INFLATION REPORT

September 2022

Recent trends and macroeconomic forecasts 2022-2023

CENTRAL RESERVE BANK OF PERU
100 YEARS | 1922 - 2022

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Recent Trends and Macroeconomic Forecasts 2022 - 2023

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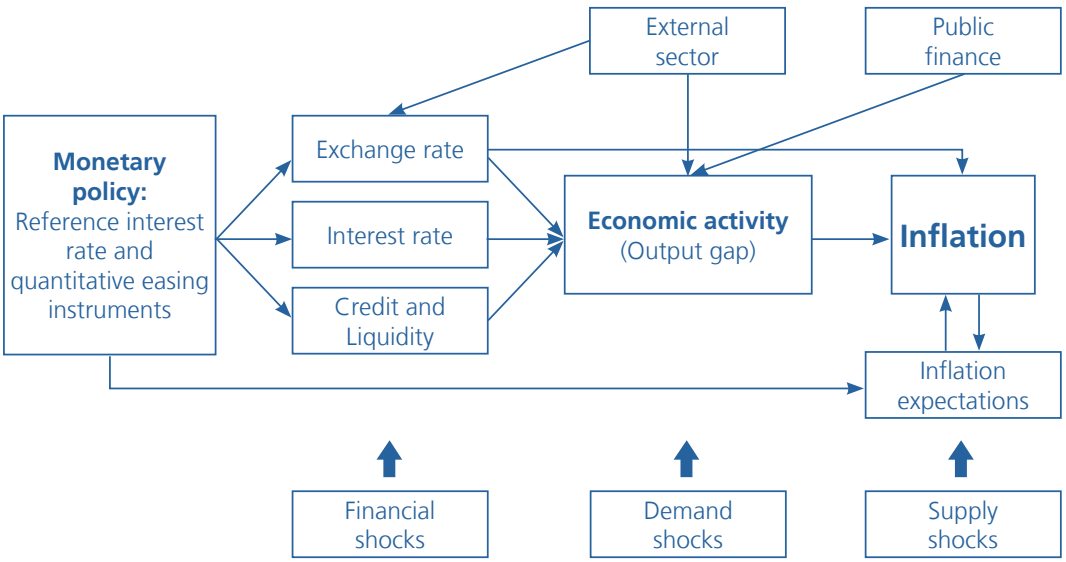

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INFLATION REPORT
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CENTRAL RESERVE BANK OF PERU

INFLATION REPORT:

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Boxes

This ***Inflation Report*** has been prepared with information on the balance of payments and gross domestic product as of the second quarter of 2022; information on the trade balance, monthly GDP and monetary accounts as of July 2022, and information on the operations of the non-financial public sector, inflation, financial markets and the exchange rate as of August 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, managing international reserves and reporting on the nation's finances.

- To fulfill this role, 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 that of 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 Since this interest rate, which is the monetary operational target, affects the inflation rate with time lags and through different channels, this interest rate is determined based on inflation forecasts and inflation determinants.

- Inflation may deviate transitorily outside the target range due to the presence of shocks that may temporarily affect the supply of goods and services. It should be pointed out that the effectiveness of monetary policy is evaluated in terms of its success in maintaining inflation expectations within the target range and in returning them to this range within a reasonable timeframe if deviations are observed due to some economic shock.

- Additionally, BCRP implements preventive actions to preserve macro-financial stability and monetary policy transmission mechanisms. Thus, the benchmark rate is complemented by the use of other monetary policy instruments, such as injection and sterilization operations, reserve requirements and interventions in the foreign exchange market to ensure the proper functioning of the markets, reduce excessive volatility in the exchange rate, and prevent significant variations in the volume and composition of credit in the financial system by currencies and terms..

- This Inflation Report includes the macroeconomic forecasts for the period 2022-2023 that support the monetary policy decisions of BCRP, as well as the risk factors that may deviate inflation from these projections.

- This Inflation Report was approved by the Board of Directors' meeting held on September 8, 2022.

- The following Inflation Report will be released on Friday, December 16, 2022.

Summary

i. **World economic activity** continued to be affected by the persistence of the supply shocks – mentioned in the previous report– associated with rising energy prices, the confinements caused by the resurgence of COVID-19 in China and geopolitical tensions. This was compounded by the withdrawal of monetary stimulus in the face of rising global inflation, as well as by a greater risk of a slowdown in the Chinese economy. Because of this, the projection for global growth in 2022 has been revised down to 2.8 percent and in 2023, to 2.7 percent (the previous projection for both years being 3.0 percent).

ii. The **terms of trade** declined 5.8 percent year-on-year in the first half of 2022 as average import prices, which include imports of oil, food, and industrial inputs, registered a greater increase than export prices. This was associated with the contraction in the supply of some commodities and with increased uncertainty due to the persistence of the conflict between Russia and Ukraine.

