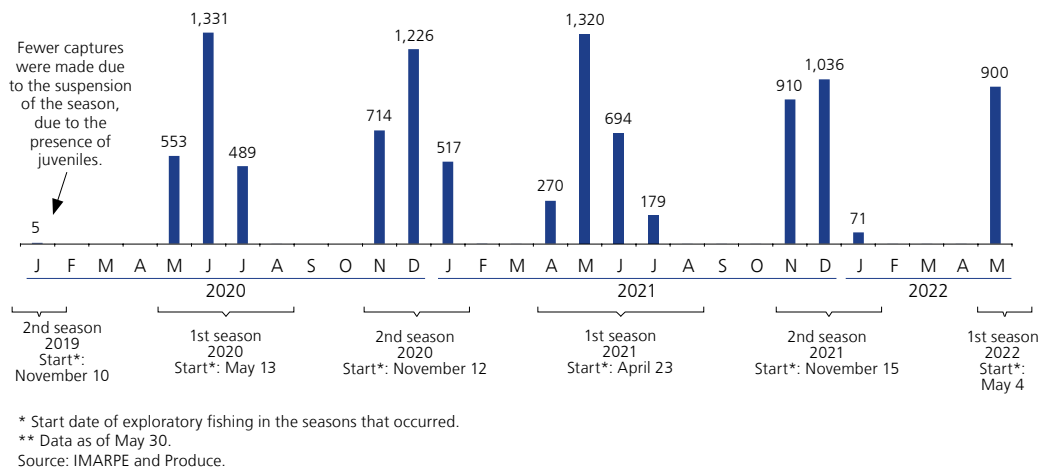


The agricultural output projected for **2022** has been revised down in this Report due to the impact that higher fertilizer prices will have on the main products for the domestic market: potatoes, rice, onions, tomatoes, peas, beans, lemons and sugar cane.

Likewise, the projection for the agricultural sector in **2023** is also revised down, from 2.8 to 2.4 percent, due to the impact of higher fertilizer prices on production, especially in crops grown by small food producers: potatoes, rice, tomatoes, lemons, peas and green beans.

- b) Activity in the **fishing sector** dropped 26.2 percent year-on-year in the first quarter of 2022, mainly due to the lower catch of species for direct human consumption (14.1 percent), which is explained by the suspension of bonito and jack mackerel fishing after the completion of the quarterly and annual quotas, respectively. In addition, lower anchoveta catch in January, during the second season in the north-central zone, also contributed to the quarter’s result.

**Graph 40**  
**ANCHOVETA EXTRACTION FOR INDUSTRIAL CONSUMPTION NORTH-CENTRAL ZONE**  
 (Thousand tons)



Exploratory fishing for the first anchoveta season of the north-central zone 2022 began on May 4, with a fishing quota of 2.8 million metric tons (2.5 million in the first season of 2021). According to the Instituto del Mar del Peru (IMARPE), about 35 percent of the quota (0.9 million MT) has been caught as of May 30. This figure represents a 15 percent lower catch compared to the first 27 days of the first season of the previous year.

Activity in this sector is expected to increase 3.1 percent in 2022 and 4.4 percent in 2023, these rates being consistent with normal weather conditions and historically average anchoveta seasons.

- c) In the first quarter of **2022**, production in the **metallic mining** sector fell 0.6 percent due to lower extraction of: (i) zinc (-11.8 percent), mainly because of lower production by Compañía Minera Los Quenuales due to the depletion of the Iscaycruz unit; (ii) silver (-6.6 percent), due to lower production by Buenaventura as a result of the suspension of operations at the Uchucchacua unit for the

implementation of measures to improve operational efficiency; and (iii) iron (-1.1 percent), because of a strike by Shougang’s workers’ union. The production of lead (-3.9 percent) and gold (-2.1 percent) decreased as well.

On the other hand, copper production increased (3.0 percent) due to the higher extraction of Mina Justa (which started operations in the third quarter of 2021), although this was offset the lower production of Southern (affected by the stoppage of the Cuajone unit due to problems with the communities).

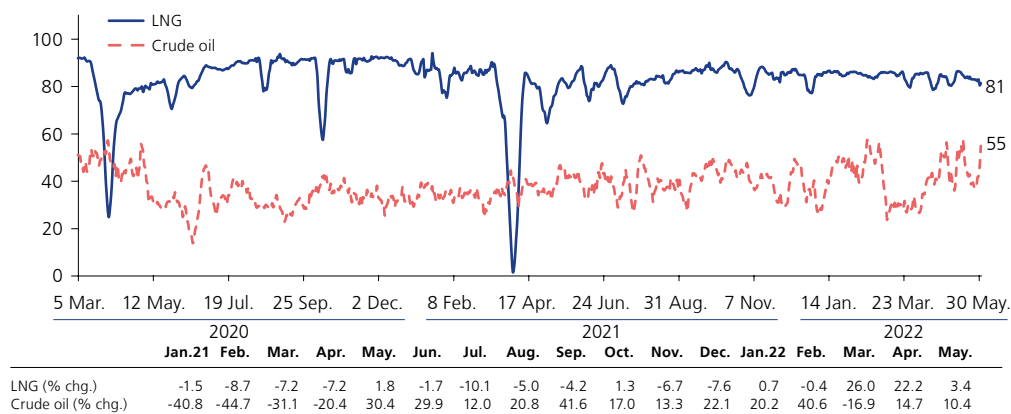
Output in the second quarter of 2022 was negatively impacted by constant community blockades, most notably the case of Las Bambas. This was reflected in the companies’ electricity consumption.

In **2022**, production in the metallic mining sector would grow 2.9 percent as a result of higher production at Mina Justa, Constancia (Pampacancha), and the entry into operation of the Quellaveco project. The projection has been adjusted mainly because of the expected slowdown in the first half of the year. In 2023, the sector is expected to grow 8.4 percent due to higher production from Quellaveco.

- d) Activity in the **hydrocarbon sector** in the first quarter of 2022 grew by 11.6 percent compared to the same period in 2021, due to higher extraction in all its components. The higher oil production (13.9 percent) is explained by the higher extraction of lot 95, while the production of natural gas and natural gas liquids increased by 16.9 and 7.7 percent, respectively, due to the higher extraction of lot 88 (domestic market) and lots 56 and 57 (external market).

So far in the second quarter of 2022, oil production has been favored by the drilling of new wells in lot 95. On the other hand, lots 192 and 8 remain at a standstill. Compared to the same quarter of 2021, the extraction of natural gas and natural gas liquids has increased due to higher domestic demand and to the statistical effect of the previous year (associated with the maintenance carried out in lots 56 and 57).

Graph 41  
**LIQUID HYDROCARBON PRODUCTION**  
(Thousands of barrels per day, 7-day moving average)

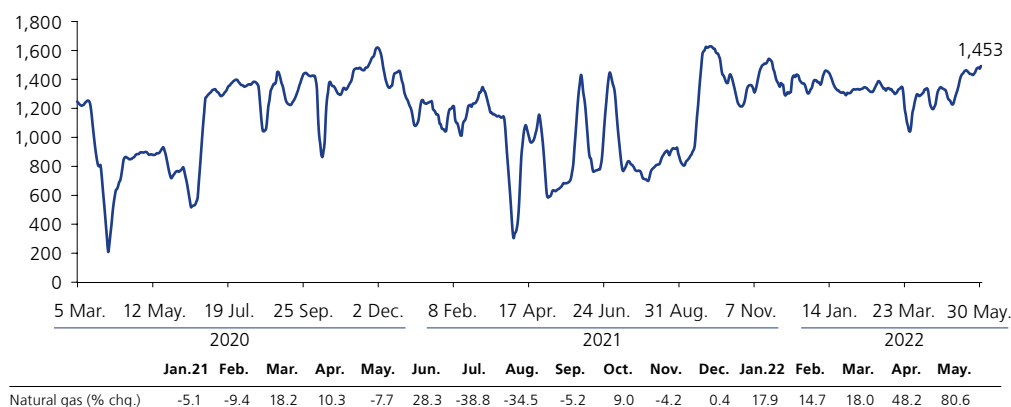


Source: Perupetro.





Graph 42  
**NATURAL GAS PRODUCTION**  
 (12-months % change of 7-days moving average)



Source: Perupetro.

In **2022**, the sector is expected to grow 12.5 percent due to the normalization of production of natural gas and natural gas liquids, as well as due to higher expected oil extraction. In **2023**, the sector would grow 4.7 percent, mostly as a result of a normalization of oil production.

- e) Activity in the **primary manufacturing** subsector decreased 8.5 percent in the first quarter of 2022, mainly due to the decline in the production of fishmeal and fish oil (because of lower anchoveta catch during the quarter) and canned and frozen fish products (because of the lower catch of squid and bonito).

The sub-sector's growth projection for **2022** has been revised downward, from 4.1 percent to 2.4 percent, mainly due to lower expected oil refining (associated with the partial shutdown of Repsol and the progressive start of operations of the new Talara refinery). This is compounded by lower projected metal refining as a result of mining social conflicts. On the other hand, a year-on-year increase of 4.6 percent is expected in **2023**.

- f) Activity in **non-primary manufacturing** grew 5.6 percent in the first quarter of 2022. This increase was due to higher production of goods oriented to investment and the external market, as well as higher production of inputs. The former included a higher production of metal products, cement, paint and lacquer, and industrial services, while the latter included a higher production of fabrics and knitted articles, clothing, and yarns and fabrics. The increased production of explosives and essences, paper and cardboard packaging, rubber, and wheat flour stand out among the latter.

Non-primary manufacturing is expected to continue recovering in **2022** with a growth rate of 2.4 percent, above pre-pandemic levels. In **2023**, it is expected to grow 3.3 percent.

- g) Activity in the **construction sector** fell 0.5 percent in the first quarter of 2022, mainly due to the lower execution of public works (-9.9 percent), offset by an increase in self-construction projects and the continuation of private works.

Domestic cement consumption –the main indicator of the sector’s activity– increased 1.3 percent during this period compared to the first quarter of 2021.

Activity in this sector is estimated to increase 0.5 percent in **2022** and 2.5 percent in **2023**, driven by higher public and private investment.

- h) During the first quarter of 2022, activity in the **commerce** sector grew 5.9 percent, in line with higher sales in all branches associated with lower operating restrictions compared to 2021. Wholesale trade grew by 6.2 percent; while retail grew by 3.4 percent and sales and repair of vehicles grew by 12.1 percent.

In **2022** and **2023**, activity in the sector is expected to increase 2.6 and 2.5 percent, respectively.

- i) The sector of **services** grew 5.4 percent in the first three months of the year, surpassing pre-pandemic levels (2019). The sector’s recovery was driven by the elimination of curfews, the authorization of higher capacity in establishments, and mass vaccination.

The sector’s growth in the quarter was due to greater dynamism in the branches of (i) telecommunications (4.1 percent), because of the continued need for remote activities; (ii) public administration services (3.8 percent); (iii) lodging and restaurants (49.4 percent), due to lower restrictions on capacity and operation hours at eating establishments; and (v) transportation and storage (12.4 percent), due to higher air and ground passenger transportation, in light of the easing of travel restrictions.

In **2022**, the sector is expected to grow by 3.7 percent. This projection considers a longer impact of the pandemic on tourism-related industries, such as transportation, restaurants and lodging. In **2023**, the sector is expected to grow 2.4 percent and tourism-related sectors are expected to reach pre-pandemic levels.

### Expenditure-side GDP

33. On the expenditure side, the growth in the first quarter of 2022 is attributed to the progress of the vaccination campaign and the easing of sanitary restrictions compared to the same period in 2021, which allowed for a better evolution of private consumption. However, this result was offset by the contraction of public investment and the deceleration of private investment caused by the low levels of business confidence and the lower dynamism of self-construction. On the other hand, exports accelerated their growth rate, driven by higher shipments of goods to other countries, whereas inbound tourism, the main component of services exports, remained below its pre-crisis levels.

The vaccination process continued to accelerate in recent months. The number of people who received the first two doses of the COVID-19 vaccine increased from 26.2 million to 27.4 million (83 percent of the population) from March 31, 2022 to May 31, 2022, while the number of people with the third booster dose increased from







13.1 million to 17.6 million (62 percent of the population over 12 years of age). In addition, the administration of the fourth booster or dose for adults over 70 years of age began in Metropolitan Lima and El Callao on April 2. As a result, indicators of COVID-19 incidence have remained at low levels in recent months, which has allowed the elimination of certain sanitary restrictions.

In line with this, the Government reestablished 100 percent capacity for shopping malls, recreation centers and institutions in February, the curfew was eliminated nationwide and schools were allowed to begin a semi-presential return to classes in March. Likewise, the capacity of public transportation was restored to 100 percent in April, while the use of face masks was declared non mandatory in open places since May. All of this has allowed access to a greater number of goods and services and accelerated sales dynamics. It should be pointed out, however, that new measures were implemented, including the presentation of the vaccination card with the three registered doses to enter public and private establishments for people over 18 years of age since April.

Economic activity in the projection horizon is expected to grow 3.1 percent, a lower rate than that foreseen in the previous report (3.4 percent). This downward revision is due to the lower dynamism of exports (as a consequence of the slowdown in global growth and the lower growth of mining production due to conflicts with communities), as well as due to lower public investment (due to lower expenditure for COVID-19 response and for economic reactivation as from April). During the second half of the year, public investment is expected to recover slightly and private consumption would continue to expand, supported by the normalization of spending habits, the recovery of employment and the availability of additional sources of income (availability of CTS funds and withdrawals of AFP funds). Private investment is likely to remain at similar levels to those observed in the previous year, in a context of low business expectations and less dynamism in self-construction. In 2023, GDP is expected to increase 3.2 percent, the same rate as that estimated in the previous Report.

Table 19  
**DOMESTIC DEMAND AND GDP**  
(Real % change)

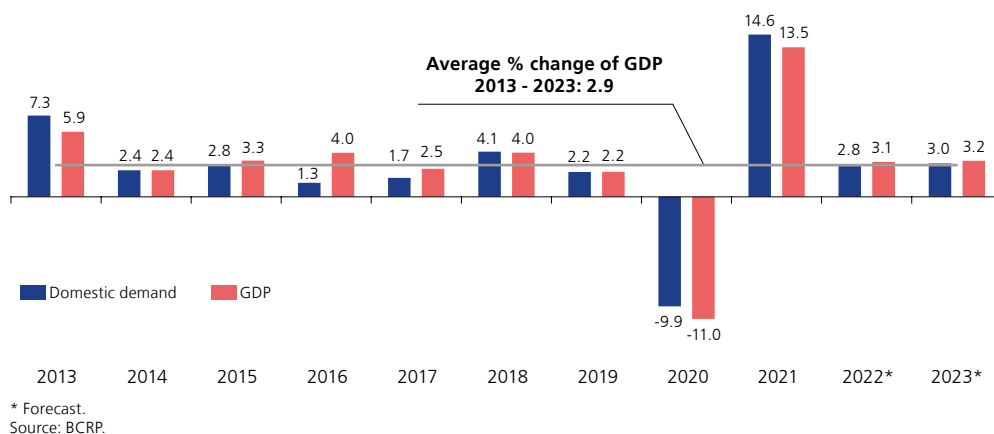
	2021	2022*			2023*	
		Q1	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>Domestic demand</b>	<b>14.6</b>	<b>2.1</b>	<b>3.0</b>	<b>2.8</b>	<b>3.0</b>	<b>3.0</b>
Private consumption	11.7	6.9	4.1	4.1	3.5	3.5
Public consumption	10.6	11.3	1.5	1.5	2.0	2.0
Private investment	37.4	0.8	0.0	0.0	2.0	2.0
Public investment	24.9	-13.7	4.0	2.1	1.6	1.6
Change on inventories (contribution)	-2.2	-3.4	0.0	-0.1	0.0	0.0
<b>Exports</b>	<b>13.7</b>	<b>8.9</b>	<b>7.5</b>	<b>6.1</b>	<b>7.6</b>	<b>7.7</b>
<b>Imports</b>	<b>18.6</b>	<b>1.7</b>	<b>5.6</b>	<b>4.5</b>	<b>6.7</b>	<b>6.7</b>
<b>Gross Domestic Product</b>	<b>13.5</b>	<b>3.8</b>	<b>3.4</b>	<b>3.1</b>	<b>3.2</b>	<b>3.2</b>
Memo:						
Public expenditure	14.0	5.2	2.1	1.6	1.9	1.9
Domestic demand excluding inventories	16.6	5.3	2.9	2.8	2.9	2.9

IR: Inflation Report.

\* The last two columns correspond to the annual projection of the previous and current RI.

Source: BCRP

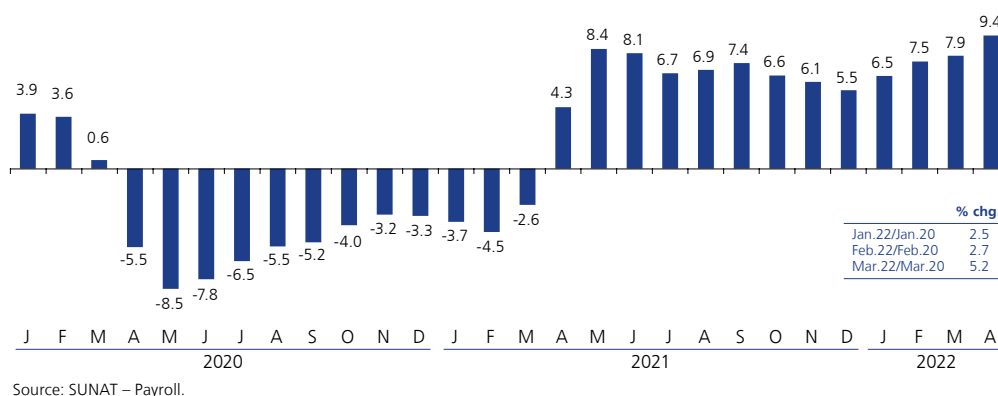
Graph 43  
**DOMESTIC DEMAND AND GDP: 2013 - 2023**  
 (Real % change)



34. Indicators of **private consumption**, excluding imports of durable goods, grew steadily in April and May, driven by the normalization of household spending and the acceleration of sales dynamics. This is explained by the relaxation of sanitary measures and the progress of the vaccination campaign.

- a) Formal jobs, which continued to increase as the health measures to contain the pandemic were eased, grew 9.4 percent year-on-year in April.

Graph 44  
**FORMAL EMPLOYMENT**  
 (Annual % change)

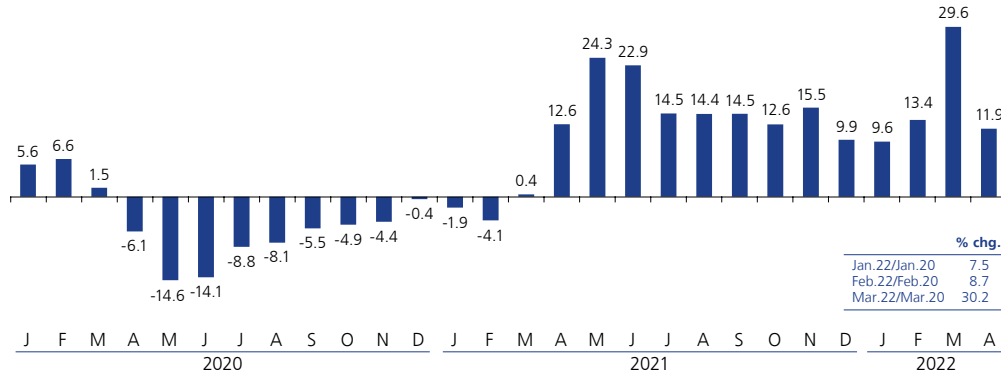


- b) The formal wage bill increased 29.6 percent year-on-year in March (21.4 percent in real terms), supported by the recovery of workers’ average income (explained in turn by the payment of profits) and the increase in the number of jobs. In April, it continued to show a significant growth rate of 11.9 percent year-on-year (3.6 percent in real terms).





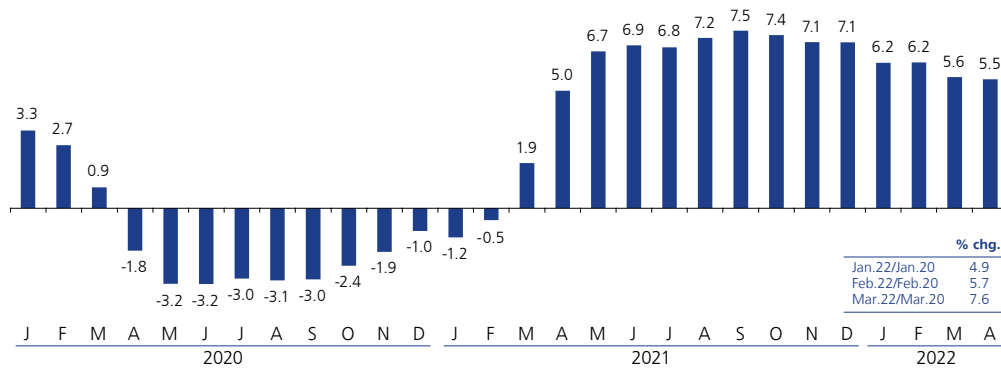
Graph 45  
**FORMAL WAGE MASS**  
(Annual % change)



Source: SUNAT – Payroll.

- c) In April, 337,000 private sector companies reported employment information, with the number of companies growing 5.5 percent year-on-year, driven mainly by companies in the mining, commerce, and services sectors.

Graph 46  
**PRIVATE SECTOR COMPANIES REPORTING FORMAL EMPLOYMENT**  
(Annual % change)

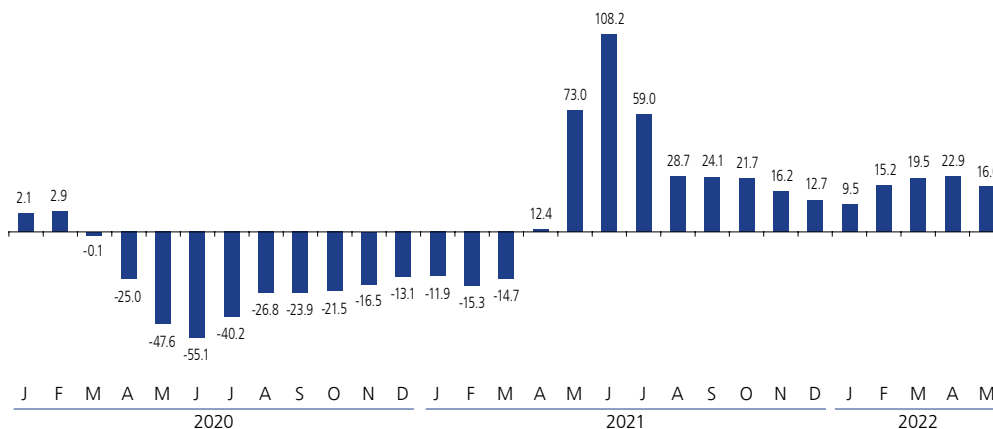


Companies	Apr.20	Apr.21	May.21	Jun.21	Jul.21	Aug.21	Sep.21	Oct.21	Nov.21	Dec.21	Jan.22	Feb.22	Mar.22	Apr.22
Total in thousand	304	319	321	323	325	327	329	331	332	332	332	333	335	337

Source: SUNAT – Payroll.

- d) According to data of INEI's Permanent Employment Survey, the employed population of Metropolitan Lima continued to register significant growth rates in recent months. In May, it grew 16.0 percent year-on-year.

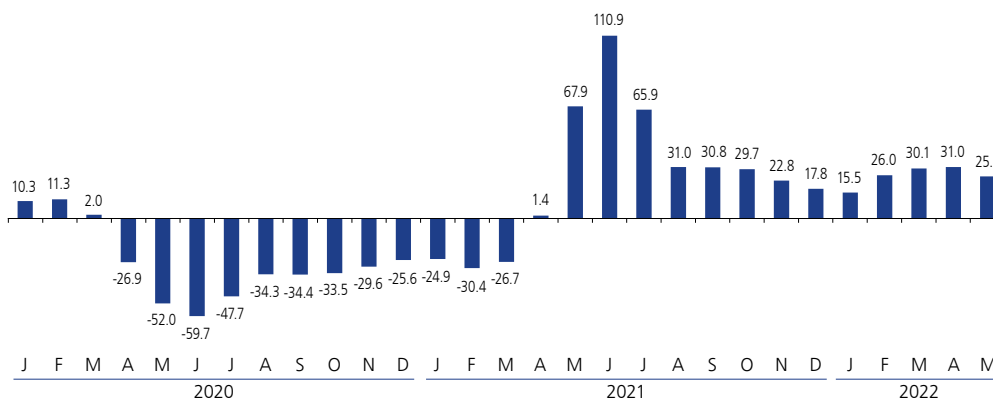
**Graph 47**  
**EMPLOYED POPULATION OF METROPOLITAN LIMA, MOVING QUARTER**  
 (Annual % change)



Source: INEI.

- e) As a result of the higher year-on-year growth rate of the number of workers and average income, mainly in the formal sector, the nominal wage bill in Metropolitan Lima increased 25.3 percent year-on-year in the moving quarter to May (15.9 percent in real terms).

**Graph 48**  
**WAGE MASS OF METROPOLITAN LIMA, MOVING QUARTER**  
 (Annual % change)



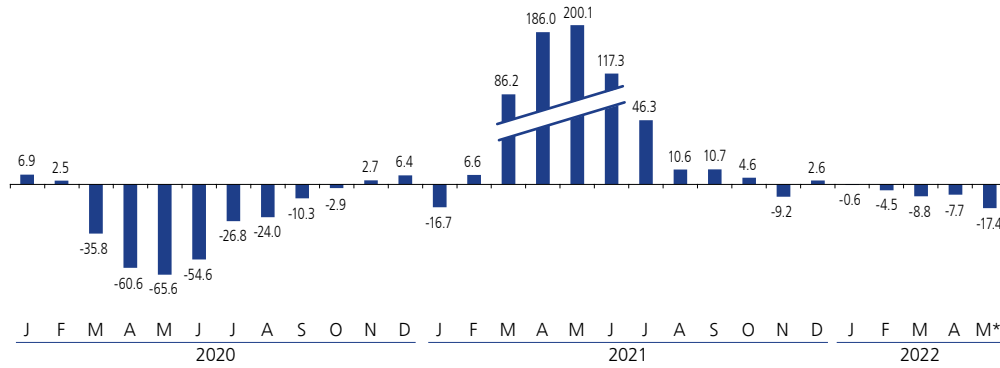
Source: INEI.

- f) The volume of imports of consumer durables fell 7.7 percent and 17.4 percent year-on-year in April and May, respectively.





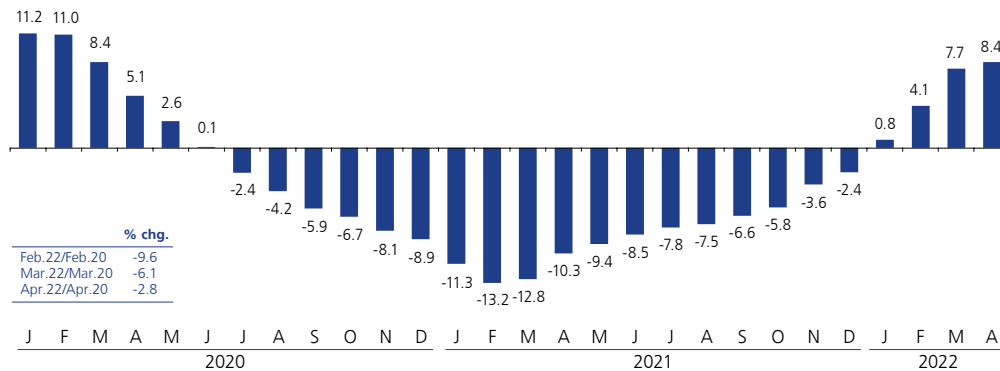
**Graph 49**  
**VOLUME OF IMPORTS OF DURABLE CONSUMER GOODS**  
(Annual % change)



\* Preliminary.  
Source: SUNAT – Customs.

- g) In April, consumer loans in real terms expanded for the fourth consecutive time, at a higher rate than in the previous three months (8.4 percent year-on-year), mainly due to the increased use of credit cards and the growth of vehicle loans.

**Graph 50**  
**REAL CONSUMER LOANS**  
(Annual % change)

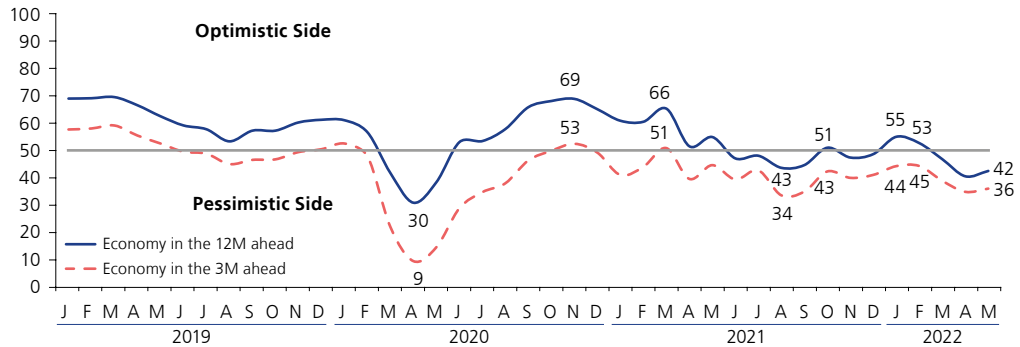


Source: BCRP.

35. Current and leading indicators related to private investment, with the exception of imports of capital goods, have shown a slight recovery in the last two months. Despite this, however, they still remain at low levels due to the persistence of political uncertainty and its negative impact on investment decision making.

- a) Business expectations about the future of the economy in 3 months and in 12 months showed a continuous decline between February and April. Although they recovered slightly in May, they still remain in the pessimistic range.

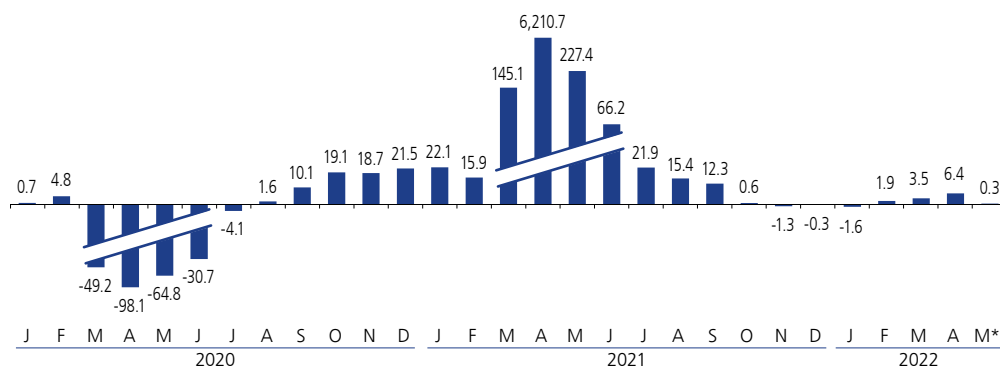
Graph 51  
**EXPECTATIONS ABOUT THE ECONOMY IN 3 AND 12 MONTHS AHEAD**  
 (Index)



Source: BCRP.

- b) Domestic cement consumption –an indicator related to construction investment– grew 6.4 percent, this growth rate being mainly explained by the execution of construction works in the private sector. Nonetheless, it is estimated to have slowed down in May, increasing only 0.3 percent.

Graph 52  
**DOMESTIC CONSUMPTION OF CEMENT**  
 (Annual % change)



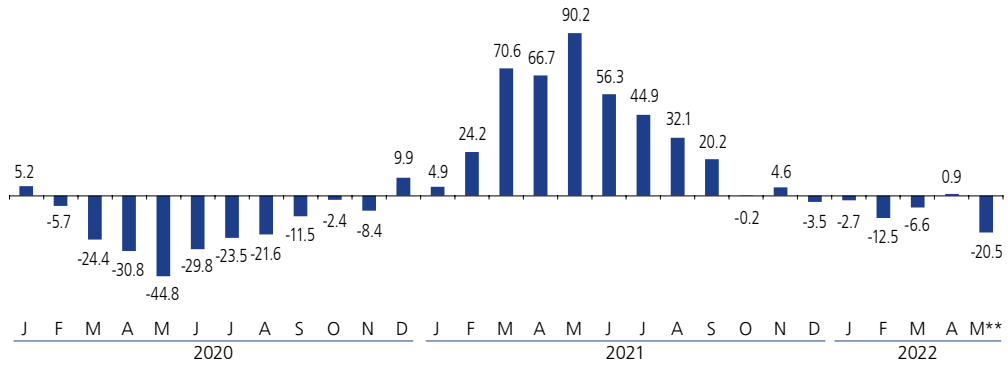
\* Preliminary.  
 Source: Cement companies.

- c) The volume of imports of capital goods, excluding construction materials and cell phones, is estimated to have fallen 20.5 percent year-on-year in May due to the effect on the weakening of business expectations on investment decisions.





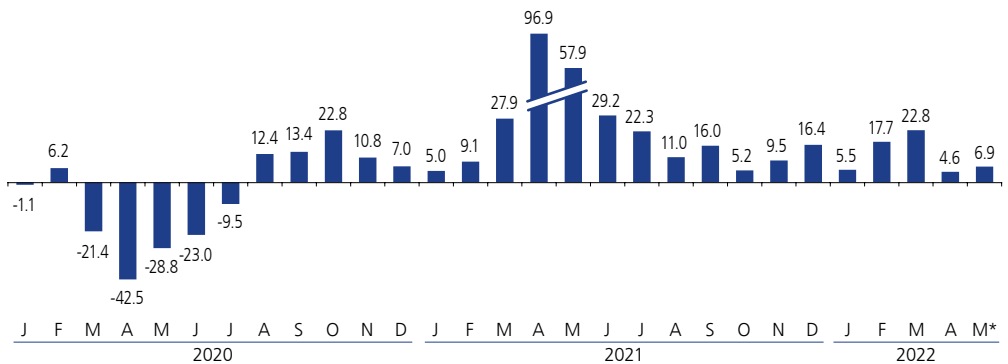
Graph 53  
VOLUME OF IMPORTS OF CAPITAL GOODS\*  
(Annual % change)



\* Excluding materials of construction and mobile phones.  
\*\* Preliminary.  
Source: SUNAT-Customs.

36. The volume of non-traditional exports grew by 4.6 percent year-on-year in April. In May, this indicator is estimated to have accelerated to 6.9 percent year-on-year, mainly due to higher exports of agricultural, textile, fishing, chemical, iron and steel and non-metallic mining products.

Graph 54  
VOLUME OF NON TRADITIONAL EXPORTS  
(Annual % change)



\* Preliminary.  
Source: SUNAT - Customs.

37. Private expectations on GDP growth have been updated in line with the economic developments of the first months of the year. The results of the latest **Survey of Macroeconomic Expectations** show that agents project growth rates between

2.5 and 3.0 percent for this year and a similar range for 2023 (between 2.6 and 3.0 percent).

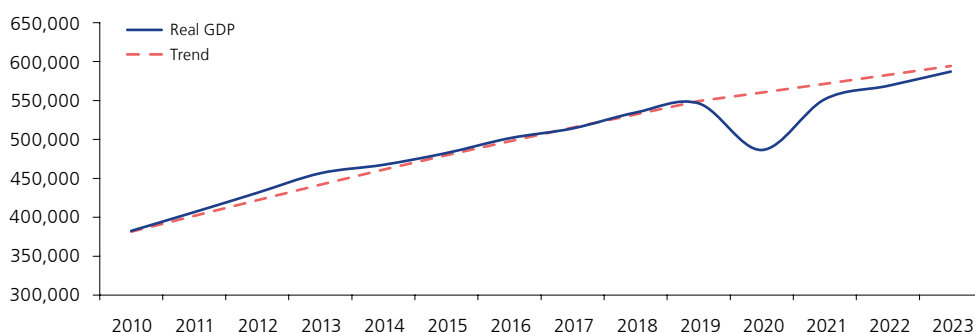
Table 20  
**MACROECONOMIC EXPECTATIONS SURVEY: GDP GROWTH**  
 (% change)

	IR Dec.21	IR Mar.22	IR Jun.22*
<b>Financial entities</b>			
2022	2.3	2.5	2.5
2023	2.7	3.0	2.6
<b>Economic analysts</b>			
2022	3.0	2.7	2.7
2023	2.8	2.8	2.7
<b>Non-financial firms</b>			
2022	3.1	3.0	3.0
2023	3.2	3.0	3.0

\* Survey conducted on May 31.  
 Source: BCRP.

38. The output gap, calculated as the difference between GDP and trend GDP (or long-term GDP) after the COVID-19 shock, is estimated at -2.4 percent for 2022, partially recovering from the previous year (-3.5 percent). The demand gap is defined as the difference between GDP and potential output. This gap measures inflationary demand pressures on the level of activity, since potential GDP characterizes the short and medium-term productive capacity of the economy throughout the economic cycle. A negative demand gap of 0.2 percent is estimated in 2022, with the gap closing in 2023, in line with the normalization of spending habits and labor market conditions in the economy.

Graph 55  
**REAL GDP AND TREND\***  
 (Millions Soles 2007)



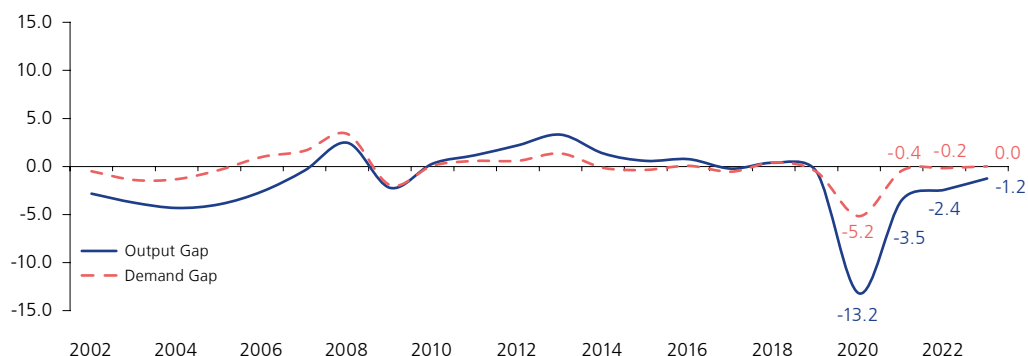
\* Long-term trend of GDP is calculated using Hodrick-Prescott filter in annual frequency.  
 Source: BCRP.







Graph 56  
**OUTPUT GAP AND DEMAND GAP\***  
(As a percentage of trend and potential GDP, respectively)



\* Long-term trend of GDP is calculated using Hodrick-Prescott filter in annual frequency.  
Source: BCRP.

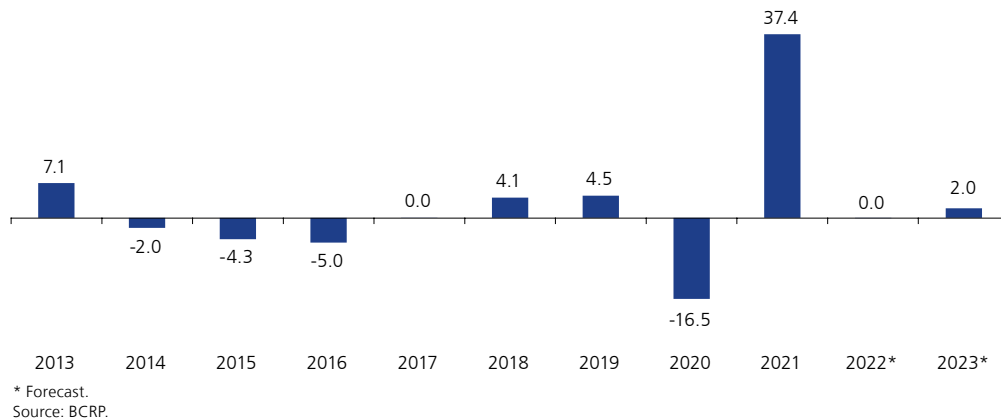
39. **Private consumption** in the first quarter of 2022 grew 6.9 percent as a result of families' greater access to goods and services compared to the same period of the previous year and the acceleration of the growth of sales, supported by the easing of health restrictions. Moreover, household spending in the following quarters of the year is expected to continue growing, driven by the increase in the number of jobs and in formal income, and by the full availability of CTS deposits and the new approved withdrawal of AFP funds equivalent to 4 tax units. However, the positive effect that this will have on consumption will be lower than that observed in previous quarters because of the improved labor market conditions and the low propensity of those benefited by the measures described above to consume. Although the result of the first quarter was higher than expected and most of the consumption indicators have become more dynamic in recent months, this is expected to be offset by the lower purchasing power of households due to the negative impact of higher inflation. Therefore, private consumption is expected to register an average growth of 4.1 percent in 2022 (a similar rate to that projected in the previous Report).

In 2023, private consumption is forecast to grow 3.5 percent, assuming an adequate business environment that will drive the creation of new jobs.

40. **Private investment** grew 0.8 percent in the first quarter of 2022, slowing its pace of growth for the third consecutive quarter because of low levels of business confidence and lower momentum in self-construction due to the normalization of household spending habits. The volume of imports of capital goods excluding construction materials and cell phones fell by 7.2 percent during the first three months of the year. Thus, low business expectations are expected to affect investment throughout the year, while mining investment is expected to decline due to increased social conflicts. Therefore, private investment is projected to register zero growth in 2022.

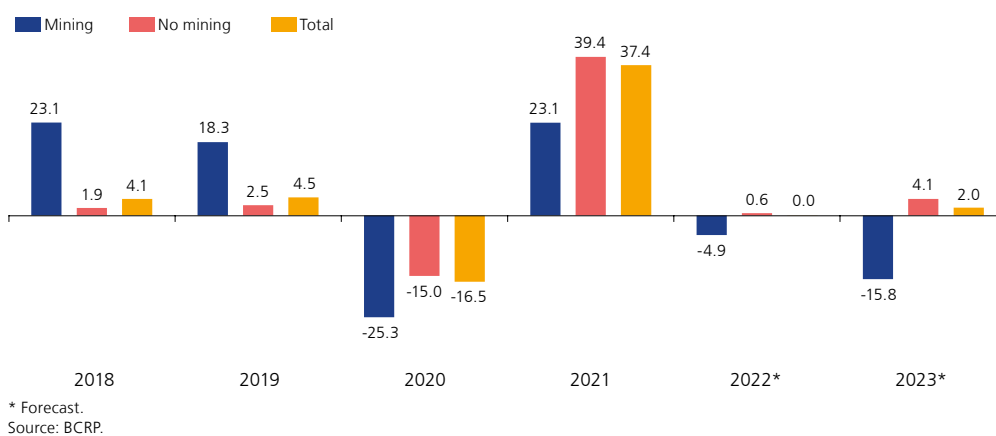
Moreover, investment is expected to grow at moderate rates in 2023 (2.0 percent). This is reinforced by a drop in the mining component, as some large projects, such as Quellaveco and Toromocho, will complete their disbursements in 2022.

Graph 57  
**PRIVATE INVESTMENT: 2013 - 2023**  
 (Real % change)



- a. Investments in the **mining sector** between January and April 2022 totaled US\$ 1,443 million, this amount being explained mainly by the investments of Anglo American Quellaveco (US\$ 427 million), Antamina (US\$ 98 million) and Yanacocha (US\$ 81 million). The projection for the 2022-2023 period considers the completion of the construction of the Quellaveco project (US\$ 5.5 billion total investment) and the Expansion of Toromocho (US\$ 1.3 billion) in 2022. In addition, the construction phase of projects such as Yanacocha Sulfuros (US\$ 2.1 billion) and San Gabriel (US\$ 0.4 billion) is expected to start in 2022, while the Corani project (US\$ 0.6 billion) would start in 2023.

Graph 58  
**PRIVATE INVESTMENT**  
 (Real annual % change)



- b. Progress continues to be made in the construction of the main **infrastructure** projects. According to OSITRAN, Line 2 of the Lima Metro is 42.3 percent complete as of April and it is expected that the first stage (Evitamiento, Óvalo Santa Anita, Colectora Industrial, Hermilio Valdizán and Mercado Santa





Anita) will be operational in the second half of 2022 after the relocation of the drinking water and sewage networks is completed. As for the expansion of Jorge Chávez International Airport, the construction of the second runway and the new control tower is 95 percent complete, and the new passenger terminal is in its initial stage, with a delivery date of 2025. On the other hand, the definitive technical feasibility file of the Marcona Port Terminal was approved in mid-May and the company expects to obtain all permits by the end of 2022 and start construction work for a term of 48 months in 2023. As for the modernization of the Callao North Pier, as of April 2022, it is 47.7 percent complete. In May 2022, the concessionaire reached an agreement with the government to expand cargo handling capacity and improve the design of the following phases, which is expected to increase the investment amount from US\$ 895 million to US\$ 1,095 million. On the other hand, DP World points out that the Muelle Bicentenario project started construction works in September last year and that it has an accumulated progress of 55.9 percent as of April 2022. The company estimates that the dock will start operating by the end of 2023.

Table 21  
**MAIN ANNOUNCEMENTS OF PRIVATE INVESTMENT PROJECTS: 2022-2023**

SECTOR	INVESTOR	PROJECTS
MINING	Angloamerican	Quellaveco
	Chinalco	Expansion of Toromocho Mine
	Yanacocha	Yanacocha sulfuros
	Bear Creek	Corani
	Buenaventura	San Gabriel
HYDROCARBONS	Cálidda Gas Natural del Peru	Wide-Scale Use of Natural Gas
	Promigas Surtigas	Wide-Scale Use of Natural Gas in Piura
ELECTRICITY	ISA Peru	500 kV Mantaro - Carapongo
	CSF Continua Misti	Solar plant in Arequipa
	Engie	Punta Lomitas wind power plant
INDUSTRY	Yura	Cement manufacturing improvement project
	Cementos Interoceánicos	Cement and lime plant
INFRASTRUCTURE	Consorcio Nuevo Metro de Lima	Line 2 of the Metro network of Lima and Callao
	Grupo Volcan	Chancay Port Terminal
	Lima Airport Partners	Expansion of International Airport (Jorge Chavez)
	Shougang Hierro Peru	Marcona Port Terminal
	APM Terminals	Modernization of Muelle Norte
	DP World Callao	Expansion of Muelle Sur
	Consorcio Transportadora Salaverry	Salaverry Port
	Covi Peru	Pucusana-Ica road network

Source: Information on companies, newspaper and specialized media.

- c. **Proinversion** reports a portfolio of more than US\$ 8.7 billion in investment projects to be awarded under concession contracts in the 2022-2023 period.

Table 22  
**MAIN PROJECTS TO BE IMPLEMENTED THROUGH CONCESSION ARRANGEMENTS IN 2022-2023**  
(Million US\$)

	Estimated investment
<b>To be called</b>	<b>8,703</b>
Peripheral Ring Road	2,380
500 kV Transmission Line Huanuco –Tocache - Celendín - Trujillo and 500 kV Transmission Line Celendín - Piura link	788
Ancon Industrial Park	762
Longitudinal of the Sierra road project, Section 4	709
New San Juan de Marcona Port Terminal	520
Headworks and Conduction for the Drinking Water Supply in Lima	480
Broadband AWS-3 and 2.3 GHz	289
Huancayo - Huancavelica Railway	263
Improvement of Tourist Services in the Choquequirao Archeological Park, Cusco-Apurimac Regions	260
National Hospital Hipólito Unanue	250
Schools in risk: Metropolitan Lima	227
500 kV Transmission Line and Piura Nueva - Frontera Substation	177
Treatment system for wastewater Huancayo	172
Schools in Risk: Ate-San Juan de Lurigancho	158
Essalud Piura	144
IPC- Wastewater Treatment for effluent dumping or reuse - Trujillo	129
Central Military Hospital	115
Essalud Chimbote	109
220 kV Transmission Line Ica - Poroma and 220 kV Transmission Line Caclic - Jaen Norte	107
Schools at Risk: Comas - San Martín de Porres	99
IPC -Wastewater Treatment for effluent dumping or reuse, Chinchá province, Ica, Peru	70
Schools at Risk: Villa María del Triunfo	63
IPC -Wastewater Treatment System for Puerto Maldonado	59
High Performance Schools: COAR Centro	58
Improvement and enlargement of the sewage and wastewater treatment system in Cajamarca	55
Improvement of Schools in Cusco	44
IPC - Wastewater Treatment for effluent dumping or reuse, Cusco province	42
Transmission Line Reque Nueva Carhuaquero and Substation Tumbes	38
Ilo desalination plant	37
IPC - Wastewater treatment for effluent dumping or reuse, Cañete province	34
IPC - Wastewater Treatment Plant for the city of Tarapoto	26
Solid Waste Management of Health Establishments Minsa	24
Tourist Project Cable Car Historic Center Lima-San Cristobal	15
Rural sanitation in Loreto	*
Wide-Scale Use of Natural Gas in Central and South Region	*
220 kV Transmission Line Piura Nueva - Colán	*
500 kV Transmission Line San José-Yarabamba	*
220 kV Substation North Lambayeque and 220 kV Transmission Line West Chiclayo - La Niña / Felam	*
220 kV Transmission Line Belaunde Terry - North Tarapoto	*
100 MVA 220/60/23 kV Substation East Piura	*
Lambayeque desalination plant	*

\* There is currently no estimated investment amount.

Source: Proinversión.

41. **Public investment** decreased 13.7 percent in the first quarter of 2022. This decrease is explained by the National Government's lower spending on equipment to combat COVID-19 and the slower pace of execution of the remaining projects as well as by Sub-national Governments' lower spending on the Arranca Perú reactivation program and Reconstruction projects.

Investment is expected to recover in the following months, driven by reconstruction works carried out mainly under the Government to Government Agreement with the United Kingdom, as well as by projects carried out within the framework of the National Infrastructure Plan for Competitiveness (NIP); Special Public Investment Projects; the increase in the budget allocation; the unblocking of irrigation megaprojects, such as Majes Sigüas and Chavimochic; and the higher execution of public spending, as this

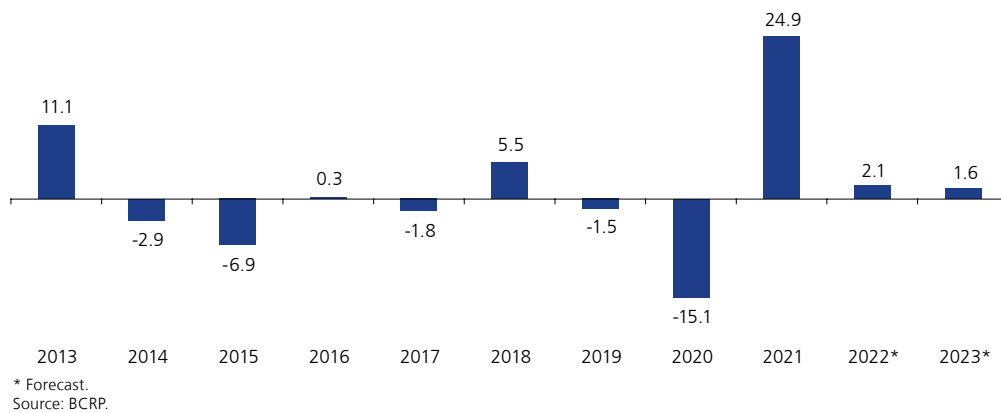




is the last year that the current subnational authorities will be in office. Thus, public investment in 2022 is projected to grow 2.1 percent. This projection is lower than that foreseen in the previous Report (4.0 percent) due to the lower spending in COVID-19 response and in economic reactivation seen as of April.

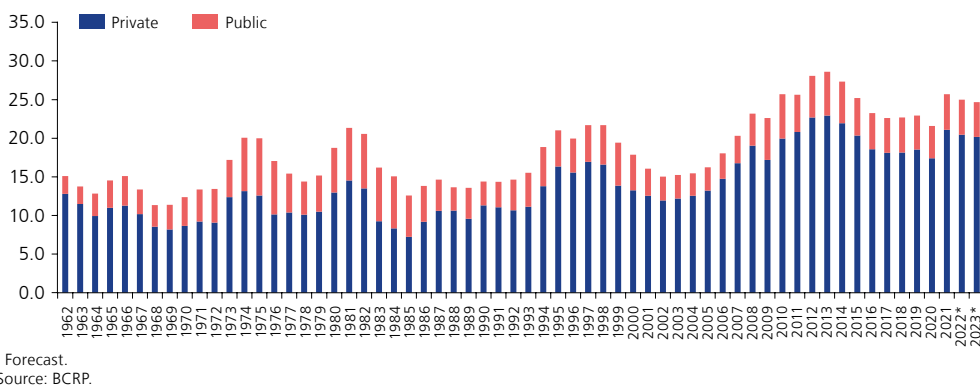
In 2023, public investment is projected to grow at a lower rate (1.6 percent) considering continuity in investment projects by subnational governments, assuming efficient and rapid training of new regional and local authorities. Likewise, the projection also considers that an important part of investment spending in 2023 will be for large infrastructure projects under the responsibility of the National Government.

Graph 59  
PUBLIC INVESTMENT: 2013-2023  
(Real % change)



- 42. **Gross fixed investment**, as a percentage of real GDP, is projected to decline from 25.7 to 25.0 percent between 2021 and 2022, a slightly lower level than in 2015. This indicator is also projected to contract again by 0.3 percentage points of output in 2023 as a result of low business expectations. In order for investment to recover, it is necessary to preserve economic and financial stability, consolidate an adequate business environment, and carry out reforms to support productivity in the economy.

Graph 60  
GROSS FIXED INVESTMENT: PRIVATE AND PUBLIC, 1962-2023  
(Real % GDP)



43. **Domestic savings** would decline from 19.6 percent of GDP in 2021 to 18.2 percent in 2022 due to a fall in private savings of 2.1 percentage points of GDP (associated with the normalization of household consumption habits and the approval to withdraw CTS deposits and AFP contributions). Gross domestic investment is expected to decline by 0.2 percentage points due to the effect of weakening business expectations on the execution of private projects. Therefore, the requirement of external financing is projected to increase, as a percentage of GDP, from 2.3 to 3.4 percent between 2021 and 2022.

On the other hand, following the normalization of the global health scenario and the recovery of economic activity, in 2023 public savings are expected to rise slightly (by 0.1 percentage points of GDP) while private savings are expected to increase by 1.9 percentage points of GDP as a result of higher interest rates in the financial system. Thus, the external gap is projected to be equivalent to -1.1 percent of GDP.

Table 23  
**SAVINGS-INVESTMENT GAP**  
(Accumulated last 4 quarters, % of nominal GDP)

	2021	2022*			2023*	
		Q1	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
1 Domestic Gross Investment 1/	21.9	21.0	20.8	21.7	20.5	21.2
2 Domestic Savings	19.6	17.9	19.2	18.2	19.9	20.1
External Gap (=2-1)	-2.3	-3.0	-1.6	-3.4	-0.6	-1.1
1.1 Private Domestic Gross Investment 1/	17.3	16.4	16.1	16.9	15.9	16.6
1.2 Private Savings	17.5	15.0	16.9	15.4	17.5	17.3
Private Gap (=1.2-1.1)	0.2	-1.4	0.8	-1.5	1.6	0.7
2.1 Public Investment	4.7	4.5	4.7	4.8	4.6	4.7
2.2 Public Savings	2.1	2.9	2.2	2.8	2.4	2.9
Public Gap (=2.2-2.1)	-2.5	-1.6	-2.5	-1.9	-2.2	-1.8

IR: Inflation Report.

\* The last two columns correspond to the annual forecast of the previous and current IR.

1/ Includes change on inventories.

Source: BCRP.



**Box 1****THE ROLE OF COMPETITIVENESS IN ATTRACTING PRIVATE INVESTMENT AND GENERATING FORMAL JOBS**

Competitiveness, the set of institutions, policies and factors that determine the level of productivity of a country,<sup>1</sup> has a positive impact on long-term economic growth and is a necessary condition for achieving economic and social development. This box describes Peru's performance in two important international rankings that seek to measure this concept, the World Economic Forum's Global Competitiveness Index (GCI) and the Fraser Institute's Investment Attractiveness Index (IAI), in order to explore opportunities for improvement for the country both in terms of attracting investment and generating formal employment.

The WEF's **Global Competitiveness Index (GCI)** is composed of 12 pillars associated with 4 dimensions of productivity.<sup>2</sup> The **Investment Attractiveness Index (IAI)**, prepared by the Fraser Institute, is an indicator composed of the Policy Perception and Mining Potential indices. In general, the results of both rankings show, on the one hand, that Peru's relative position is below that of the other countries integrating the Pacific Alliance (Chile, Mexico and Colombia) and, on the other hand, a decline in recent years.

**GLOBAL COMPETITIVENESS AND INVESTMENT ATTRACTIVENESS INDEX**

(Percentiles, 0-worse position, 100-best position)

	Peru		Chile		Mexico		Colombia		Brazil		Ecuador	
	2017	2021	2017	2021	2017	2021	2017	2021	2017	2021	2017	2021
<b>Investment Attractiveness</b>												
<b>Index - Fraser</b>	<b>79</b>	<b>50</b>	<b>91</b>	<b>63</b>	<b>52</b>	<b>60</b>	<b>30</b>	<b>65</b>	<b>29</b>	<b>39</b>	<b>23</b>	<b>71</b>
a. Policy perception	53	18	73	55	46	36	13	39	27	19	10	46
b. Mining potential	85	71	92	64	55	67	58	79	35	52	48	83
<b>Global Competitiveness</b>												
<b>Index - WEF 1/</b>	<b>56</b>	<b>54</b>	<b>75</b>	<b>77</b>	<b>67</b>	<b>66</b>	<b>58</b>	<b>60</b>	<b>49</b>	<b>50</b>	<b>39</b>	<b>36</b>
<b>a. Business environment</b>												
Institutions	34	33	78	77	27	30	33	35	39	30	25	25
Infrastructure	35	38	69	70	64	62	40	43	34	45	59	56
ICT adoption	34	30	60	60	45	48	41	38	54	52	36	35
Macroeconomic stability	99	99	83	99	99	71	58	70	7	18	47	35
<b>b. Human capital</b>												
Health	76	87	77	74	59	57	74	89	47	47	72	65
Capabilities	40	43	69	67	34	37	42	43	33	32	48	46
<b>c. Markets</b>												
Goods	67	60	88	93	58	62	36	36	25	12	7	8
Labor	50	45	71	62	30	32	41	48	27	26	19	18
Financial system	52	52	85	85	53	55	66	62	62	61	37	37
Market size	64	65	66	67	92	92	73	74	93	93	50	52
<b>d. Innovation</b>												
Business dynamism	45	31	65	67	73	71	71	65	25	52	8	8
Innovation capacity	35	36	60	62	64	63	47	45	72	72	34	38

1/ Data for 2021 corresponds to 2019, the latest available.

Sources: World Economic Forum, TCDATA360 World Bank; Fraser Institute. Memo: The relative position is measured as a percentile (0 indicates a worse position, 100 a better position), which allows correcting the effect of the change in the number of economies in the ranking.

1 World Economic Forum (WEF).

2 Appropriate environment (institutions, infrastructure, ICT adoption, and macroeconomic stability), human capital (health and skills), markets (goods markets, labor market, financial system and market size), and innovation (business dynamism and innovation capability).

### Competitiveness to attract private investment

According to the GCR pillars, Peru's main strength and competitive advantage is macroeconomic stability due to good management of inflation and public debt, this pillar putting the country in the 99th percentile of the ranking. On the other hand, however, the most critical situation is observed in the pillars associated with a favorable business environment (institutions and infrastructure) and the innovation ecosystem (business dynamism and innovation capability).<sup>3</sup>

Within the pillar of institutions, many indicators are below the 15<sup>th</sup> percentile, including organized crime, efficiency of legal framework in dispute resolution, reliability of police services, burden of government regulations, protection of intellectual property, independence of the judiciary system, and property rights. It is worth pointing out that Peru not only is in the 5th percentile in the first two indicators –along with hiring and firing practices, indicators of the labor market pillar, which showed the worst performance by ranking 134<sup>th</sup>–, but also registered a decline compared to 2017 (they were ranked in percentile 6).

On the other hand, according to the Fraser Institute's IAI, Peru has also regressed between 2017 and 2021, moving from the 79th to the 50th percentile due to the deterioration of the Index of Perception of Policies (down from the 53rd to the 18th percentile) and Mining Potential (down from the 85th to the 71st percentile), in a context where investment in mining exploration contracted by 32.5 percent during the period analyzed (and by 62 percent with respect to 2011). Thus, Peru ranks 8th in the region (after ranking 2nd in 2017), which contrasts with the significant improvement registered by Colombia and Ecuador. The gap between the position achieved in the overall index and the mining potential represents an opportunity for the country to improve. In our case, this gap was equal to 18 positions in 2021, a wider gap than that faced by Chile (1 position), Mexico (6 positions), Ecuador (10 positions) and Colombia (11 positions), reflecting that Peru lags behind in terms of policy perception.

For example, according to the Fraser Institute's policy perception index, there is more uncertainty regarding environmental regulation in Peru than in Chile, Mexico, Colombia, Brazil, and Ecuador. A similar situation is observed in terms of regulatory duplication and inconsistencies, as well as in terms of labor regulations, according to this ranking. These results reduce the country's attractiveness for investment.

Political instability, government regulatory burdens<sup>4</sup> and social conflicts<sup>5</sup> have increased in the country. Moreover, conflicts in regions with important mining projects deteriorate confidence

3 An alternative indicator is the World Competitiveness Ranking (WCR), prepared by the International Institute of Management Development (IMD) of Switzerland. The IMD considers 63 countries and measures 4 pillars: economic performance, government efficiency, business efficiency and infrastructure. In 2019, Peru ranked in the 13th percentile in the WCR, and, if the World Economic Forum's GCI were to consider the same sample of countries as the WCR, Peru would rank in the 11th percentile. The correlation between both indicators (WCR and GCI), considering a common sample of countries, is 0.88. According to the WCR of IMD, Peru's relative position deteriorated to the 9th percentile in 2021. By pillars, Peru ranked in the 25th percentile in government efficiency and in the 17th percentile in business efficiency, with a lower relative position in infrastructure and economic performance (6th percentile in both cases).

4 Peru's score on the Fraser Institute's indicator of regulatory duplication and inconsistency fell from 45 in 2019 to 29 in 2021 (a value below 50 indicates a perception of unfavorable effect on investment, while one above 50 indicates a perception of favorable effect).

5 Social conflicts increased from an average of 195 conflicts in January-April 2021 to 206 in the same period in 2022. A total of 143 and 159 of these average figures were active conflicts, respectively.







and the business environment. For example, as pointed out in Box 5 of the March 2022 Inflation Report, it is estimated that mining in 2021 would have grown 12.0 percent instead of 9.7 percent without the effect of social conflicts (-2.3 percentage points effect). Furthermore, in addition to an adverse business climate, the persistence of structural restrictions (high gap in quantity and quality of infrastructure<sup>6</sup>, low productivity labor force operating informally, and low innovation capability and bureaucratic barriers) discourages private investment. If this worsens, it may affect potential growth, which would hinder the generation of formal employment.

### FRAZER INSTITUTE: POLICY PERCEPTION INDEX (PPI)2021

Questions of PPI	Policy Perception Range 1/					
	Peru	Chile	Mexico	Colombia	Brazil	Ecuador
1. Uncertainty concerning the administration, interpretation, or enforcement of existing regulations	27	57	50	54	43	68
2. Uncertainty concerning environmental regulations	34	48	52	50	41	40
3. Regulatory duplication and inconsistencies	29	46	45	50	34	50
4. Legal system	29	46	36	50	36	50
5. Taxation regime	38	41	41	54	39	45
6. Uncertainty concerning disputed land claims	33	52	42	46	39	41
7. Uncertainty concerning what areas will be protected as wilderness, parks, or archeological sites, etc.	34	50	42	46	39	41
8. Infrastructure	41	54	55	50	45	59
9. Socioeconomic agreements/community development conditions	29	50	40	36	39	50
10. Trade barriers	45	55	48	57	39	50
11. Political stability	24	36	39	43	43	50
12. Labor regulations/employment agreements and labor militancy/work disruptions	38	44	42	50	41	50
13. Quality of the geological database	55	63	66	46	43	55
14. Level of security	36	57	25	27	33	59
15. Availability of labor/skills	63	76	67	54	52	64

1/ Compiled on the basis of responses from interviewees by the Fraser Institute. The number means the difference between the percentage of respondents who answered that the question "favors investment in exploration" and the sum of the percentages of respondents who answered that "the factor is a strong impediment to investment" and "I would not try invest in exploration due to this factor". This number is centered at 50, so a positive number greater than 50 indicates that there is a higher concentration of favorable responses and higher values indicate better performance.

Source: Fraser Institute.

Incorporating the completion of the construction projects of Mina Justa, Quellaveco and the expansion of Toromocho, mining investment is estimated to contract by 5 and 16 percent in 2022 and 2023, respectively. Creating a favorable environment for private investment is key to materialize

6 A short term horizontal gap in basic access to infrastructure (water, sanitation, telecommunications, transportation, health, and irrigation) is estimated at US\$ 35.51 billion and a total long-term gap (water, sanitation, telecommunications, electricity, transportation, health, education, and irrigation) is estimated at US\$ 110.137 billion for the 2019-2038 period. Moreover, the vertical infrastructure gap estimated for the 2019-2038 period is US\$ 96.12 billion. Furthermore, it is estimated that an investment of US\$ 169,783 million will be required to close only a portion of the quality gap in the water and sanitation, mobile telephony, broadband, roads, and education sectors. See Bonifaz, J.; Urrunaga R.; Aguirre, J.; Quequezana, P. (2020). Brecha de infraestructura en el Perú: estimación de la brecha de infraestructura de largo plazo 2019-2038. Banco Interamericano de Desarrollo.

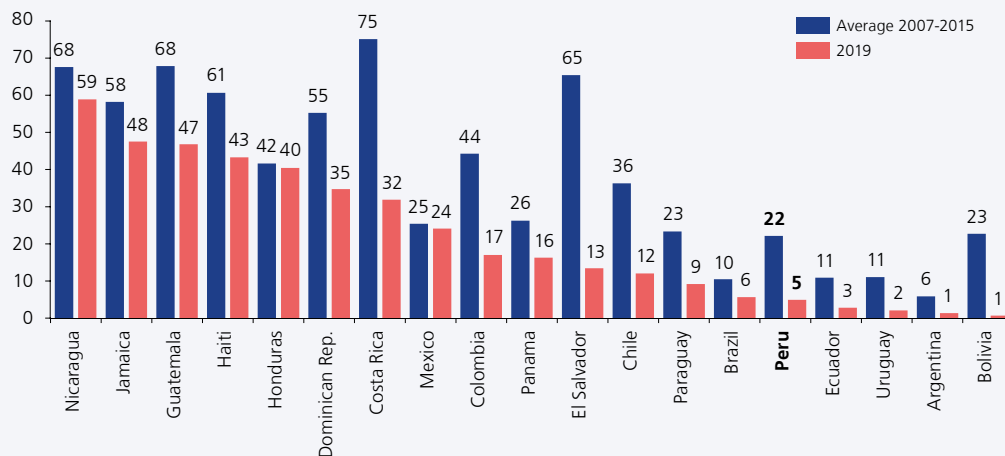
the important investment portfolio that our country has. In the case of mining, construction projects to 2021 total US\$ 53.2 billion (including 35 new mine projects for a total of US\$ 48.3 billion and 8 projects of expansion or replacement of existing mines amounting to US\$ 4.8 billion), according to the Ministry of Energy and Mines (MINEM).

### Flexibility to generate formal employment

A high regulatory burden generally reduces incentives to invest, while flexible regulation can promote new developments in private activity and generate a better environment for increasing productivity in the economy and dynamism in markets. In recent years, Peru’s relative position in terms of labor regulatory flexibility has deteriorated. The country’s relative position in the World Economic Forum’s index of hiring and firing practices has fallen from an average of 22 in the 2007-2015 period to 5 in 2019 (Peru ranks 134th out of 141 countries).

The lack of flexibility in hiring formal labor, which is reflected in a labor market with high informality, may prevent economic growth from translating into an increase in formal employment and higher quality jobs (World Bank, 2013)<sup>7</sup>, which in turn may limit the positive impact of economic growth on poverty reduction. It should be noted that greater competitiveness is associated with higher income levels and with the capacity to generate quality jobs. In addition, countries with higher growth and income also have more complex production chains and industries that interact with each other and generate greater value added.<sup>8</sup>

**HIRING AND FIRING PRACTICES**  
(Percentiles, 0-worst, 100-best)



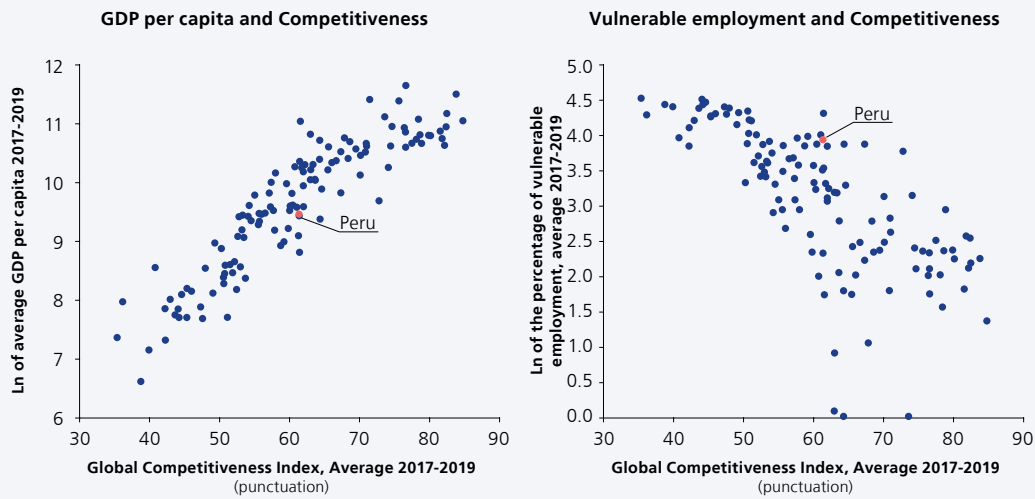
Memo: For Haiti, the average is 2011-2015. Ecuador does not report data in 2014.  
Source: World Economic Forum.

7 World Bank. 2012. World development report 2013: Jobs.

8 A country’s economic complexity is related to the diversification and ubiquity of the export basket, and reflects the capacity of an economy to take advantage of accumulated knowledge. See: Hausmann, R. and Hidalgo, C. (2009). “The Building Blocks of Economic Complexity”. Proceedings of the National Academy of Sciences, 106, 10570-10575.



**COMPETITIVENESS, GDP PER CAPITA, AND VULNERABLE EMPLOYMENT**



Memo: Sample of 126 countries is considered for which GDP per capita information was available, Purchasing Power Parity (PPP in constant 2011 international dollars) and vulnerable employment. It should be noted that vulnerable employment refers to unpaid family workers and the self-employed as a percentage of total employment. For GDP per capita and vulnerable employment indicators, the natural logarithm (Ln) is used.  
Sources: World Economic Forum and World Bank.

While it is true that Peru already had a highly informal labor market prior to the pandemic, several measures that discourage its formalization have been implemented in recent years. In addition, a series of measures have been proposed that would further increase rigidities for the generation of formal jobs, should they be approved. For example, increasing the indemnity for arbitrary dismissal from 1.5 to 3 monthly salaries for each full year of service, without a ceiling of 12 salaries, or modifying the compensation for unjustified dismissal, or reducing the number of contracts per modality, among other measures.<sup>9</sup> This occurs in a context in which the rate of informal employment has risen from 72.7 percent in 2019 to 75.3 percent in 2020 and has continued to rise to 76.8 percent in 2021, according to ENAHO data. These types of proposals would not contribute to the reduction of labor informality or the generation of adequate employment<sup>10</sup>, as they only favor those currently employed in the formal sector and do not allow labor market dynamics to adjust to economic cycles or efficiently allocate workers according to their productivity (e.g., the most productive workers in the informal sector would no longer be able to access formal employment as easily).

Given the magnitude and complexity of the obstacles that prevent the country from increasing its competitiveness, it is advisable to prioritize the economic policy options that are more cross-cutting, such as, for example:

- Invest in institutional and human capacity to prevent the deterioration of institutions.
- Increase trust and social cohesion to contribute to growth.<sup>11</sup>

9 For example, it has been proposed that the maximum term applicable to fixed-term contracts be reduced from 5 to 2 years, or to regulate teleworking, making the cost of labor provision to be assumed or compensated by the employer. See <https://www.gob.pe/institucion/mtpe/campa%3%B1as/8488-anteproyecto-de-codigo-del-trabajo>

10 Mondragón-Vélez, C., Peña, X., Wills, D., & Gugler, A. (2010). Labor market rigidities and informality in Colombia. *Economía*, 11(1), 65-101.

11 Keefer y Scartascini (2022) proponen, por ejemplo, reformas judiciales y del sector público y fortalecer las instituciones que empoderan a la sociedad civil. Ver: Keefer, P. y Scartascini, C. (Ed.) (2022).. For example, Keefer and Scartascini (2022) propose judicial and public sector reforms and strengthening institutions that empower civil society. See: Keefer, P. and Scartascini, C. (Ed.) (2022). *Confianza. La clave de la cohesión social y el crecimiento en América Latina y el Caribe*. Executive Summary. Inter-American Development Bank.

- Promote the provision of a minimum set of quality public services (education, health, infrastructure)
- Strengthen human capital capacity building through the provision of quality public health and education services, which proved to be vulnerable during the COVID-19 pandemic.
- More flexible labor regulation is needed so that companies have more incentives to hire formal workers on a permanent basis. This would contribute to generate an environment of higher productivity and thus higher labor income. Greater labor flexibility should also be accompanied by policies that help improve social protection.

As in any public policy, the implementation of reforms to overcome the obstacles that limit competitiveness requires a great effort, synergies of wills and cooperation between the public and private sectors, which is why giving priority to this aim in the public agenda is imperative if sustained, resilient and inclusive growth is to be achieved in order to overcome the barriers of a developing economy and generate well-being among the population.





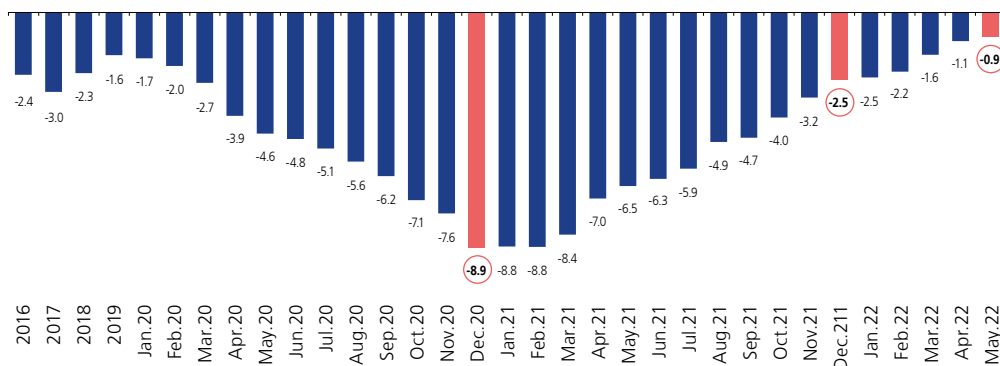
# IV. Public Finances

44. Maintaining the downward trend initiated in February 2021, the fiscal deficit accumulated over the last twelve months decreased from 2.5 to 0.9 percent of GDP between December 2021 and May 2022. The decrease in the deficit with respect to the close of 2021 is mostly explained by an increase in the current revenues of the General Government and, to a lesser extent, by the reduction in non-financial expenditures as a percentage of output.

The increase in annualized current revenues of the General Government in terms of output reflected mainly higher tax revenues of the National Government and, to a lesser extent, an increase in non-tax revenues. The increase in the former was due to higher revenues from the income tax, especially from the regularization of payments of this tax for FY 2021 and from the value added tax (VAT), especially from import duties. On the other hand, the increase in revenues from *canon* and oil royalties stands out among non-tax revenues. This increase was offset by an increase in tax refunds, mainly those related to exports.

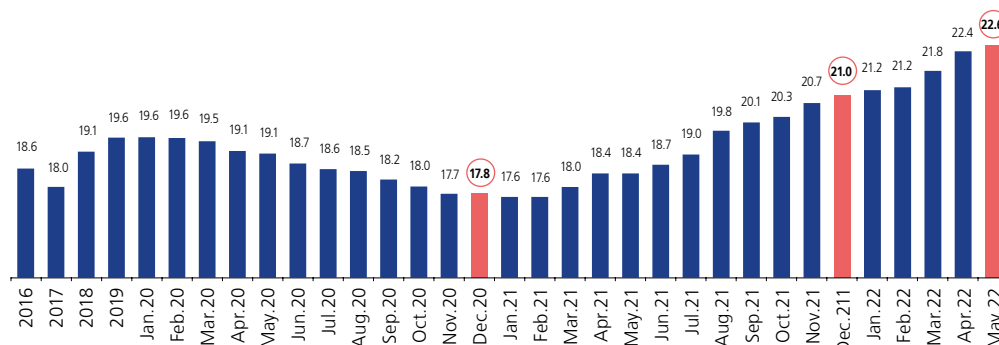
Although the General Government’s non-financial expenditures decreased as a percentage of GDP in the last twelve months to May 2022, they did increase in nominal terms. This increase was mainly due to higher current expenditures on goods and services to address the health emergency and due to the recovery of non-COVID-19 spending, as well as expenditure in salaries, mainly due to the salary increase granted to teachers in March. This was in part offset by a reduction in current transfers and expenditure in gross capital formation. By sector, the largest contraction in gross capital formation was observed in Transportation, Sanitation, Communications, and Housing and Urban Development.

Graph 61  
ECONOMIC BALANCE OF THE NON-FINANCIAL PUBLIC SECTOR: 2016 - 2022  
(Accumulated last 12 months - % GDP)



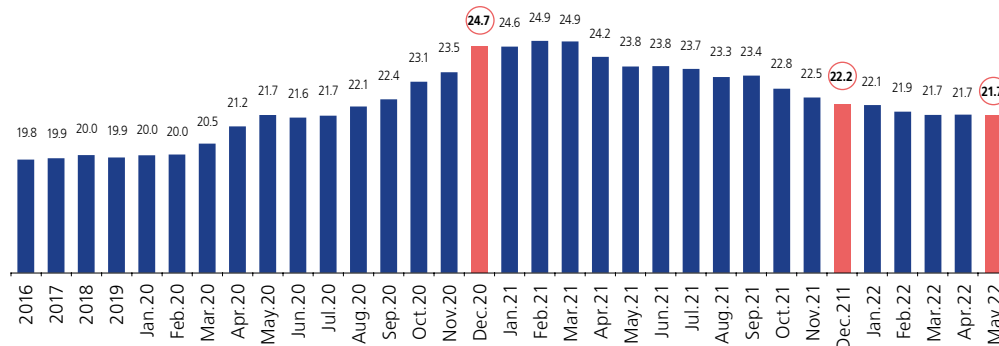
Source: MEF, SUNAT and BCRP.

Graph 62  
**CURRENT REVENUES OF THE GENERAL GOVERNMENT: 2016 - 2022**  
 (Accumulated last 12 months - % GDP)



Source: SUNAT and BCRP.

Graph 63  
**CURRENT REVENUES OF THE GENERAL GOVERNMENT: 2016 - 2022**  
 (Accumulated last 12 months - % GDP)



Source: MEF and BCRP.

- The **fiscal deficit** is projected to decline from 2.5 to 1.9 percent of GDP between 2021 and 2022, a deficit level 1.8 percentage points of GDP lower than the 3.7 percent fiscal rule deficit (Emergency Decree No. 079-2021). Revenues are expected to continue to show positive growth rates this year, mainly because of higher tax revenues, while spending is expected to continue moderating its dynamism due to lower spending in response to the COVID-19 pandemic and in economic reactivation-related actions.

In terms of output, the deficit is expected to narrow slightly to 1.8 percent in 2023, this rate being lower than the new proposed fiscal rule of 2.4 percent (Draft Bill 1763/2021-PE<sup>12</sup>). While revenues are foreseen to be less buoyant compared to the previous year, non-interest expenditures –mainly current revenues and, to a lesser extent, gross capital formation– are also foreseen to decline in terms of output. Spending on gross capital formation is projected to contract by 0.1 percentage points of GDP, reaching 4.4 percent of output by the end of the projection horizon.





Compared to the March Report, the fiscal deficit projection has been lowered from 2.5 to 1.9 percent of GDP for 2022 and from 2.2 to 1.8 percent for 2023. The lower deficits estimated for both years are explained by an increase in the revenue projection, given the favorable evolution observed between January and May of this year and the upward revision of the prices of some export metals and oil.

Table 24  
**NON-FINANCIAL PUBLIC SECTOR**  
(% GDP)

	2021	2022*			2023*	
		May <sup>1/</sup>	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>1. General government current revenues</b>	<b>21.0</b>	<b>22.6</b>	<b>20.7</b>	<b>21.6</b>	<b>20.7</b>	<b>21.1</b>
<i>Real % change</i>	38.1%	32.1%	1.1%	4.1%	3.8%	1.2%
<b>2. General government non-financial expenditure</b>	<b>22.2</b>	<b>21.7</b>	<b>21.8</b>	<b>22.0</b>	<b>21.3</b>	<b>21.4</b>
<i>Real % change</i>	5.1%	-1.8%	0.5%	0.2%	2.0%	1.0%
Of which:						
Current expenditure	17.2	16.8	16.6	16.8	16.3	16.3
<i>Real % change</i>	-0.6%	-4.0%	-0.9%	-1.1%	2.1%	0.8%
Gross capital formation	4.2	4.1	4.4	4.5	4.4	4.4
<i>Real % change</i>	30.9%	5.4%	7.9%	6.6%	2.5%	2.8%
<b>3. Other <sup>2/</sup></b>	<b>0.2</b>	<b>-0.3</b>	<b>0.2</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>
<b>4. Primary balance (1-2+3)</b>	<b>-1.0</b>	<b>0.6</b>	<b>-0.9</b>	<b>-0.4</b>	<b>-0.5</b>	<b>-0.2</b>
<b>5. Interests</b>	<b>1.5</b>	<b>1.5</b>	<b>1.5</b>	<b>1.5</b>	<b>1.6</b>	<b>1.6</b>
<b>6. Overall Balance</b>	<b>-2.5</b>	<b>-0.9</b>	<b>-2.5</b>	<b>-1.9</b>	<b>-2.2</b>	<b>-1.8</b>

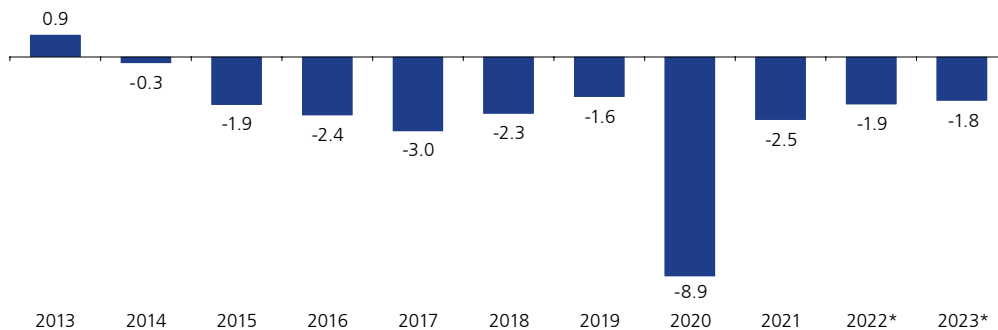
1 / Ratios on % of GDP and real % changes represent accumulated in the last 12 months as of May.

2 / Includes capital income of the general government and primary balance from state-owned companies.

\* Forecast.

IR: Inflation Report.

Graph 64  
**ECONOMIC BALANCE OF THE NON-FINANCIAL PUBLIC SECTOR: 2013 - 2023**  
(% GDP)



\* Forecast.  
Source: BCRP.

### Current revenues

46. **Current revenues** would show a real growth of 4.1 percent in 2022, and would represent 21.6 percent as a percentage of GDP, a result 0.6 percent higher than at the end of 2021, explained mainly by a higher collection and regularization of corporate income tax in the mining and hydrocarbon sectors. In addition, the increase in revenues from the VAT as a result of the normalization of economic activity, as well as the increase in revenues from *canon* and oil royalties contribute to a lesser extent to this

growth, although this would be in part offset by the temporary reduction of the VAT on food and the excise tax on fuels.

In 2023 current revenues would grow less (1.2 percent in real terms) and represent a lower percentage of GDP (21.1 percent), with this being mostly explained by lower revenues from the regularization of the income tax, offset by the reversal of the transitory tax reduction measures.

Moreover, compared to the previous Report, the revenue projection has been revised upwards, from 20.7 to 21.6 percent of GDP for 2022 and from 20.7 to 21.1 percent of GDP for 2023. This revision reflects the higher tax resources collected between January and May 2022, mainly due to a higher regularization of income tax payments and due to the increase in the projected international prices of some export minerals and oil, which has a positive impact on revenues *from canon* and royalties.