The terms of trade are projected to fall 7.2 percent in 2022, showing a larger contracction than estimated in the previous Report (-6.3 percent), due to the downward correction in metal prices. On the other hand, the projected decline of 2.4 percent in 2023 takes into account a normalization in food and oil supply, which would reduce import prices, and lower world growth, which would continue to put downward pressure on industrial metal prices.

iii. The accumulated **current account** in the last four quarters increased from a deficit of 2.3 percent of GDP at the end of 2021 to a deficit of 3.4 percent at the second quarter of 2022. This is explained by an increase in imports, higher profits of companies with foreign direct investment in the country and by the high deficit of the services account (low exports of tourism services and high import freight). In view of the lower terms of trade projected and the lower primary production estimated for 2022, the current account deficit estimated for 2022 has been revised up to 3.8 percent of GDP and that estimated for 2023 has been revised to 1.8 percent, maintaining the soundness of the balance of payments.

iv. **Economic activity** in the first half of 2022 recorded a year-on-year growth of 3.5 percent, driven mainly by the dynamism of private consumption and the recovery of exports. GDP is projected to grow 3.0 percent in 2022, a lower rate than that estimated in the previous Report (3.1 percent), this downward revision being explained by lower growth in mining production. On the other hand, the growth projection for 2023 has been revised from 3.2 to 3.0 percent due to anticipated lower activity in non-primary sectors such as manufacturing, construction and services, reflecting the lower projected growth in private consumption and investment. GDP is estimated to be close to its potential level in the forecast horizon.

Moreover, GDP growth would be supported by the normalization of spending habits and the recovery of the services sector, which would continue to sustain employment and domestic demand. Likewise, mining production would recover in 2023 due to projects that will come into operation and to the reactivation of mines whose operations came to a standstill this year. However, this momentum would be offset by the low level of business and household confidence, which would affect investment and consumption decisions and, therefore, future production plans. In addition, public investment is also assumed to show

zero growth in 2023, taking into account the effect of the fall in investment usually observed in subnational governments in the year following municipal elections.

v. The cumulative **fiscal deficit** over the last twelve months decreased from 2.5 to 1.6 percent of GDP between December 2021 and August 2022. This decline reflects the increase in current income of the General Government due to the recovery of economic activity and the favorable situation of export mineral and hydrocarbon prices, as well as lower non-financial expenditures as a percentage of GDP. The deficit at the end of 2022 is projected to register 1.9 percent of GDP, falling to 1.8 percent in 2023.

Given the projected path of the fiscal deficit, the **net debt** of the Non-Financial Public Sector (NFPS) is expected to decline from 21.8 to 21.3 percent of GDP between 2021 and 2022, before increasing slightly to 21.5 percent of output in 2023. The gross debt of the NFPS is expected to go from 35.9 to 33.8 percent of GDP between 2021 and 2022, and to finally stand at 32.8 percent in 2023, this dynamics being explained by the evolution of public deposits.

vi. Between July and September 2022, the Board of Directors of BCRP continued with the normalization of the monetary policy stance initiated in August 2021. After increasing the **benchmark rate** by a total of 525 basis points during the monetary policy meetings held between August 2021 and June 2022, the Board of BCRP decided to raise the monetary policy benchmark rate by 125 additional basis points between July and September of this year (50 basis points in July and August and 25 basis points in September), thus accumulating fourteen rate hikes in total. As a result, the benchmark rate went from 0.25 percent in July 2021 (historic low) to 6.75 percent in September 2022. After having reached a historic low of -2.53 percent in August 2021, the real benchmark rate stands at 1.65 percent in September 2022 (slightly above the estimated neutral real rate of 1.50 percent).

The balance of **liquidity injection operations** in domestic currency declined from S/ 56.7 billion at the end of December 2021 to S/ 49.0 billion as of September 12, 2022. In comparative terms, the total balance of these operations is 6.2 times higher than the maximum balance reached during the 2008-2009 international financial crisis (S/ 7.9 billion) and 1.5 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 July 2022, mainly as a result of the credit to individuals component. With this, the projected growth of credit to the private sector has been revised up from 4.5 to 5.5 percent in 2022.

viii. Year-on-year **inflation**, which continued to be affected by high international food and energy prices, peaked at 8.81 percent in June and then declined to 8.40 percent in August. Non-food and energy inflation rose from 4.95 to 5.39 percent in the same period, reflecting the impact of higher costs such as transportation, placing it above the target range. The different indicators of trend inflation are also above the target range.

Based on the information available today, year-on-year inflation is projected to return to the target range in the second half of next year. This forecast assumes the reversal of the effect of transitory factors on the inflation rate (international food and energy prices) in a context in which inflation expectations return to the target range and GDP is close to its potential level.

ix. The **balance of risks to the inflation projection** remains skewed to the upside. The following risks and contingencies are considered in the forecasts: (i) delay in the reversal of disruptions in global supply chains and geopolitical tensions, which could exacerbate and prolong the current energy and food crisis; (ii) slowdown in global growth, which would imply lower demand for our main export products; (iii) a lower level of local activity if business and consumer confidence does 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 growth, or a faster withdrawal of monetary stimulus in developed countries.

SUMMARY OF INFLATION REPORT FORECAST

	2021	2022[1/]		2023[1/]	
		IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
Real % change					
1. Gross Domestic Product	13.6	3.1	3.0	3.2	3.0
2. Domestic demand	14.7	2.8	2.5	3.0	2.7
a. Private consumption	11.7	4.1	4.2	3.5	3.1
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	1.8
d. Public investment	24.9	2.1	2.1	1.6	0.0
3. Exports (good and services)	13.7	6.1	5.5	7.7	7.7
4. Imports (good and services)	18.6	4.5	3.8	6.7	6.5
5. Global economic growth	6.0	3.0	2.8	3.0	2.7
Memo:					
Output gap [2/] (%)	-0.4	-0.5 ; 0.5	-0.5 ; 0.5	-0.5 ; 0.5	-0.5 ; 0.5
% chg.					
6. Inflation	6.4	6.4	7.8	2.5	3.0
7. Expected inflation [3/]	3.5	5.8	7.3	3.7	4.0
8. Expected depreciation [3/]	12.1	-5.4	-3.5	0.7	-0.6
9. Terms of trade	11.8	-6.3	-7.2	0.0	-2.4
a. Export prices	30.3	8.0	5.4	-1.6	-4.3
b. Import prices	16.6	15.3	13.6	-1.6	-2.0
% chg.					
10. Currency in circulation	16.0	2.5	1.5	1.5	1.5
11. Credit to the private sector	4.4	4.5	5.5	5.4	5.2
% GDP					
12. Gross fixed investment	25.2	25.0	25.0	24.3	24.6
13. Current account of the balance of payments	-2.3	-3.4	-3.8	-1.1	-1.8
14. Trade balance	6.6	5.4	5.0	5.3	4.6
15. Long-term external financing of the private sector [4/]	7.4	2.8	3.9	0.5	1.1
16. Current revenue of the general government	21.0	21.6	21.8	21.1	20.9
17. Non-financial expenditure of the general government	22.2	22.0	22.1	21.4	21.4
18. Overall balance of the non-financial public sector	-2.5	-1.9	-1.9	-1.8	-1.8
19. Balance of total public debt	35.9	34.3	33.8	33.2	32.8
20. Balance of net public debt	21.8	21.2	21.3	21.3	21.5

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 have 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. Since the last Inflation Report, global activity has been affected, among other factors, by the persistence of high energy prices, the quarantine measures against the resurgence of COVID-19 in China and the withdrawal of monetary stimulus in the main developed economies. This withdrawal has been more aggressive than anticipated in the June Report due to the persistence of high inflation rates which, despite the partial reversal of some of the supply chain shocks, even reached new historical highs in several countries.

   In line with these developments, global growth forecasts have been revised down from 3.0 to 2.8 percent for 2022 and from 3.0 to 2.7 percent for 2023. Risks to this projection remain on the downside in the face of the possibility of a more severe energy crisis, further flare-ups of COVID-19 in China, a sharp adjustment in international financial conditions, or the aggravation of geopolitical tensions at the global level.

   The outlook for lower global growth and adjustments in international financial conditions continued to affect the outlook for emerging economies, particularly those exporting commodities. Since the June Report, the prices of most commodities continued their downward trend, the price correction of basic metals standing out. For their part, despite shoing a slight recovery in August, capital flows to emerging economies remain below those observed in 2021.

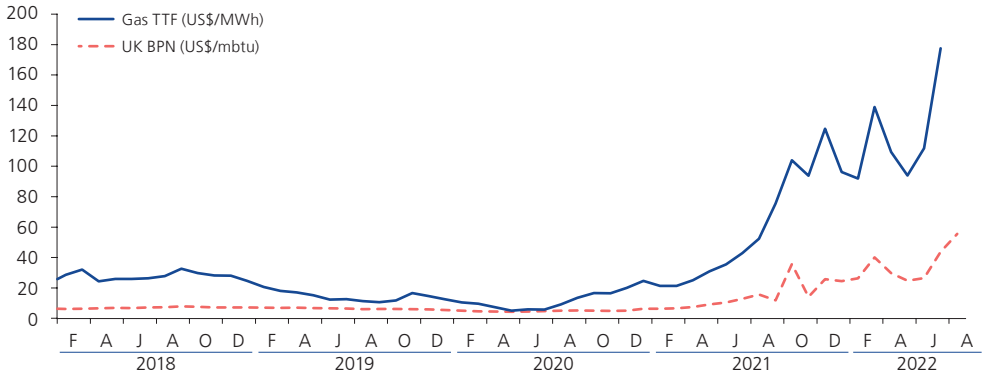
Recent developments in global economic activity

2. In recent months, economic activity continued to be affected by several of the shocks outlined in the June Inflation Report.