Table 25  
**CURRENT REVENUES OF THE GENERAL GOVERNMENT**  
(% GDP)

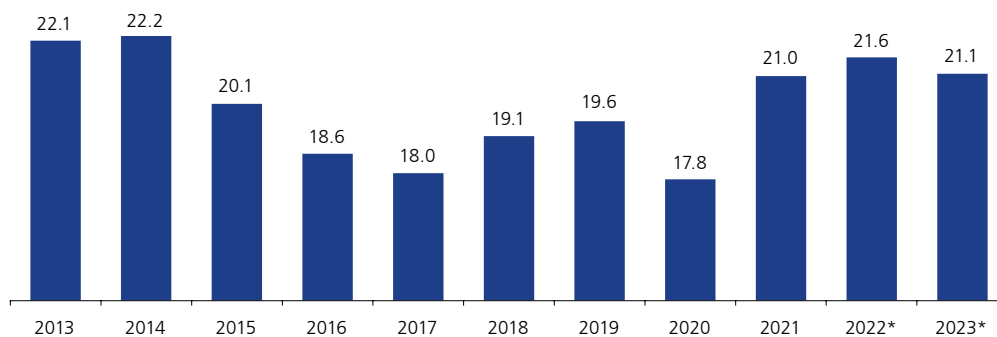
	2021	2022*			2023*	
		May '1	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>TAX REVENUES</b>	<b>16.3</b>	<b>17.7</b>	<b>16.1</b>	<b>16.9</b>	<b>16.1</b>	<b>16.4</b>
Income tax	6.3	7.5	6.4	7.3	6.4	6.6
Value Added Tax (VAT)	8.9	9.3	9.0	9.3	9.1	9.3
Excise tax	1.0	1.0	1.0	0.8	1.0	0.9
Import duties	0.2	0.2	0.2	0.2	0.2	0.2
Other tax revenues	2.2	2.3	1.9	1.9	1.9	1.8
Tax returns	-2.3	-2.6	-2.4	-2.5	-2.4	-2.4
<b>NON-TAX REVENUES</b>	<b>4.6</b>	<b>4.9</b>	<b>4.6</b>	<b>4.7</b>	<b>4.5</b>	<b>4.6</b>
Contributions to social security	2.1	2.0	2.1	2.0	2.1	2.0
Own resources and transfers	1.3	1.3	1.3	1.2	1.3	1.3
Royalties and likely	1.0	1.2	1.0	1.2	0.9	1.0
Rest	0.3	0.4	0.3	0.3	0.3	0.4
<b>TOTAL</b>	<b>21.0</b>	<b>22.6</b>	<b>20.7</b>	<b>21.6</b>	<b>20.7</b>	<b>21.1</b>

1 / Represents accumulated in the last 12 months as of May.

\* Forecast.

IR: Inflation Report.

Graph 65  
**CURRENT REVENUES OF THE GENERAL GOVERNMENT: 2013 - 2023**  
(% GDP)



\* Forecast.  
Source: BCRP.







## Non-financial expenditure

47. **Non-financial expenditures** would register a real growth of 0.2 percent in 2022, and a rate of 22.0 percent as a percentage of GDP, a level 0.2 percentage points of GDP lower than that observed in 2021. This projection is in line with the expected consolidation of public spending and with compliance with the macro-fiscal rules of the Non-Financial Public Sector (Emergency Decree No. 079-2021). This expected lower dynamism is explained by the reduction in public spending related to COVID-19 and to economic reactivation, which would be equivalent to 1.3 percent of GDP in 2022 (in contrast to the 3.2 percent of GDP executed in 2021).

Non-financial expenditures as a percentage of GDP are expected to continue to decline and reach 21.4 percent in 2023, thus continuing the fiscal consolidation process. The projected lower expenditures are mostly the result of the withdrawal of spending in response to the pandemic, including most notably transfers to households and workers, procurement of medical supplies, and hiring of personnel.

On the other hand, gross capital formation is projected to grow 2.8 percent in real terms in 2023, despite the change of authorities at the regional and local government levels. This projection is based on the fact that several important projects are in charge of the National Government in terms of budget, as well as on the assumption that the provision of efficient training to the new authorities will contribute to guarantee the continuity of investments.

Table 26  
**NON-FINANCIAL EXPENDITURE OF THE GENERAL GOVERNMENT**  
(% GDP)

	2021	2022*			2023*	
		May <sup>1/</sup>	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>Current expenditure</b>	<b>17.2</b>	<b>16.8</b>	<b>16.6</b>	<b>16.8</b>	<b>16.3</b>	<b>16.3</b>
National Government	11.6	11.3	11.3	11.4	11.2	11.2
Regional Governments	3.8	3.7	3.4	3.5	3.3	3.3
Local Governments	1.8	1.8	1.9	1.9	1.8	1.7
<b>Capital expenditure</b>	<b>5.0</b>	<b>4.9</b>	<b>5.1</b>	<b>5.2</b>	<b>5.0</b>	<b>5.1</b>
Gross capital formation	4.2	4.1	4.4	4.5	4.4	4.4
National Government	1.6	1.5	1.7	1.7	1.7	1.7
Regional Government	0.8	0.8	0.8	0.9	0.8	0.9
Local Governments	1.8	1.8	1.9	1.9	1.8	1.9
Other	0.8	0.8	0.7	0.8	0.7	0.7
<b>TOTAL</b>	<b>22.2</b>	<b>21.7</b>	<b>21.8</b>	<b>22.0</b>	<b>21.3</b>	<b>21.4</b>
National Government	14.0	13.6	13.7	13.8	13.5	13.6
Regional Governments	4.6	4.5	4.3	4.4	4.2	4.2
Local Governments	3.6	3.6	3.8	3.8	3.7	3.6

<sup>1/</sup> Represents accumulated in the last 12 months as of May.

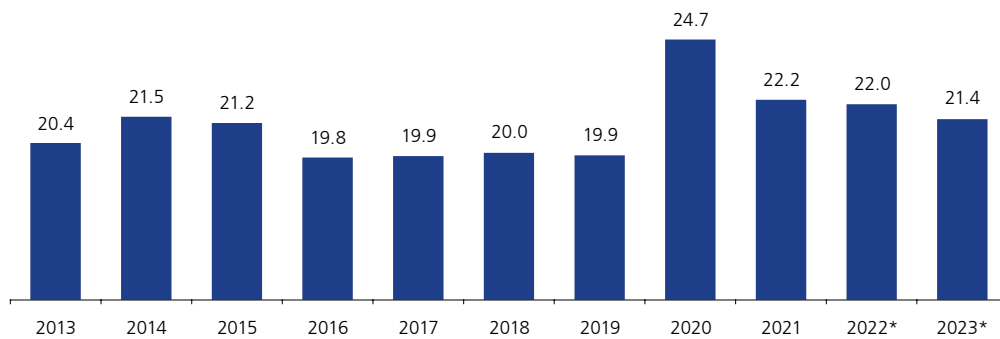
\* Forecast.

IR: Inflation Report.

Compared to what was foreseen in the last Report, the expenditure projection has been increased from 21.8 to 22.0 percent of GDP for 2022 and from 21.3 to 21.4 percent of GDP for 2023. These revisions are explained by higher spending on goods

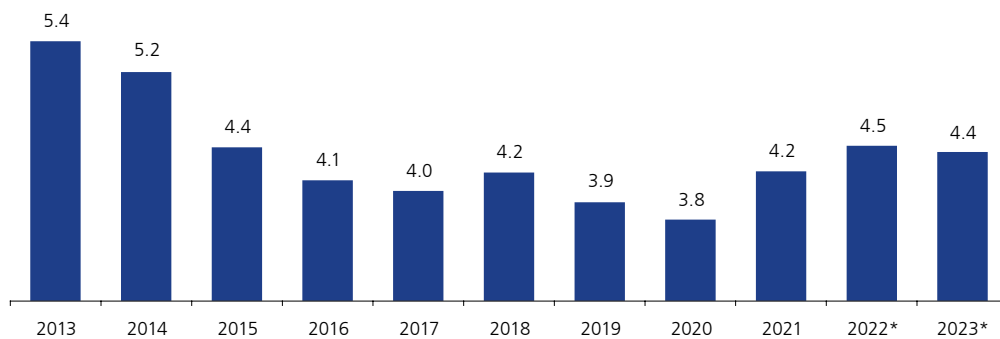
and services than expected in March. In contrast, real growth rates for both years have been revised downward, in line with the upward revision of inflation. Expenditures are projected to remain above pre-pandemic levels at the end of the projection horizon (average level of 19.2 percent in the 2003-2019 period).

Graph 66  
**NON-FINANCIAL EXPENDITURE OF THE GENERAL GOVERNMENT: 2013 - 2023**  
 (% GDP)



\* Forecast.  
 Source: BCRP.

Graph 67  
**GROSS CAPITAL FORMATION OF THE GENERAL GOVERNMENT: 2013 - 2023**  
 (% GDP)



\* Forecast.  
 Source: BCRP.

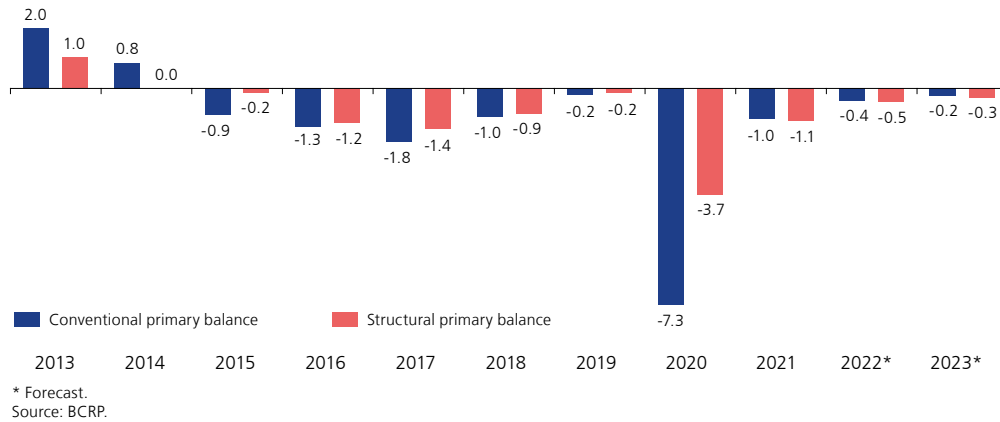
### Fiscal stance

- The **structural primary balance** is an indicator that excludes the effects of discretionary fiscal policy decisions and of cyclical and transitory components that affect the economy on government revenues and expenditures. The structural primary deficit is estimated at 0.5 percent of trend GDP in 2022 and at 0.3 percent of trend GDP at the end of the forecast horizon (that is, at even higher rates than the 0.2 percent of trend GDP estimated for 2019). The decreasing trend of the structural primary deficit reflects a gradual reduction of the expansionary fiscal position, in line with the consolidation of public finances.





Graph 68  
**CONVENTIONAL AND STRUCTURAL PRIMARY BALANCE OF THE NON-FINANCIAL PUBLIC SECTOR: 2013 - 2023**  
 (% GDP and Trend GDP)



## Financing and debt

49. The projections of **financing requirements** for 2022 and 2023 has been reduced compared to the March Report, these adjustments being mostly explained by the lower nominal fiscal deficits estimated for both years. As for the **sources of financing**, a lower use of public deposits is expected for 2022 and 2023. Likewise, a lower issuance of sovereign bonds is estimated for the projection horizon. This downward revision responds to the lower expected demand for these instruments by the AFPs, in line with the approved withdrawal of pension funds.

Table 27  
**FINANCIAL REQUIREMENT AND FINANCING OF THE NON-FINANCIAL PUBLIC SECTOR**  
 (Million Soles)

	2021	2022*			2023*	
		Jan-May	IR Mar.22	IR Jun.22	IR Mar.22	IR Jun.22
<b>I. USES</b>	<b>25,220</b>	<b>-14,389</b>	<b>27,802</b>	<b>22,749</b>	<b>27,575</b>	<b>23,990</b>
1. Amortization	2,937	1,626	4,664	4,589	5,899	5,815
a. External	1,554	1,307	3,894	3,821	3,879	3,795
b. Internal	1,383	319	770	768	2,020	2,020
Of which: recognition bon	627	202	556	511	550	550
2. Economic balance <sup>1/</sup>	22,283	-16,015	23,138	18,160	21,676	18,175
<b>II. SOURCES</b>	<b>25,220</b>	<b>-14,389</b>	<b>27,802</b>	<b>22,749</b>	<b>27,575</b>	<b>23,990</b>
1. Disbursements and others	59,139	5,523	26,504	25,659	25,329	22,222
a. External	11,185	2,329	3,109	8,055	2,849	4,667
b. Bonds	47,954	3,194	23,394	17,604	22,480	17,555
2. Variation in deposits and others <sup>2/</sup>	-33,919	-19,912	1,299	-2,910	2,246	1,768
Memo:						
<u>Percentage of GDP</u>						
Gross public debt balance	35.9	33.2	35.2	34.3	34.8	33.2
Net public debt balance	21.8	18.3	22.4	21.2	23.2	21.3
Balance of public deposits	14.2	14.9	12.7	13.1	11.6	11.9

1/ Negative sign indicates surplus.

2/ Positive sign indicates reduction of deposits.

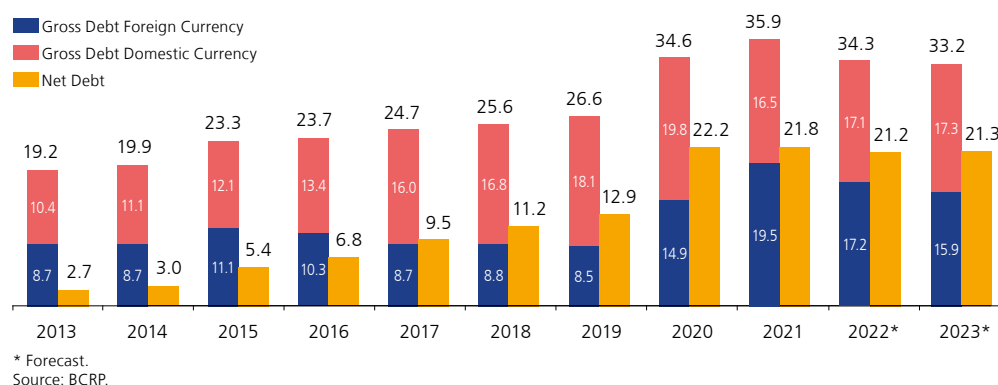
\* Forecast.

RI: Inflation Report.

The **gross debt** of the Non-Financial Public Sector is projected to fall from 35.9 to 34.3 percent of GDP between 2021 and 2022, and would show a rate of 33.2 percent at the end of the projection horizon, in line with the expected consolidation of public finances. Moreover, gross debt projections for 2022 and 2023 are lower than the maximum established by the macrofiscal debt rule of 38.0 percent of GDP for 2022 and the same level proposed for 2023 through Bill 1763/2021-PE.

On the other hand, the **debt net** of Non-Financial Public Sector deposits is projected to decline from 21.8 to 21.2 percent of GDP between 2021 and 2022 and would represent 21.3 percent of output in 2023. Projections of fiscal deficits and the expected management of public deposits explain the evolution of net debt.

Graph 69  
NON-FINANCIAL PUBLIC SECTOR DEBT: 2013 - 2023  
(% GDP)



The interest rates of Government bonds in local currency maintained an upward trend in the second quarter of 2022, amid higher global and local risk due to: (i) uncertainty regarding the duration of the war between Russia and Ukraine; (ii) the effects of confinements in China due to the COVID-19 omicron variant on global growth; (iii) tighter financial conditions in the United States, which increase the risk premium in emerging economies, and (iv) the approval of a new extraordinary withdrawal of contributions to the AFPs. In this context, the interest on the Peruvian 10-year bond in soles has risen from 6.55 to 7.94 percent between March 31 and June 13, above the regional average.

Like in the first quarter of the year, the performance of Latin American debt continues to be differentiated based on the trend of the main commodities exported by each country and on the less dovish stances of their central banks. Thus, the interest rates on 10-year bonds in local currency of Chile, Mexico, Brazil and Colombia have increased by 36, 95, 138 and 181 basis points, respectively. In some cases, the devaluation of government bonds in the region has been accompanied by a reduction in non-resident investors' bond holdings. For example, between December 2021 and March 2022, foreign investors' holdings in Brazil, Mexico and Peru decreased by 1.2, 0.2

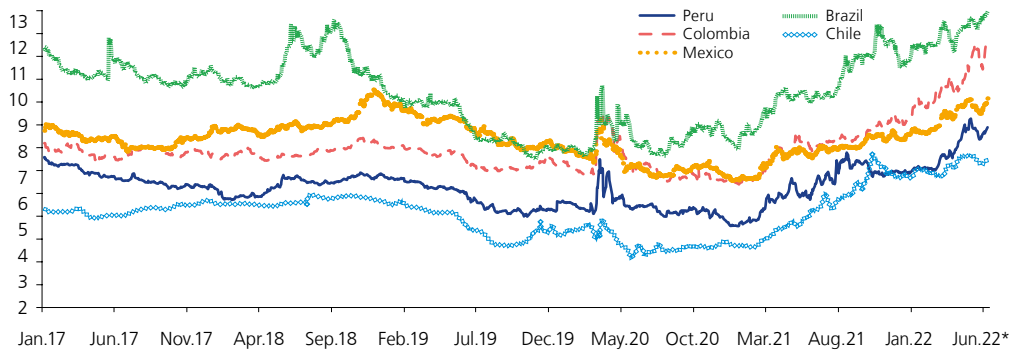




and 1.7 percentage points, respectively, whereas in Colombia, holdings rose by 0.16 percent.

Likewise, the yields on 10-year bonds denominated in dollars increased between March 31 and June 13, in line with the increase in U.S. bond rates. The yields on Mexican, Brazilian, Chilean, Peruvian and Colombian bonds increased by 139, 144, 152, 152 and 181 basis points, respectively. For its part, the U.S. bond rose by 102 basis points, from 2.34 percent in March to 3.37 percent in June 2022.

Graph 70  
**10 YEAR SOVEREIGN BOND YIELDS IN LOCAL CURRENCY**  
(%)

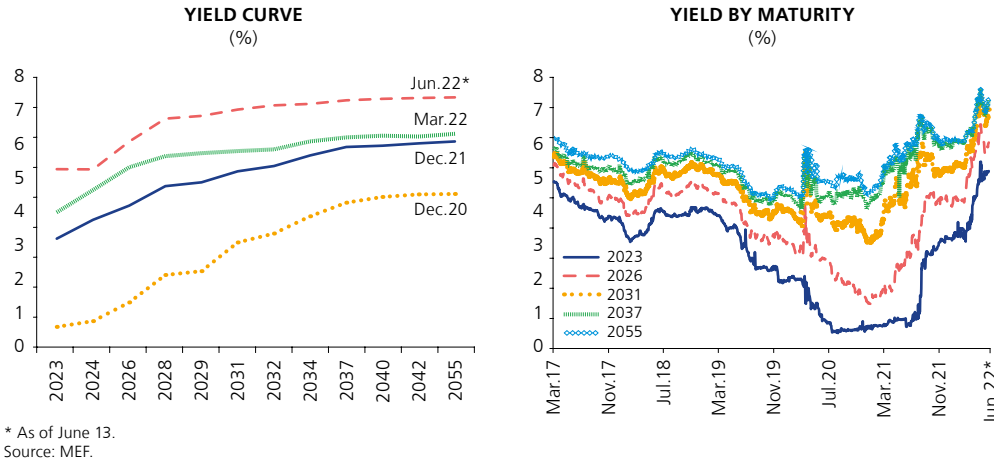


\* As of June 13.  
Source: MEF and Reuters.

The yield curve of fixed-rate Public Treasury Bonds (BTP) shows an average increase of 121 basis points between March and June 2022, the largest devaluations being observed in the short and medium tranches of the curve. Thus, the yield rate of the BTP 2023 increased by 144 basis points, from 4.47 percent in March to 5.91 percent in June. This increase is similar to that of the benchmark rate during the same period (150 basis points). Moreover, since May, upward pressures on interest rates also came from a legislative measure that allows a new extraordinary withdrawal of funds from the AFPs, which would result in a liquidation of government securities in a short period of time. Following the approval of the withdrawal law, on May 9 the yield rates of BTP 2028, 2029, 2032, 2034, 2040, 2042 and 2055 reached new historical highs since their placement dates. In terms of liquidity, trading in the secondary market through the Datatec platform (S/ 12,494 million) in April was lower than the amount traded in the first quarter of 2022 (S/ 12,563 million) as well as lower than the monthly average of 2021 (S/ 17,578 million).

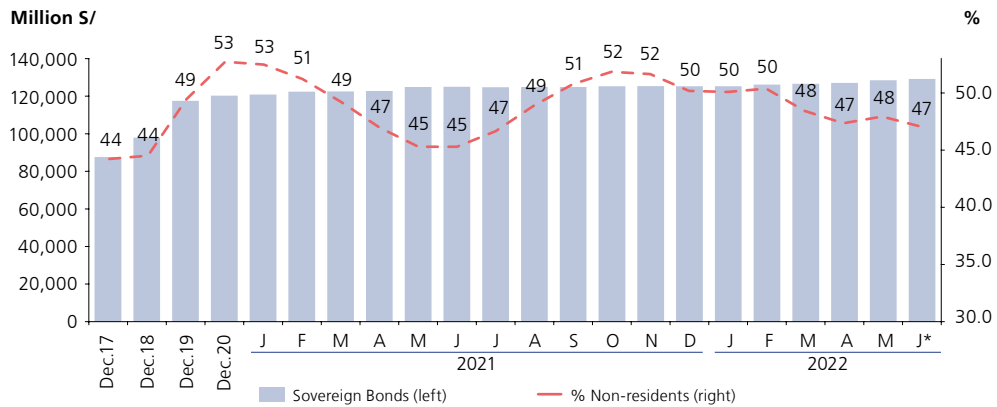
In addition, inflationary pressures have also been reflected in the bond market through an increase in the spread between nominal BTPs and VAC bonds (bonds with Constant Acquisitive Value). More specifically, the spread for the 10-year term has risen from 2.88 to 3.54 percent between March and June 2022.

Graph 71



The balance of sovereign bonds amounted to S/ 129 billion on June 15, 2022. Between March and June 2022, non-resident investors reduced their sovereign bond holdings by S/ 562 million, bringing their share down slightly from 48 to 47 percent. It is worth pointing out that the structure of bond holdings has changed significantly since March 2020 in response to extraordinary withdrawals of AFP funds and high volatility in global and local financial markets. As a result, between March 2020 and May 2022, banking companies and insurance companies increased their share of bond balances by 10 and 2 percentage points, respectively, while the share of AFPs and non-residents decreased by 9 and 3 percentage points, respectively.

Graph 72  
**SOVEREIGN BOND BALANCE AND PARTICIPATION OF NON-RESIDENT INVESTORS**  
(Amounts in millions of soles and participation in %)



\* As of June 15.  
Memo: As of February 2022, excludes inflation-linked bonds, Global Depository Notes (GDN) and Euroclear transactions of non-residents. As of March, nominal sovereign bonds and VAC are included and GDN are excluded.  
Source: BCRP, CAVALI, MEF, and SBS.



**Box 2****PRICE IMPACT OF THE TEMPORARY REDUCTION OF TAXES  
ON SOME PRODUCTS**

In a context of rising international input prices, exacerbated by the conflict between Russia and Ukraine, several countries have taken measures to mitigate the effects of rising prices on their economies. The effects of the temporary reduction of the Value Added Tax (VAT) for some products of the basic food basket, a measure adopted in Peru to mitigate the pass-through effect of international prices to consumer prices, is examined in this box.

**International experience: actions implemented**

According to the IMF's Fiscal Monitor report of April 2022 (see last table in Box 5), measures adopted at the international level in response to price increases include mainly tax reductions, concessions and extensions of subsidies, and monetary transfers to households. For example, Poland, Turkey and Peru have reduced taxes on certain products. Other countries, such as Belgium, France, Italy, New Zealand, South Korea, Serbia, Thailand, and Turkey, have implemented temporary tax reductions or exemptions on specific energy consumption, while countries like Brazil, Iraq and Turkey, have announced temporary reductions or suspensions of food tariffs.

However, because these measures may have significant fiscal costs, the IMF recommends that these compensation measures give priority to the most vulnerable sectors. In the same vein, the Organization for Economic Cooperation and Development (OECD) points out that in the case of consumption taxes (such as the VAT), evidence suggests that exemptions or preferential rates are not an effective way to achieve the objective of helping lower income sectors more. On the contrary, it recommends resorting as little as possible to this type of measures and using targeted instruments that are directly aimed at increasing the real incomes of the poorest households as well as public services for them<sup>13</sup>, without affecting the price adjustment that incentivizes the increase in supply. This strategy would reduce the fiscal impact and preserve market incentives to increase food and energy supply.

**Measures taken in Peru**

In Peru, the main actions implemented have been tax reduction and subsidy increase measures, in particular: (i) a reduction of the excise tax on fuels; (ii) a temporary exemption (for three months) of the VAT on five final goods (chicken, eggs, uncooked and unfilled pasta, bread, and sugar) and on inputs of chicken meat and eggs, noodles, bread, and sugar; (iii) an extraordinary additional subsidy of S/ 200, S/ 250 and S/ 300 for beneficiaries of the JUNTOS, Pensión 65, and Contigo Programs, respectively.

As regards the **temporary reduction of the VAT**, the government announced this possibility for the first time on April 2, 2022<sup>14</sup> and by means of Law 31452, enacted on April 14, 2022, it exempted a set of foodstuffs from VAT from May 1 to July 31, 2022, including chicken meat (fresh, refrigerated or frozen), fresh chicken eggs, sugar, uncooked and unstuffed noodles, and bread. This Law established that the companies that commercialize the exempted goods will be able to apply as tax credit the VAT corresponding to the acquisitions and/or imports of the main inputs required in the productive process, which will be determined by means of a supreme decree of the MEF.

13 OECD/KIPF (2014), The Distributional Effects of Consumption Taxes in OECD Countries, OECD Tax Policy Studies, No. 22, OECD Publishing, Paris.

14 <https://elperuano.pe/noticia/142566-ministro-de-economia-anuncia-reduccion-del-isc-a-los-combustibles-hasta-en-90>

Supreme Decree 083-2022-EF, which contains the regulations of Law 31452, was enacted on April 30. This norm specifies the list of inputs required to produce the exempted goods that generate tax credit:

- a) Chicken meat: live chickens, fertilized hatching eggs, maize, fats and oil of fish, soybean and corn, and various poultry feed preparations.
- b) Chicken eggs: live chickens, maize, fats and oil of fish, soybean and corn, and various poultry feed preparations.
- c) Sugar: sugar cane.
- d) Uncooked and unfilled noodles: Wheat and wheat flour.
- e) Bread: wheat, wheat flour, wheat gluten, yeast, baking improvers and sharps bran and other residues from milling or other treatment of wheat.

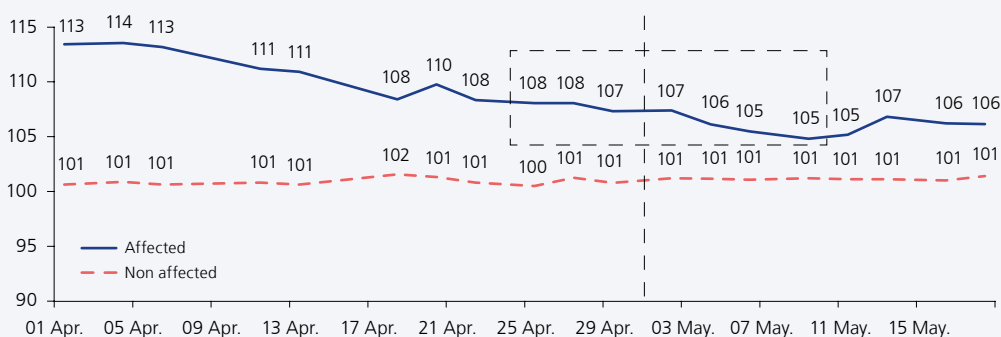
In addition, this Supreme Decree reaffirmed that the companies that commercialize the goods exempted from the VAT by Law No. 31452 may apply the VAT exemption for acquisitions and/or imports of the inputs required in the production process and listed in the decree as tax credit. This tax credit may not be applied against other taxes nor may it be subject to refund via the SUNAT –National Superintendence of Customs and Tax Administration–, but may only be used against the debit for other taxable operations. The credit will be recovered as from August, when the products will be taxed again with the VAT. It is worth mentioning that the list of inputs that may be used for tax credit does not include all the inputs used in the production of the exempted goods.

### Estimated impact of the temporary reduction of the VAT

According to daily information reported by Midagri’s Supply and Price System (SISAP) on retail prices in Lima for products subject to the temporary reduction of the IGTV, a limited impact of the measure is expected during the first week of application. The average price of affected goods (excluding bread and pasta) is estimated to have decreased by approximately 2.5 percentage points between the fourth week of April and the first week of May. On the other hand, it is estimated that the average price of other goods not subject to the measure, such as oil, rice and evaporated milk, did not register reductions during the same period.

### EVOLUTION OF RETAIL PRICES OF AFFECTED AND NON-AFFECTED GOODS BY THE REDUCTION OF THE VAT

(Index: March 16, 2022=100)



Source: SISAP, Own elaboration

Regarding these initial impacts, however, it should be mentioned that other events may have affected the price of these products and offset the effects of the temporary reduction of the VAT. Thus, in



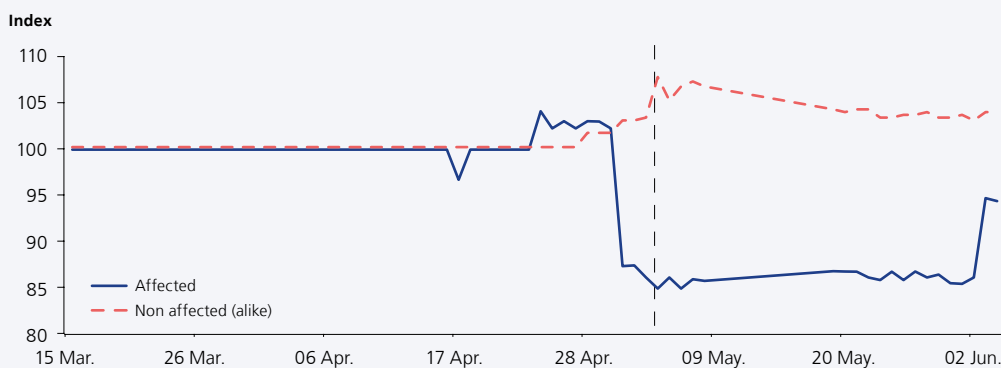




order to isolate these effects, the evolution of prices reported in the markets can be compared with information on supermarket prices, taking into account that the degree of informality the former have would make them less sensitive to changes in the VAT.

Thus, the information gathered when daily information from supermarkets was analyzed showed that some products belonging to the group of goods affected by the tax exemption measure had significantly reduced their prices between 14 and 16 percent on average during the first week of May. The following graph shows the dynamics of the average price of each of the standard presentations of sugar, chicken, bread and eggs, and contrasts them with the evolution of the average price of some varieties similar to the products affected by the measure. Among the products with similar presentations or varieties whose prices did not change or even increased are products such as toasts, chicken parts with more processing, and other types of sugars, such as brown sugar or coconut sugar, among other products.

**EVOLUTION OF PRICES OF AFFECTED AND NON-AFFECTED GOODS IN SUPERMARKETS**  
(Index March 16, 2022=100)



Source: SISAP, Own elaboration.

The table below provides a summary of the percentage variations of prices in the first week of the reduction through the referred items. The table summarizes the monitoring of specific goods differentiated by brand, weight and the specification with which they are sold in supermarkets, which include 15 sugar products, 10 egg products, 122 types of bread, and 39 types of chicken products.

**PERCENTAGE CHANGE IN PRICES BETWEEN APRIL 30 AND MAY 7, 2022**  
(Average)

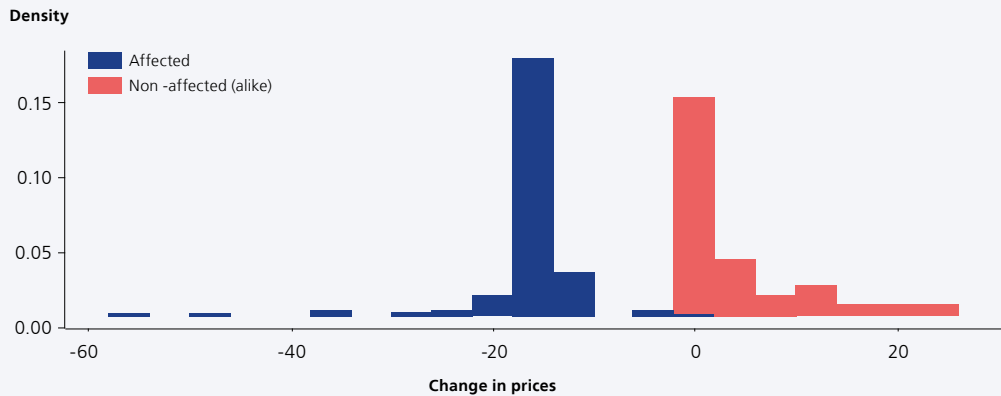
Items	Non-affected*		Affected	
	Number	Variation	Number	Variation
Sugar	4	8.6	11	-14.3
Eggs	3	0.0	7	-14.3
Bread	45	3.0	77	-17.5
Poultry meat	16	6.5	23	-14.1
Total	68	4.0	118	-16.3

\* Within the varieties or similar products non affected by the measure, for example, sugar (brown, coconut, imported In the Raw), pultry meat (prepared with chicken), eggs (white egg, quail egg), bread (various toasts, some pre-cooked, breads with additional ingredients).  
Source: Supermarket web sites

The following histogram shows the heterogeneity in price variations. For example, the most extreme variation was observed in the price of supermarket *petipan* bread, which fell 57 percent, from

S/ 6.9 on April 30 to S/ 2.95 on May 1, this price being in effect until the second week of May. On the other hand, however, one can also see that the price variations of the affected products were concentrated around -14 and -16 percent.

**HISTOGRAM OF THE PERCENTAGE CHANGE IN PRICES  
BETWEEN APRIL 30 AND MAY 7, 2022**



Source: Supermarket web sites.

Initial evidence suggests that the temporary reduction of the VAT has had a differentiated impact on final prices depending on the place where the products subject to the measure are sold. Thus, a reduction in prices between 14 and 16 percent on average is observed in the case of supermarkets, but this figure is less than 3 percent on average in the case of supply markets. This result is probably due to the fact that the latter operate with a certain degree of informality, which makes them less sensitive to changes in the VAT.



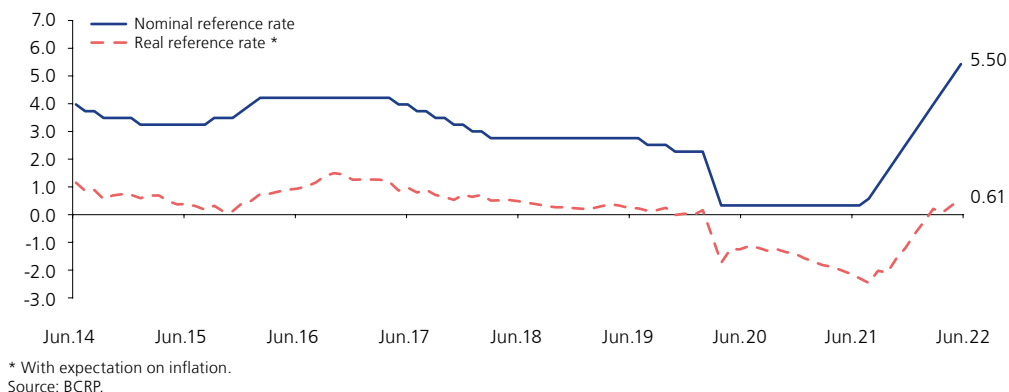


## V. Monetary Policy and Financial Conditions

### Monetary policy actions

50. Between March and June 2022, the Board of Directors of BCRP continued with the normalization of the monetary policy stance initiated in August 2021. After having increased the benchmark rate by a total of 375 basis points during the monetary policy sessions held between August 2021 and March 2022, the BCRP Board decided to raise the monetary policy interest rate by an additional 150 basis points between April and June of this year (50 basis points in each session), thus accumulating eleven rate increases in total. Thus, the benchmark interest rate went from 0.25 percent in July 2021 (historical minimum) to 5.50 percent in June 2022. It is worth mentioning that the benchmark real interest rate is at a positive level (0.61 percent in June 2022), after having reached a historical low of -2.53 percent in August 2021.

Graph 73  
REFERENCE INTEREST RATE  
(%)



51. The monetary policy decisions taken between March and June 2022 were made in light of the following factors:

- Remaining above the above the BCRP inflation target range (1 – 3 percent), in May the twelve-month inflation rate was 8.09 percent due to the resurgence of international food and fuel price hikes.

- In May 2022, the twelve-month inflation rate, excluding food and energy prices, was also above the upper limit of the target range (4.26 percent), although to a lesser extent.
  - The significant increase in international energy and food prices observed since the second half of last year, accentuated by international conflicts, has led to a sharp increase in global inflation rates to levels not seen in many years in advanced economies and in the region. Because of this, inflation is projected to return to the target range between the second and third quarters of next year.
  - The downward trend in year-on-year inflation is expected to begin in July of this year due to the reversal of the effect of transitory factors on the inflation rate and on expectations of inflation (exchange rate, international fuel and grain prices) and due to the fact that economic activity will still be below its potential level.
  - Expectations of inflation in twelve months increased from 4.39 percent in March to 4.89 percent in May, above the upper limit of the inflation target range.
  - Most leading indicators and indicators of economic expectations remain in the pessimistic range, but showed some recovery in May.
  - World economic activity has been recovering at a slower pace due to the persistence of bottlenecks in the global supply of goods and services, as well as due to the reversal of monetary stimulus in advanced economies, containment measures in China, and international conflicts.
52. The Board's decision on the benchmark interest rate takes into account projections of inflation and its determinants, such as the evolution of the output gap, changes in international prices, the exchange rate, and supply factors that may affect the formation of economic agents' expectations<sup>15</sup>.

In a context of significant and persistent supply shocks, it is advisable for central banks to provide a monetary policy response since these shocks, despite being transitory, can affect the formation of inflation expectations and even place them above the target range. If monetary policy does not respond in a timely manner through the gradual withdrawal of monetary stimulus, economic agents may internalize the monetary authority's passivity, adjusting their inflation expectations formation process. These expectations could increase persistently and generate additional inflationary pressures, since agents could begin to give greater weight to realized inflation as a predictor of future inflation.

In recent months, in a context of higher international food and energy prices, the Central Bank has made the necessary adjustments to its monetary policy stance to ensure that inflation expectations return to the target range within a reasonable period of time. In the absence of a timely response, the BCRP would have opted for a more restrictive monetary policy in the future in order to regain credibility regarding inflation control. In such a case, the increases in the reference rate necessary to control inflation would be greater and consequently the potential impact on economic activity would also be greater.

15 Inflation expectations refer to the rate at which economic agents expect the price level of an economy to increase. The lower and more stable these expectations are, the better price and wage decisions can be made by firms and households.





53. In its meetings between April and June, the Board of Directors also agreed to modify the interest rates of the BCRP window facility operations in local currency with financial entities. The current rates are as follows:
- i. Overnight deposits: 3.50 percent per year.
  - ii. Direct securities/currency repos and rediscount operations: i) 6.0 percent per annum for the first 10 transactions carried out by a financial entity in the last 3 months, and ii) the interest rate set by the Monetary and Exchange Operations Committee for additional transactions to these 10 transactions in the last 3 months. Moreover, the Monetary and Exchange Operations Committee may establish higher rates depending on the amount of the operations.

Given that window operations are operations of last resort, the (lower and upper) limits of this corridor are set to induce financial entities to channel their liquidity surpluses through the interbank market.

54. In terms of communication, the BCRP Board decided to maintain the outlook statement between April and June, although the expression “if necessary” was removed to indicate a more hawkish tone: *“The Board is particularly attentive to new information regarding inflation and its determinants, including the evolution of inflation expectations and economic activity, in order to consider additional modifications in the monetary policy stance to ensure the return of inflation to the target range over the projection horizon”*.

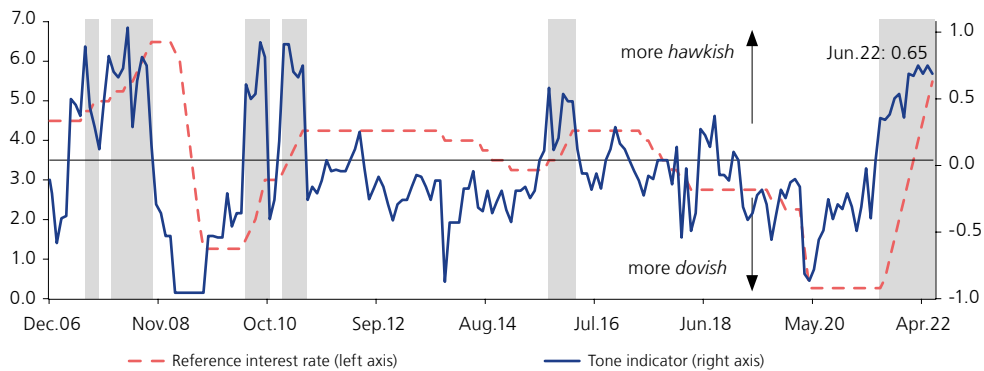
Table 28  
**MESSAGES FROM THE MONETARY POLICY DECISIONS OF THE BCRP**

Session	Information Note Message
March 2022	<ul style="list-style-type: none"> <li>• The Board of Directors of the Central Reserve Bank of Peru (BCRP) decided to raise the reference interest rate by 50 bps to 4.0 percent, thus continuing to normalize its monetary policy stance.</li> <li>• The Board is particularly attentive to new information on inflation expectations and economic activity, with an aim to consider, if necessary, changes in the monetary stance so that inflation returns to the target range over the forecast horizon. In a context of uncertainty, financial volatility persists, with BCRP policies aiming at mitigating it.</li> </ul>
April 2022	<ul style="list-style-type: none"> <li>• The Board of Directors of the Central Reserve Bank of Peru (BCRP) decided to raise the reference interest rate by 50 bps to 4.50 percent, thus continuing to normalize its monetary policy stance.</li> <li>• The Board is particularly attentive to new information on inflation and its determinants, including the evolution of inflation expectations and economic activity, with an aim to consider changes in the monetary stance so that inflation returns to the target range over</li> </ul>
May 2022	<ul style="list-style-type: none"> <li>• The Board of Directors of the Central Reserve Bank of Peru (BCRP) decided to raise the reference interest rate by 50 bps to 5.0 percent, thus continuing to normalize its monetary policy stance.</li> <li>• The Board is particularly attentive to new information on inflation and its determinants, including the evolution of inflation expectations and economic activity, with an aim to consider changes in the monetary stance so that inflation returns to the target range over the forecast horizon.</li> </ul>
June 2022	<ul style="list-style-type: none"> <li>• The Board of Directors of the Central Reserve Bank of Peru (BCRP) decided to raise the reference interest rate by 50 bps to 5.50 percent, thus continuing to normalize its monetary policy stance.</li> <li>• The Board is particularly attentive to new information on inflation and its determinants, including the evolution of inflation expectations and economic activity, with an aim to consider changes in the monetary stance so that inflation returns to the target range over the forecast horizon.</li> </ul>

Moreover, in a context of lower volatility in financial markets, the Board also decided to remove the following text: “Financial markets have continued to show volatility in a context of uncertainty and BCRP’s actions have been aimed at mitigating such volatilities”.