   High energy prices stand out among the **main shocks** affecting the world economy, This situation is occurring in a context of gas supply restrictions (lower supply from Russia to Europe), adverse weather conditions and expectations of colder weather during the northern winter. Between June and July, gas prices in the European and UK markets

increased significantly and reached record levels. This has put pressure on other markets (such as the Henry Hub natural gas market) and kept oil prices high.

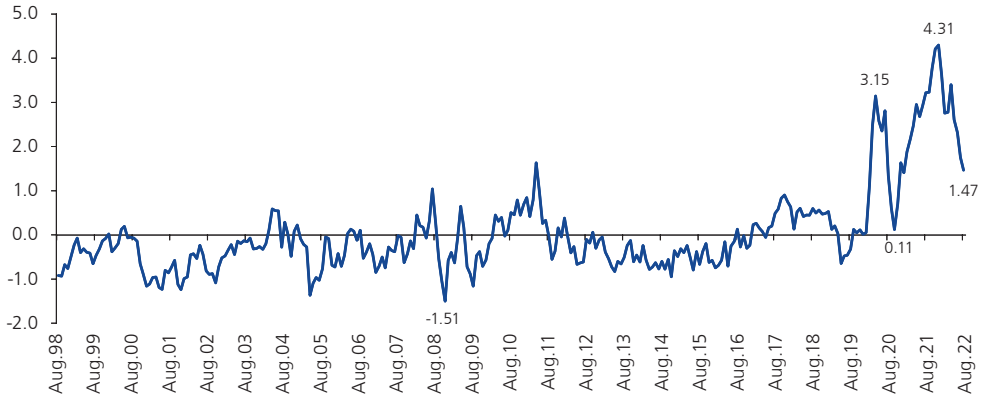
Graph 1
INTERNATIONAL NATURAL GAS QUOTES FROM THE UNITED KINGDOM AND EUROPE
(In US$/mbtu y US$/MWh, respectively)



UK BPN: Natural gas supplied by British Gas Trans Co, the pipeline operator, to the National Balancing Point (NBP), the central location, in the United Kingdom. TTF Gas: Natural Gas at the Title Transfer Facility (TTF) Virtual Trading Point, operated by Gasunie Transport Services (GTS), the transmission system operator in the Netherlands.
Source: Reuters.

Despite these developments, the aggregate supply chain pressures index, published by the New York Federal Reserve, recorded a decline in June and July, due to lower transportation costs and corrections in input and final goods prices, among other factors. Nonetheless, the level of this index remains above its historical average.

Graph 2
GLOBAL SUPPLY CHAIN PRESSURES INDEX
(GSCPI*, deviations from historical average)

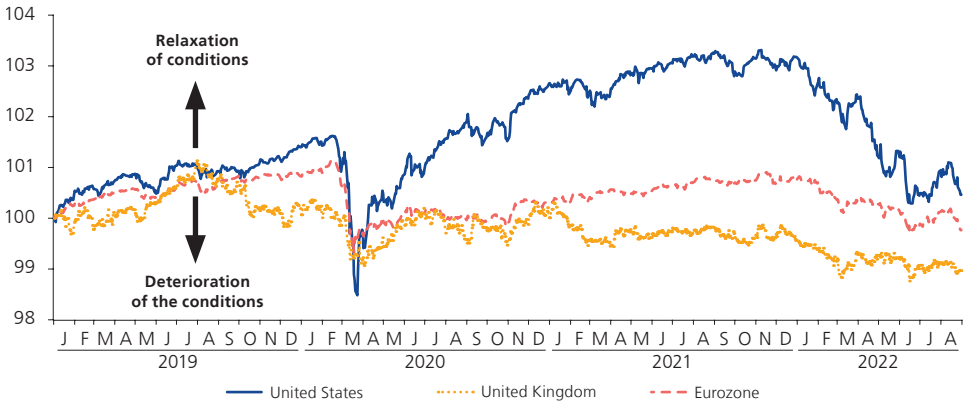


* The GSCPI is constructed from transportation costs (Baltic Dry Index, the Harpex index and BLS air freight cost indices) and PMI components from the United States, China, Eurozone, Japan, United Kingdom, South Korea and Taiwan.
Source: New York Federal Reserve.

There has also been a higher adjustment in global financial conditions than expected in the June Report due to the monetary policy adjustments of the main central banks. High

inflation rates –reflecting supply shocks and, in several cases, an expansion of domestic demand– led the Fed, the European Central Bank and the Bank of England, among other banks, to increase their interest rates and further significant adjustments are foreseen in the following months.

Graph 3
FINANCIAL CONDITION INDEXES
(January 1, 2019 =100)



Source: Goldman Sachs.

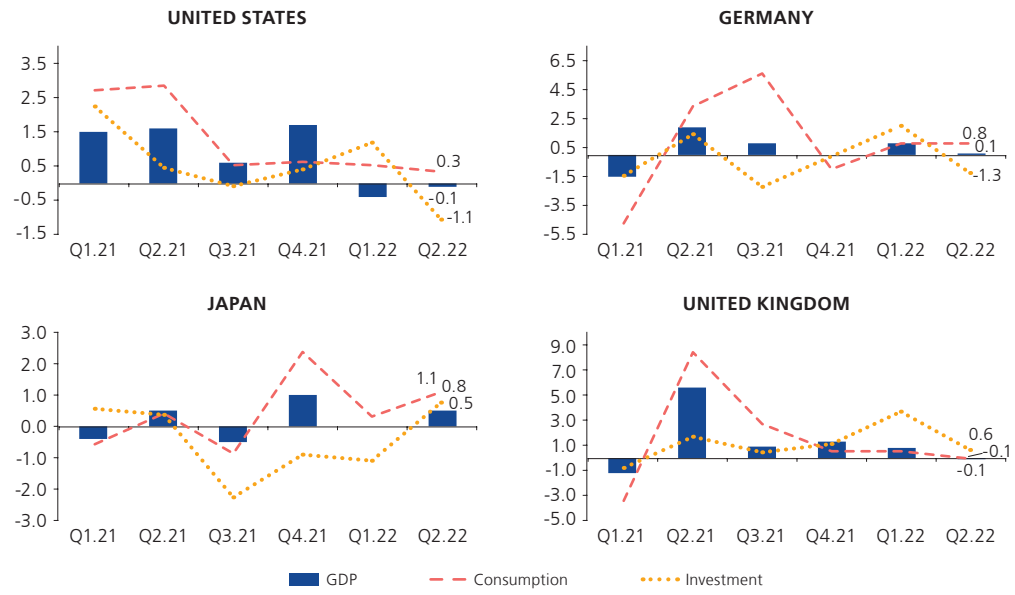
A third factor has been the adoption of containment measures in China in response to outbreaks of COVID-19 infections, particularly in the second quarter of the year, in cities such as Shanghai and Beijing. Although the outbreaks have diminished so far in the third quarter, new cases continue to be recorded in smaller cities and the Chinese authorities continue to adopt a "zero tolerance" policy against them.

3. In line with these developments, global economic activity recorded a contraction, the first in two years. in the second quarter of 2022.

In the developed economies, the lower dynamism of economic activity is mainly explained by the evolution of investment, particularly residential investment. In the United States, activity recorded a quarterly contraction of 0.1 percent (equivalent to an annualized quarterly variation of -0.6 percent), which was the second consecutive quarterly decline. The contraction in investment was partially offset by the dynamism of exports and, to a lesser extent, by consumption (favored by labor market conditions).

Activity in Germany, on the other hand, registered a slight expansion due to the growth of private consumption (0.8 percent quarterly) and public spending (2.3 percent quarterly) and, on the sectoral side, due to the dynamism of the services sector. In the United Kingdom, the contraction of GDP is explained by the evolution of private consumption (-0.1 percent), affected by the fall in real wages, which counterbalanced the positive contribution of net exports.

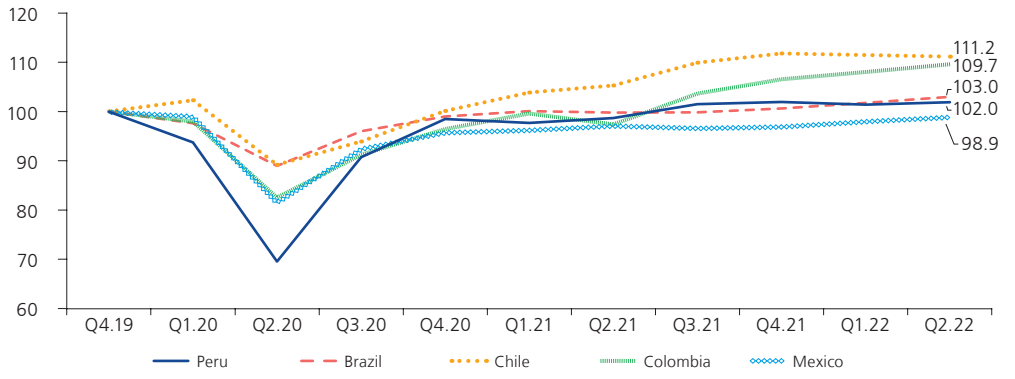
Graph 4
GDP, CONSUMPTION AND INVESTMENT OF THE MAIN DEVELOPED ECONOMIES, 2021-2022
(Quarterly % change)



Source: OECD.