- 55. As for the tone of monetary policy communication, the tone indicator used by BCRP shows a stance of withdrawal of monetary stimulus since July 2021, one month before the August interest rate increase. The indicator also shows a more favorable stance vis-à-vis the withdrawal of monetary stimulus in the following months.

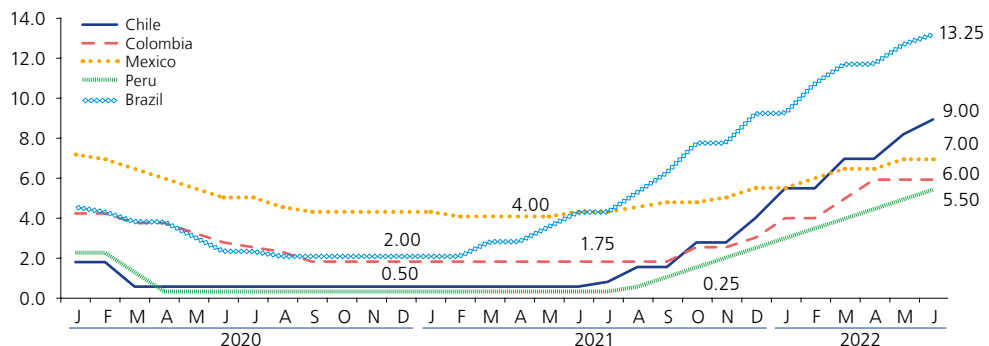
**Graph 74**  
**REFERENCE INTEREST RATE AND MONETARY POLICY TONE INDICATOR\***  
(% and index value)



\* For the monetary policy tone indicator, the positive values of the index mean a tone in favor of a contractionary position (hawkish), while negative values imply communication with an expansive position (dovish). Shaded areas correspond to periods of rising interest rates.  
Source: BCRP.

- 56. In a context of inflationary pressures and a faster recovery of economic activity than initially expected, the normalization of the monetary policy stance has been more accelerated than in other episodes. Peru’s monetary policy interest rate of 5.50 percent is one of the lowest in the region.

**Graph 75**  
**MONETARY POLICY INTEREST RATE IN LATIN AMERICA: JUNE 2022\***  
(%)



\* As of June 16.  
Source: Central banks.





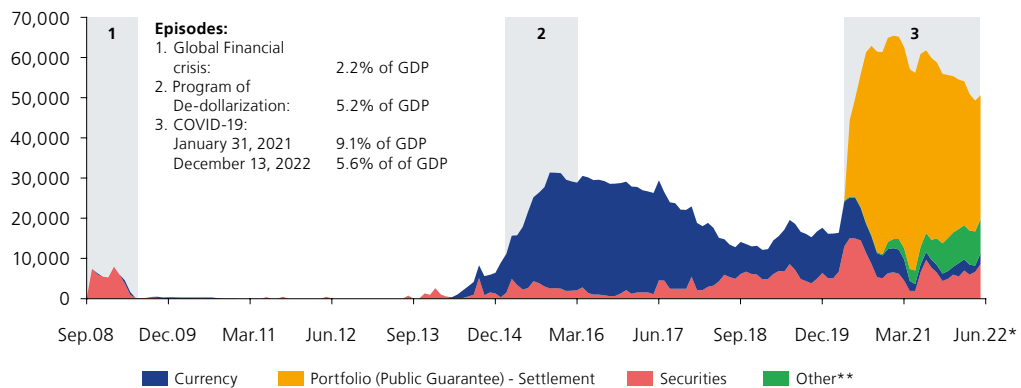
In 2021, central banks in the region began a cycle of monetary policy interest rate hikes, based on their inflation and economic activity projections. In most cases, this involved a balance of risks analysis between slowing down the economic recovery after COVID-19 or allowing a misalignment of inflation and inflation expectations with respect to the target level. The latter occurred in a context in which inflationary pressures were progressively appearing at the global level due to rising prices for fuels and food inputs, amid a general crisis in the post-pandemic global supply chain.

**Additional BCRP actions**

57. The balance of liquidity injection operations in local currency decreased from S/ 56.7 billion at the end of 2021 to S/ 50.2 billion on June 13, 2022, mainly due to the amortization of government guaranteed portfolio repos under the Reactiva Perú program (S/ 8.6 billion) and, to a lesser extent, due to the maturity of currency repos (S/ 1.3 billion), offset in part by securities repo transactions (S/ 3.5 billion). This balance of liquidity injection operations is equivalent to 5.6 percent of GDP, of which S/ 30.2 billion corresponds to repos of government-guaranteed credit portfolio.

In comparative terms, the total balance of liquidity injection operations is 6.4 times higher than the maximum balance of these operations during the 2008-2009 international financial crisis (S/ 7.9 billion) and 1.6 times the balance reached during the period of falling commodity prices (2013-2016) and the de-dollarization program (S/ 31.8 billion).

**Graph 76**  
**BALANCE OF MONETARY INJECTION OPERATIONS OF BCRP**  
(In mill. S/)



\* As of June 16.  
\*\* The item "Other" includes the purchase of Public Treasury bonds, in line with article 61 of the BCRP Organic Law, and Repos operations of portfolio loans.  
Source: BCRP.

Table 29  
**BALANCE OF INJECTION OPERATIONS OF BCRP**  
(Million S/)

Episode	Date	Values	Currency (Regular)	Currency (Expansion)	Currency (Substitution)	Portfolio (Government backed) - Settlement	Other**	Total
Financial crisis 2008-2009	Oct-08	7,383	300	0	0	0	0	7,683
	Nov-08	5,959	30	0	0	0	0	5,989
	Dec-08	5,412	0	0	0	0	0	5,412
	Jan-09	5,239	0	0	0	0	0	5,239
	Feb-09	7,877	0	0	0	0	0	7,877
	Mar-09	5,989	735	0	0	0	0	6,724
De-dollarization program	Dec-14	1,300	8,600	0	0	0	0	9,900
	Mar-15	4,900	8,600	2,200	1,500	0	0	17,200
	Jun-15	2,631	11,500	5,100	4,305	0	0	23,536
	Sep-15	3,034	16,050	7,900	4,805	0	0	31,789
	Dec-15	2,500	14,900	7,900	4,805	0	0	30,105
Crisis COVID-19	Feb-20	5,100	9,650	0	0	0	0	14,750
	Mar-20	6,675	11,150	0	0	0	0	17,825
	Abr-20	13,015	10,030	0	0	0	250	23,295
	May-20	15,060	10,145	0	0	19,017	260	44,482
	Jun-20	14,947	8,095	0	0	24,338	260	47,640
	Sep-20	8,604	5,895	0	0	47,002	304	61,805
	Dec-20	6,309	5,970	0	0	50,729	1,785	64,793
	Jan -21	6,554	6,030	0	0	50,497	2,258	65,339
	Mar-21	4,454	2,430	0	0	49,907	2,812	59,603
	Jun-21	6,476	1,922	0	0	47,968	4,408	60,774
	Sep-21	6,470	1,842	0	0	43,770	6,590	58,672
	Oct-21	4,383	1,902	0	0	42,283	7,489	56,057
	Nov-21	4,913	1,942	0	0	40,475	8,251	55,581
	Dec-21	5,963	3,342	0	0	38,827	8,519	56,651
	Jan-22	5,462	2,742	0	0	37,095	8,514	53,813
	Feb-22	6,989	2,452	0	0	35,745	8,505	53,691
	Mar-22	5,962	1,522	0	0	33,910	8,503	49,897
	Abr-22	6,662	2,682	0	0	32,508	8,500	50,353
May-22	8,562	2,177	0	0	30,803	8,478	50,020	
Jun-22*	9,462	2,077	0	0	30,183	8,464	50,186	

\* As of June 13.

\*\* The item "Others" includes the purchase of Public Treasury bonds, in line with article 61 of the Organic Law of the BCRP, and Repo operations of loan portfolio.

Source: BCRP.

58. Injection operations registered their maximum balance at the end of January 2021. Since then it has been decreasing, given that the amortizations of the Reactiva Perú program imply a decrease in the balance of credit repos guaranteed by the National Government. This has been partially offset by other programs such as credit rescheduling







repos and long-term credit expansion repos, in addition to purchases of BTP. On the other hand, credit rescheduling under Reactiva Perú has served to extend the maturity term of injection operations.

Table 30  
**LIQUIDITY INJECTION PROGRAMS**  
(Billion S/)

Program	Dec.19	Dec.20	Jan.21	Jun.21	Sep.21	Dec.21	Jun.22*
Repos of loans with Government-backe	0	50.7	50.5	48.0	43.8	38.8	30.2
Of which: balance of repos for rescheduling	0	0.0	0.0	0.0	9.2	14.2	15.3
Credit rescheduling repos	0	0.5	1.1	2.5	4.2	4.8	4.7
Long-term credit expansion repos	0	0	0.2	0.2	2.2	5.5	5.5
Purchasing of Public Treasury Bonds **	0	1.3	1.3	2.1	2.1	2.1	2.1
Rest***	17.4	12.2	12.1	8.0	6.3	5.4	7.6
<b>Total</b>	<b>17.4</b>	<b>64.8</b>	<b>65.3</b>	<b>60.8</b>	<b>58.7</b>	<b>56.7</b>	<b>50.2</b>

\* As of June 13.

\*\* At acquisition value.

\*\*\* Regular Repos as currency and security repos.

Source: BCRP.

59. In addition, BCRP continued with the placement of interest rate swaps (IRS) with maturity terms between 3 and 9 months. The IRS, which were created in December 2020, are derivative instruments denominated in domestic currency, in which BCRP undertakes to pay a variable interest rate –capitalization of the Interbank Overnight Index (ION)– in exchange for the commitment of the participating entity to pay a fixed interest rate equal to the one offered in the auction (or the interest rate established by BCRP in the direct placement). These operations contribute to the matching of maturities in a context of expectations of rising interest rates, as well as to the development of the swap market in soles. As of June 13, 2022, the balance of IRS amounted to S/ 8,645 million, of which S/ 1,000 million correspond to 3-month IRS, S/ 1,575 million to 6-month IRS, and S/ 6,070 million to 9-month IRS.
60. On the monetary sterilization side, BCRP has continued to place variable rate certificates (CDV BCRP). This instrument, which was originally created in 2010, was reactivated on August 18, 2021, for the first time since 2015, to offer financial entities a hedge against the risk of interest rate increases. On June 13, the balance of CDV BCRP was S/ 17,435 million.
61. As for actions related to the reserve requirement regime in local currency, after a period in which these requirements were raised with the aim of strengthening the BCRP's monetary control in a context of gradual withdrawal of the monetary stimulus, a minimum legal reserve requirement rate of 6 percent has been in effect since May 2022.

Today, the rate of reserve requirements in soles is the maximum between (i) the sum of the amount resulting from applying the reserve requirement rate of the base period (July 2021) to the Total Obligations Subject to Reserve Requirements of that period, plus the amount resulting from applying a marginal reserve requirement rate of 25 percent to the increase in Total Obligations Subject to Reserve Requirements with respect to the base period; and (ii) the amount resulting from applying the minimum legal reserve

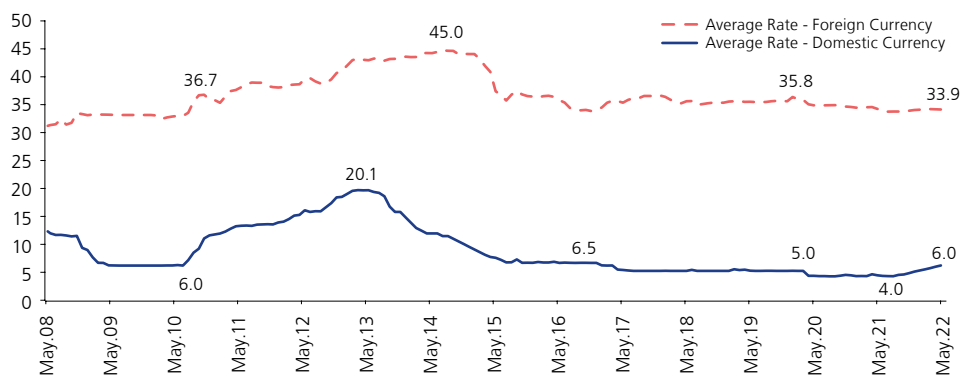
requirement to Total Obligations Subject to Reserve Requirements. Additionally, as of November 2021, a maximum average reserve requirement equivalent to 6.0 percent of the flow of Total Obligations Subject to Reserve Requirements for the evaluation period is in effect, which allows maintaining a low dispersion in the average reserve requirement rates among financial institutions.

Table 31  
**INCREASE IN RESERVE REQUIREMENT RATES IN SOLES**  
(%)

	Aug.21	Sep.21	Oct.21	Nov.21	Dec.21	Jan.22	Feb.22	Mar.22	Apr.22	May.22
Minimum legal reserve requirement rate	4.0	4.0	4.0	4.50	4.75	5.0	5.25	5.5	5.75	6.0
Minimum reserve requirement rate for current account level	0.75	0.75	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Marginal reserve requirement rate	-	25	25	25	25	25	25	25	25	25
Minimum average reserve requirement rate	4.0	4.0	4.25	-	-	-	-	-	-	-
Average maximum rate of the General Scheme	-	-	-	6.0	6.0	6.0	6.0	6.0	6.0	6.0

Source: BCRP.

Graph 77  
**RESERVE REQUIREMENTS IN DOMESTIC AND FOREIGN CURRENCY**  
(As % banks' liabilities)



Source: BCRP.

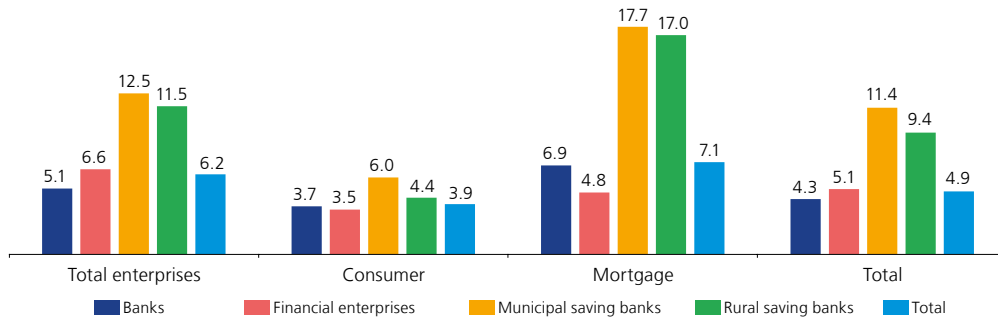
- The balance of loan rescheduling of depository corporations has continued to decrease. The total balance of rescheduled loans as of April 2022 (S/ 19.5 billion) is S/ 109 billion lower than that observed in June 2020 (S/ 128 billion, equivalent to 35.6 percent of the portfolio), which is explained by the repayment of rescheduled loans, in line with the recovery of the economy.

As of April 30, 2022, the depository corporations –banking companies, financial companies, municipal savings banks and rural savings banks– have a balance of rescheduled loans of around S/ 19.5 billion, which is equivalent to 4.9 percent of the total portfolio of the depository corporations. Likewise, as of April 2022, 6.2 percent of the total corporate portfolio and 3.9 percent of the consumer portfolio had been rescheduled. Entities specialized in microfinance have rescheduled at least 5 percent of their portfolios.





Graph 78  
**RESCHEDULED CREDITS OF DEPOSITORY COMPANIES:1/ APRIL 2022**  
 (As % of total credits)



1/ Banks, Financial enterprises, Municipal savings bank and Rural savings banks.  
 Source: Financial statement of depository companies.

### Monetary operations

63. The **Central Bank's operations** continued to be aimed at ensuring adequate liquidity levels in the interbank market, contributing in this way to maintain the interbank interest rate above its reference level. To do so, between December 2021 and May 2022, BCRP injected liquidity through the net maturity of term and overnight deposits (S/ 8,353 million), BCRP CDs (S/ 7,707 million) and BCRP CDRs (S/ 1,350 million), as well as through the net placement of Securities Repos (S/ 2,599 million) and the auction of Public Treasury Funds (S/ 1,742 million). These operations were partially offset by the amortization of Government Guaranteed Portfolio Repos (S/ 8,024 million) and Portfolio Repos (S/ 41 million), the net placement of BCRP CDVs (S/ 5,470 million) and the net maturity of Currency Repos (S/ 1,165 million).

Table 32  
**BALANCE OF BCRP MONETARY OPERATIONS**

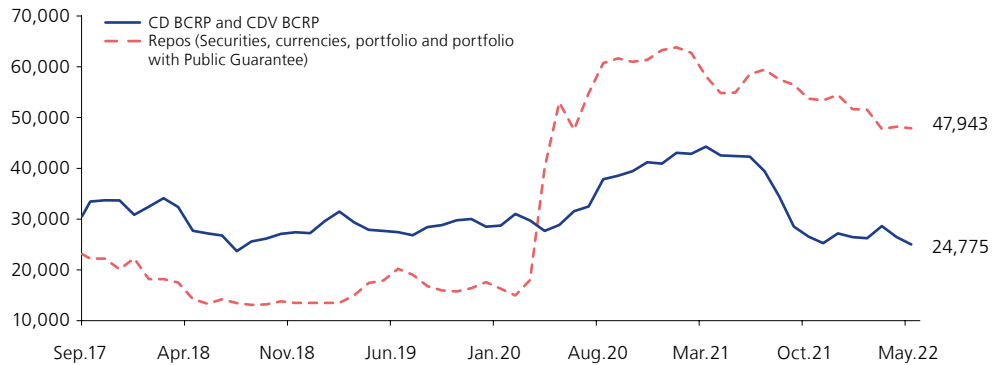
	Balance (Mill. S/)			Average interest rate of the balance (%)		
	Dec.20	Dec.21	May.22	Dec.20	Dec.21	May.22
<b>Monetary sterilization</b>						
1. CD BCRP	41,067	14,347	6,640	0.74	0.84	4.59
2. CDR BCRP	6,392	1,350	0	0.18	0.57	-
3. CDV BCRP	-	12,664	18,135	-	-	-
4. Term and overnight deposits	43,714	15,110	6,757	0.23	2.35	4.29
<b>Monetary injection</b>						
5. Currency repos	5,970	3,342	2,177	2.80	2.29	3.57
6. Security repos <sup>1/</sup>	6,309	5,963	8,562	1.09	1.81	3.91
7. Portfolio repos	464	6,441	6,400	0.50	1.26	1.27
8. Government-backed portfolio repos*	50,729	38,827	30,803	0.50	0.50	0.50
9. Public Treasury fund auctions	200	4,632	6,374	3.18	2.37	5.22
<b>Memo</b>						
Repos of loans with Government-backed	-	14,230	15,341	0.50	0.50	0.50
Credit rescheduling repos	497	4,803	4,763	0.50	0.71	0.72
- Security repos	34	657	656	0.50	0.76	0.76
- Portfolio repos	463	4,146	4,107	0.50	0.71	0.71
Long-term credit expansion repos	-	5,540	5,538	-	2.11	2.11
- Security repos	-	3,045	3,045	-	2.00	2.00
- Portfolio repos	-	2,295	2,293	-	2.26	2.26
- Currency repos	-	200	200	-	2.00	2.00
Interest rate swaps	-	37,777	9,945	-	0.45	3.05
FX Swaps-sell (Fixed rate)	-	19,391	29,866	-	0.53	0.83
FX Swaps-sell (Variable rate)	8,135	18,386	5,458	0.20	0.36	0.67

\* The disbursed amount of the instrument is considered as of May 31, 2022. The rates correspond to the operations Repos with the ESF, and the credits linked have a rate of 1.40 percent.

1/ Not consider the Securities Repo to provide foreign currency.

As a result, the balance of repo transactions went from S/ 54,573 million in December 2021 to S/ 47,943 million at the end of May 2022, while the balance of CD-BCRP, CDV BCRP and CDR BCRP went from S/ 28,361 million in December 2021 to S/ 24,775 million in May 2022.

Graph 79  
**BALANCE OF REPO OPERATIONS, CD BCRP AND CDV BCRP**  
 (Million S/)



Source: BCRP.

Moreover, on May 31, 2022, the balance of repo operations represented 14.5 percent of the BCRP's net assets (14.8 percent in December 2021). On the side of BCRP liabilities, public sector deposits increased their share from 26.0 percent in December 2021 to 30.9 percent in May 2022, while BCRP instruments (CDBCRP, CDV BCRP, CDR BCRP, and term and overnight deposits) decreased their share of BCRP net liabilities from 11.8 percent in December 2021 to 9.5 percent in May 2022. In addition, currency in circulation increased its share from 22.6 percent in December 2021 to 22.9 percent in May 2022.

Table 33  
**SIMPLIFIED BALANCE SHEET OF THE BCRP**  
 (As % of Net Assets)

	Dec.20	Dec.21	31 May.22
<b>I. Net assets</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Net International Reserves</b>	80.7	84.6	84.9
	(US\$ 74,707 mills.)	(US\$ 78,495 mills.)	(US\$ 76,109 mills.)
<b>Repos</b>	18.9	14.8	14.5
<b>Sovereign bonds</b>	0.4	0.6	0.6
<b>II. Net liabilities</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>1. Total public sector deposits</b>	<b>20.7</b>	<b>26.0</b>	<b>30.9</b>
In domestic currency	17.4	23.9	27.2
In foreign currency	3.3	2.1	3.7
<b>2. Total financial system deposits</b>	<b>19.3</b>	<b>22.2</b>	<b>23.5</b>
In domestic currency	4.3	3.9	4.1
In foreign currency	15.0	18.4	19.4
<b>3. BCRP instruments</b>	<b>27.2</b>	<b>11.8</b>	<b>9.5</b>
CD BCRP	12.3	3.9	2.0
CDV BCRP	0.0	3.4	5.5
CDR BCRP	1.9	0.4	0.0
Term deposits	10.6	3.2	1.4
Overnight deposits	2.4	0.9	0.6
<b>4. Currency</b>	<b>21.4</b>	<b>22.6</b>	<b>22.9</b>
<b>5. Other*</b>	<b>11.4</b>	<b>17.4</b>	<b>13.2</b>

\* Includes assets and other accounts.  
 Source: BCRP.

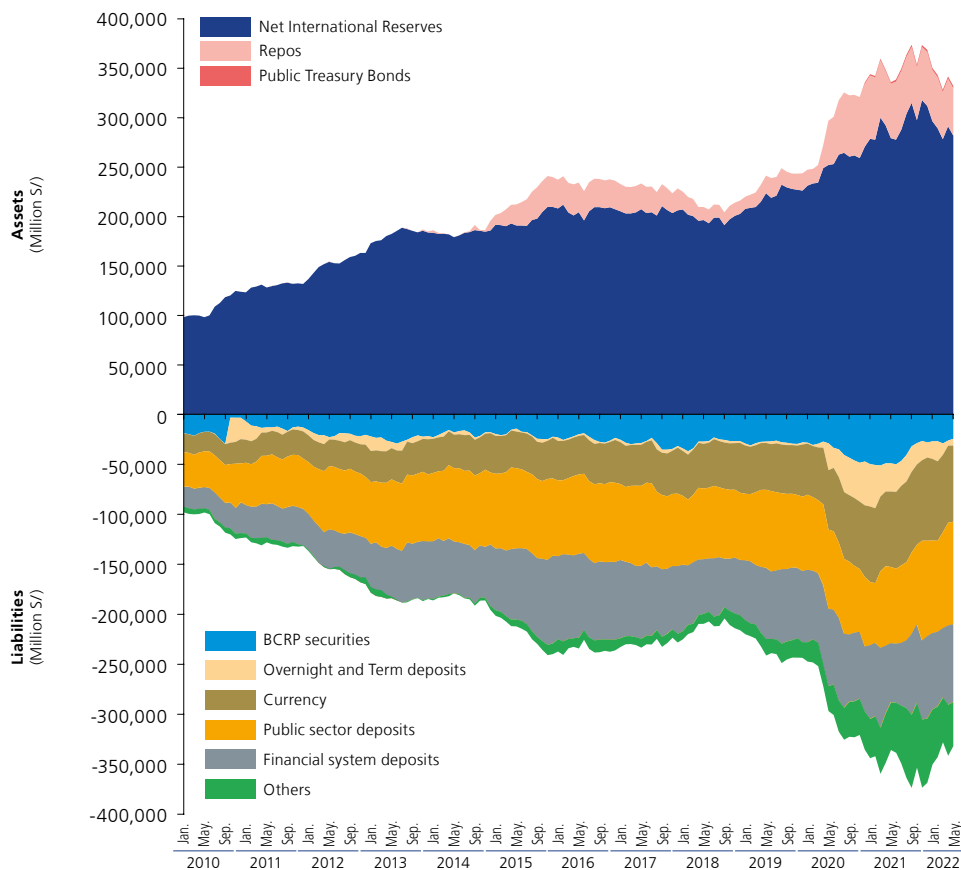




The result of these operations is reflected in the change in the size and composition of the Central Bank's balance sheet. Thus, as of May 31, 2022, BCRP assets amounted to S/ 331,625 million, a sum equivalent to 37.2 percent of GDP, below the level observed in 2015 during the de-dollarization program (39.3 percent of GDP).

From January to May, the monetary base has been decreasing, mainly as a result of the fiscal sterilization resulting from income tax regularization revenues corresponding to FY 2021 (S/ 13.8 billion).

Graph 80  
EVOLUTION OF THE BCRP BALANCE SHEET: 2010 - 2022



Source: BCRP.

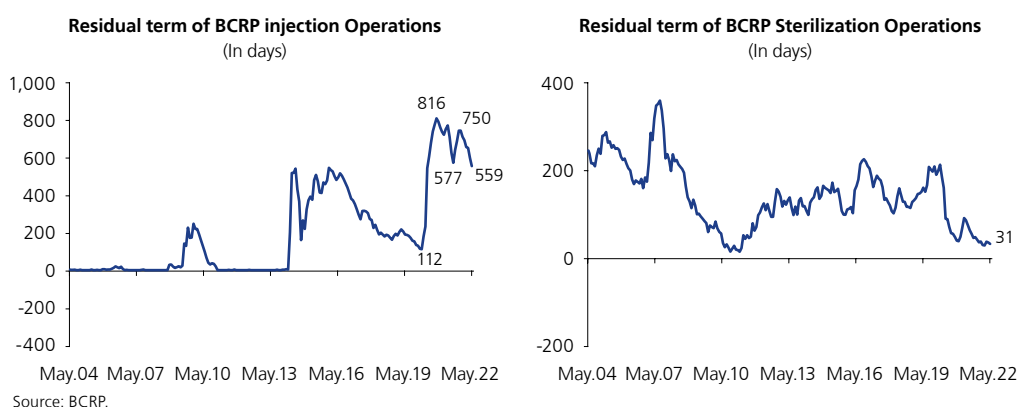
The greater injection of liquidity at longer maturity terms is reflected in the higher residual term of these operations after the state of emergency was declared. Placements of government-guaranteed repos with maturity terms of up to 3 years as part of the Reactiva Peru program in 2020 have resulted in an increase in the residual term of the injection operations from 112 days in February 2020 to a maximum of 816 days in October 2020.

After the completion of the program, the residual term of these operations began to gradually decrease until mid-2021, at which point it began to increase again due to higher placements of securities and portfolio repos at longer terms (between 1 and 4 years), which were associated with the operations conditioned to the expansion

of long-term credit and the Reactiva Peru reschedulings. The residual term of these operations increased to a maximum of 750 days in November 2021, after which it has decreased to 559 days in May 2022, amid a gradual withdrawal of the monetary stimulus.

In addition, the BCRP has been carrying out sterilization operations at shorter maturity terms, which have reduced the residual term of sterilization operations from 214 days in February 2020 to 31 days in May 2022.

Graph 81



## Financial markets

64. The withdrawal of monetary stimulus, reflected in the increase in the benchmark interest rate since August 2021, continued to be passed on to financial system interest rates. In the second quarter of 2022, BCRP increased the benchmark rate by 150 basis points, from 4.00 percent in March to 5.50 percent in June, and continued to raise reserve requirements in local currency, from 5.25 percent in February 2022 to 6.00 percent in May 2022, to complement the recent increases in the monetary policy rate and thus improve liquidity control.

Short episodes of possible upward pressure on the overnight interest rate were observed in the interbank market, in a context of greater demand for liquidity and accumulation of reserve requirements funds in the first days of the month, in view of market expectations associated with the increase in the benchmark interest rate in the following monetary policy sessions and the consequent increase in the cost of funding, together with an increase in traded amounts. It is worth mentioning that an average of S/ 1,419 million (highest figure since November 2018), S/ 1,307 million and S/ 1,184 million were traded daily in April, May and June, respectively, these sums being above those traded in the first quarter of 2022 (S/ 593 million) and 2021 (S/ 225 million).

As for corporate prime interest rates, which are highly representative of the market, it should be pointed out that they continue to absorb the increase in the benchmark rate, and that, on average, lending and deposit rates for overnight and twelve-month maturity terms rose by 144 and 136 basis points, respectively, between March and June 2022. By maturity term, the largest increases in the second quarter were observed in the three-month maturity term.





Similarly, the interest rates for most lending segments rose between March and June 2022, reaching levels above historical averages. The interest rates for consumer loans and corporate credit stand out with the largest rate increases, associated to the higher related risk, in the case of the former, and to the higher pass-through, in the case of the latter.

Likewise, banks' deposit interest rates have also incorporated the impact of the gradual increase in the benchmark interest rate, albeit at a slower pace than lending rates. In the case of prime rates, the rates between overnight and twelve-month maturity terms increased by an average of 136 basis points between March and June. On the other hand, banks' average interest rates on time deposits for companies is higher than that for individuals –these rates have increased by 158 and 110 basis points, respectively– and especially for terms longer than 90 days. On the other hand, the average rate for CTS deposits decreased between March and June from 2.83 to 2.07 percent.

Table 34  
**INTEREST RATE IN DOMESTIC CURRENCY <sup>1/</sup>**  
 (%)

	Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Jun.22*	Average Hist. <sup>2/</sup>
90-day corporate prime	2.8	0.2	0.1	0.4	0.9	2.6	4.3	5.9	3.3
TIPMN	2.3	1.0	0.9	0.8	0.8	1.1	1.5	2.1	2.2
FTIPMN	1.5	0.1	0.1	0.2	0.3	1.0	2.0	2.8	2.0
Deposits up to 30-day	2.3	0.0	0.0	0.2	0.4	1.9	3.5	4.9	3.0
Individuals	1.6	0.2	0.1	0.2	0.3	0.7	1.2	1.3	2.3
Business	2.3	0.0	0.0	0.2	0.4	1.9	3.5	4.9	3.0
On 31 to 90-day term deposits	2.7	0.2	0.2	0.4	0.7	2.2	3.8	5.2	3.2
Individuals	1.8	0.5	0.4	0.4	0.4	0.8	1.7	2.4	1.8
<b>Passive</b> Business	2.8	0.2	0.2	0.4	0.8	2.2	3.9	5.4	3.3
On 91 to 180-day term deposits	3.0	0.4	0.3	0.5	1.0	2.4	4.0	6.0	3.4
Individuals	2.3	0.5	0.5	0.5	0.5	0.9	2.3	4.0	2.3
Business	3.1	0.3	0.2	0.5	1.0	2.6	4.3	6.3	3.6
On 181 to 360-day term deposits	3.3	0.7	0.7	0.8	1.6	2.9	4.4	5.9	3.7
Individuals	3.3	1.3	1.3	1.4	1.4	2.9	3.6	5.3	3.5
Business	3.3	0.4	0.5	0.6	1.6	2.9	4.7	6.1	3.8
CTS	2.2	1.9	2.5	2.4	2.9	2.3	2.8	2.1	3.1
90-day corporate prime	3.3	0.7	0.5	0.9	1.5	3.1	4.8	6.6	4.0
TAMN	14.4	12.1	11.2	10.7	10.5	11.2	11.8	12.4	15.8
FTMAN	18.2	17.6	18.0	14.7	16.7	20.9	23.3	24.0	20.2
Corporates	3.8	2.5	2.2	1.4	2.1	3.2	5.0	6.5	4.9
Large companies	6.0	4.6	3.9	3.7	4.2	5.7	6.8	8.1	6.5
Medium-sized enterprises	9.3	6.1	8.0	7.3	7.9	8.8	10.8	11.0	9.8
<b>Active</b> Small business	18.0	17.2	18.2	17.6	18.1	19.3	20.3	20.7	20.0
Micro business	31.3	30.1	32.8	32.4	31.6	32.3	35.6	35.4	32.3
Micro business <sup>3/</sup>	44.5	22.6	40.1	43.1	44.3	38.8	37.3	38.1	39.9
Consumer	40.9	39.5	38.6	38.7	38.8	41.8	42.4	44.2	41.4
Consumer <sup>3/</sup>	43.1	41.5	44.2	41.8	42.8	40.4	43.5	42.1	42.3
Mortgage	7.0	6.4	5.9	5.9	6.4	6.9	7.1	7.9	8.3

<sup>1/</sup> Annual rates for operations in the last 30 working days. In the case of credits and term deposits, it corresponds to the banking companies.

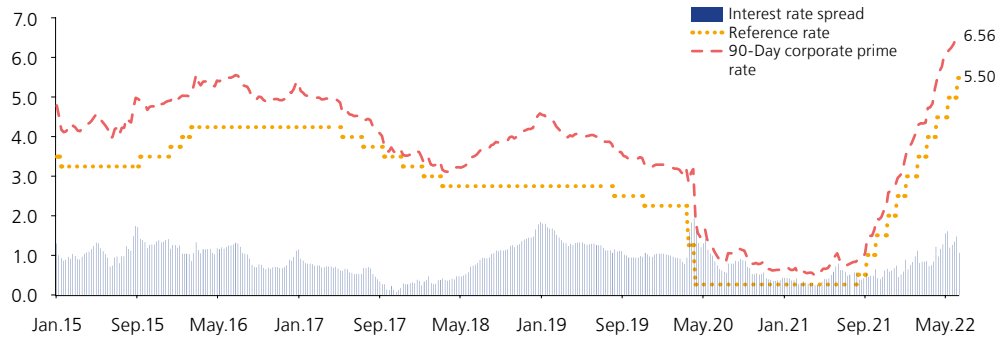
<sup>2/</sup> Average since September 2010. In the case of consumer credit, it is the average since October 2019.

<sup>3/</sup> Corresponds to the average of the financial system.

As of June 13.

Source: BCRP and SBS.

Graph 82  
**INTEREST RATE IN \$: 90-DAY CORPORATE PRIME  
 AND REFERENCE RATE**  
 (%)

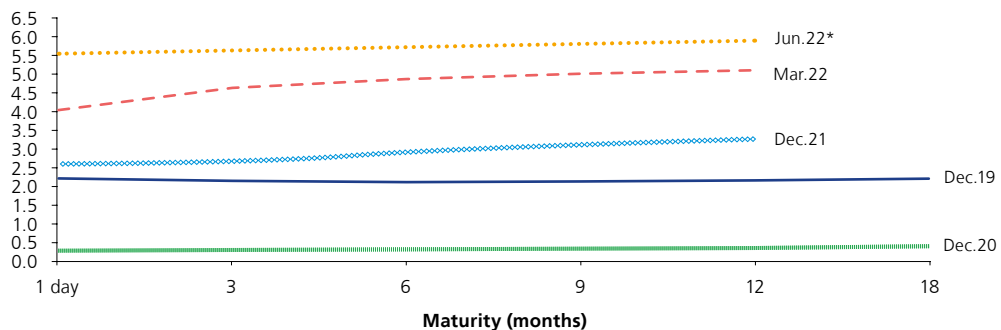


\* As of June 15.  
 Source: BCRP and SBS.

Since the period of consecutive increases began in August 2021, the corporate prime lending rates for maturity terms between overnight and twelve months operations, as well as the corporate prime deposit rates for terms longer than one month, for credit to medium-sized companies, for consumer loans and FTAMN have increased by a greater magnitude than the variation of the benchmark rate (525 basis points). This is associated, on the one hand, with the higher pass-through in corporate prime interest rates and, on the other hand, with the high risk of the credit segments.

- 65. The yield curve of BCRP securities increased 95 basis points on average between March and June 2022, in line with the increase of 150 basis point in the BCRP benchmark rate, as well as with agents' expectation of future increases. The rates on securities with 3-month, 6-month, 9-month and 12-month maturities rose by 110, 100, 89, and 79 basis points, respectively.

Graph 83  
**YIELD CURVE OF CENTRAL BANK SECURITIES <sup>1/</sup>**  
 (%)



<sup>1/</sup> Yield rate in the primary and secondary market of CD BCRP.  
 As of June 13.  
 Source: BCRP.

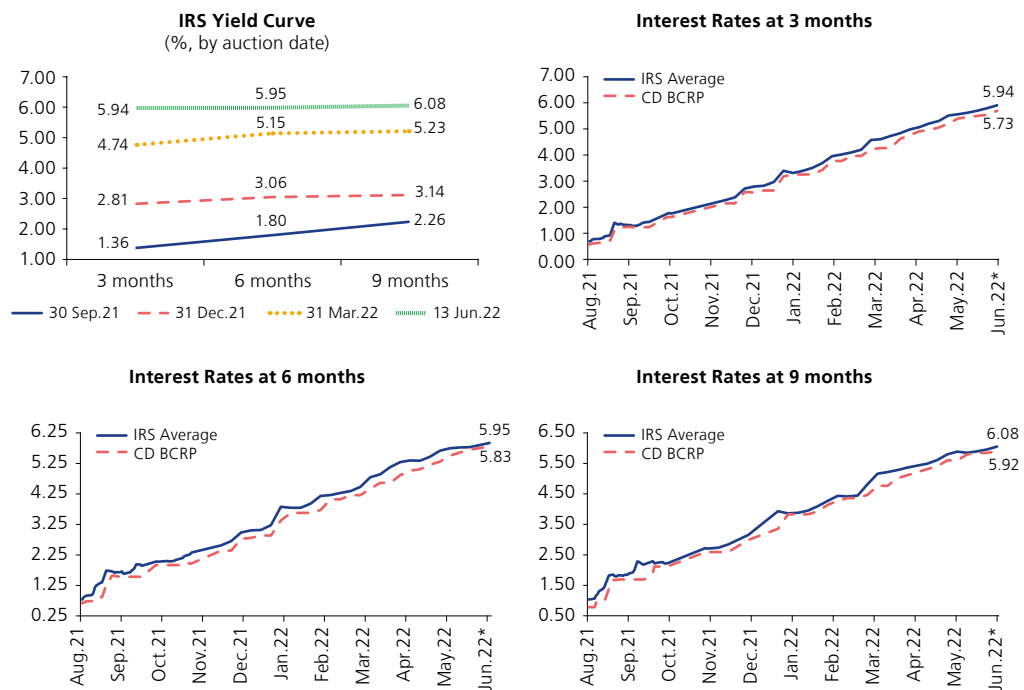






The average rates of the auctions of Interest Rate Swaps (IRS) carried out between the first auction (August 23, 2021) and June 13, 2022, have increased in the 3-month, 6-month and 9-month maturity terms by 529, 520 and 508 basis points, respectively, in line with market expectations of further increases in the benchmark interest rate. On June 13, the balance of IRS was S/ 8,645 million. Moreover, a total of S/ 5,445 million, approximately 63 percent of the current balance, will mature in June and July.

Graph 84  
INTEREST RATE SWAP (IRS) RATES <sup>1/</sup>  
(%)

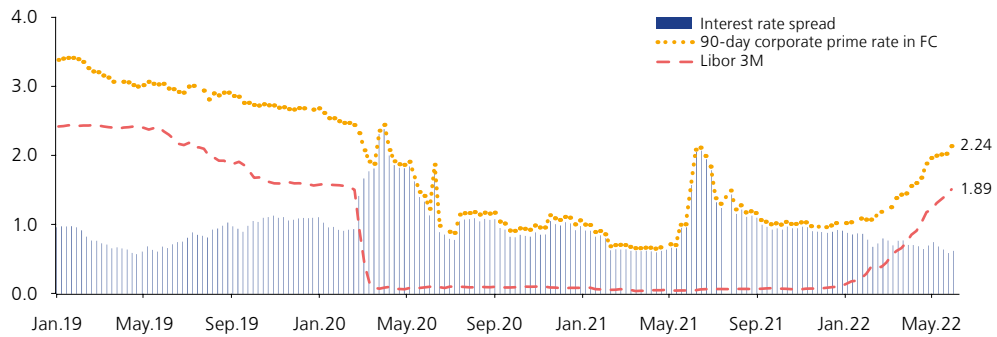


<sup>1/</sup> Average rate of IRS auctions.  
\* As of June 13.  
Source: BCRP.

- 66. Interest rates in the case of the dollar money market, especially lending rates, incorporated the increase in the Federal Reserve’s policy rate of 125 basis points between May and June. On the one hand, the overnight interbank interest rate increased by 50 basis points to 1.00 percent between May and June 2022, while the overnight and 6-month prime lending and deposit rates rose by an average of 81 and 59 basis points, respectively. The spread between the prime lending rate and the 3-month SOFR rate decreased from 77 basis points in March to 35 basis points in June 2022.

The segments with the higher credit risk, such as the small business sector, have registered higher interest rate increases. Moreover, in June most interest rates were below the historical average since September 2010.

Graph 85  
**INTEREST RATE IN US\$: 90-DAY CORPORATE PRIME  
 AND LIBOR 3-MONTH**  
 (%)



As of June 15.  
 Source: Chicago Mercantile Exchange and BCRP.

In addition, the interest rates paid by banks to companies and individuals for time deposits have risen by an average of 57 and 33 basis points, respectively, between March and June.