In the emerging economies, the contraction of activity in China (-2.6 percent) stands out. This first contraction since the first quarter of 2020 is mainly associated with the measures adopted to address the COVID-19 flare-ups in several major cities, such as Shanghai and Beijing. On the other hand, the main economies in Latin America were affected by lower global growth, although this was offset in the cases of Brazil and Colombia by an expansion of domestic demand.

Graph 5
LATIN AMERICA: QUARTERLY GDP*
(Index 100 = Q4.19)

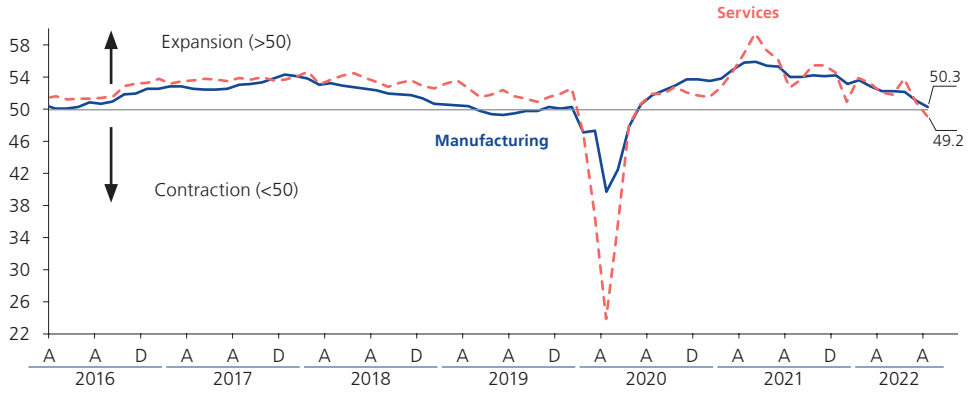


* Seasonally adjusted series.
Source: Statistical institutes and central banks.

4. So far in the third quarter, monthly frequency indicators show that economic activity continues to be affected by supply shocks and tightening monetary conditions.

Global production indices reflect a decline between June and August. The manufacturing and services indices reached 26-month lows; in the case of services, this indicator moving into the contraction zone (below 50) in August.

Graph 6
GLOBAL PMI: WORLD ECONOMIC ACTIVITY INDEX FOR MANUFACTURING AND SERVICES SECTORS
(Diffusion index)



Source: JPMorgan.

It should be pointed out that the largest decreases were observed both in activity-related items (production, future production and pending sales) and in those related to prices and costs (input costs and final prices, although at high levels, they began to record a downward correction).

Table 1
GLOBAL ACTIVITY OF THE MANUFACTURING AND SERVICES SECTORS, 2022
(PMI diffusion index)

	May	June	July	August
Production	51.5	53.5	50.8	49.3
New business	52.5	51.4	51.2	49.7
New export business	48.6	49.3	48.0	47.3
Future Production	**64.5**	61.2	**60.2**	**61.7**
Employment	53.4	53.1	52.1	51.6
Pending Sales	53.3	50.2	49.2	48.5
Input Prices	**71.3**	69.3	**67.6**	**64.8**
Final Prices	**61.3**	59.7	**58.1**	**46.9**

Source: J.P.Morgan Global Composite PMI.

At the country level, the evolution has been homogeneous. Developed economies show a slowdown in both the services and manufacturing sectors. In the United States, despite the favorable evolution of employment, the manufacturing sector reached a two-year low, while the services sector showed levels in the contraction area. The Eurozone has been affected by lower demand amid inflationary pressures and energy constraints that have

particularly affected manufacturing activity. In the United Kingdom, the manufacturing sector was in contractionary territory, affected by the shortage of inputs, and consumer and investor confidence remained in negative territory.

Table 2
JP MORGAN GLOBAL ACTIVITY INDEX: MAJOR ECONOMIES

I. Services

	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Aug-22
Global	51.8	54.7	57.4	53.8	54.7	53.4	53.9	49.2
USA Markit	54.8	60.4	64.6	54.9	57.6	58.0	52.7	43.7
China Caixin	56.3	54.3	50.3	53.4	53.1	42.0	54.5	55.0
Eurozone	46.4	49.6	58.3	56.4	53.1	55.6	53.0	49.8
United Kingdom	49.4	56.3	62.4	55.4	53.6	62.6	54.3	50.9
Japan	47.7	48.3	48.0	47.8	52.1	49.4	54.0	49.5

II. Manufacturing

	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Aug-22
Global	53.8	55.0	55.5	54.1	54.3	52.9	52.2	50.3
USA Markit	57.1	59.1	62.1	60.7	57.7	58.8	52.7	51.5
China Caixin	53.0	50.6	51.3	50.0	50.9	48.1	51.7	49.5
Eurozone	55.2	62.5	63.4	58.6	58.0	56.2	52.1	49.6
United Kingdom	57.5	58.9	63.9	57.1	57.9	55.2	52.8	47.3
Japan	50.0	52.7	52.4	51.5	54.3	54.1	52.7	51.5

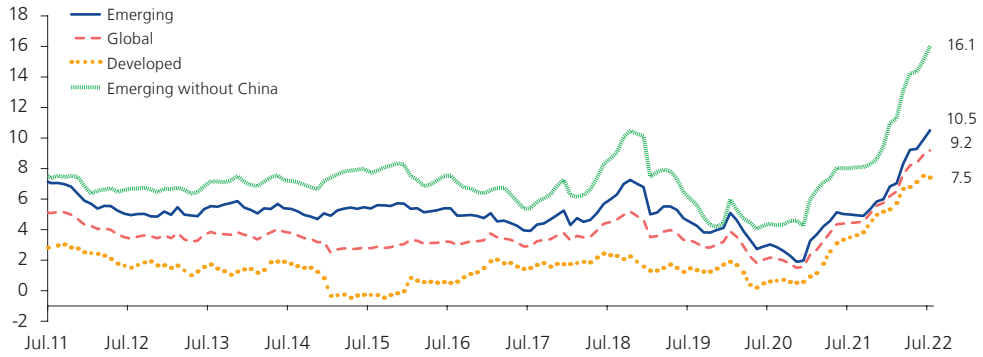
Source: JP Morgan.

Within the emerging economies, China's recovery stands out as a result of the partial lifting of the restrictions imposed in the second quarter in response to the resurgence of COVID-19. However, the economy continues to be affected by developments in the real estate sector and recent energy restrictions. In Latin America, monthly frequency indicators suggest that the region's economies would slow down in the third quarter of 2022, in line with the adjustment in global financial conditions, the deterioration in the terms of trade and adjustments in domestic interest rates to address rising inflationary pressures.

5. Following the trend outlined in previous Reports, **inflationary pressures** remained high and reached new highs in several countries and regions (e.g. the Eurozone and the United Kingdom).

Global inflation rose from 8.9 to 9.2 percent between June and July, continuing the sustained trend observed throughout the year. This increase is explained by the evolution of emerging economies, whose rate rose from 9.9 to 10.5 percent. In contrast, the rate in developed economies declined slightly –from 7.6 to 7.5 percent– due to lower inflation in the United States in July.

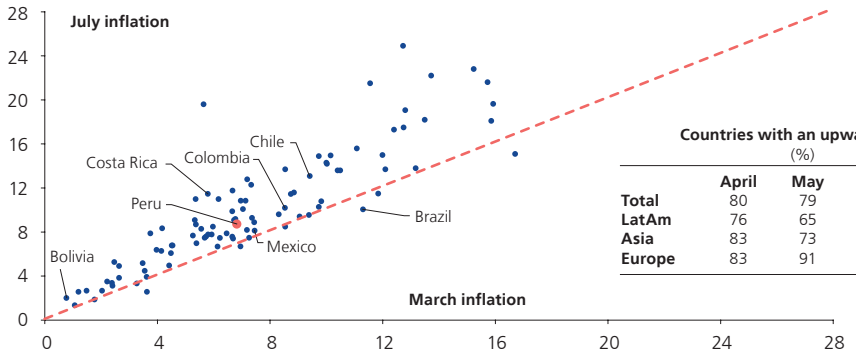
Graph 7
GLOBAL INFLATION IN DEVELOPED AND EMERGING ECONOMIES
(12-months % chg.)



Source: Central banks and statistical institutes.
Own elaboration.

The upward trend in inflation has been sustained in most countries throughout the year. The percentage of countries recording month-to-month increases in inflation rates was approximately 80 percent between April and June, while this percentage decreased slightly in July due to the correction of fuel prices in several countries. Despite July's evolution, the inflation rate is higher than that recorded four months earlier in 95 percent of countries.