Table 35  
**INTEREST RATE IN FOREIGN CURRENCY <sup>1/</sup>**  
 (%)

	Dec.18	Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Jun.22*	Historical average <sup>2/</sup>
90-day corporate prime	2.5	1.6	0.2	0.1	0.7	0.4	0.3	0.6	1.2	0.9
TIPMEX	0.8	0.8	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.5
FTIPMEX	1.5	1.2	0.1	0.1	0.2	0.2	0.1	0.1	0.3	0.6
Deposits up to 30-day	1.9	1.4	0.1	0.1	0.4	0.3	0.1	0.1	0.4	0.7
Individuals	1.8	1.3	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.6
Business	1.9	1.4	0.1	0.1	0.4	0.3	0.1	0.1	0.4	0.7
On 31 to 90-day term deposits	2.2	1.5	0.3	0.2	0.3	0.3	0.2	0.3	0.5	0.9
Individuals	1.9	1.0	0.2	0.1	0.2	0.2	0.2	0.2	0.4	0.6
Business	2.3	1.6	0.3	0.2	0.3	0.3	0.2	0.3	0.5	1.0
On 91 to 180-day term deposits	1.8	1.3	0.3	0.3	0.4	0.6	0.5	0.4	1.1	0.9
Individuals	1.3	1.0	0.2	0.2	0.2	0.3	0.3	0.3	0.8	0.7
Business	2.3	1.6	0.3	0.3	0.5	0.6	0.6	0.5	1.3	1.0
On 181 to 360-day term deposits	1.9	1.4	0.3	0.3	0.4	0.7	0.6	0.6	1.6	1.1
Individuals	1.4	1.2	0.3	0.3	0.3	0.4	0.4	0.6	1.2	1.0
Business	2.5	1.8	0.3	0.3	0.5	0.9	0.7	0.8	1.7	1.2
CTS	1.2	1.3	1.0	1.2	1.2	1.2	0.9	1.1	0.8	1.5
90-day corporate prime	3.6	2.7	1.0	0.6	2.0	1.0	1.0	1.4	2.2	1.9
TAMEX	7.9	7.6	6.1	6.3	6.1	6.7	6.7	6.7	6.6	7.5
FTAMEX	7.6	7.1	6.3	6.0	5.7	7.8	7.6	8.1	8.1	7.4
Corporates	4.0	3.2	2.0	1.8	1.6	2.1	2.1	2.5	2.6	2.9
Large companies	5.5	5.5	4.5	4.3	4.3	5.0	4.3	4.2	5.1	5.3
Medium-sized enterprises	6.9	6.6	5.9	5.9	5.9	6.1	5.9	6.5	6.6	7.7
Small business	9.9	8.8	5.3	7.1	9.7	9.4	10.3	9.4	12.8	11.4
Micro business <sup>3/</sup>	7.6	7.7	4.8	7.2	6.5	11.8	17.1	10.2	11.0	13.2
Consumer <sup>3/</sup>		35.3	33.5	35.0	33.1	31.1	33.9	32.9	34.1	34.5
Mortgage	6.1	5.6	5.4	5.0	5.2	5.6	5.0	5.1	6.7	6.8

<sup>1/</sup> Annual rates for operations in the last 30 working days. In the case of credits and term deposits, it corresponds to the banking companies.

<sup>2/</sup> Average since September 2010. In the case of consumer credit, it is the average since October 2019.

<sup>3/</sup> Corresponds to the average of the financial system.

As of June 13.

Source: BCRP and SBS.



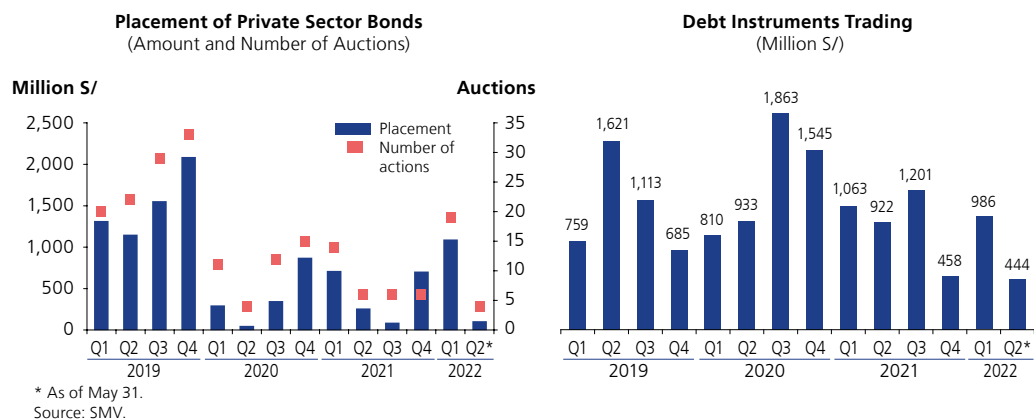


**Fixed-income market**

67. In the second quarter of 2022, Peruvian companies had access to financing in the local and foreign capital markets at lower rates than in the first quarter, in a context of higher risk in financial markets and higher borrowing costs due to more restrictive monetary policies worldwide. Bonds for a total of S/ 109 million were placed in April through public offerings in four auctions, while no auctions were carried out in May. It is worth mentioning that this amount was lower than the total placed in the first quarter of 2022 (S/ 1,093 million). In addition, two Peruvian companies have sold securities for a total of US\$ 1,100 million in the external market so far in the second quarter of 2022: (i) on April 4, Consorcio Transmantaro placed US\$ 500 million for a 16-year term, at a coupon rate of 5.2 percent and a spread over the yield rate on the US Treasury bond at a similar term of 277 basis points, and (ii) on April 7, Fondo MiVivienda sold securities for US\$ 600 million, at a coupon rate of 4.625 percent, 5-year term and spread over the U.S. and global treasury bond of 200 and 104 basis points, respectively.

Moreover, the average trading of debt securities in the secondary market of the Lima Stock Exchange (BVL) carried out in the second quarter of 2022 until June 13 amounted to S/ 222 million, a figure below the quarterly average traded in the first quarter of the year (S/ 329 million) and in 2021 (S/ 304 million).

Graph 86  
**FIXED INCOME MARKET OF THE PRIVATE SECTOR**



On the other hand, the international placements made by non-resident entities in the second quarter, as of May 27, amounted to S/ 390 million, a figure below the total made in the first quarter of 2022 (S/ 669 million). The placements were made by four external issuers and at terms between 4 and 15 years.

68. The portfolios managed by institutional investors continue to be affected by the global fall in asset returns as well as by the approval of legislative measures requiring the liquidation of securities in negative environments. In the case of the AFPs, the investment portfolio decreased from S/ 132.9 billion to S/ 125.7 billion between March 31 and June 3, 2022, mainly due to the lower value of local equities, lower shares of

external mutual funds, and the lower value of government bonds. On June 3, the value of the investment portfolio shows a reduction of 5.7 percent due to lower contributions from affiliates, the liquidation of local and external securities, and the devaluation of the assets comprising the investment portfolio.

On May 4, 2022, the Congress of the Republic approved the bill authorizing optional withdrawals from private pension funds. Subsequently, on May 20 it enacted Law No. 31478, allowing all members who are not of retirement age to withdraw up to 4 tax units (i.e. up to S/ 18,400) from their Individual Capitalization Accounts (ICA). Withdrawals will be made in three parts: 1 tax unit (S/ 4,600) may be withdrawn 30 days after the application is approved; 1 tax unit (S/ 4,600) 30 days after the first withdrawal, and 2 tax units (S/ 9,200), 30 days after the second withdrawal. The SBS estimates that with the approval of this law, the AFPs will have to liquidate up to S/ 31.9 billion for 5.9 million members. The estimated withdrawal of funds, which would take place between July and September 2022, would be equivalent to 25 percent of the value of the managed portfolio as of June 3, 2022.

It is worth highlighting that the facilities granted by BCRP for the approved withdrawals of funds from pension funds prevented undesirable impacts on interest rates and on the stability of financial markets due to the liquidation of significant amounts of securities in a short period of time. In 2020, the AFPs obtained liquidity from the BCRP through repos with BTP to mitigate the effect of the withdrawal of funds for a total of S/ 6,137 million. In addition, between January and July 2021, direct repos for S/ 6,221 million for a term of 3 months. There is currently no outstanding balance of repos with the AFPs.

Moreover, in the case of mutual funds, the assets under management have decreased from S/ 32.5 billion in December 2021 to S/ 28.6 billion in May 2022, while the number of unitholders has also decreased from 367 thousand to 347 thousand in the same period. In addition, the investment portfolio of insurance companies has decreased from S/ 54.9 billion to S/ 53.5 billion between December 2021 and March 2022.

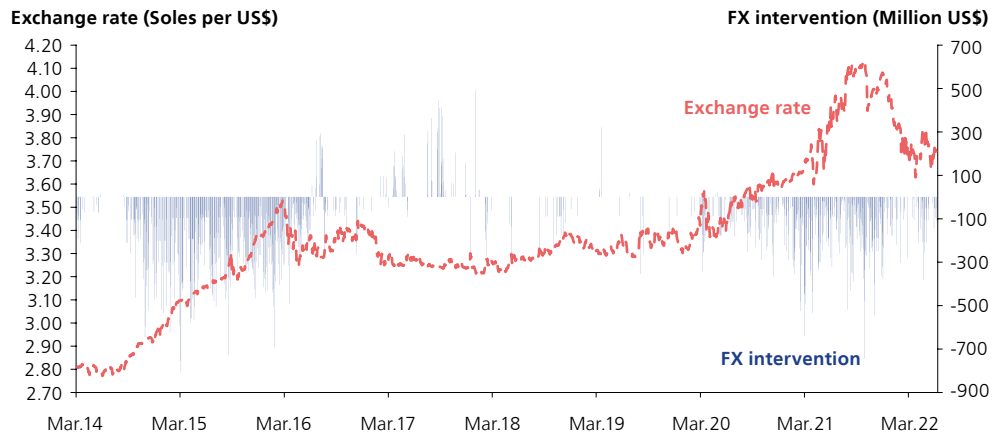
### Foreign exchange market

69. In April, the PEN depreciated by 4.2 percent, influenced by an external environment of lower risk appetite due to fears associated with confinements in China and their impact on global growth, as well as by the persistence of inflationary pressures worldwide and fears of recession in the U.S. economy. In addition, greater political noise was perceived in the local environment. On the other hand, the sol appreciated by 3.2 percent in May, showing the worst performance in the region due to the high local political risk that limits the exchange rate to benefit, like the currencies of its regional peers, from the increase of the main raw materials exported by Latin American economies. It should be pointed out that the dollar strengthened globally during May and reached its highest levels in the last 20 years due to expectations that the FED will accelerate the normalization pace of its monetary policy and due to a positive economic performance of the United States in relative terms. In June, as of June 13, the sol has depreciated 0.6 percent in a context marked by risk aversion after the publication of higher-than-expected inflation in the United States, which caused a global sell-off.





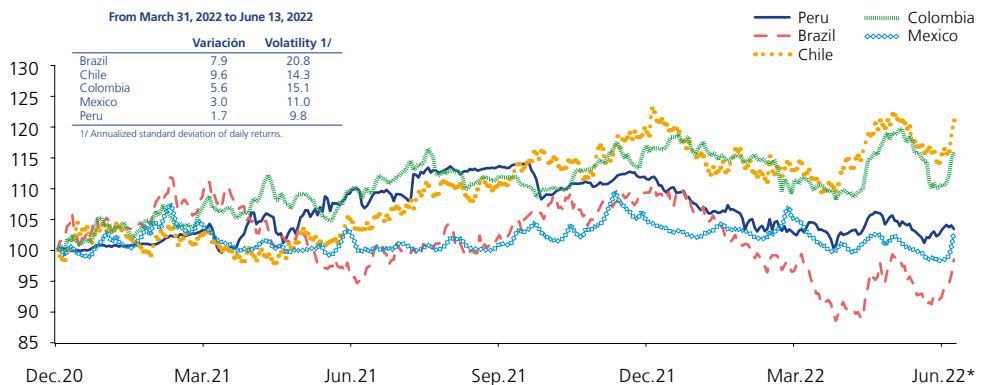
Graph 87  
EXCHANGE RATE AND FX INTERVENTION <sup>1/</sup>



<sup>1/</sup> Includes Net purchases of US\$ in the spot market and placement of CDLD BCRP, CDR BCRP, and FX swaps.  
As of June 13.  
Source: BCRP.

From the end of March to June 13, 2022, Latin American currencies depreciated against a backdrop of a strengthening dollar at a global level, but showing a performance above that of other emerging regions. Volatility has increased in most countries in the region due to greater local political noise associated with the presidential elections in Colombia and the constitutional reform in Chile, reflecting that, although exchange rate volatility in the region is highly synchronized, idiosyncratic factors also explain exchange rate variations in each country. The DXY index has strengthened by 6.9 percent in the second quarter of 2022.

Graph 88  
EXCHANGE RATE INDEX <sup>1/</sup>  
(Dec 31, 2020=100)



<sup>1/</sup> An index increase indicates the depreciation of the currency.  
Data as of June 13.  
Source: BCRP and Reuters.

Between April and June, BCRP intervened in the foreign exchange market through the auction of fixed-rate foreign exchange swaps and sales in the spot market in order to minimize volatility in the price of the PEN, in a context of high uncertainty in both the

global and local foreign exchange markets. Thus, BCRP placed a total of S/ 10,038 million in fixed rate swaps at 3, 6 and 12 month terms and instruments amounting to S/ 10,200 million matured (S/ 3,295 million at fixed rate). On the other hand, no new placements of BCRP CDRs have been made and since certificates for a total of S/ 195 million matured on May 27, the balance of this instrument to date is zero. In addition, BCRP sold US\$ 429 million in the spot market. The percentage of days in which foreign exchange intervention actions are carried out in 2022 is below that observed in 2021.

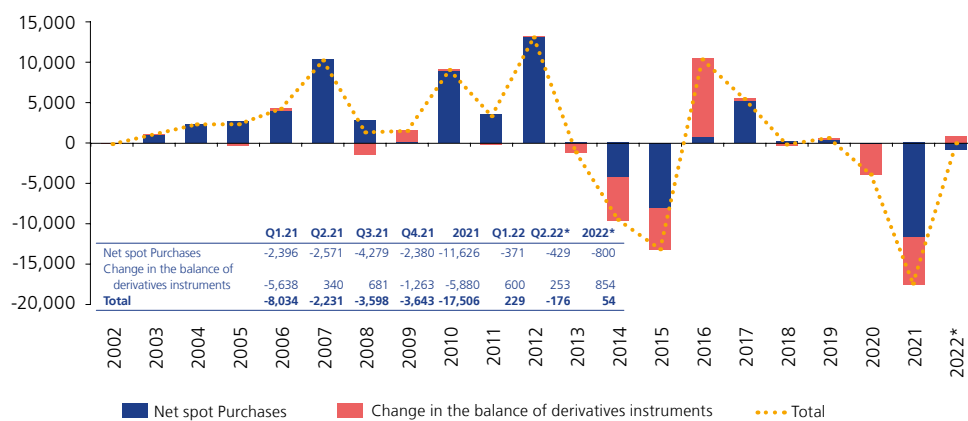
Table 36  
NUMBER OF DAYS OF INTERVENTION

	Trading days	Number of intervention days						SD of the Exchange Rate (Annual % change)
		Spot market	Placement of derivatives and indexed instruments	Total (spot and/or placement)	% of days with intervention			
					Spot	Instrumentos	Total	
2015	248	98	203	207	40%	82%	83%	3.9%
2016	250	50	119	134	20%	48%	54%	7.3%
2017	249	55	26	64	22%	10%	26%	4.5%
2018	245	4	27	30	2%	11%	12%	3.4%
2019	249	4	6	10	2%	2%	4%	4.4%
2020	254	13	97	100	5%	38%	39%	7.4%
2021	251	141	183	206	56%	73%	82%	9.4%
2022 <sup>1/</sup>	114	12	44	46	11%	39%	40%	10.0%

\* As of June 13.

Year-to-date as of June 13, BCRP has offered US\$ 0.1 billion in the foreign exchange market through sales in the spot market (US\$ 0.8 billion) and through net placement of foreign exchange swaps and BCRP CDRs (US\$ 0.9 billion).

Graph 89  
FX INTERVENTION OF THE BCRP  
(Million US\$)



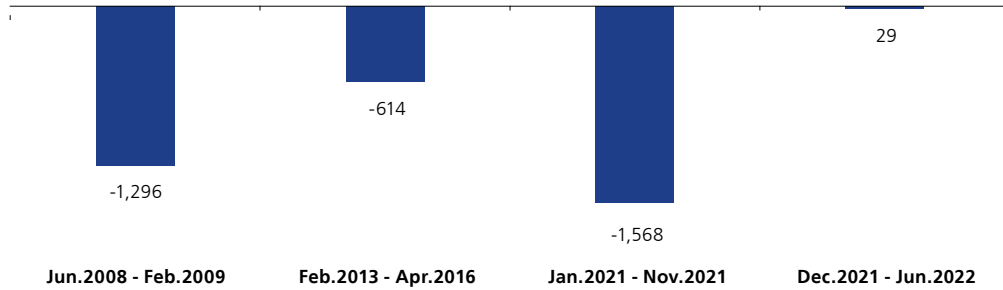
\* As of June 13.  
Source: BCRP.

Moreover, the average monthly amount of intervention in the foreign exchange market in the episode of higher volatility (from January to November 2021) has been US\$ 1,568 million, higher than that observed during the period of the global financial crisis (US\$ 1,296 million), higher than the episode observed between February 2013 and April 2016 (US\$ 614 million), and higher than the current period of declining exchange rate trend observed since December 2021 (US\$ 29 million).





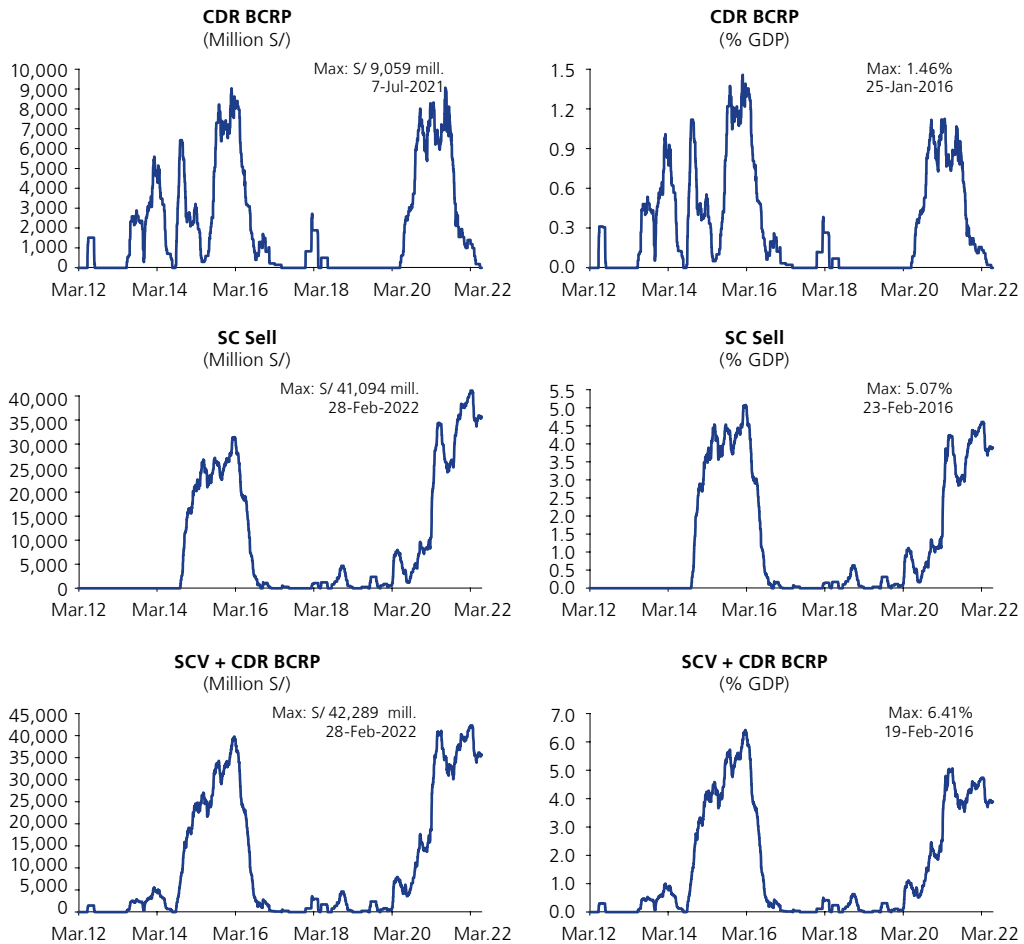
Graph 90  
MONTHLY AVERAGE FX INTERVENTION OF THE BCRP  
(Million US\$)



Includes Net purchases of US\$ in the spot market and the gross placement of instruments in the negotiation table.  
As of June 13.  
Source: BCRP.

As of June 13, the accumulated balance of FX swaps-sale and CDR BCRP was S/ 35.7 billion (3.9 percent of GDP). The increase in the average maturity terms of the instruments is associated with the demand for hedging over a longer horizon. Thus, in the case of FX swaps-sale, the average term has increased from 62 to 284 days between December 2019 and June 2022.

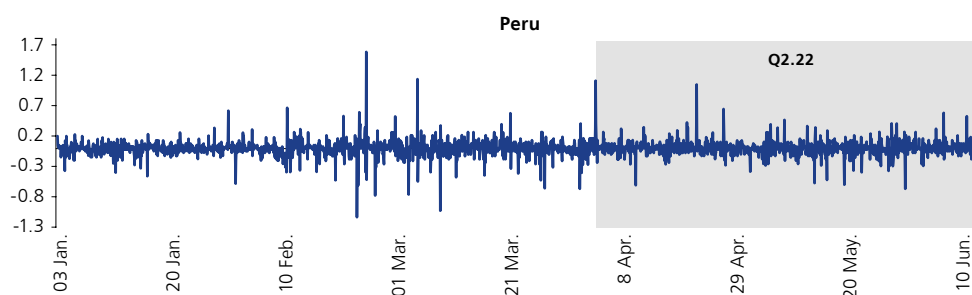
Graph 91  
SALDO DE INSTRUMENTOS CAMBIARIOS



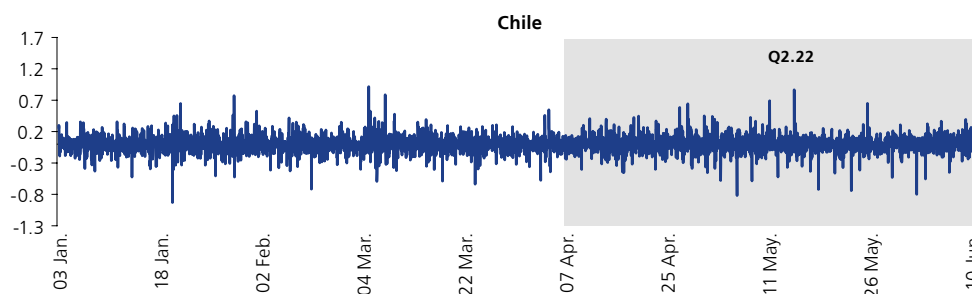
As of June 13.  
Source: BCRP.

In the second quarter of 2022, the PEN shows a similar level of volatility to that observed in the first quarter, although in monthly terms there was greater variability in April (9.0 percent) and May (9.6 percent) than in March (8.7 percent). Considering the evolution of the exchange rate for every 10 minutes between 9:30 a.m. and 1:30 p.m., the intraday variation in the second quarter has fluctuated between a 1.13 percent depreciation (April 5, 2022) and a 0.68 percent appreciation (April 1, 2022). This intraday variation shows greater persistence, but less sensitivity to new information since May 2022 than what was observed in the fourth quarter of 2021 and in the first quarter of 2022.

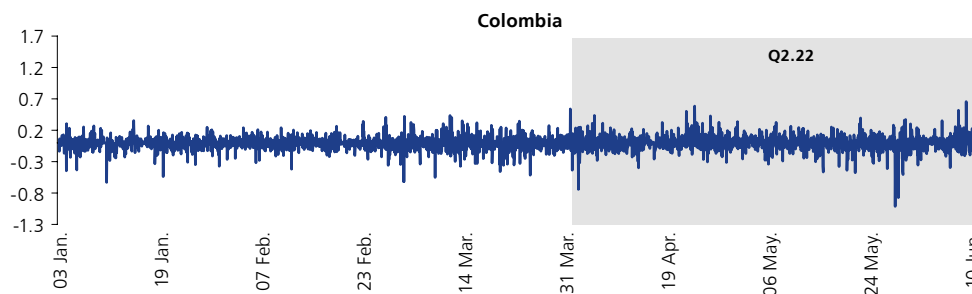
Graph 92  
INTRADAY VARIATION OF EXCHANGE RATE<sup>1/</sup>: 2022



1/ % change every 10 minutes in the exchange rate between 9:00 a.m. and 1:30 p.m. A positive variation indicates depreciation of Sol.



1/ % change every 10 minutes in the exchange rate between 6:30 a.m. and 2:00 p.m. A positive variation indicates depreciation of Chilean peso.



1/ % change every 10 minutes in the exchange rate between 8:00 a.m. and 1:00 p.m. A positive variation indicates depreciation of Colombian peso.

Data as of June 13.  
Source: Reuters.

This higher volatility in the second quarter of 2022 was also reflected in the bid-ask spreads of the exchange rate. The increase occurred mainly in April and until the second week of May, and until the latest available data, volatility has not returned to the levels recorded prior to the first presidential round in 2021, although some greater stability is observed in comparison with the first quarter of 2022. On the other hand, the average daily trading in the interbank foreign exchange spot market fell in April, May and June

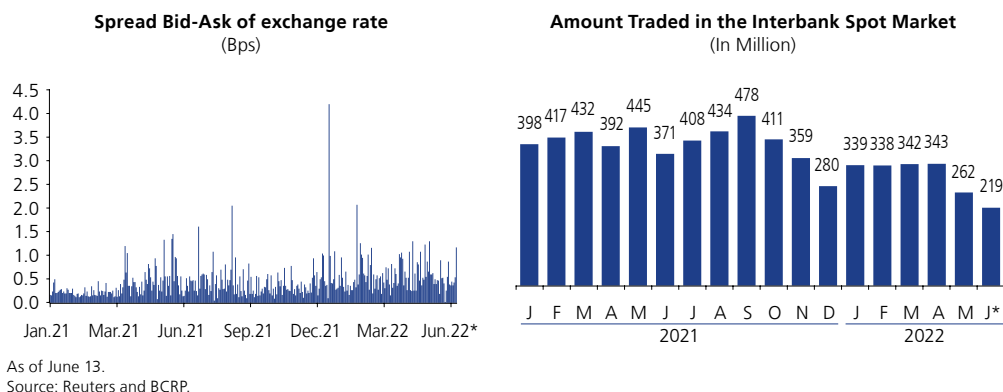






(US\$ 343 million, US\$ 262 million, and US\$ 219 million, respectively), but below the average traded in 2021 (US\$ 402 million), which is associated to the lower demand for dollars from the non financial sector.

Graph 93  
SPREAD AND EXCHANGE RATE NEGOTIATION



The historical volatility of the Peruvian exchange rate in 30-day moving periods observed in April and May 2022 was one of the lowest in the region. Moreover, using three alternative definitions of exchange rate volatility for daily data in recent months (historical, implied, and based on a GARCH-type volatility model), we observe an increase in the variability of the PEN in April and a reduction in May and June, in a context of higher risk in international financial markets.

Table 37  
NUMBER OF DAYS OF INTERVENTION

	Historical (SD) <sup>1/</sup>					Implicit <sup>2/</sup>					GARCH(1,1) <sup>3/</sup>				
	Brazil	Chile	Colombia	Mexico	Peru	Brazil	Chile	Colombia	Mexico	Peru	Brazil	Chile	Colombia	Mexico	Peru
Jan.21	22.6	17.3	14.5	14.4	2.6	18.4	13.8	13.6	15.3	6.5	22.0	13.9	16.5	18.1	5.7
Feb.21	13.7	11.2	10.9	14.8	1.8	19.2	12.3	13.4	17.1	5.0	22.0	14.2	13.5	20.8	4.5
Mar.21	20.0	13.2	12.5	14.1	4.3	19.7	13.8	14.3	15.5	4.2	20.8	12.9	12.1	14.7	6.1
Apr.21	17.3	11.0	9.9	8.9	14.0	18.0	12.0	14.1	12.3	7.4	20.6	13.8	13.2	14.0	15.2
May.21	13.4	13.8	12.8	8.2	14.6	16.4	13.4	14.7	11.7	11.6	18.6	12.6	12.2	12.2	13.2
Jun.21	13.8	10.8	11.8	13.5	16.2	15.8	13.3	14.4	10.7	9.8	18.0	12.4	12.5	12.6	15.4
Jul.21	17.0	12.7	9.8	9.2	14.7	16.5	13.5	13.5	10.5	11.9	17.9	12.2	13.8	11.9	10.8
Aug.21	15.1	11.7	12.6	7.8	5.9	16.3	13.4	13.6	9.9	10.7	17.5	12.1	12.7	11.7	9.8
Sep.21	14.8	9.1	4.8	6.3	2.4	16.3	13.7	12.4	11.0	10.6	15.7	11.4	9.4	11.3	6.8
Oct.21	14.9	11.0	6.2	10.1	9.4	18.1	17.7	11.2	9.3	8.6	17.2	11.1	12.3	10.0	8.9
Nov.21	14.2	16.6	7.8	13.7	3.9	16.6	19.4	12.6	14.8	7.2	16.5	13.1	12.9	13.4	7.0
Dec.21	13.6	16.4	10.7	8.5	3.9	15.8	17.2	12.5	11.2	9.7	16.5	13.4	12.8	9.7	8.2
Jan.22	14.8	11.8	10.8	5.6	6.1	16.2	14.5	14.1	10.5	8.9	15.2	12.9	13.8	8.9	7.7
Feb.22	13.3	20.1	6.0	8.9	14.7	17.4	17.6	16.5	11.0	6.9	15.4	17.7	12.9	10.9	11.9
Mar.22	14.7	12.7	14.9	12.8	8.7	18.3	14.9	15.7	10.0	7.0	16.0	14.5	12.8	9.7	10.1
Apr.22	22.2	14.1	13.2	8.9	10.0	21.0	17.5	17.3	12.3	6.9	15.8	14.2	12.8	9.8	10.6
May.22	20.1	12.2	16.0	9.9	9.6	19.8	15.8	19.8	11.1	7.2	16.4	13.8	14.1	9.6	10.7
Jun.22*	16.8	19.1	14.3	15.4	8.2	19.6	16.6	19.4	10.7	7.4	16.5	13.8	15.4	9.4	10.2

1/ Annualized standard deviation of daily returns.

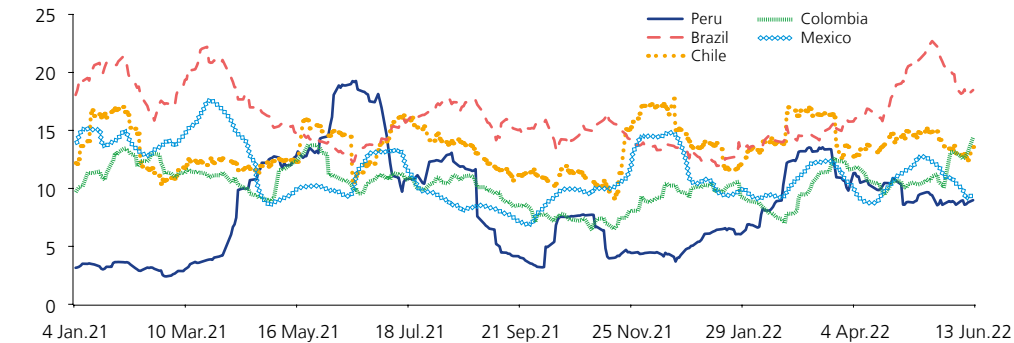
2/ Corresponds to the resulting variable in the Black Scholes option pricing model. It measures the market's expectations of the exchange rate for one month.

3/ The model GARCH (1,1) applies a stochastic process to historical time series of the exchange rate to predict its future volatility. The concept is similar to applying exponential moving averages to volatility where the current exchange rate has the highest impact on the forecast.

As of June 13.

Source: BCRP and Reuters.

Graph 94  
1-MONTH ANNUALIZED HISTORICAL VOLATILITY <sup>1/</sup>

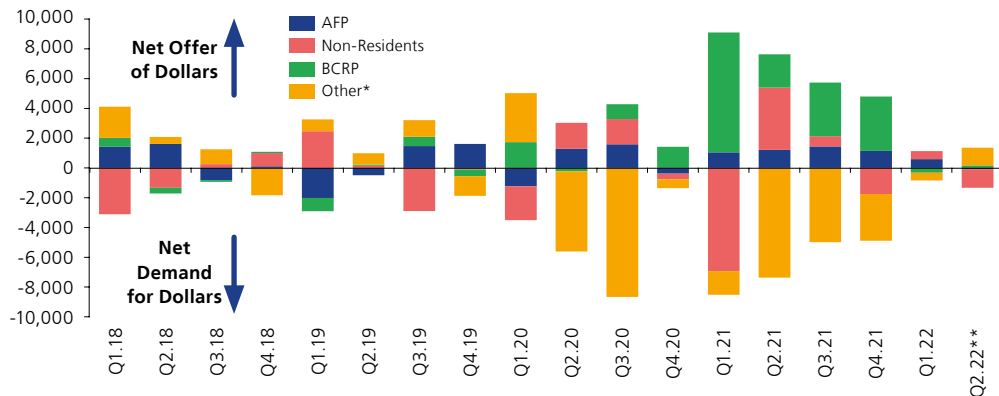


<sup>1/</sup> Annualized standard deviation in the last 30 days.  
Data as of June 13.  
Source: Reuters.

As of June 13, foreign exchange flows from market participants in the second quarter of 2022 correspond to a net dollar demand for US\$ 382 million, which represents a change from what was seen in the first quarter of 2022 (net dollar supply of US\$ 306 million). In the spot market, there was a net supply of dollars (US\$ 1,141 million) that came mainly from mining companies, while non-financial sector companies were the main net demanders. On the other hand, net demand in the derivatives market (US\$ 1,524 million) came from non-resident investors, AFPs and the corporate sector

In the case of banking companies, the overall position fell by US\$ 207 million in the second quarter of 2022 (whereas this position increased by US\$ 370 million and US\$ 76 million in 2021 and in the first quarter of 2022, respectively). Banks' balance of net sales of Non-Deliverable Forward (NDF) with non-resident investors increased by US\$ 1,060 million between the first quarter and the second quarter of 2022, reflecting the higher demand for dollars from non-resident investors observed in foreign exchange market flows.

Graph 95  
FLOWS TO THE FOREIGN EXCHANGE MARKET (SPOT AND DERIVATIVES)  
(Million US\$)



\* Other includes companies in the corporate sector, mining and retail sector.  
\*\* As of June 13.  
Source: BCRP.





As for non-resident investors, in the second quarter of the year they registered a net demand for dollars amounting to US\$ 1,240 million, this demand having been observed mainly in the derivatives market (US\$ 946 million). This represents not only a change from non-residents' net supply in the first quarter (US\$ 1,601 million), but also an increase in foreign investors' BTP holdings from S/ 61,204 million in March to S/ 61,466 million at the end of May.

The AFPs registered a net supply of US\$ 86 million (US\$ 261 million net supply in the spot market and US\$ 346 million net demand in the derivatives market). Between April and June, the AFPs have net settled external securities for a total of US\$ 13 million, less than the quarterly average for 2021 (US\$ 2,384 million).

On the other hand, in the second quarter the corporate sector showed a net demand for dollars amounting to US\$ 1,655 million, a lower flow than that recorded in the first quarter of 2022 (US\$ 3,772 million) and lower than the quarterly average of 2020 and 2021 (US\$ 3,161 million and US\$ 4,150 million, respectively), reflecting a reduction in economic agents' level of dollarization because of precautionary reasons. The retail segment offered US dollars in the spot market for a total of US\$ 450 million to comply with the regularization payment of income tax and profit payments, mainly in April (US\$ 489 million of net supply).

Mining companies continued to stand out as net suppliers of dollars in the spot market (US\$ 2,393 million between April and June), with the monthly maximum reached in April (US\$ 1,188 million) –associated with foreign currency sales for the payment of income tax regularization– standing out. Mining exports during January and April 2022 reached US\$ 12,715 million, an increase of US\$ 1,074 million compared to the same period in 2021.

In this context of lower demand for dollars in the local foreign exchange market, BCRP has demanded dollars from banks between April and June 2022 for the net maturities of foreign exchange instruments (BCRP CDRs and FX swaps) and net sales in the spot market (US\$ 176 million net). It is worth pointing out that in addition to the adequate level of international reserves it has, BCRP enjoys high credibility and has access to credit lines such as the IMF's Flexible Credit Line (FCL), which only countries with very sound macroeconomic fundamentals have access to<sup>16</sup>. The increased foreign exchange intervention carried out by BCRP in 2021 to offer dollars in the spot markets, and mainly in the derivatives markets, has contributed to offset the extraordinary upward pressures on the exchange rate.

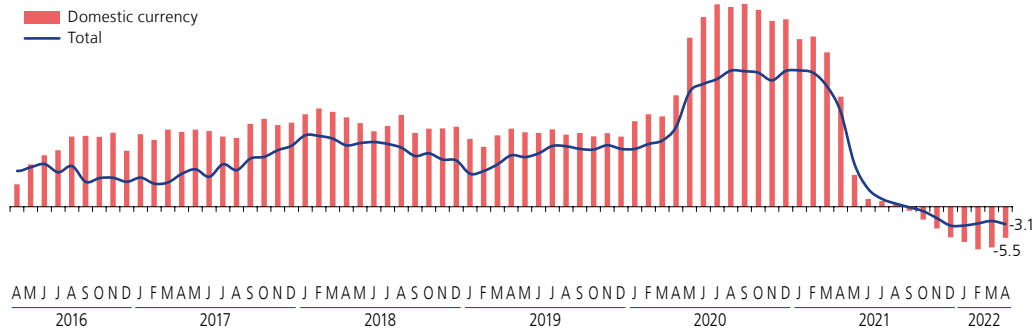
## Liquidity

70. In April 2022, private sector deposits showed a year-on-year growth rate of -3.1 percent. By currency, deposits in soles decreased by 5.5 percent year-on-year, while deposits in dollars grew 1.3 percent in the last 12 months. The negative growth of deposits in domestic currency has accelerated since the last quarter of 2021 due to the statistical effect of high growth rates in 2020 and due to local uncertainty.

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16 On May 27, 2022, the IMF approved a new two-year agreement involving US\$ 5.4 billion for Peru.

**Graph 96**  
**DEPOSITS OF THE PRIVATE SECTOR BY CURRENCY**  
 (Annual % change)

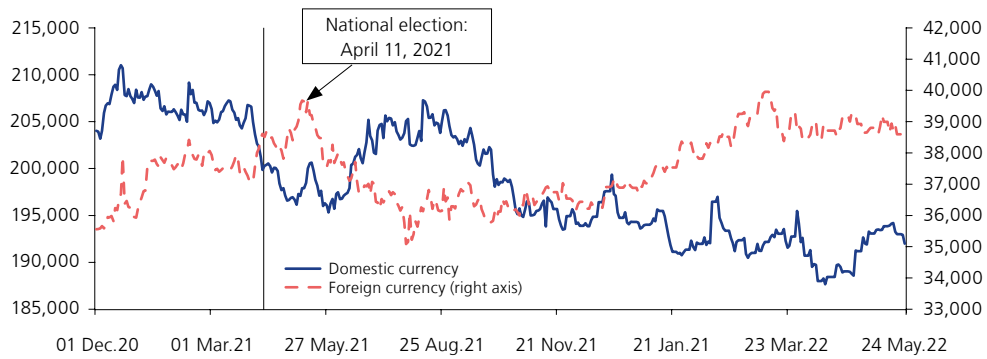


Source: BCRP.

The dollarization ratio of private sector deposits increased from 33.2 percent in December 2020 to 36.3 percent in April 2022. This increase is explained by an increase in the dollarization of corporate deposits (from 36.8 to 41.0 percent) and by an increase in the dollarization ratio of individual deposits (from 30.2 to 32.5 percent).

The rate of banks' total obligations subject to reserve requirements in domestic currency decreased slightly between February and May 2022 (down by S/ 605 million), while total obligations subject to reserve requirements in foreign currency decreased by US\$ 431 million during the same period, showing a more moderate rising trend from December 2021 to the first quarter of 2022.

**Graph 97**  
**TOTAL OBLIGATIONS SUBJECT TO RESERVE REQUIREMENTS OF BANKS**  
 (In millions of S/ and US\$)



As of May 24.  
 Source: BCRP.

In 2022, deposits in domestic currency are expected to grow at a slightly lower rate than credit to the private sector in domestic currency (4.8 and 5.3 percent, respectively).





Table 38  
**MONETARY AND CREDIT ACCOUNTS OF THE DEPOSITORY CORPORATIONS**  
**(END-OF-PERIOD)**  
 (Annual % change)

	Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Apr.22	Dec.22*	Dec.23*
Currency in circulation (End-of-period)	4.7	37.3	42.4	20.6	20.9	16.0	3.7	4.1	2.5	1.5
Deposits in domestic currency	12.3	33.0	27.2	1.3	-0.7	-5.4	-7.2	-5.5	4.8	8.3
Total deposits 1/	10.1	23.9	21.2	3.1	-0.2	-3.4	-2.6	-3.1	3.4	5.8
Broad money in domestic currency	10.6	32.2	28.9	5.1	3.6	-0.7	-4.3	-2.7	4.2	6.5
Total broad money 1/	9.6	25.3	23.6	5.5	3.0	0.0	-0.8	-1.2	3.2	4.9
Credit to the private sector in domestic currency	10.1	19.4	17.3	7.6	4.2	5.6	7.6	7.0	5.3	6.8
Total credit to the private sector 1/	7.1	11.0	8.7	4.7	2.8	4.4	7.2	6.7	4.5	5.4
Total credit to the private sector (without Reactiva Peru Program)1/	7.1	-5.4	-7.3	-1.6	5.3	9.4	14.0	13.7	10.8	8.6

1/ Balances are valued at constant exchange rate of December 2020.

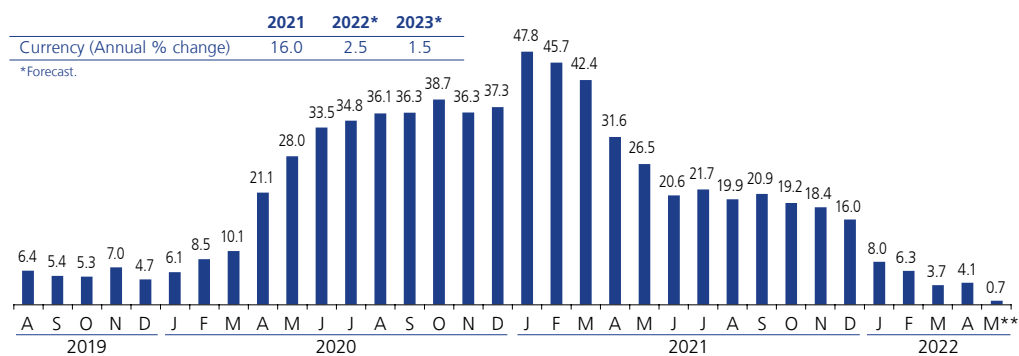
\* Forecast.

Source: BCRP.

71. **Currency in circulation** grew by 16.0 percent in 2021 and 0.7 percent year-on-year in May 2022. It is expected to grow 2.5 percent in 2022 and to decline then to a rate of 1.5 percent in 2023. After growing at historically high rates during the state of emergency<sup>17</sup>, the growth of currency in circulation is expected to continue to moderate during the second quarter of 2022 due to the weaker effect of the factors that favored this increase in the preceding years. Thus, currency in circulation is expected to grow at a slower pace than nominal GDP and to return to its pre-pandemic trend in the medium term.

After reaching historically high rates in 2020 and in the first half of 2021, the growth of currency began to slow down in the fourth quarter of 2021 and more rapidly during the first five months of 2022.

Graph 98  
**CURRENCY**  
 (Annual % change)



\* Forecast.

\*\* Preliminary as of May 2022.

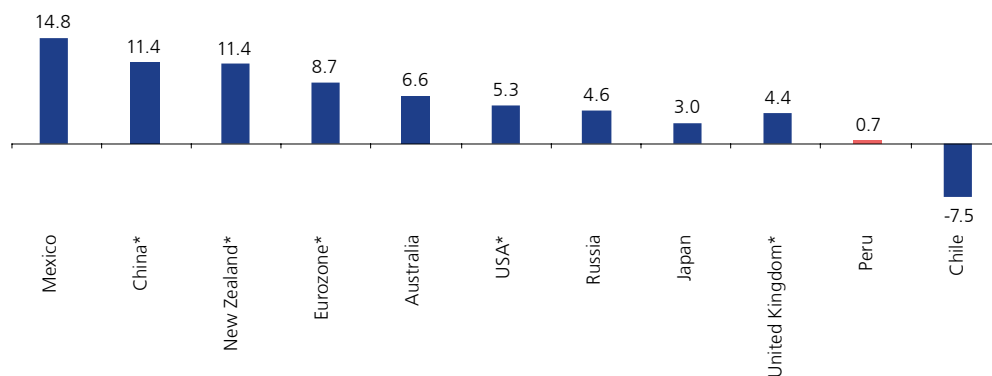
Source: BCRP.

72. The annual growth rate of currency in circulation in May 2022 (0.7 percent) was lower than the growth rate observed in February 2020 (8.5 percent) and in December 2020 (37.3 percent). The annual growth rate of money velocity in the first quarter of 2022

17 The growth of precautionary cash savings would have been driven mainly by transfers to families through the bonds granted by the State.

remains positive at a rate of 11.7 percent, a higher rate than that observed prior to the pandemic (-12.7 percent in the first quarter of 2020) but lower than that registered in the third quarter of 2021 (15,3 percent). The demand for cash remains high, but showing a more moderate pace of growth in recent months.

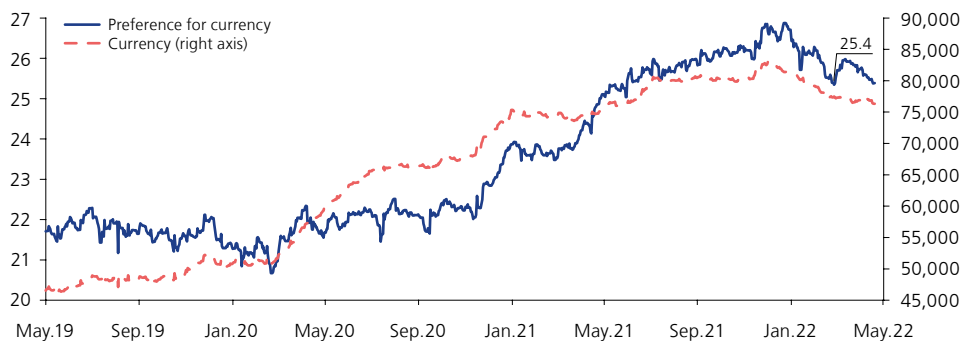
Graph 99  
**CURRENCY GROWTH BY COUNTRIES: MAY 2022**  
 (% change)



\* Information as of April 2022.  
 Source: Central Banks.

- 73. After growing steadily between April 2020 and December 2021, the preference for currency in circulation has declined during the first and second quarters of 2022. Between January and March 2022, it declined and reached a nine-month low of 25.4 percent at the end of March, returning to June 2021 levels. Then it rose again during the first two weeks of April, declining thereafter during the rest of April and in May.

Graph 100  
**CURRENCY AND PREFERENCE FOR CURRENCY**  
 (In millions soles and %)



Source: BCRP.

### Credit to the private sector

- 74. The growth of **credit to the private sector** slowed down from an expansion rate of 11.0 percent in 2020 to a year-on-year rate of 6.7 percent in April 2022 (13.7 percent excluding the credit granted under the Reactiva program). By segment, credit to businesses grew 3.5 percent, less than the rate observed in December 2020 (20.3





percent). On the other hand, credit to individuals went from contracting 3.1 percent in 2020 to increasing by 12.8 percent in April 2022 as a result of the recovery of domestic demand. In the case of credit to individuals, an increase was observed in vehicle loans (12.6 percent) and in mortgage loans (7.5 percent). On the side of credit to businesses, the segments with the highest growth rates were credit to corporations and large companies (9.1 percent), followed by credit to small and micro businesses (9.1 percent), whereas credit to medium-sized companies showed a drop (10.0 percent).

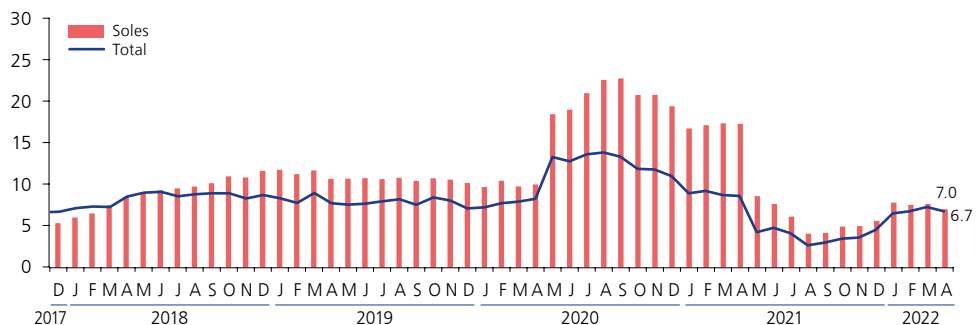
Table 39  
**CREDIT TO THE PRIVATE SECTOR 1/**  
 (Annual % change)

	Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Apr.22
<b>Businesses</b>	<b>4.3</b>	<b>20.3</b>	<b>17.2</b>	<b>7.4</b>	<b>3.2</b>	<b>3.9</b>	<b>4.9</b>	<b>3.5</b>
Corporate and large companies	4.4	6.8	2.0	-2.5	2.7	8.1	10.6	9.1
Medium-sized enterprises, Small business and Micro business	4.3	36.2	36.4	19.5	3.7	0.0	-0.5	-1.7
<b>Individuals</b>	<b>11.5</b>	<b>-3.1</b>	<b>-4.5</b>	<b>-0.3</b>	<b>2.1</b>	<b>5.4</b>	<b>11.7</b>	<b>12.8</b>
Consumer	13.3	-7.1	-10.5	-5.5	-1.8	3.9	15.1	17.0
Car loans	12.0	-2.3	-8.1	-0.3	3.0	7.6	13.8	12.6
Rest	13.4	-7.3	-10.6	-5.7	-1.9	3.8	15.1	17.1
Mortgage	8.8	3.0	4.6	7.3	7.6	7.4	7.3	7.5
<b>TOTAL</b>	<b>7.1</b>	<b>11.0</b>	<b>8.7</b>	<b>4.7</b>	<b>2.8</b>	<b>4.4</b>	<b>7.2</b>	<b>6.7</b>
<b>Memo:</b>								
<b>Total without Reactiva Peru</b>	<b>7.1</b>	<b>-5.4</b>	<b>-7.3</b>	<b>-1.6</b>	<b>5.3</b>	<b>9.4</b>	<b>14.0</b>	<b>13.7</b>

1/ Balances are valued at constant exchange rate on December 2020.  
 Source: BCRP.

75. The growth of credit in soles has slowed down since March 2021, mainly due to the weakening of the statistical effect of the Reactiva Peru program. On the other hand, the growth of credit in dollars has been declining since June 2020, although this declining trend reversed thereafter since December 2021. Thus, as of April 2022, credit in soles has grown 7.0 percent, while credit in dollars has grown by 5.7 percent in the same period.

Graph 101  
**CREDIT TO THE PRIVATE SECTOR**  
 (Annual % change)



Source: BCRP.

Table 40  
**CREDIT TO THE PRIVATE SECTOR 1/**  
 (Annual % change)

	Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Apr.22
Domestic Currency	10.1	19.4	17.3	7.6	4.2	5.6	7.6	7.0
Foreign Currency	-0.3	-11.0	-14.0	-4.3	-1.7	0.3	5.7	5.7
<b>Total</b>	<b>7.1</b>	<b>11.0</b>	<b>8.7</b>	<b>4.7</b>	<b>2.8</b>	<b>4.4</b>	<b>7.2</b>	<b>6.7</b>

1/ Balances are valued at constant exchange rate on December 2020.  
 Source: BCRP.

## Dollarization of credit and liquidity

76. The ratio of dollarization of credit to the private sector, measured at a constant exchange rate, was 21.7 percent in April 2022, higher than the level observed in December 2021 (21.1 percent) and lower than that observed in December 2020 (22.0 percent). A slight increase was seen in the dollarization ratio of credit to business, which rose from 29.0 to 29.8 percent between December 2020 and April 2022, whereas the dollarization ratio of credit to individuals fell from 8.6 to 7.4 percent. Moreover, the dollarization ratio of the segment of mortgage loans declined from 12.5 percent in December 2020 to 9.2 percent in April 2022, while that of consumer loans increased from 5.8 percent to 6.2 percent in the same period.

Table 41  
**RATIO OF DOLLARIZATION OF CREDIT TO THE PRIVATE SECTOR 1/**  
 (%)

	Dec.19	Mar.20	Jun.20	Sep.20	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Apr.22
<b>Businesses</b>	<b>39.1</b>	<b>39.2</b>	<b>33.4</b>	<b>29.3</b>	<b>29.0</b>	<b>28.7</b>	<b>29.8</b>	<b>28.1</b>	<b>28.4</b>	<b>29.2</b>	<b>29.8</b>
Corporate and large companies	52.4	51.9	45.1	43.4	44.5	43.8	45.6	42.9	43.3	44.4	45.4
Medium-sized enterprises	40.6	40.8	32.0	26.0	23.5	22.5	22.0	21.3	21.8	22.1	22.7
Small business and Micro business	6.1	5.9	5.0	4.0	4.3	4.2	4.1	3.8	3.6	3.5	3.4
<b>Individual</b>	<b>9.6</b>	<b>9.1</b>	<b>9.0</b>	<b>8.8</b>	<b>8.6</b>	<b>8.4</b>	<b>8.5</b>	<b>8.0</b>	<b>7.5</b>	<b>7.5</b>	<b>7.4</b>
Consumer	6.5	6.2	5.9	5.8	5.8	5.8	6.4	6.1	5.7	6.1	6.2
Car loans	15.9	16.1	16.1	17.2	18.0	18.1	17.3	15.9	13.8	12.2	11.9
Credit cards	7.7	7.1	6.1	5.7	6.2	9.0	12.5	13.0	12.3	11.8	12.0
Rest	5.4	5.2	5.3	5.2	5.1	4.5	4.6	4.4	4.1	4.8	4.7
Mortgage	14.4	13.7	13.5	13.1	12.5	11.9	11.2	10.5	9.8	9.4	9.2
<b>TOTAL</b>	<b>27.4</b>	<b>27.5</b>	<b>24.7</b>	<b>22.3</b>	<b>22.0</b>	<b>21.7</b>	<b>22.6</b>	<b>21.3</b>	<b>21.1</b>	<b>21.4</b>	<b>21.7</b>

1/ Balances are valued at constant exchange rate on December 2020.  
 Source: BCRP.

## Non-performing loans

77. The NPL ratio was 3.79 percent in April 2022, 0.03 percentage points higher than in December 2021 (3.76 percent). This result is mainly explained by higher delinquency rates in loans to businesses, with the increase in the segment of medium-sized companies and corporations being particularly noteworthy. In contrast, the NPL ratio of loans to individuals decreased in the same period, particularly in the case of loans associated with credit cards and mortgages.







Table 42  
**NON-PERFORMING LOANS INDEX**  
 (%)

	Dec.19	Mar.20	Jun.20	Sep.20	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Apr.22
<b>Businesses</b>	<b>3.71</b>	<b>3.82</b>	<b>3.51</b>	<b>3.54</b>	<b>3.73</b>	<b>4.03</b>	<b>4.04</b>	<b>4.60</b>	<b>4.60</b>	<b>4.80</b>	<b>4.79</b>
Corporate and large companies	0.62	0.64	0.67	0.85	1.04	1.09	1.16	1.08	1.08	1.28	1.35
Medium-sized enterprises	8.24	9.00	7.53	6.82	6.27	6.45	6.78	9.49	9.49	9.99	10.00
Small business and Micro business	6.29	6.53	6.22	5.51	6.06	7.14	7.06	6.54	6.54	6.63	6.50
<b>Individuals</b>	<b>2.85</b>	<b>3.03</b>	<b>3.43</b>	<b>3.71</b>	<b>4.91</b>	<b>4.19</b>	<b>3.56</b>	<b>2.57</b>	<b>2.57</b>	<b>2.45</b>	<b>2.41</b>
Consumer	2.81	3.00	3.37	3.94	5.92	4.68	3.64	2.23	2.23	2.14	2.12
Credit cards	5.33	5.65	6.05	8.03	12.70	11.75	8.52	6.28	6.28	6.18	6.23
Car loans	3.75	3.86	4.78	5.58	5.85	5.74	5.51	3.72	3.72	3.74	3.55
Rest	1.46	1.62	2.04	2.01	3.07	2.95	2.45	1.35	1.35	1.28	1.22
Mortgage	2.91	3.08	3.51	3.39	3.51	3.56	3.47	3.01	3.01	2.87	2.83
<b>Average <sup>1/</sup></b>	<b>3.24</b>	<b>3.37</b>	<b>3.35</b>	<b>3.47</b>	<b>4.00</b>	<b>3.96</b>	<b>3.77</b>	<b>3.76</b>	<b>3.76</b>	<b>3.82</b>	<b>3.79</b>

<sup>1/</sup> The non-performing loans index is the percentage of direct loans that are overdue or in the judicial collection. Likewise, this indicator includes credits to companies, natural persons, sovereign credits, to multilateral organizations, and to companies and public sector organizations.  
 Source: BCRP.

78. Financial entities have continued taking actions to mitigate the impact of the pandemic on the solvency of the financial system. The strengthening of the equity base, the better control of operating and financial expenses, and the establishment of voluntary provisions stand out among these measures.

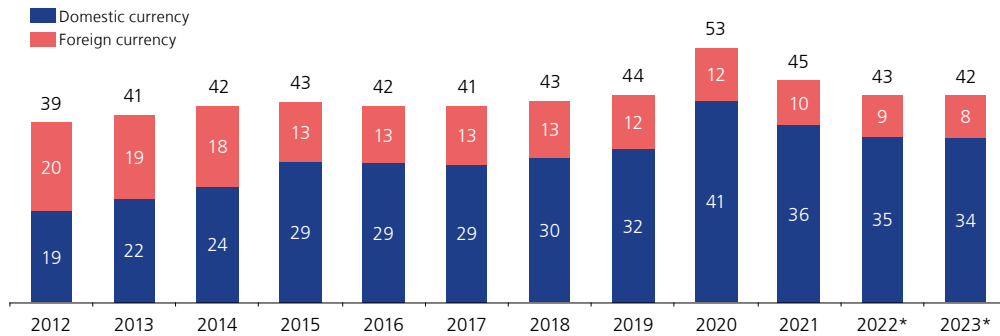
### Projection of credit to the private sector

79. After showing a significant increase in the credit-to-GDP ratio in 2020, credit to the private sector in 2022 and 2023 is expected to moderate its growth rate and to grow at a slower pace than nominal GDP. Thus, the credit-to-GDP ratio is expected to show a rate of 43.5 percent in 2022 (after having recorded a rate of 52.5 in 2020 and a rate of 45.0 percent in 2021). This projection also assumes the recovery of economic activity to a level above pre-pandemic levels in 2022 (growth of 22.3 percent of nominal GDP compared to 2019). In 2023, credit to the private sector would then resume its prepandemic trend, but would still continue to grow at a rate lower than that of nominal GDP. Thus, the credit-to-GDP ratio would decrease to 42.3 percent in 2023.

Credit to the private sector in domestic currency is projected to grow 5.3 percent in 2022 and 6.8 percent in 2023, taking into account the dissipation of the statistical effect of the sharp increase of credit in 2020 and the beginning of the amortization of the loans granted under the Reactiva Perú program. Thus, total credit would grow 4.5 percent in 2022 (10.8 percent without the loans of the Reactiva program) and 5.4 percent in 2023 (8.6 percent without the loans of the Reactiva program). As a result, the credit dollarization ratio would continue to decline, reaching a level of 19.5 percent at the end of 2023.

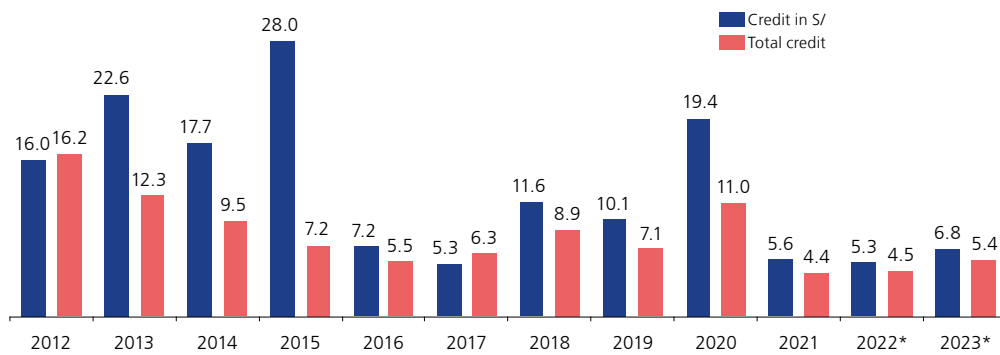
In line with the projections for credit to the private sector, the growth of liquidity is expected to recover (after remaining unchanged in 2021) and the growth of currency in circulation is expected to moderate, although both would continue to grow at lower rates than those of nominal GDP in 2022 and 2023. The ratio of liquidity to GDP would decline from 60.7 percent in 2020 to 45.9 percent in 2023 and the corresponding ratio for currency in the banking system would decrease from 10.1 percent in 2020 to 8.6 percent in 2023.

Graph 102  
RATIO CREDIT/GDP  
(%)



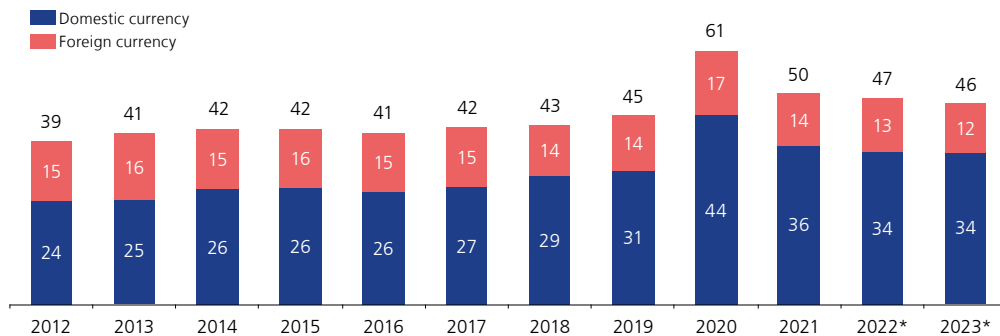
Note: calculated with constant exchange rate (December 2020).  
\* Forecast.  
Source: BCRP.

Graph 103  
CREDIT TO THE PRIVATE SECTOR  
(Annual % change)



\* Forecast.  
Source: BCRP.

Graph 104  
LIQUIDITY RATIO/GDP  
(%)



Note: calculated with constant exchange rate (December 2020).  
\* Forecast.  
Source: BCRP.

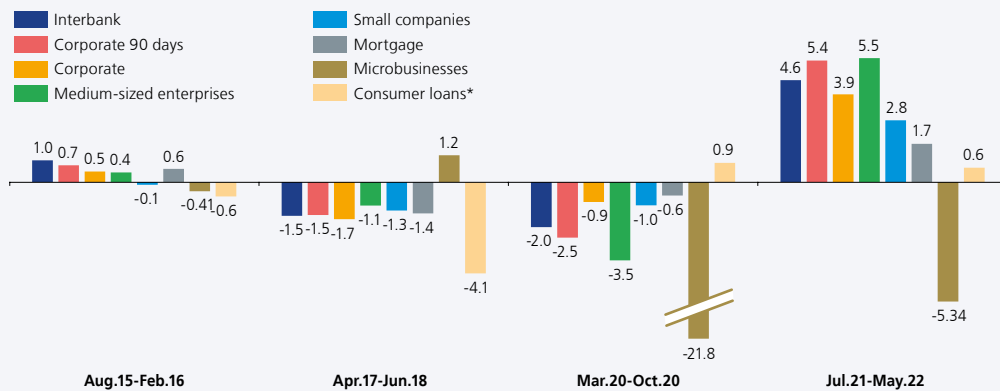




### Box 3 PASS-THROUGH EFFECT OF THE BENCHMARK INTEREST RATE TO FINANCIAL SYSTEM RATES

Establishing the benchmark interest rate as an operational monetary policy target in September 2003 within the inflation targeting scheme has proven that the BCRP’s monetary policy actions are transmitted through this variable to the rest of the interest rates in the financial system. This box provides an updated estimate of the pass-through effect considering the recent period of the pandemic, from the initial reduction of the benchmark rate to its historical minimum (0.25 percent) to the withdrawal of the monetary stimulus in recent months.

**CHANGES IN INTEREST RATES IN SOLES**  
(%)



\* In case of Consumption, the periods Mar-Oct 2020 and Jul 2021-May 2022 correspond to financial system data. In the case of Microbusinesses, all periods correspond to the Financial System. The rest of the interest rates correspond to the banks.  
Source: BCRP and SBS.

As one can see in the previous graph, taking into account the recent cycles of hikes and cuts in the benchmark interest rate, we find that the selected interest rates register a strong correlation with such movements in the policy rate, with the exception of consumer and micro-enterprise rates. However, in order to estimate the aforementioned pass-through effect, it is necessary to correctly identify the monetary policy shock, so that the reaction functions (impulse response) obtained represent the causal effect of interest. For this reason, a Factor-Augmented Autoregressive Vector (FAVAR) model<sup>18</sup> was used in previous studies (see for example, Perez (2021)<sup>19</sup>), the vectors being obtained through their main components using more than 20 interest rates, including lending and deposit rates of the banking and financial system, as well as the rates that make up the yield curve of BCRP securities and sovereign bonds in soles.

The model includes variables such as credit growth, the rate of reserve requirements and the exchange rate, as well as GDP growth and inflation. The analysis sample covers the period from September 2010 to May 2022, which takes into account the monetary stimulus measures in response to the COVID-19 health crisis. By including credit to the private sector and reserve requirements as a control variable, the possibility of a bias due to omitted variables in the estimation of the pass-

18 See Bernanke, Boivin and Elias (2005): Measuring the Effects of Monetary Policy: A Factor-Augmented Vector Autoregressive (FAVAR) Approach. The Quarterly Journal of Economics, Volume 120, Issue 1, February 2005, Pages 387–422.

19 Pérez, Fernando (2021): “Transmisión de la política monetaria a las tasas de interés del sistema financiero,” Revista Moneda, Banco Central de Reserva del Perú, No. 186, pp. 4-8.

through effect is minimized, since it takes into account the monetary impulse associated with the Reactiva Peru program, as well as the facilities for rescheduling and expanding long-term credit.

**PASSTHROUGH: BANK INTEREST RATE TO FINANCIAL SYSTEM INTEREST RATE  
12 MONTHS AHEAD <sup>1/</sup>**

(20 percent most likely interval centered on the median)

CDBCRP 3 months	(0.8-0.9-0.9)	Big companies	(1.1-1.1-1.1)
CDBCRP 6 months	(0.8-0.8-0.9)	Medium-sized enterprises	(1.6-1.6-1.7)
CDBCRP 9 month	(0.8-0.8-0.8)	Mortgage	(0.8-0.9-0.9)
CDBCRP 12 months	(0.8-0.8-0.9)	Corporate 90 days	(0.9-0.9-1)
Public Treasury Bonds 1 year	(0.9-0.9-1)	FTIPMN	(0.8-0.9-0.9)
Public Treasury Bonds 2 years	(0.7-0.8-0.9)	Passive as of 1 month	(1-1-1.1)
Public Treasury Bonds 10 years	(0.3-0.4-0.5)	Passive as of months	(1-1-1.1)
Corporate	(0.8-0.9-0.9)	Passive as of months	(1-1-1.1)

<sup>1/</sup> Orthogonal shock to the interbank interest rate in a FAVAR model for the Peruvian economy. Factors estimated through main components. Monthly data from September 2010 to May 2022. The pass-through effect is the relationship that exists between the accumulated 12-month impulse response functions of the FAVAR model. Estimated median value through a Bootstrap simulation of 2,000 replicates.

The results for the period between September 2010 and May 2022 indicate a high degree of effectiveness of monetary policy's pass-through to the rest of the interest rates of the financial system. Likewise, changes in the policy interest rate are transferred to the rest of the interest rates after 1 year in a range between 0.5 and 1.0, thus showing a pass-through effect close to 100 percent in a good part of the interest rates under study. The high pass-through in the yield curve rates stands out, especially in maturity terms of less than or equal to 2 years, with pass-throughs close to 100 percent, and in the segments of corporate rates with maturity terms of less than one year (including the corporate prime rate), with pass-throughs between 0.6 and 0.9. On the other hand, short-term deposit rates also show a high pass-through effect, reaching 100 percent after one year in most of them.

In conclusion, the transmission of monetary policy to the rest of interest rates continues to be quite effective, the pass-through being the main channel in which the effects of such actions are reflected. This not only has been reaffirmed and enhanced during the COVID-19 pandemic, together with the other complementary measures mentioned above, but also explains the effect that increases in the benchmark interest rate have today on the rest of lending and deposit interest rates.



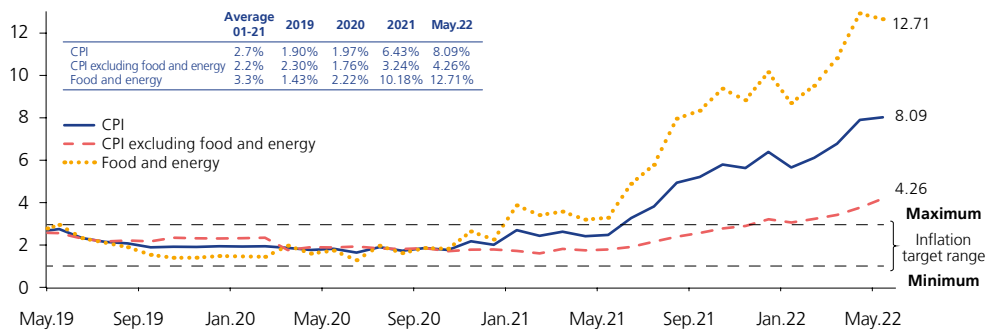


# VI. Inflation and Balance of Inflation Risks

## Recent inflation trends

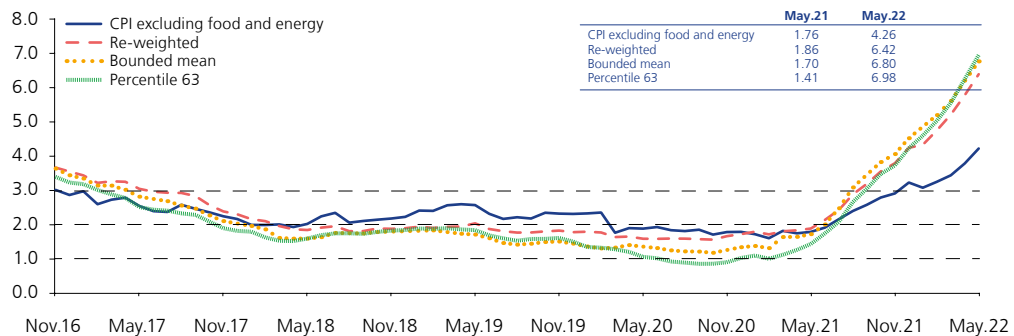
80. Year-on-year **inflation** rose to 8.09 percent in May, from 6.15 percent in February, due to the higher prices of food products with a high imported content and fuels. Inflation excluding food and energy prices rose from 3.26 to 4.26 percent, above the target range, in the same period. Moreover, the different indicators of trend inflation also show levels above the target range as well as an upward trend.

**Graph 105**  
**INFLATION**  
(Last 12-month % change)



Source: INEI and BCRP.

**Graph 106**  
**MEASUREMENTS OF THE INFLATIONARY TREND**  
(Last 12 months % change)



**Memo:**

- 1. CPI excluding food and energy:** CPI excluding food, fuel and electricity.
  - 2. Re-weighted:** Reduces the weight of items with greater volatility, considers the original weights of each item between the standard deviation of their monthly percentage changes.
  - 3. Bounded mean:** Weighted average of the percentage change of prices between the 34th and 84th percentiles.
  - 4. Percentil 63:** Corresponds to the percentage changes of the item located in the 63th percentile.
- Source: BCRP.

81. The items most closely linked to the exchange rate, to international prices, and to WPI-linked contracts contributed with 0.7 percentage points to accumulated inflation between January and May (3.21 percent). It is worth mentioning as a reference that, in December 2020, these same items contributed 0.7 percentage points to annual inflation, which registered 2.0 percent<sup>20</sup>, while in 2021 they contributed with 3.6 percentage points to annual inflation (6.4 percent).

Table 43  
**ITEMS LINKED TO THE EXCHANGE RATE, INTERNATIONAL PRICES AND TO THE WHOLESALE PRICE INDEX (WPI)**

	Weight 2009=100	% chg 12m Dec.20	Weighted contribution	% chg 12m Dec.21	Weighted contribution	Weight Dec.21=100	% chg 12m Jan.-May.22	Weighted contribution
<b>CPI</b>	<b>100.00</b>	<b>1.97</b>		<b>6.43</b>	<b>6.43</b>	<b>100.00</b>	<b>3.21</b>	
<b>Items linked to the exchange rate</b>	<b>14.06</b>	<b>1.66</b>	<b>0.21</b>	<b>4.25</b>	<b>0.54</b>	<b>14.58</b>	<b>0.92</b>	<b>0.13</b>
Appliances	1.29	-0.42	0.00	4.14	0.04	0.46	2.51	0.01
Personal care items	4.93	0.75	0.03	2.05	0.09	3.99	3.23	0.13
Cleaning articles	0.92	0.74	0.01	4.29	0.04	1.32	2.37	0.03
Medicinal products	2.08	5.53	0.11	1.61	0.03	1.62	0.89	0.01
Vehicle purchase	1.62	3.34	0.06	7.21	0.12	1.61	0.95	0.02
Spare parts and car wash	0.21	2.15	0.00	9.05	0.02	0.08	11.30	0.01
Vehicle repair	0.20	2.04	0.00	10.03	0.02	0.28	1.14	0.00
Rentals	2.41	0.50	0.01	1.76	0.03	4.45	-0.12	-0.01
Plane tickets	0.41	-3.32	-0.01	45.44	0.15	0.78	-9.32	-0.07
<b>Items linked to international prices and exchange rate</b>	<b>9.83</b>	<b>2.15</b>	<b>0.19</b>	<b>28.52</b>	<b>2.51</b>	<b>7.99</b>	<b>6.11</b>	<b>0.49</b>
<b>Linked to food commodities</b>	<b>7.03</b>	<b>4.83</b>	<b>0.30</b>	<b>21.32</b>	<b>1.35</b>	<b>5.84</b>	<b>5.76</b>	<b>0.34</b>
Chicken meat	2.96	6.63	0.17	23.40	0.61	2.70	-7.42	-0.20
Bread	1.92	0.25	0.00	15.50	0.26	1.35	9.32	0.13
Sugar	0.53	16.41	0.08	12.70	0.07	0.37	38.57	0.14
Noodles	0.54	5.60	0.03	10.39	0.06	0.32	17.15	0.06
Oils	0.52	4.09	0.02	63.49	0.29	0.38	1.76	0.01
Eggs	0.58	0.00	0.00	12.31	0.06	0.71	29.26	0.21
<b>Fuels</b>	<b>2.79</b>	<b>-4.20</b>	<b>-0.11</b>	<b>47.20</b>	<b>1.15</b>	<b>2.15</b>	<b>6.97</b>	<b>0.15</b>
Gasoline and lubricants	1.30	-11.16	-0.14	46.41	0.49	1.06	18.51	0.20
Gas	1.40	1.97	0.02	50.97	0.64	0.84	-1.59	-0.01
Other fuels	0.09	3.02	0.00	10.98	0.01	0.02	2.52	0.00
Consumption of natural gas for home	0.01	-5.26	0.00	26.98	0.00	0.23	-14.52	-0.03
<b>Items related to WPI</b>	<b>1.64</b>		<b>0.06</b>		<b>0.22</b>	<b>1.37</b>		<b>0.00</b>
Water consumption	1.64	3.03	0.06	11.57	0.22	1.37	0.00	0.00
<b>Items related to the exchange rate, WPI and price</b>	<b>2.95</b>		<b>0.24</b>		<b>0.35</b>	<b>2.62</b>		<b>0.05</b>
Electricity	2.95	6.73	0.24	9.50	0.35	2.62	1.96	0.05
<b>Total items related to the exchange rate, WPI and prices</b>	<b>28.47</b>	<b>2.58</b>	<b>0.70</b>	<b>13.31</b>	<b>3.63</b>	<b>26.56</b>	<b>2.53</b>	<b>0.67</b>
<b>Rest</b>	<b>71.54</b>	<b>1.75</b>	<b>1.27</b>	<b>3.86</b>	<b>2.81</b>	<b>73.44</b>	<b>3.46</b>	<b>2.54</b>

Source: BCRP.

82. As for the evolution of inflation during 2022, in the period from January to May, the general price level increased 3.21 percent. The CPI index excluding food and energy prices grew 1.95 percent in the same period, while the food and energy component grew at a higher rate (4.77 percent). The prices of food and beverages increased 4.8 percent, while energy prices increased 4.2 percent, reflecting a 7.0 percent rise in fuel prices and a 2.0 percent increase in electricity rates.

20 The difference between the 2020 and 2021 contributions only represents the direct effects of supply shocks affecting inflation, and not the total effect that these increases imply (including second-order or indirect effects).





Table 44  
**INFLATION**  
(% change)

	Weight	Dec.19	Dec.20	Dec.21	2022	
					Jan.-May.	May
<b>CPI</b>	<b>100.0</b>	<b>1.90</b>	<b>1.97</b>	<b>6.43</b>	<b>3.21</b>	<b>8.09</b>
<b>1. CPI excluding food and energy</b>	<b>55.3</b>	<b>2.30</b>	<b>1.76</b>	<b>3.24</b>	<b>1.95</b>	<b>4.26</b>
a. Goods	17.4	1.4	1.5	2.6	2.1	4.0
b. Services	37.9	2.9	1.9	3.6	1.9	4.4
Education	8.6	5.2	2.0	1.6	2.9	2.9
Health	1.5	1.5	1.2	2.8	1.8	3.0
Other	27.8	1.8	1.9	5.5	1.5	5.0
<b>2. Food and energy</b>	<b>44.7</b>	<b>1.43</b>	<b>2.22</b>	<b>10.18</b>	<b>4.77</b>	<b>12.71</b>
<b>a. Food and beverages</b>	<b>40.0</b>	<b>1.0</b>	<b>2.2</b>	<b>8.0</b>	<b>4.8</b>	<b>11.1</b>
Meals inside the home	24.5	0.6	2.9	9.8	5.3	12.7
Meals outside the home	15.5	1.7	1.0	4.5	4.1	8.2
<b>b. Fuel and electricity</b>	<b>4.8</b>	<b>4.3</b>	<b>2.1</b>	<b>24.4</b>	<b>4.2</b>	<b>22.3</b>
Fuel	2.1	-0.4	-4.2	47.2	7.0	34.1
Electricity	2.6	8.0	6.7	9.5	2.0	13.3

Source: BCRP.

83. At a disaggregated level, the items with the highest positive contribution to inflation in the January-May period were meals away from home, local transportation, eggs, fuel for vehicles, and other fresh fruits, while the items with the highest negative contribution to inflation were chicken, domestic air transportation, avocados, fish, and domestic ground transportation.

Table 45  
**ITEM WITH THE HIGHEST WEIGHTED CONTRIBUTION TO INFLATION: JANUARY - MAY 2022**

Positive	Weight	% chg.	Contr.	Negative	Weight	% chg.	Contr.
Meals outside the home	15.5	4.1	0.64	Chicken meat	2.7	-7.4	-0.20
Local transportation	8.1	4.2	0.34	National air transport	0.2	-24.7	-0.06
Eggs	0.7	29.3	0.21	Avocado	0.2	-18.2	-0.04
Vehicle fuels	1.1	18.5	0.20	Fresh or frozen fish maritime	0.7	-6.4	-0.04
Other fresh fruits	0.6	27.0	0.16	National ground transportation	0.3	-14.3	-0.04
Sugar and other presentations	0.4	38.6	0.14	Natural gas	0.2	-14.5	-0.03
Root or bulb vegetables	0.5	28.3	0.14	Telephone equipment	0.5	-3.3	-0.02
Personal care products	4.0	3.2	0.13	International air transport	0.5	-2.7	-0.01
Bread	1.4	9.3	0.13	Citrus	0.6	-2.3	-0.01
Potatoes	0.7	13.5	0.10	Domestic gas	0.8	-1.6	-0.01
<b>Total</b>			<b>2.19</b>	<b>Total</b>			<b>-0.48</b>

Source: BCRP.

### **Foodstuffs**

From January to May, the price increases standing out were those observed in meals consumed away from home and the higher price of foods with a high imported content, such as eggs and bread. Other products that contributed to the increase were potatoes and sugar.

The price of meals consumed outside the home, such as “restaurant menus”, increased due to the higher cost of food inputs and to the greater influx of the public (due to fewer restrictions associated with the pandemic and the return to face-to-face activities at work and school).

The increase in egg prices was due to higher production costs resulting mainly from the increase in the international price of hard yellow maize, the main poultry feed

(which has shown a cumulative variation of 34 percent in the year and 13 percent in the last twelve months). In addition, a considerable number of small producers of eggs were forced to exit the market because they were unable to meet the higher costs of production, which affected supply during the first months of the year.

In the case of bread, the cost of production also increased due to the higher price of wheat (52 percent accumulated variation in the year and 79 percent in the last twelve months).

The increase in sugar prices during the first months of the year was related to the technical stoppages of several sugar companies, to lower sugarcane yields due to weather factors (lower temperatures in February on the northern coast), and lower fertilizer and pesticide application. This was compounded by the rise in international prices (12 percent in the last twelve months), which limited exports. In addition, there was a higher increase in the price of sugar during the month of April which was associated with disruptions in road traffic due to the strike of cargo transporters (from the end of March to the first week of April). Subsequently, the price reversal was delayed due to the lower commercial movement in April, in view of expectations that the VAT for some important foodstuffs of the basic food basket would be eliminated as from May.

The price of potatoes increased, mainly in January and February, because the alteration of the rainfall pattern affected harvests in the central highlands. This was compounded by higher production costs due to higher fertilizer and pesticide prices, which led to a decrease in plantings in regions such as Huánuco. Later in May, lower temperature anomalies in the central highlands and the normalization of rainfall contributed to an increase in harvests in Junín and Ayacucho, which offset the lower participation of Huánuco.

On the other hand, the price of chicken meat was among the products that decreased in price, reflecting mainly the price reductions recorded in January and February. During this period, producers opted to lower the price of chicken due to lower demand after the end of the year celebrations. In addition, there was also a greater supply of hydro-biological species, such as bonito and jack mackerel. In March, the price of chicken increased due to a lower level of supply than required by demand, in a context of higher production costs (mainly due to the increase in the international price of hard yellow maize). Another factor that played a role was the end of the industrial fishing season for jack mackerel and bonito. In May, the price of chicken meat fell again, due to the need for poultry companies to increase sales, which were affected in April by the strike of cargo transporters.

## **Energy**

The price of vehicle fuels rose 18.5 percent, reflecting the increase in local refineries' ex-plant prices in a context of rising international oil prices. The price of WTI oil rose from US\$ 72 per barrel in December 2021 to US\$ 102 in April and US\$ 109 in May, reaching an increase of 67 percent year-on-year. In the January-May period, at the consumer price level there was an average increase of 27 percent in the prices of 95







and 97 octane gasohol, as these products are not included in the Fuel Price Stabilization Fund (FPSF). On the other hand, the prices of 90 octane gasohol and vehicle diesel oil, which are included in the FPSF, had a lower variation (19 and 1 percent, respectively). Similarly, the price of LPG for vehicles, which is another product included in the FPSF, decreased 7 percent due to the reduction of the upper and lower limits of the price band.

### Services

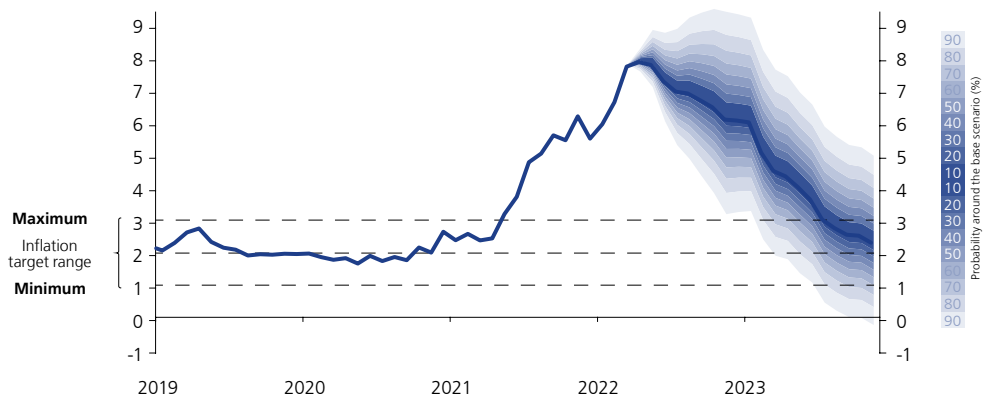
Urban transportation rates have registered successive increases since March as a result of higher fuel prices and higher tolls. In May, bus and minibus fares (including the fares of complementary corridor buses) rose 3.8 percent and *combi* fares rose 3.5 percent.

### Forecasts

- 84. BCRP adopts monetary policy actions in response to inflation forecasts and projections of inflation determinants, taking into account all available macroeconomic and financial information. Key determinants of inflation include inflation expectations, imported inflation (which comprises the effect of the exchange rate), and inflationary pressures on both demand and supply.

Based on the information available, and taking into account the gradual recovery of economic activity and the greater persistence of the higher international prices of energy and food, year-on-year inflation is projected to return to the target range in by the end of the forecast horizon. This projection assumes the reversal of the effect of transitory factors on the inflation rate (exchange rate, international fuel and grain prices) in a context in which the output gap will gradually close, the gradual withdrawal of monetary stimulus continues, and inflation expectations return to the target range in the following months.

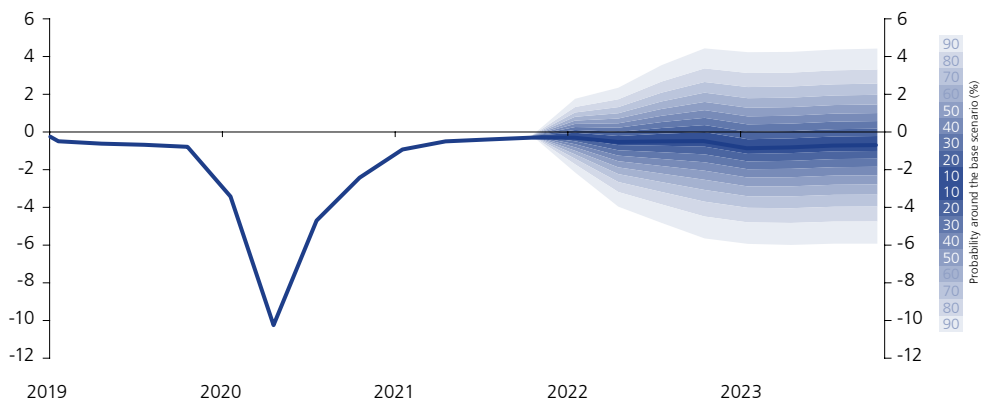
Graph 107  
**INFLATION FORECAST: 2022 - 2023**  
(Last 12-month % change)



Source: BCRP.

- 85. A recovery of the demand gap is foreseen for 2022 and 2023, supported by the high prices of our exports, along with a recovery of business confidence.

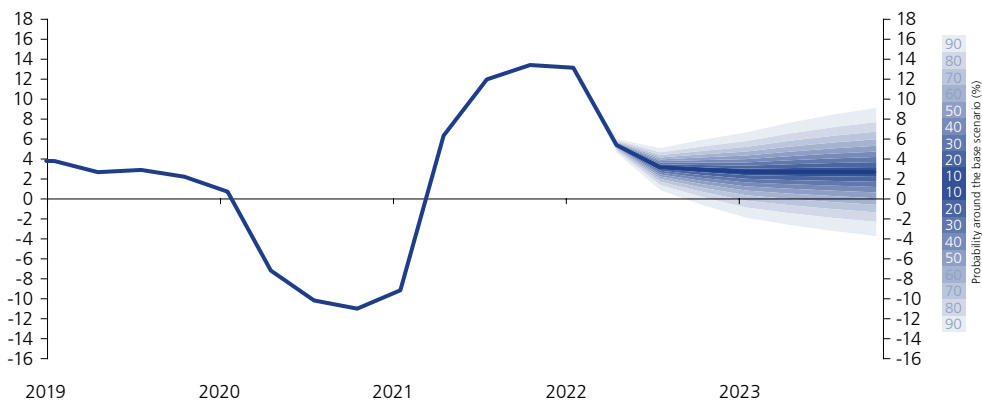
Graph 108  
**DEMAND GAP FORECAST: 2022 - 2023**  
 (in percentage of potential output, quarterly average)



Source: BCRP.

- 86. The recovery of the demand gap, together with the normalization of economic activity, point to a gradual but sustainable recovery in the level of economic activity.

Graph 109  
**GDP GROWTH FORECAST: 2022 - 2023**  
 (Last 12-month % change)



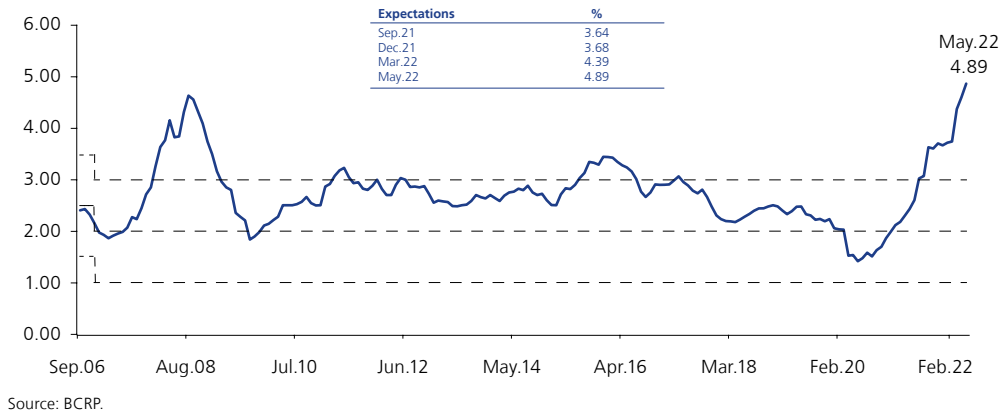
Source: BCRP.

- 87. Inflation expectations, calculated on the basis of surveys conducted among representatives of financial entities and non-financial firms, as well as among economic analysts, reveal an expected inflation rate for 2022 that ranges between 5.5 and 6.0 percent and an expected inflation rate for 2023 that ranges between 3.55 and 4.0 percent. Moreover, expectations of inflation in twelve months rose to 4.89 percent in May 2022, standing temporarily above the upper limit of the inflation target range.





**Graph 110**  
**EXPECTATIONS OF INFLATION FOR THE NEXT YEAR**  
(% points)



**Table 46**  
**SURVEY ON INFLATION EXPECTATIONS**  
(%)

	IR Sep.21	IR Dec.21	IR Mar.22	IR Jun.22*
<b>Financial entities</b>				
2022	3.00	3.50	3.80	5.50
2023		3.00	3.00	3.55
<b>Economic analysts</b>				
2022	2.55	3.55	4.00	6.00
2023		2.80	3.00	3.80
<b>Non-financial firms</b>				
2022	3.00	3.21	4.00	5.80
2023		3.00	3.20	4.00

\* Survey conducted as of May 31.  
Source: BCRP.

88. Another determinant of inflation is the imported component, which combines the effect of the international prices of the products that our country imports –e.g. crude oil, wheat, soybean, and maize– with the effect of the exchange rate variation (U.S. dollar/sol exchange rate).

Average import prices are projected to increase by 15.3 percent in 2022, mainly due to the increase in the price of crude oil and some foodstuffs, such as maize, wheat, and soybean. On the other hand, a 1.6 percent decrease in prices is expected in 2023, basically due to a partial reversal in the prices of these products. Moreover, the survey responses about the exchange rate expected in May show a level between S/ 3.80 and S/ 3.85 per dollar in 2022 and a level between S/ 3.80 and S/ 3.90 per dollar in 2023.

**Table 47**  
**SURVEY ON MACROECONOMIC EXPECTATIONS: EXCHANGE RATE**  
(S/ per US\$)

	IR Sep.21	IR Dec.21	IR Mar.22	IR Jun.22*
<b>Financial entities</b>				
2022	4.00	4.12	3.90	3.80
2023		4.20	3.85	3.80
<b>Economic analysts</b>				
2022	4.25	4.20	3.90	3.85
2023		4.25	3.93	3.90
<b>Non-financial firms</b>				
2022	4.00	4.10	3.90	3.80
2023		4.01	3.90	3.86

\* Survey conducted as of May 31.  
Source: BCRP.

The aforementioned effects are foreseen to contribute to maintain inflation around the center of the target range, even though the output gap is expected to register negative values during the projection horizon.

### Balance of Risks of the Inflation Forecast

89. The upward bias in the balance of risks of the inflation projection is maintained, based on the following shocks:

- **Domestic demand shocks**

If consumer and business confidence do not recover, this could result in lower growth of private sector consumption and investment. Likewise, delays in the execution of public spending, especially investment, could also reduce the speed of recovery of economic activity. The short and medium-term impacts of these episodes could generate a contraction in domestic demand and negatively affect inflation through a decrease in the output gap.

- **External demand shocks**

The persistence of inflation worldwide and its possible impact on inflation expectations could lead to a more accelerated withdrawal of monetary stimulus in the advanced economies, contracting demand at the global level. On the other hand, uncertainty about world economic growth, aggravated by geopolitical tensions in Eastern Europe, could further reduce external demand. These developments are compounded by the possibility of a resurgence of infection waves due to the emergence of new strains of COVID-19 or due to other diseases.

- **Food and energy price shocks**

Despite the current increase in the international prices of food and fuel, there are still risks of further increases in the future due to production and supply problems generated by the economic recovery from the current health crisis. These risks would be exacerbated by recent geopolitical tensions in Eastern Europe, which would translate into higher fuel and food prices and higher transportation costs.

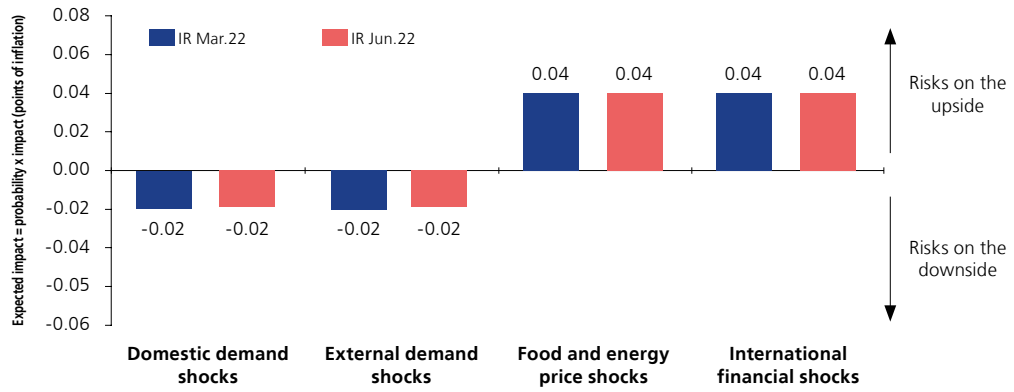
- **Financial shocks**

The faster pace of the early withdrawal of monetary stimulus in advanced economies, political uncertainty and its impact on economic growth, and growing public and private indebtedness (especially in the emerging economies) could generate episodes of capital outflows. Together with volatility in financial markets, these factors could generate upward pressure on the exchange rate and, therefore, higher inflation over the forecast horizon.





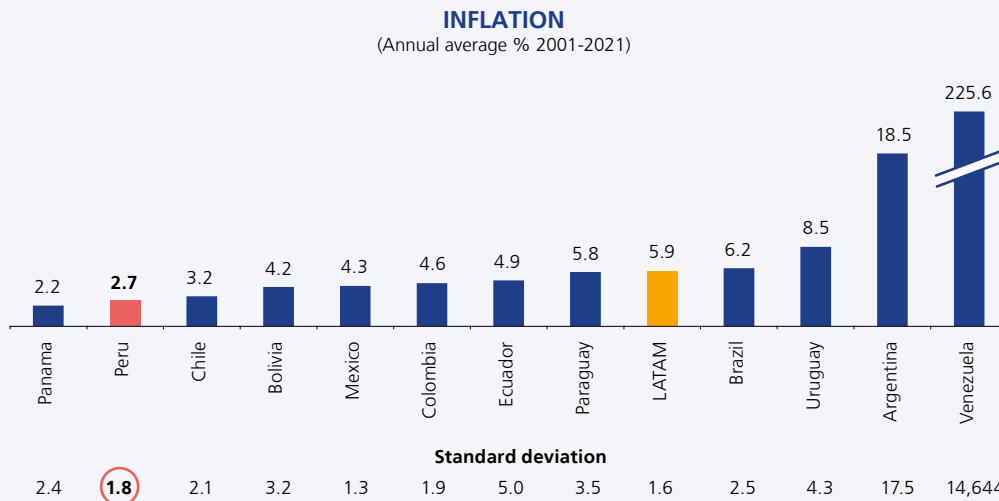
Graph 111  
**BALANCE OF RISKS AGAINST THE BASE SCENARIO**



Source: BCRP.

**Box 4**  
**TWENTY YEARS PUBLISHING INFLATION REPORTS**

The Central Reserve Bank of Peru (BCRP) adopted Inflation Targeting (IT) in 2002 to comply with its constitutional mandate of preserving monetary stability. As a result of this, Peru's average inflation rate in this century has been 2.7 percent, the lowest inflation rate registered among the countries in the region, as well as one of the least volatile, with the second standard deviation after Mexico.



Source: WEO (April 2022) – IMF.

Under the inflation targeting scheme, macroeconomic projections allow the BCRP to determine the current state and likely future paths of inflation, economic activity and various monetary policy actions. Because these projections are of interest to the general public, BCRP has published them for the last 20 years in the Inflation Reports as part of its communication strategy.

As a key communication element on the future outlook for inflation and its balance of risks, inflation projections are reported on the basis of a fan chart<sup>21</sup>, i.e., a graph representing the distribution of the inflation projection over the projection horizon. This chart provides all the information necessary to probabilistically characterize the inflation projection on two axes: the “projection horizon” and the “possible inflation values”. Its central line is the distribution mode of possible projected paths for inflation (called the “baseline projection”).

Each layer of the fan (each shade or shadowed area) reveals how the projection ranges for inflation evolve over time and, at the same time, how the probability that inflation registers the values associated with those ranges is changing (Winkelried 2012 and Vega 2003). Each fan chart has a projection horizon of up to 24 months forward. Over the last 20 years (2002-2022), BCRP has published 72 fan charts.

The previous graph shows the fan chart published in the December 2021 Inflation Report with respect to actual inflation as an example. When an unexpected shock occurs, inflation projections

21 The term Fan Chart was first used by the Bank of England. See Britton et al. (1998). This tool became very popular as a projection instrument. A more extensive explanation on its use in Peru is provided by Vega (2003) and Winkelried (2012).





improve as information about the event is acquired. For example, this fan chart contains within its spectrum the inflation outlook through May 2022<sup>22</sup>.

### FAN CHARTS: INFLATION REPORT DECEMBER 2021



Memo: The graph shows the fan chart published in the Inflation Report December 2021 and the inflation executed as of May 2022 (blue line).

The first part of this box evaluates the projections presented in the Inflation Reports. First, the predictability of the baseline scenario (the mode or most likely scenario of each published fan chart) is shown by calculating the Root Mean Square Error (RMSE<sup>23</sup>) of the projection, and then the accuracy of the projections is characterized by the projection bias<sup>24</sup>. In each case, we show: i) the performance of the baseline scenario inflation projections individually, when compared to the inflation realization at different fixed projection horizons of the fan chart; and ii) we compare the relative performance of the BCRP's projections with respect to other experts (professional forecasters) by comparing the year-end inflation realization with their inflation forecasts for a fixed date at different projection

22 This example shows that the projection window of the fan chart is fixed, while the end date of the projection is variable, and changes throughout the year with the publication date of the Inflation Report. This way of presenting the projections differs from those made by experts based on an inflation forecast for the end of the current year and the following years. In other words, experts have a window with a variable projection horizon, but with a fixed projection end date, or a fixed projection event, which does not change throughout the year.

23 The Root Mean Square Error (RMSE) 
$$\sqrt{\sum_{t=1}^N \frac{(x_{t+h} - x_{t+h/t}^f)^2}{N}}$$
 is a measure of how different the inflation projection,  $x_{t+h/t}^f$ , was on average from the actual data,  $x_{t+h}$ , for a given projection horizon,  $h$ , and where negative or positive differences are normalized using a squared power. Low RMSE values indicate lower prediction errors.

24 The projection bias 
$$\sum_{t=1}^N \frac{(x_{t+h} - x_{t+h/t}^f)}{N}$$
 is a measure of how different the inflation projection,  $x_{t+h/t}^f$ , was on average from the actual data,  $x_{t+h}$ , for a given projection horizon,  $h$ , and assesses whether underestimates (when the actual data is higher than the projected data) or overestimates (when the actual data is lower than the projected data) are made.

horizons<sup>25</sup>. The second part of this box provides an evaluation of the annual GDP growth forecasts published by the BCRP over the last 20 years in its Inflation Reports and compared with the forecasts made by other experts.

In general, the expert projections we use include the projections of professional forecasters collected in *Consensus Forecasts* and the expectations of economic analysts, financial companies and non-financial companies collected by BCRP on a monthly basis through surveys, and similar forecasts made by the International Monetary Fund (IMF) through the projections published in its World Economic Outlook (WEO), as well as the projection for GDP growth of the Ministry of Economy and Finance (MEF) included in the publication of the Multiannual Macroeconomic Framework (MMM). The horizon over which the event is forecast is taken into account in this comparison with expert projections. For example, fixed event projections are used for the different types of forecasts analyzed, since inflation or GDP growth rates are projected for calendar years, which can be either the current year, the next year or the year after the next.

Two cases are discussed for the evaluation of the forecasts: in the first case, the events that are associated with extreme shocks are removed, as do Celasum et al. (2021), who carried out an evaluation of IMF forecasts. In this box, the removal of extreme observations includes the years 2008, 2009, 2020 and 2021<sup>26</sup>, which are years associated with the period of financial crisis and the COVID-19 pandemic period. In the second case, the total sample is considered.

### Evaluation of inflation forecasts: Accuracy

The RMSE is a measure of how different the inflation projection turned out to be from the actual data on average, and where negative or positive differences are normalized using a square power. A RMSE value of zero indicates perfect predictive power, while higher values indicate projection errors and, therefore, lower predictive power. In order to evaluate the predictive power of the base scenario of the fan chart, the RMSE is calculated from the information projected in the inflation reports between 2002 and December 2021, as well as from the executed inflation data for four projection horizons in each inflation report (3, 6, 9 and 12 months)<sup>27</sup>.

The following figure shows the calculation of the average RMSE for different projection horizons (3, 6, 9 and 12 months) and different episodes that include the full sample of Inflation Reports from 2002 to 2021, as well as the full sample subtracting extreme events.

25 In the case of inflation projections, the projections made in March, June, September and December of each year with respect to year-end inflation for the current year are considered.

26 In the case of inflation projections, the sample without extreme values does not consider the projections made between September 2007 and September 2009 and from March 2020 to December 2021.

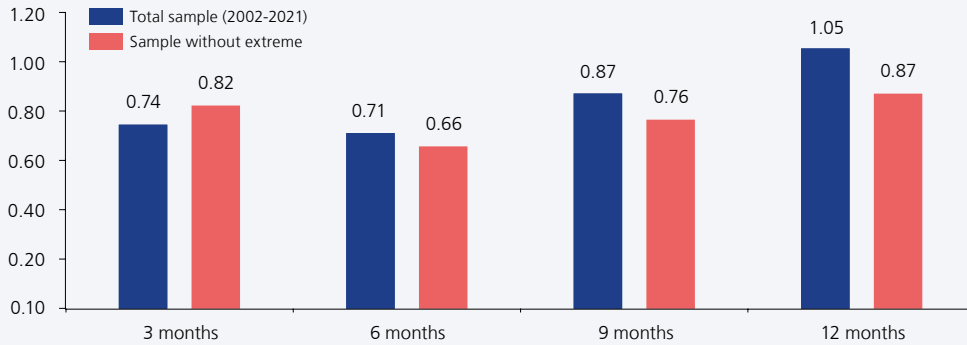
27 Thus, each Inflation Report will consider four RMSEs based on the calculation of projection windows, which are expanded as the projection horizons increase. For example, the 3-month RMSE is calculated from the predicted and official data for the next 3 months of the projection period. The results are then averaged for each projection horizon to assess the accuracy of the predictions as the projection window is extended.







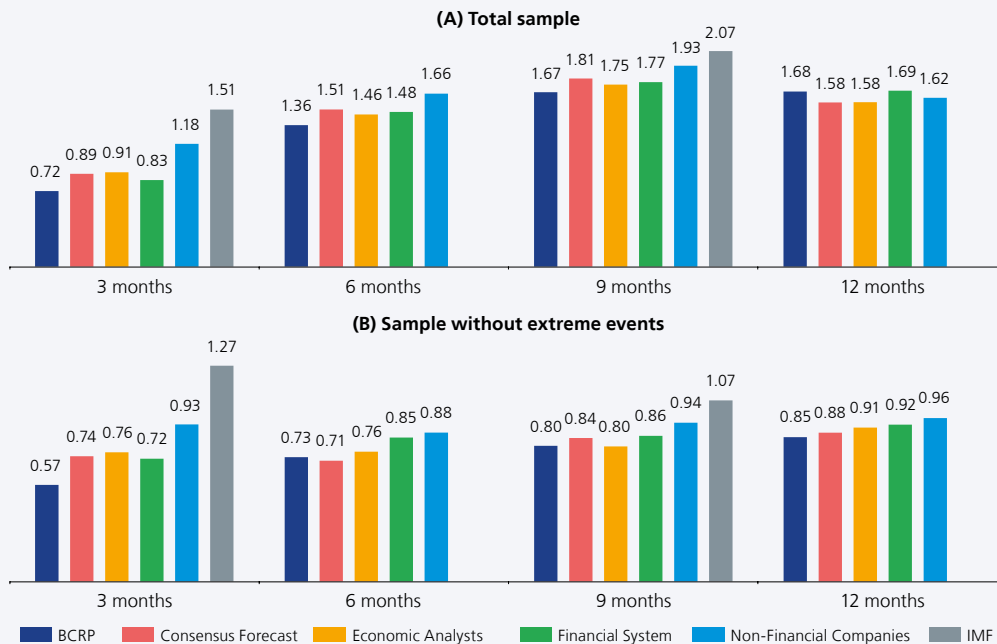
### ROOT MEAN SQUARE ERROR (RMSE) FOR INFLATION FORECAST OF THE BCRP



Note: The Root Mean Square Error (RMSE) measures how different, on average, the inflation forecast turned out with respect to the executed data, and where negative or positive differences are normalized using a squared. Low RMSE values indicate lower prediction errors.  $h = 3, 6, 9, 12$  months, are the different fixed forecast horizons. The extreme events consider the periods between 2008 and 2009 due to the international financial crisis and the period between 2020 and 2021 corresponding to the COVID-19 pandemic.

As can be seen, the longer the projection horizon, the lower the ability to forecast inflation (in other words, the higher the average RMSE). This forecasting capacity is lower in episodes of crisis, such as the international financial crisis and the COVID-19 pandemic, which are characterized by a significant increase in macroeconomic uncertainty. It is in the latter episode that greater uncertainty has been generated regarding the persistence of positive shocks to inflation.

### ROOT MEAN SQUARE ERROR (RMSE) FOR INFLATION FORECASTS OF THE BCRP AND EXPERTS



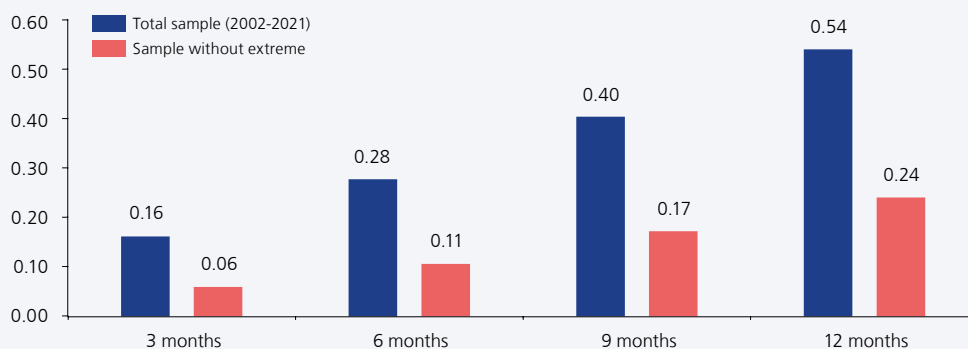
Memo: The predictive capacity of Experts is shown (Economic Analysts, Financial System, Non-Financial Companies, Consensus Forecast, and International Monetary Fund (IMF)) and the BCRP. Computation based on forecasts made in March, June, September and December of each year with respect to future year-end inflation (of the current year or next year).  $h = 3, 6, 9, 12$  months, are the different horizons of forecast, and correspond to forecasts made in March, June, September and December of each year, respectively. The forecasts of economic analysts, companies in the financial system and non-financial companies come from the median of the Survey of Expectations Macroeconomics of the BCRP. Consensus Forecast projections correspond to the average forecast reported by the magazine. Forecasts of the BCRP correspond to those reported in the base scenario of the fan chart. IMF forecasts correspond to the projections of the bi-annual WEO reports. IMF forecasts in March and September correspond to their projections published in the WEO Spring reports and WEO Fall, respectively. The Root Mean Square Error (RMSE) is a measure of how different the forecast was on average of inflation carried out 12 months before with respect to the executed data, and where the negative or positive differences are normalized using a square. Low RMSE values indicate lower prediction errors. The sample without extreme events does not consider the periods associated with the international financial crisis (2007M9 – 2009M9) and the Pandemic (2020M3 – 2021M12).

The loss of inflation predictability in extreme events also affects the projections of other experts<sup>28</sup>. As shown in the following graph, the greater uncertainty that characterizes extreme events is also reflected in greater losses in the predictability of economic analysts, financial companies, non-financial companies, experts from *Consensus Forecast* and the International Monetary Fund.

### Evaluation of the inflation forecasts: Bias

A comparative exercise is also carried out regarding the average biases in the inflation forecasts for the total projection sample and the sample without extreme events for four projection horizons<sup>29</sup>. The BCRP forecasts show a moderate positive average bias for the four projection horizons considered, particularly in the sample without extreme events. This behavior reflects the difficulties in predicting such events.

**AVERAGE BIAS FOR BCRP INFLATION FORECASTS**



Memo: The forecast bias is a measure of how different, on average, the inflation forecast turned out with respect to the executed data, and where it is evaluated if underestimates are made (when the executed is greater than the projected) or overestimates (the case in which the executed is less than projected).  $h = 3, 6, 9, 12$  months, are the different forecast horizons. Extreme events consider the periods between 2008 and 2009 due to the International Financial Crisis and the period between 2020 and 2021 corresponding to the COVID-19 pandemic.

### Evaluation based on the upper and lower bounds of the fan charts

In order to analyze the predictability of the inflation projections for a given horizon, we compare the evolution of the upper and lower bounds<sup>30</sup> of the inflation projection 12 months ahead of its publication date with the actual inflation rate. The comparison shows that there have been 5 episodes in the 20-year period in which actual inflation exceeded the forecasts presented in the fan charts. In all these episodes the positive shocks to inflation were persistent and caused by strong unexpected increases in food and energy prices. Lasting 15 months so far, the latest episode has been the most persistent and shows a maximum deviation of April 2022 run rate inflation of 3.68 percent above the upper bound considered in the March 2021 Inflation Report.

28 To make the fan chart projections consistent with those of the experts, the RECM is calculated for a fixed year-end projection of the current year or the next year, at varying projection horizons of 3 to 12 months before year-end.

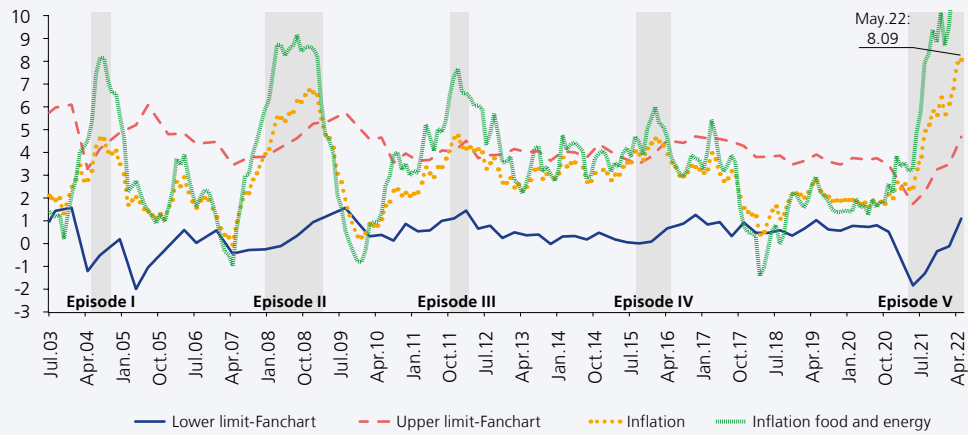
29 The exercise consists of calculating the projection bias by generating a projection window, whose end point changes according to the horizon considered for each of the inflation reports. In this way, four biases per inflation report are calculated and then averaged into an average bias measure for each forecast horizon.

30 The 95th and 5th percentiles of the inflation projection distribution presented in the fan charts published in the Inflation Reports.





### INFLATION FORECAST UPPER AND LOWER LIMIT 12 PERIODS AHEAD



	Period	Duration (months)	Maximum Inflation	Maximum Deviation
Episode I	jun-04/ago-04	3	4.61 (jul-04)	0.46 (jul-04)
Episode II	dic-07/feb-09	15	6.75 (nov-08)	1.64 (aug-08)
Episode III	oct-11/dic-11	3	4.74 (dec-11)	0.61 (nov-11)
Episode IV	ago-15/feb-16	7	4.61 (jan-16)	0.61 (jan-16)
Episode V	mar-21/may-22	15	8.09 (may-22)	3.68 (apr-22)

Note: An episode, denoted by E, is made up of those inflation data for consecutive dates that exceed the upper limit of any of the fan charts published up to 1 year ago. For example, from the beginning of the sample, the first inflation figure to be above the upper limit of some of the fan charts published a year ago was January 2004. This pattern was repeated until July 2004, the date where the first episode "E1" ends.

### GDP projection in the Inflation Reports: Evaluation of comparative predictive performance

Peru's GDP grew 4.4 percent between 2001-2021, one of the highest growth rates among countries in the region.



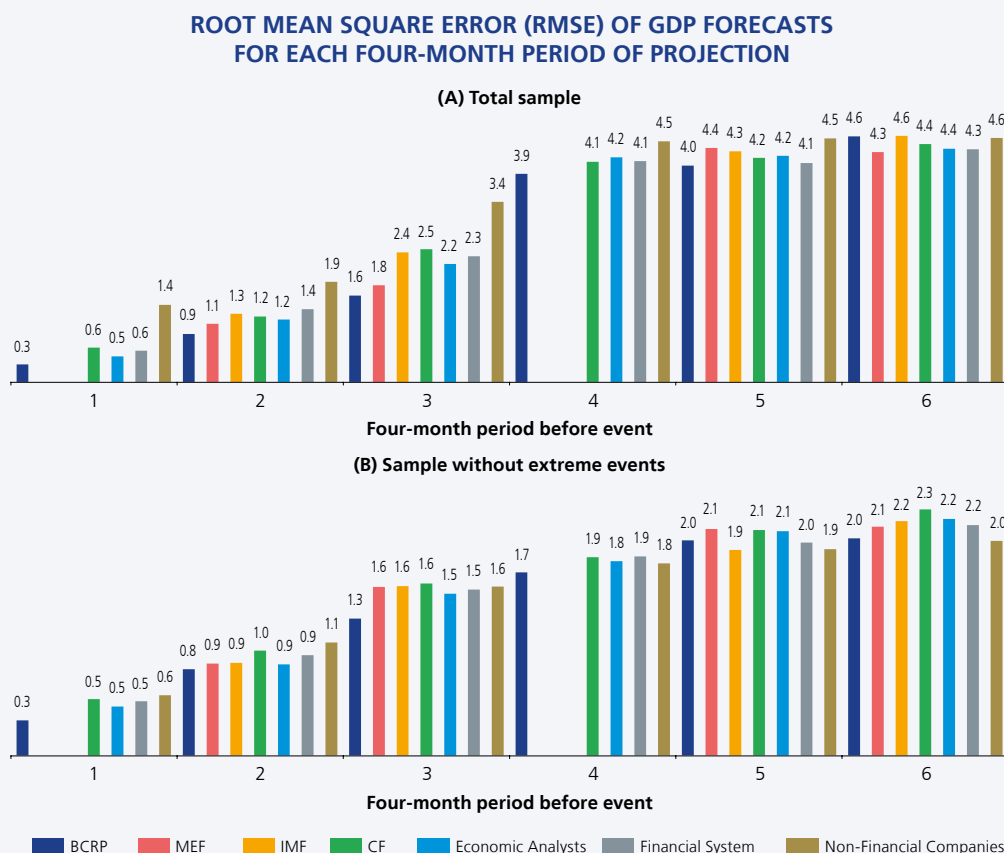
Source: WEO (April 2022) – IMF.

Unlike inflation data, GDP growth data is published with a lag of some months, and therefore the assessment of its predictive capacity must take into account the time lag. Since INEI publishes in February of each year the GDP growth rate at the end of the previous year, this month is considered

as the date of the event. Moreover, it is useful to group the forecasts together for their comparison, because they are not published every month on a regular basis<sup>31</sup>. The first group is made up of the shortest-term horizon forecasts, for which BCRP, Consensus Forecasts and the expectations collected by the BCRP have data. This horizon is made up of the forecasts for November, December, January and February<sup>32</sup>. The next horizon comprises the forecasts for each July, August, September and October, months in which the IMF and MEF forecasts are updated, as well as most of the Inflation Reports close to September. The third horizon within the current year comprises the months of March through June and is where the first annual versions of the MEF's Multi-Year Macroeconomic Framework (MMF) and the IMF's World Economic Outlook (WEO) are produced. It typically contains two inflation reports.

### Evaluation of GDP forecasts: Accuracy

The graph below shows the behavior of RMSEs, both in the period comprising the entire sample (panel A) and in periods excluding extreme episodes (panel B).



31 The BCRP Inflation Report is usually published in the months of March, June, September and December, although the report has also been published in other months. The MMF, which is normally published in April or May of each year, is usually updated in August, while the IMF's WEO is usually published in April each year and its projections are updated either in September or October. On the other hand, the projections of Consensus Forecasts and the expectations of analysts, financial firms and non-financial firms are published on a monthly basis.

32 BCRP performs the backcasting/nowcasting process of the previous year's GDP growth data in December and January.





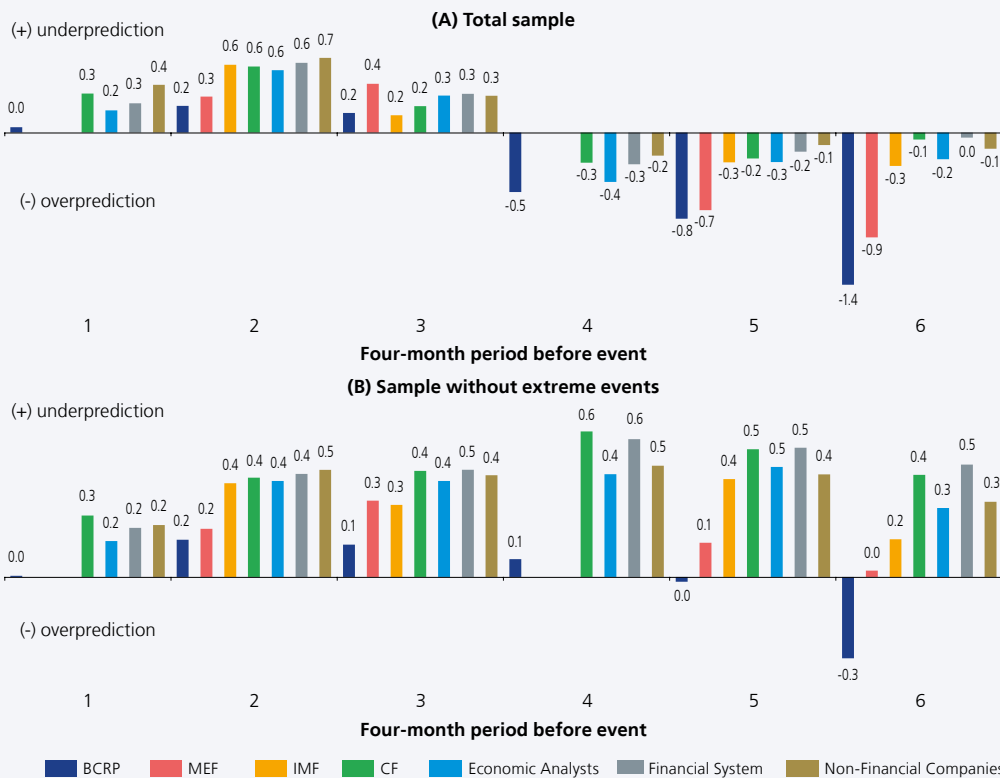
As we can see, the RMSEs associated with the BCRP predictions for 2 quarters before the event are below 1 in both panels of the graph. A substantial difference is observed in the third quarter before the event in panel A. Moreover, it is worth highlighting that BCRP forecasts have a higher accuracy (RMSE of 1.3 versus 1.5-1.6 of the other forecasters).

We can also see from the previous graph that, as of quarter 5, the RMSEs are practically equal to the standard deviation of GDP growth (2.2 without extreme scenarios and 4.2 with extreme scenarios). This indicates that, from that horizon onwards, the information processed by forecasters is limited in terms of reducing uncertainty beyond the unconditional standard deviation of output growth.

**Evaluation of GDP forecasts: Bias**

The following chart shows the forecast biases both in the case where the whole sample is considered (panel A) and in the case that extreme episodes such as the International Financial Crisis or the COVID-19 shock are excluded (panel B).

**GDP PREDICTION BIAS FOR EACH FOUR-MONTH PERIOD BEFORE EACH EVENT**



It is clear from the graph that, when outlier years are not considered, all seven forecasters tend to underestimate output growth. In this case, the BCRP projections have the smallest bias. When outlier years are included, the underestimation only occurs in the short term horizons since the bias is towards overestimation in the long term. These results coincide with those obtained by Celasum et al. (2021).

## Final Comments

The monthly year-on-year inflation projections and their corresponding balance of risks have been published over twenty years in the Inflation Report, where they are quantified in the so-called fan chart. The accuracy of these projections is of utmost importance for the communication of monetary policy measures and their impact on the formation of inflation expectations. The international financial crisis and the crisis caused by the COVID-19 pandemic have been periods characterized by a significant increase in macroeconomic uncertainty and volatility at the global level. This situation has made inflation forecasting more difficult, which has been reflected in higher forecast errors compared to normal periods. Nonetheless, these deviations are not systematic and, as in the past, are the result of unexpected supply shocks in food and energy prices, which are not under the influence of the BCRP's actions.

As for the comparative performance analysis of the annual GDP growth forecasts published by BCRP over the last 20 years, it can be inferred that these forecasts show characteristics compatible with good forecasting practices. First, forecasts up to a horizon of 6 quarters (2 years) are statistically unbiased and, therefore, there is no evidence of overestimation or underestimation. Secondly, the prediction errors are relatively small over the horizons up to quarter 5. Thus, the calendar year forecasts made between March and June stand out, as these forecasts have historically been more accurate than the ones made by other forecasters.

It should be pointed out that the extreme scenarios show an underestimation of inflation and an overestimation of output growth, mainly at time horizons exceeding the year. This is an indication that supply shock factors prevail in these scenarios.

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Celasun, O., J. Lee, M. Mrkaic y A. Timmermann (2021), "An Evaluation of World Economic Outlook Growth Forecasts, 2004–17", IMF Working Paper 2021-216, August.

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Winkelried, D. 2012 "¿Qué es un fan chart?", Banco Central de Reserva del Perú, Revista Moneda 151.





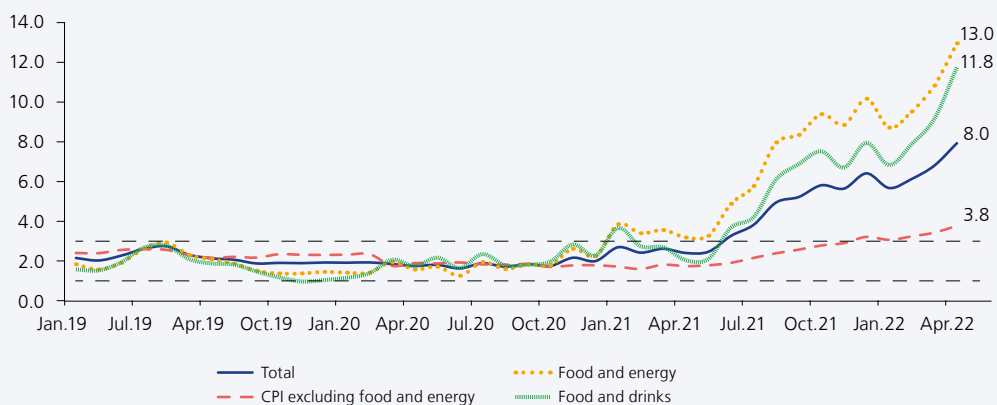
### Box 5 IMPACT OF FOOD AND FUEL PRICES ON THE WELFARE OF PERUVIAN HOUSEHOLDS

The impact of food and fuel prices on Peruvian households' welfare is discussed in this box, understanding this as the ability of Peruvian families to satisfy their needs. The economic policy responses of Peru and other countries to protect households from price increases is also described herein.

#### Price evolution and monetary poverty

Over the last year, Peru has been experiencing a period of high inflationary pressures. Total inflation has been above the upper limit of the 3.0 percent target range since June 2021, mainly due to the sharp increase in food and energy prices in an international environment of supply frictions resulting from logistical problems, droughts, and the impact of the war in Ukraine.

PERU: MONTHLY INFLATION BY ITEM, 2019-2022  
(%)



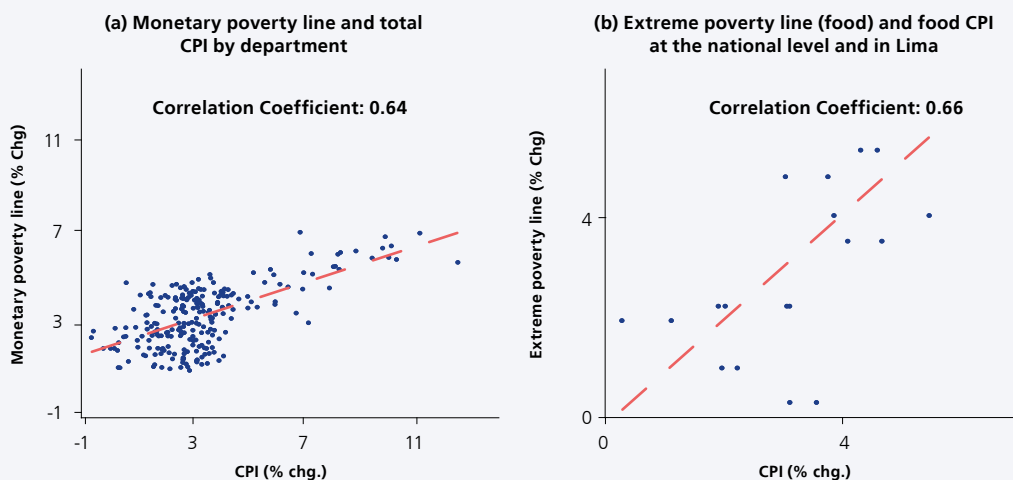
Source: BCRP.

By definition, the inflationary process increases the cost of goods and services available to Peruvian households. This has a direct impact on the calculation of the monetary poverty line, which measures the level of per capita expenditure that Peruvian families must meet in order to be considered non-poor. The poverty line is the sum of: (i) a food component, defined on the basis of a food basket linked to the caloric intake necessary to carry out basic activities, and (ii) a non-food component, defined as the value of a basket of basic goods and services in the areas of clothing and footwear, housing rent, fuel, furniture and household goods, health, transportation, communications, recreation, education, culture, and other goods and services. The expenditure necessary to cover the food component is used as a reference to measure extreme poverty.

Evidently, the higher total inflation and the higher increase in food prices, the higher will monetary poverty and extreme poverty lines be, respectively, a close association existing between these variables, as shown in the following graph.

**PERU: POVERTY AND INFLATION LINE, 2012-2021**

(%)



Note: The CPIs of panel (a) correspond to the price level of the main cities of each department (in most cases, it is the capital, with the exception of Ancash, where Chimbote is taken, and San Martín, where take Tarapoto). Callao and Lima appear together. For its part, panel (b) includes the variation in the extreme poverty line and the food CPI for Peru as a whole and for Lima (including Callao) in the same graph.  
Source: INEI – ENAHO and BCRP.

Thus, a high inflationary process could reduce the possibility of a household being classified as non-poor, since its per capita expenditure would have to adjust at the same rate as the nominal variation in the prices of the basic food basket. It is worth noting in this regard that a first vulnerability of Peruvian households is that lower spending families are more sensitive to changes in food prices. For example, in 2021, while households in the top quintile of per capita expenditure (i.e., those with the highest expenditure) allocated 31 out of every 100 soles of their expenditure to food, those in the bottom two quintiles allocated more than 50 out of every 100 soles<sup>33</sup>.

**PERU: STRUCTURE OF MONTHLY PER CAPITA EXPENDITURE ACCORDING TO QUINTILES, 2021**

(Constant soles of 2021 and prices of Metropolitan Lima)

Quintiles	Foods	Dress and footwear	Housing*	Furniture and fixtures	Health	Transportation	Recreation	Other Expenses	Total
<b>Household Expenditure Structure (Soles)</b>									
I	152	11	49	13	15	23	12	11	285
II	230	16	83	18	30	42	19	18	457
III	291	21	120	24	49	63	30	25	623
IV	353	25	184	31	79	93	47	33	845
V	475	43	408	66	195	185	117	64	1552
<b>Household Expenditure Structure (%)</b>									
I	53.2	3.9	17.0	4.5	5.4	8.0	4.1	3.9	100.0
II	50.3	3.6	18.2	4.0	6.6	9.2	4.1	4.0	100.0
III	46.8	3.3	19.2	3.9	7.9	10.1	4.9	4.1	100.0
IV	41.7	3.0	21.8	3.7	9.3	11.0	5.5	3.9	100.0
V	30.6	2.8	26.3	4.2	12.5	11.9	7.5	4.1	100.0

\* Rental of housing and fuel.

Note: Quintiles are calculated based on monthly per capita household spending.

Source: INEI-ENAHO.

33 In 2021, all families in the bottom quintile of monthly per capita expenditure were considered to live in poverty.



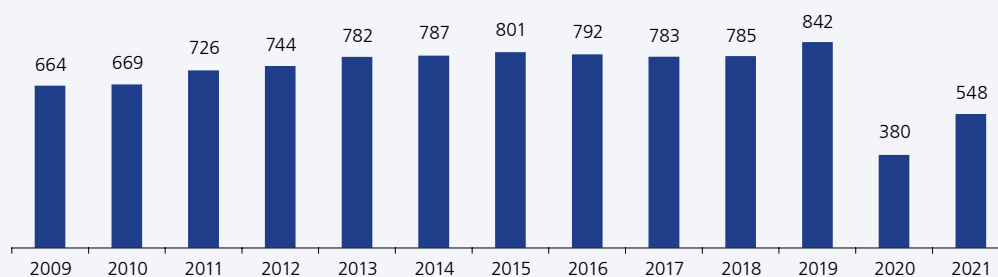




A second vulnerability is related to income recovery. When we analyze the evolution of labor income per recipient for households in the bottom two income quintiles in urban areas, it is observed that households with the least resources experienced a significant contraction in income during the pandemic, and that their income is substantially below 2019 levels (lagged by about 35 percent)<sup>34</sup>.

### PERU: REAL MONTHLY LABOR INCOME PER RECEIVER OF THE LOWEST INCOME 40 PERCENT OF THE POPULATION IN URBAN AREAS, 2009-2021

(Constant soles of 2021 and prices of Metropolitan Lima)



Note: Quintiles are calculated based on total household income per capita.  
Source: INEI - ENAHO.

### Measures to cope with rising prices

In 2022, the following actions were taken in Peru in order to protect vulnerable households from price increases: (i) a reduction of the excise tax on fuels; (ii) a temporary exemption (for three months) of the VAT on five final goods (chicken, eggs, uncooked pasta, bread, and sugar) and inputs of chicken meat and eggs, noodles, bread and sugar; and (iii) an additional extraordinary subsidy of S/ 200, S/ 250 and S/ 300 for the beneficiaries of the programs JUNTOS, Pensión 65 and Contigo, respectively (these sums being equivalent to the bimonthly payment transferred to the users of these programs). It is worth mentioning that, at the international level, it is observed that most countries, both advanced and emerging economies, have also used expenditure measures (including subsidies, vouchers, and the expansion of existing social programs) and tax measures.

### WORLD: MEASURES TO FACE THE RISE IN PRICES, 2021-2022

	Spending measures		Tax measures	Other measures	Number of countries
	Money transfers	Other spending measures			
Advanced economies	6	14	15	0	29
Emerging markets	4	14	17	5	46
Developing economies	1	2	2	0	19
Oil importers	11	28	31	5	78
Oil exporters	0	2	3	0	16
Large wheat importers from Russia/Ukraine	5	9	11	3	41
Wheat exporters	2	1	3	0	5

Note: Other measures include trade bans. A country is a "major wheat importer" of Russia and Ukraine if the country imports more than 10 percent of its wheat imports from Russia and Ukraine combined. A country is a "wheat exporter" if its share of world wheat exports is greater than 3 percent.  
Source: IMF (Fiscal monitor, April 2022).

34 For this population group, total per capita income—which also includes current transfers, extraordinary and rental income, and imputed rent—was 11.2 percent below that observed in 2019, which reflected a partial income recovery in line with that observed in the rest of the population in urban areas (11 percent below 2019). On the other hand, the per capita expenditure of the poorest families in urban areas was still 9.2 percent below that observed in 2019, but above that reported in 2020, in line with a 4.2 percentage point reduction in poverty during 2021.

Assessing the above measures, the IMF suggests that aid should be targeted to vulnerable families, allowing domestic prices to follow international prices (to avoid further imbalances between demand and supply). Similarly, countries with established subsidies should let the final price adjust gradually to avoid excessive fiscal costs and may rather consider actions in the food and fertilizer markets (e.g., releasing food reserves). In addition, the IMF indicates that countries with low levels of social protection should expand their most effective programs targeting vulnerable households and consider using digital tools for scaling up. On the other hand, countries with higher levels of social protection can evaluate the use of cash transfers to low-income households, since this measure does not distort relative prices and can be targeted.

With regard to existing social programs in Peru, there are two areas that can be used to provide food security to households in the current context: Qali Warma and the Programa de Complementación Alimentaria – PCA (Food Complementation Program). Qali Warma is a program that provides breakfast and lunch to students in the lower income quintiles of kindergarten, primary and public secondary school (although it should be pointed out that meals are provided to secondary students only in villages in the Amazon and to those studying in Full School Day regime and Diversified Attention Forms in rural areas). Expanding the program's coverage, especially at the secondary education level, would serve to alleviate the expenses of parents in vulnerable families. Moreover, it would also help to prevent inflation from slowing down the development of the human capital of school-age children, in the context of the great losses observed in learning achievements and socioemotional development as a result of the pandemic.

On the other hand, the PCA provides food to soup kitchens and shelters, among other centers, on a decentralized basis through local governments. Targeted in-kind transfers can be made through this program to different populations requiring food support in this high-inflation situation. Moreover, recent Law 31458<sup>35</sup> recognizes soup kitchens as grassroots social organizations so that they can participate in food supplementation programs during emergency situations and LD 1472<sup>36</sup> empowers Qali Warma to provide food directly to people in vulnerable households at the request of the districts during the health emergency. These actions, which have extended the government's reach to provide food to end users, could be further enhanced by establishing a mechanism to capture and centralize donations and funding from the private sector for supplementary feeding centers.

Despite this, however, in comparison to in-kind transfers, monetary transfers could prove to be a more effective alternative in terms of welfare gains because they facilitate the allocation of families' spending according to their preferences and initial economic conditions. In this regard, the main conditions for the success of a cash transfer program are: (i) targeting, (ii) coverage, and (iii) timeliness. This implies drawing on the experiences of previous vouchers to ensure that the aid reaches households that are really in need, with an adequate amount to cover their deprivations (to this end, it is essential that resources do not leak to other non-vulnerable households) and at the right time (without excessive delays that lead to food insecurity risks materializing).

35 Law 31458 recognizing "kitchen soups as organizations and guaranteeing their sustainability, financing, and the productive work of their beneficiaries, promoting their entrepreneurship" was enacted on April 12, 2022.

36 Legislative Decree 1472 was published on April 29, 2020..



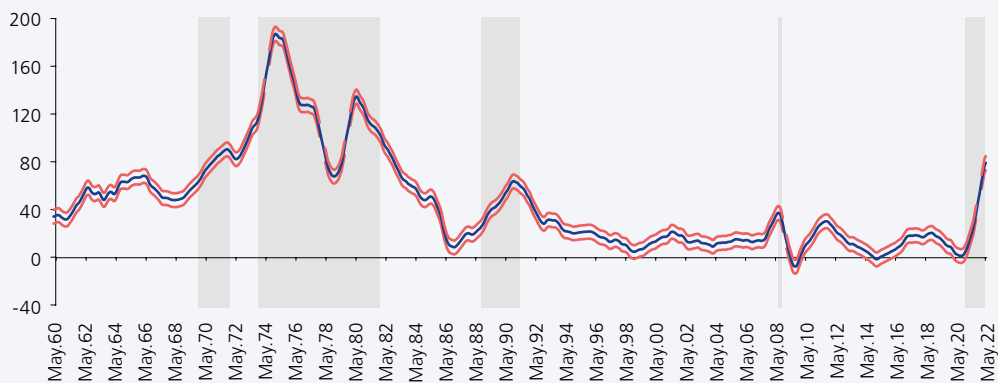


### Box 6 GLOBAL INFLATION AND IDIOSYNCRATIC FACTORS IN LATIN AMERICA<sup>37</sup>

The year-on-year inflation rate of each country, which measures the change in the cost of living, has always been a key indicator for the evaluation of each central bank's monetary policy. Globally, there is a high degree of synchronization of inflation rates, especially in the advanced economies (mainly the G-10 economies). This is currently reflected in a high level of inflation that has not been seen for forty years. Naturally, this global component is having a significant impact on inflation rates in the region, making it difficult to meet monetary policy objectives. In this box we quantify and separate what portion of the inflation currently observed in the countries of the region is explained by this global component, applying a historical perspective for the inflation targeting period.

First, using data from the G-10 group of countries, we capture the global component of year-on-year inflation synchronization for the period between January 1960 and May 2022. The following graph shows the estimated global factor for the indicated period<sup>38</sup>, which reflects that current inflation is comparable to that of the early 1980s.

**FACTOR GLOBAL ESTIMADO DE SINCRONIZACIÓN DE INFLACIÓN**  
(1960 – 2022\*)



\* Al mes de mayo. Las áreas sombreadas representan los periodos de alta inflación global señalados por Rouse and Other (2021)<sup>39</sup>. Las unidades son referenciales and útiles para identificar niveles relativos.

Subsequently, and given this estimated global synchronization factor, we proceed to calculate the residual components for the countries of the region (Brazil, Chile, Colombia, Mexico, and Peru) and other emerging countries for the recent period. These country components can be interpreted as the counterfactual inflation that would be obtained if this global synchronization had not occurred.

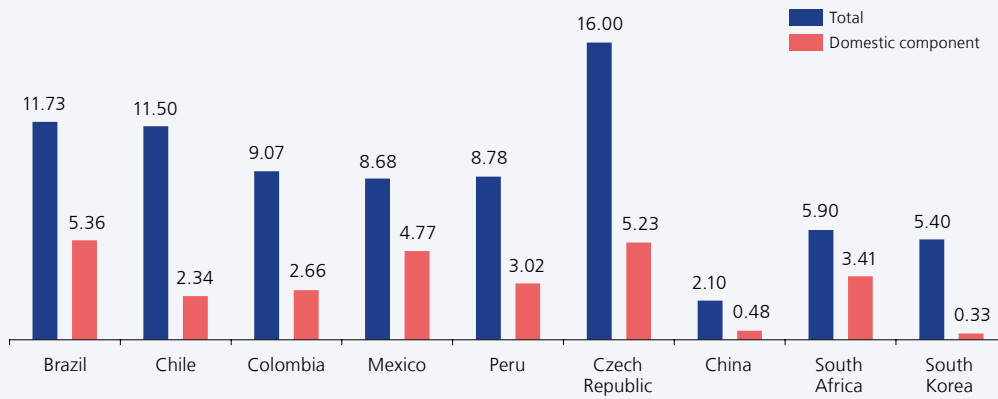
37 Box based on the work in progress entitled "Global Inflation and Idiosyncratic Factors in Emerging Economies" by Perez, Fernando (2022).

38 A dynamic model comprising a common inflation component (weighted by a factor) and an idiosyncratic component is specified and estimated using Bayesian techniques:  $\pi_{i,t} = \alpha_i \pi_t + \tilde{\pi}_{i,t} + e_{i,t}$ .

39 Rouse, Zhang, and Tedeschi (2021): Historical Parallels to Today's Inflationary Episode. The White House Blog.

### TOTAL INFLATION AND DOMESTIC COMPONENT IN MAY 2022

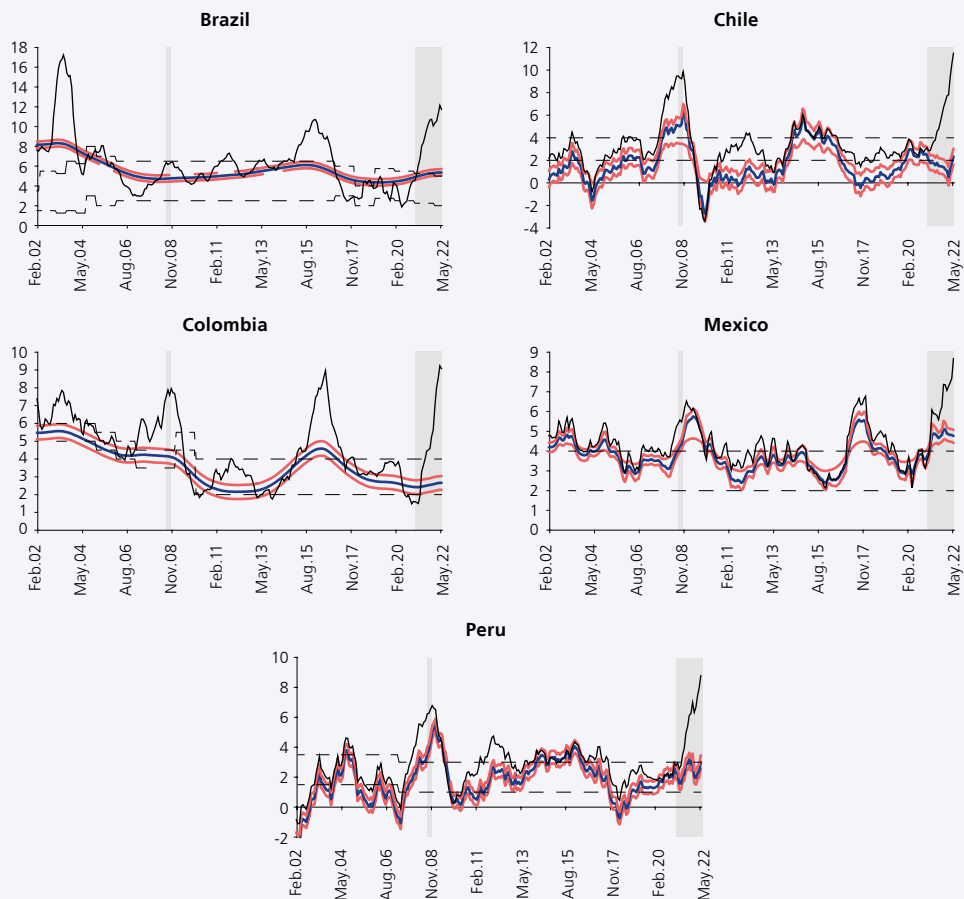
(In %)



Source: Central banks and statistical institutes of each country.

### TOTAL INFLATION, ESTIMATED RESIDUAL DOMESTIC COMPONENT AND TARGET RANGE

(In %)



The solid black line is headline inflation and the blue line is the component of each estimated country (including confidence bands of 68 percent most likely in red). The gray dotted lines represent the current target range in each period. The shaded gray areas correspond to episodes of global inflation similar to the first graph.





In general terms, we find that the contribution of the common factor to the region's inflation rates, although it is not constant over time, is very significant, especially in the last episode (in some cases, higher than 50 percent at the end of April 2022). However, we also find that in our region, in specific episodes, the contribution of the idiosyncratic factor may be higher than that of the common factor. This is associated with specific shocks that have a heterogeneous impact on inflation, depending on the composition of the basic food basket (for example, in the case of the predominance of commodity prices such as metals and hydrocarbons), and with supply shocks such as those associated with El Niño event. In fact, we found that the country-specific component (including confidence bands of the most likely 68 percent) is located in most of the sample within the target range or very close to it, especially in the case of Peru in the last episode (2021-2022), thus reflecting that currently the deviation of inflation from the target range is mainly explained by factors that are not controlled by monetary policy.

In conclusion, we are currently in a context of higher global inflation that is comparable to other episodes of several years ago. Inflation's temporary deviation from the target range is mainly explained by these global factors, so inflation rates in the region will return to the target range as these factors begin to reverse and fade. It is highly likely that the country-specific component is anchored to the target range. This would be indicating that the monetary policy actions taken (interest rate setting, liquidity management, use of macroprudential measures and adequate communication) are going in the right direction and that they will contribute, in the medium term, to shaping expectations and reinforcing the credibility of central banks.

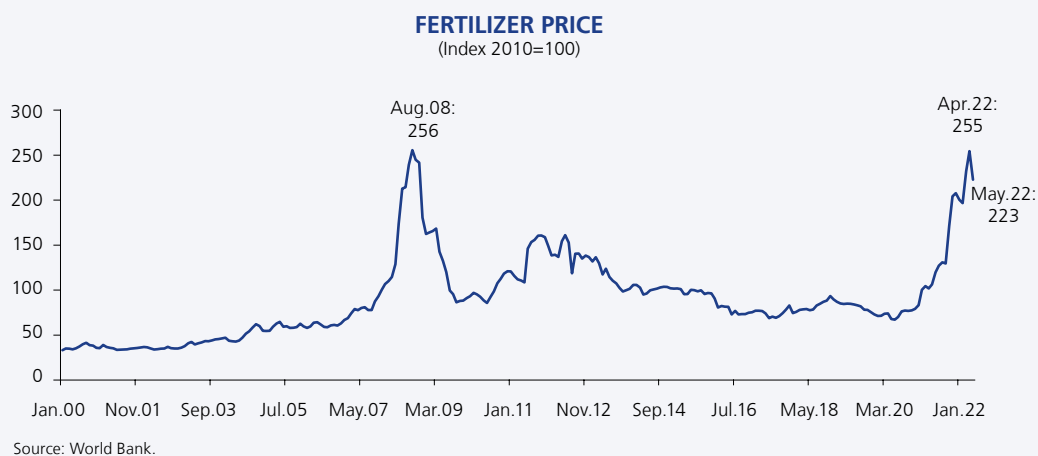
**Box 7**  
**RECENT DEVELOPMENTS IN FERTILIZER SUPPLY AND PRICES**

The increase in fertilizer prices since 2021 has been affecting the global food supply, this situation having intensified since the war in Ukraine began. In Peru, the main crops that would be affected in the second half of 2022 are potatoes and, to a lesser extent, rice, onions, tomatoes, and carrots. Higher fertilizer prices are estimated to have an impact on inflation in the country equivalent to an additional 0.5 percentage points in 2022 and an additional 0.1 percentage points in 2023, although this will depend on the duration of the war and the sanctions imposed on Russia and Belarus.

**International fertilizer prices**

Fertilizer prices have been on the rise since 2021 due to the increase in the cost of its main inputs, e.i. natural gas and coal. In addition, the sanctions imposed on Belarus, the main global exporter of potash fertilizers, in June 2021 compounded this rise. These limitations to the global supply of fertilizers, with the consequent increase in their prices, are particularly relevant for Peru since the country imports almost all of the chemical fertilizers used in agricultural production.

Fertilizer prices showed a slight reversal between December 2021 and February 2022, but the war in Ukraine has pushed them up again. The new sanctions imposed on Russia and Belarus because of the conflict are limiting supply from two of the world's leading exporters of nitrogen and potash fertilizers. As a result, in April, the World Bank's fertilizer price index was on the verge of reaching its all-time high, which was registered in August 2008.



The fertilizers that make up the World Bank's fertilizer index include urea, triple superphosphate, potassium chloride, diammonium phosphate, and rock phosphate. The prices of all of these fertilizers have experienced sharp increases since mid-2021 and are expected to remain high through 2022 and to begin to decline in 2023.





**INTERNATIONAL PRICE OF CHEMICAL FERTILIZERS**

Soles per ton	Urea	Triple superphosphate	Potassium chloride	Diammonium phosphate	Phosphate rock
<b>End of period (executed)</b>					
Dec.15	264	360	302	341	124
Dec.16	218	278	207	297	98
Dec.17	215	309	216	357	80
Dec.18	277	368	216	390	99
Dec.19	218	243	266	238	73
Dec.20	245	320	203	389	83
Dec.21	890	687	221	745	177
May.22	708	828	563	843	255
<b>Annual average price (executed and projected)</b>					
2020	229	265	218	312	76
2021	483	538	210	601	123
2022*	850	750	520	900	175
2023*	750	650	470	800	160
2024*	600	550	453	650	150
<b>Annual percentage change</b>					
Dec.19	-21.4	-33.9	23.2	-38.9	-26.9
Dec.20	12.6	31.5	-23.7	63.1	14.9
Dec.21	263.3	114.6	9.1	91.8	112.0
May.22	-20.5	20.5	154.5	13.1	44.3
2021	110.9	103.0	-3.7	92.6	61.8
2022*	76.0	39.4	147.6	49.8	42.3
2023*	-11.8	-13.3	-9.6	-11.1	-8.6
2024*	-20.0	-15.4	-3.6	-18.8	-6.3

\* Forecast.  
Source: World Bank.

**Prices and supply in the local market**

Urea is the main fertilizer imported by Peru –it accounts for 30 percent of the volume of fertilizer imports between 2015 and 2021– because of its high nitrogen content (46 percent).<sup>40</sup> The international price of urea rose 263 percent in 2021 and 4 percent until April 2022, but in May the price saw a sharp drop (23 percent) that brought the price to 20 percent below the December 2021 level. This was passed on to the local market with a retail price increase of 145 percent in 2021 and an additional 10 percent so far in 2022. Until 2021, about 70 percent of Peru’s imports of urea came from Russia.

**INTERNATIONAL AND LOCAL PRICE OF UREA**



\* FOB price of granulated urea from Ukraine in the Middle East, before March 2022, it is reported the price in the Black Sea.  
Source: MIDAGRI and World Bank.

40 The three main nutrients required by plants are nitrogen, phosphorus and potash. Nitrogen serves for the vegetative development of plants, while phosphorus and potash strengthen resistance and root development.

Among the nitrogen fertilizers imported by Peru, urea has experienced the highest increase in its retail price since December 2020 (186 percent), although other nitrogen fertilizers, such as ammonium sulfate and ammonium nitrate have also seen significant price increases (156 and 157 percent, respectively).

#### RETAIL PRICE OF CHEMICAL FERTILIZERS

Soles per ton	Urea	Ammonium nitrate	Ammonium sulphate	Superphosphates	Potassium chloride	Potassium sulfate	Sulfate of potassium and magnesium	Diammonium phosphate
Dec.15	1,573	1,610	1,193	2,229	1,942	2,973	2,219	2,082
Dec.16	1,459	1540	1,226	2,176	1,864	2,784	2,188	2,066
Dec.17	1,490	1,565	1,091	2,133	1,794	2,560	2,097	1,967
Dec.18	1,513	1,589	1,147	2,110	1,731	2,464	1,965	1,983
Dec.19	1,530	1,563	1,183	2107	1,725	2425	1,934	1,984
Dec.20	1,591	1,671	1,265	2,148	1,820	2,400	1,927	1,996
Dec.21	3,904	3,321	2,459	3,488	3,391	3,926	3,037	4,062
Apr.22	4,553	4,300	3,241	3,930	3,991	4,400	3,470	4,551
<b>Annual percentage change</b>								
Dec.19	1.1	-1.6	3.1	-0.1	-0.3	-1.6	-1.6	0.0
Dec.20	4.0	6.9	7.0	2.0	5.5	-1.0	-0.4	0.6
Dec.21	145.4	98.8	94.4	62.3	86.3	63.6	57.6	103.5
Apr.22	16.6	29.5	31.8	12.7	17.7	12.1	14.3	12.0

Source: Midagri.

Due to the shortage and increase in the price of fertilizers, farmers have resorted to the substitution of urea for other fertilizers, the possibility of substituting urea depending on the nutrient requirements as well as on the growth stage of the crops. Urea is the fertilizer with the highest nitrogen content (46 percent), but for its assimilation it has to be converted into nitrate, which generates a loss of approximately 40 percent of the nitrogen in the soil. On the other hand, other nitrogen fertilizers, such as ammonium nitrate, have already gone through this process, so, despite having a lower nitrogen content (34 percent), their assimilation by plants is greater. Ammonium sulfate has even lower nitrogen content (21 percent), but contains secondary nutrients such as sulfur (24 percent), which benefit plant growth. Similarly, phosphate and potash fertilizers also have different contents of phosphorus, potash and other secondary nutrients.

#### CONTENT OF MAIN NUTRIENTS IN FERTILIZERS

	Nitrogen N	Phosphorus P <sub>2</sub> P <sub>5</sub>	Potash K <sub>2</sub> O
<b>Nitrogenated</b>			
Urea	46.0	-	-
Ammonium nitrate	34.0	-	-
Ammonium sulphate	21.0	-	-
<b>Phosphated</b>			
Triple superphosphate	-	46.0	-
<b>Potassium</b>			
Potassium chloride	-	-	60.0
Potassium sulfate	-	-	52.0
Sulfate of potassium and magnesium	-	-	21.0
<b>Compounds</b>			
Diammonium phosphate	18.0	46.0	
Peruvian guano (nitrogenated)	11.5	11.5	3.0

Source: Soil, crop and more ([www.soilcropandmore.info/soil/fertiliz.htm](http://www.soilcropandmore.info/soil/fertiliz.htm)); Tamil Nadu Agricultural University; Guano: The White Gold of the Seabirds.







Compound fertilizers are fertilizers that contain more than one main nutrient, Island Guano standing out among them. However, the low level of nitrogen concentration and the low annual production of this fertilizer (23 tons on average between 2015 and 2021) limit their capacity to offset the lower import of chemical fertilizers such as urea.

#### IMPORTS OF NITROGENATED CHEMICAL FERTILIZERS BY PRODUCT

Thousands of tons	2015	2016	2017	2018	2019	2020	2021	Average January - May		% chg. (b) / (a)
								2015-2021 (a)	2022 (b)	
Urea	424	358	414	257	399	374	325	143	61	-58
Ammonium nitrate	51	128	153	171	169	127	312	54	56	5
Ammonium sulphate	188	227	235	197	264	251	257	96	168	75

Source: MIDAGRI, SUNAT-Aduanas.

As of April, although the volume of urea imports is only 42 percent of what is usually imported at that time of the year, the total effective content of nitrogen imported (chemical fertilizers) and produced (guano) reaches 80 percent of the usual supply. This has been made possible by higher imports of ammonium sulfate (75 percent above average imports). Imports of ammonium sulfate have not been affected by the war in Ukraine given that they came mainly from the United States and China (57 and 43 percent, respectively) before the war.

Interviews with representatives of fertilizer importing companies confirm this information, indicating that they are increasing their fertilizer imports from the United States and China, although imports from China take longer (90 days, more than the 70 days that imports from Russia take). In addition, they are looking for new markets to import urea, such as Algeria, Bolivia and Indonesia. Algeria's supply is granulated urea (large particles), while Peru uses mostly pearled urea (small particles). However, given the scarcity of pearl urea (which comes mainly from Russia), the Peruvian market has been accepting granular urea. On the other hand, there are limitations for the import of ammonium nitrate, since it has to be of the stabilized type, as it is forbidden to import it in another state (because it was used to manufacture clandestine bombs during the 1980s). Ammonium sulfate (and phosphorus-based products) are also being imported from Mexico and Morocco.

Because of the delays that these changes have generated in the pattern of imports, since April many fertilizer trading companies indicate that their inventories have declined and that, despite a higher sales value, the companies' volume of sales has also fallen in some cases by 10 to 40 percent.

#### Impact on agricultural production and prices

The sharp rise in fertilizer prices has especially affected small and medium-sized farmers with fewer logistics means for obtaining fertilizer and lower commercial margins. These producers are located mostly in the highlands (49.9 percent), a region that stands out in the production of potatoes, beans, peas, carrots and onions. To a lesser extent, they are also located on the

coast, where there is a significant production of rice and tomatoes. It should be noted that soils in the highlands have a higher nitrogen content than in the coast, which allows for less fertilizer use.

#### PRODUCERS OF THE AGRICULTURAL SECTOR, ACCORDING TO ACTIVITY 1/ (Thousands)

Region	Agricultural		Livestock		Agriculture		Total
<b>Total</b>	<b>392</b>	<b>100.0</b>	<b>48</b>	<b>100.0</b>	<b>1,731</b>	<b>100.0</b>	<b>2,170</b>
Highlands (Andes)	195	49.9	31	64.3	1,235	71.4	1,461
Coast	114	29.1	15	32.6	168	9.7	298
Rain forest	82	21.0	2	3.2	327	18.9	411

1/ Small and medium producers.  
Source: National Agrarian Survey 2019 - INEI.

#### FERTILIZATION 1/ (Percentage of producers)

	Uso			Non use
	Enough	Reduced	Total	
<b>Coast</b>	<b>50.6</b>	<b>38.9</b>	<b>89.5</b>	<b>10.5</b>
Highlands (Andes)	10.4	44.5	54.9	45.1
Rain forest	4.9	15.8	20.7	79.3

1/ Fertilization can be with fertilizers or chemical fertilizers.  
Source: MIDAGRI, National Agrarian Census 2012.

#### FERTILIZER USE 1/ (Percentage of producers)

	Soil fertilization		
	Manure and fertilizer	Only manure	Only Fertilizer
2019	47.2	35.8	17.1
2018	45.7	36.0	18.3
2017	44.7	36.8	18.6
2016	46.0	38.0	16.0
2015	44.3	39.3	16.4
2014	45.6	39.7	14.7

1/ Small and medium producers.  
Source: National Agrarian Survey 2019, INEI.

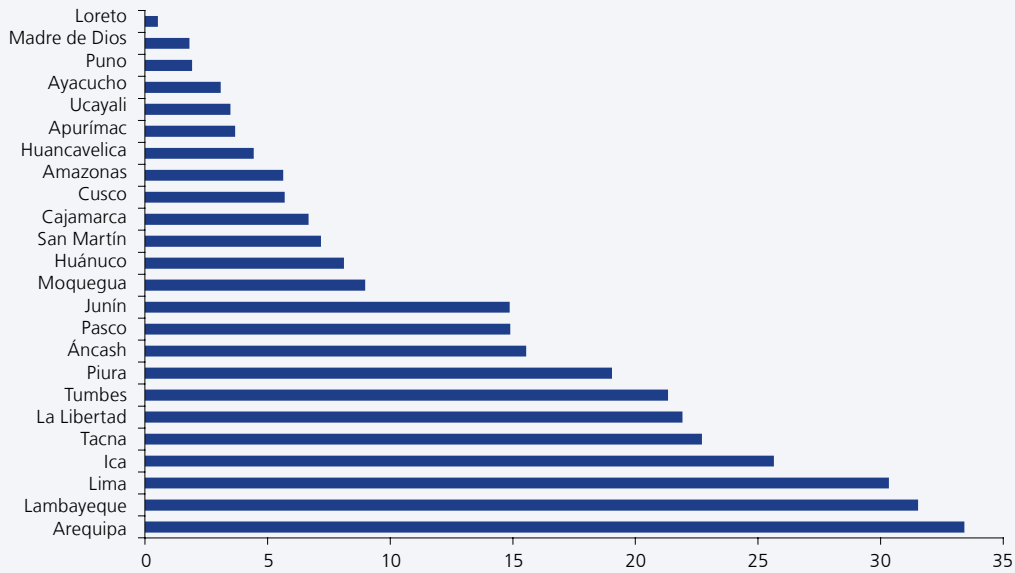
Moreover, the crops estimated to be most affected are those that require more urea fertilization. On the coast, these products include rice, hard yellow maize, coastal potatoes, tomatoes and, to a lesser extent, lemons, whereas in the highlands, they are potatoes and, to a lesser extent, corn, peas, onions, carrots, beans, lima beans, *ocas*, *ollucos* and wheat. According to CENAGRO (2012), the departments with the highest relevant use of a chemical fertilizer are those on the coast, i.e. Lima, Ica, Tacna, and rice and onion producers in Arequipa, Lambayeque, La Libertad, Tumbes and Piura. On the other hand, those with the lowest use of a chemical fertilizer are those in the highlands, such as Puno, Ayacucho, Apurímac, Huancavelica, Cusco, Cajamarca, Huánuco, Junín and Pasco (potato producing departments) and those in the jungle area.





### USE OF FERTILIZERS IN SUFFICIENT QUANTITIES

(Percentage of producers that use fertilizers in sufficient quantities with respect to the total number of producers in the region)



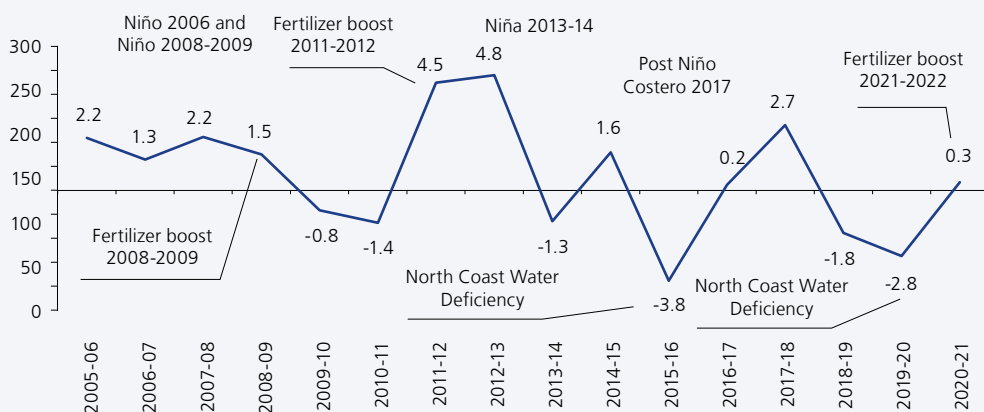
Source: CENEAGRO 2012.

Although fertilizers have the potential to increase production, other factors in agriculture, such as the impact of weather conditions and water, can enhance, reduce or mitigate fertilizer use. A well-fertilized soil with a water deficit has poor results. A poorly nourished soil or one receiving the same dose of nutrients as in the previous season, but with better water and weather conditions, increases its yield.

The most important drop observed in rice production (10.3 percent) took place in 2019 as a result of a combined effect of water cuts and high temperatures. The water cuts were associated with the entrenchment of the Poechos reservoir in Piura, while the high temperatures implied lower yields in rice plantations in La Libertad (early development with lower weight) and Lambayeque (sanitary problems due to sogata). Likewise, the most significant drop in potato production took place in 2016 (4.3 percent) due to a water deficit in the highlands. Moreover, potato crops in the coast registered their most notable reduction in Ica due to lower yields caused by anomalous warm temperatures that affected tuberization in 1997 (12.0 percent drop) and by water deficits in 2000 (33.0 percent).

### SOWINGS OF CROPS WITH A SHORT VEGETATIVE PERIOD BY CAMPAIGNS 2005-06 TO 2020-21

(Annual % change)



Source: MIDAGRI.

In fact, sowings are more related to the availability of water because a large portion of farming production for the domestic market is rainfed agriculture and because the capability of filling the country's main reservoirs depends on rainfall.

Assuming that restrictions on fertilizer use are mitigated by good weather and water conditions, the impact of the fertilizer price increases on crops oriented to the domestic market is estimated at -0.8 percentage points in 2022 and -1.0 percentage point in 2023, in comparison to what was projected in the March Report.

Considering that the war issue began at the end of February, when an average 82 percent advance had already been carried out in the transitional crop planting calendar and, with three months of fertilizer supplies, the impact in 2022 is expected to occur in the second half of the year. Furthermore, the impact has also been mitigated by the substitution of urea for ammonium sulfate (lower price and nitrate content) and organic fertilizers, as well as by favorable weather and water conditions and harvests of large crops in the highlands and the coast in the first half of the year.

In 2023, the impact is likely to depend on the duration of the war, the provision of other sources of supply –e.g. Bolivia and the United States–, and the actions taken by the executive branch to import and facilitate the distribution of fertilizers in a timely manner.

Two episodes of fertilizer price increases have been observed recently: one in 2008-2009 and the other, in 2010-2011. However, as mentioned above, the impact of fertilizer prices is difficult to isolate from factors related to weather conditions, which usually are more important for production and which had a negative impact on prices in the periods indicated (La Niña event). On the other hand, good weather conditions may offset the impact on production in the current context, but higher input prices would be passed on to final consumers in the form of higher prices. Higher fertilizer prices are estimated to contribute with an additional 0.5 percentage points to inflation in 2022 and with 0.1 percentage points to inflation in 2023, although this will depend on the duration of the Russia-Ukraine conflict and on the sanctions imposed on Russia and Belarus.

### **Economic policy actions**

To facilitate farmers' access to crucial inputs such as fertilizers, it is necessary to strengthen existing distribution and marketing chains. Thus, complementarity between the public and private sectors should be sought rather than the substitution of one for the other. Transparent and timely mechanisms must be established for the allocation of inputs so that farmers can avoid postponing the planting season, while waiting for subsidies or a direct delivery of fertilizers by the State. The latter may arrive late and jeopardize food supply.

Many countries all over the world are adopting measures to cope with rising fertilizer prices, providing, for example, support to research for innovations in fertilizer production and implementing subsidy and technical assistance programs for farmers (United States<sup>41</sup> and the European Union<sup>42</sup>), or reducing dependence on manufactured fertilizers and urea (United Kingdom)<sup>43</sup>. In the region, short-

41 Source: White House (2022). President Biden Announces New Actions to Address Putin's Price Hike, Make Food More Affordable, and Lower Costs for Farmers.

42 Source: International Fertilizer Association (2022). An Unfolding food crisis: A perspective from the fertilizer industry.

43 Source: Department for the Environment Food and Rural Affairs (2022). Eutice: Supporting farmers ahead of the coming growing season.





term measures are mainly oriented to providing subsidies (Chile, Argentina, Colombia and Ecuador), while long-term measures focus on technical training and reducing the level of dependence on fertilizer imports (Brazil).

In addition to country-level initiatives, FAO has prepared a contingency plan to address global fertilizer supply challenges in 2022 and 2023, which proposes the following actions:

#### MAIN MEASURES ADOPTED IN THE REGION TO FACE THE PRICE OF FERTILIZERS INCREASE

Country	Measures
Colombia (Jan.22) 1/	<ul style="list-style-type: none"> <li>Fund of US\$ 18 million to grant resources and subsidies to small producers (Law of Agricultural Inputs; with the regulation in process).</li> </ul>
Brazil (Mar.22)	<ul style="list-style-type: none"> <li>“Embrapa FertBrasil Caravan” program, to increase the efficiency in the application of fertilizers and reduce their use in the next harvest, through training and exchange of knowledge between research institutes and the productive sector. 2/</li> </ul>
Chile 3/ (Apr.22)	<ul style="list-style-type: none"> <li>“Siembra por Chile” program, which includes a guarantee fund for low-cost credits, for amounts of up to US\$ 192 million to cover the purchase of fertilizers.</li> <li>Provision of non-reimbursable subsidies for up to US\$ 620 million for small farmers, channeled through the Agricultural Development Institute.</li> </ul>
Ecuador 4/ (May.22)	<ul style="list-style-type: none"> <li>Announcement of subsidy for the importation of urea.</li> </ul>

1/ Measure enacted on January 6, 2022.

2/ Source: Embrapa FertBrasil. By 2050, it is expected to reduce the country's dependence on fertilizer imports, starting with the location of potassium and phosphorus deposits, under the guidance of the National Fertilizer Plan.

3/ Measure announced on April 8, 2022. Source: Agricultural Development Institute (INDAP).

4/ Measure announced on May 3, 2022.

Source: Press media and official publications. Own elaboration.

- In the **short run**: (i) keep fertilizer trade open, maintain reliable supplies and avoid *ad hoc* trade restrictions; (ii) monitor trade and trade policies; (iii) improve data and information sources in the fertilizer market; (iv) use early warning indicators: stock levels and level changes, stock-to-use ratios, etc.; (v) support poorer consumers, but avoid structural protection and support to farmers; (vi) prioritize the use of fertilizers in agriculture over non-agricultural uses.
- In the **long run**: (i) foster the transition to low-carbon energy sources; (ii) improve the efficiency of fertilizer use; (iii) improve agronomic practices, giving priority to improving soil fertility.