Graph 8
INFLATION FOR JULY 2022 AND INFLATION FOR MARCH 2022
(%)



Countries with an upward trend
(%)

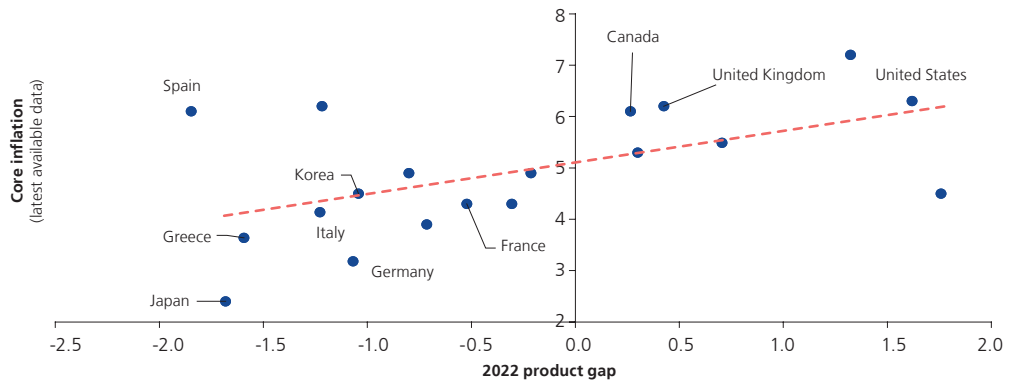
	April	May	June	July
Total	80	79	83	69
LatAm	76	65	88	53
Asia	83	73	83	50
Europe	83	91	91	71

Source: Trading Economics.

In developed economies, energy prices (particularly the price of gas) and wage pressures explain the persistence of high inflation. The depreciation of currencies against the dollar and supply chain problems, which remain above their historical averages despite the reduction in recent months, also played a role.

In addition, demand pressures are observed in several of these economies due to excess private spending (resulting from savings generated during the pandemic) and fiscal deficits that remain at higher levels than those recorded before the pandemic. These demand pressures are reflected in a positive output gap in 2022 and high core inflation rates (as in the case of the United States and the United Kingdom).

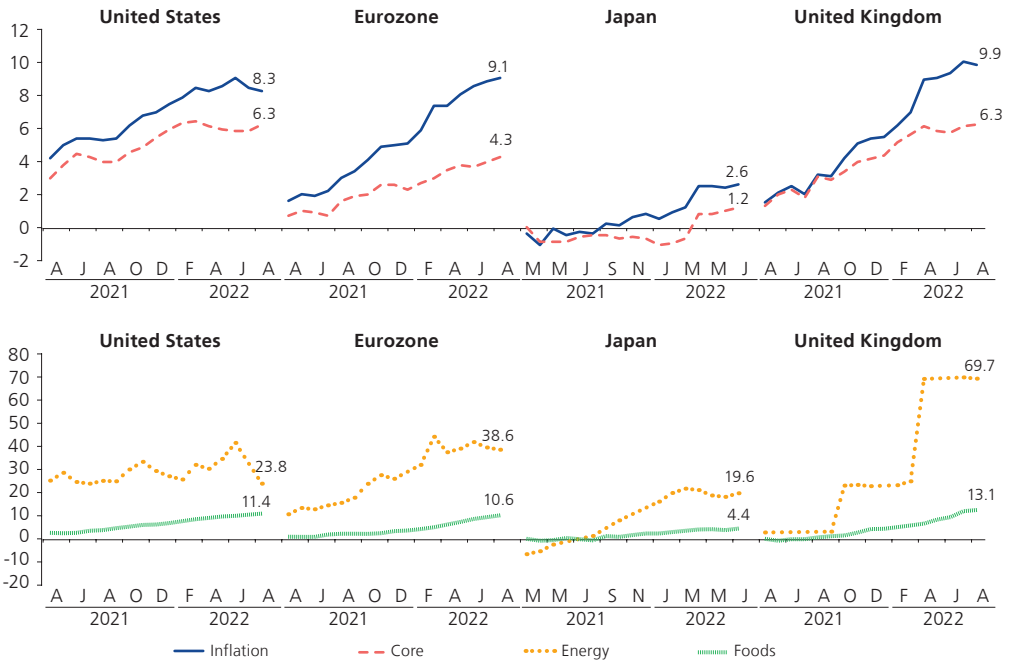
Graph 9
2022 OUTPUT GAP AND CORE INFLATION RATE
(As % of potential GDP and year-on-year change, respectively)



Source: IMF, statistical institutes and central banks.

Inflation in the United States, after reaching a 40-year high in June, eased slightly in the following two months, recording an annual rate of 8.3 percent in August (above an expected rate of 8.1 percent). This reduction mainly reflects the lower increase in fuel prices due to the normalization of refinery activities. In contrast, core inflation rose from 5.9 to 6.3 percent, above the 2 percent target. In the Eurozone, inflation reached successive records in July (8.9 percent) and August (9.1 percent), in line with high energy and food prices; while core inflation registered 4.3 percent. In the United Kingdom, inflation showed a 40-year high of 10.5 percent in July, reflecting high energy costs, while core inflation rose to 6.2 percent (the highest rate among major developed economies).

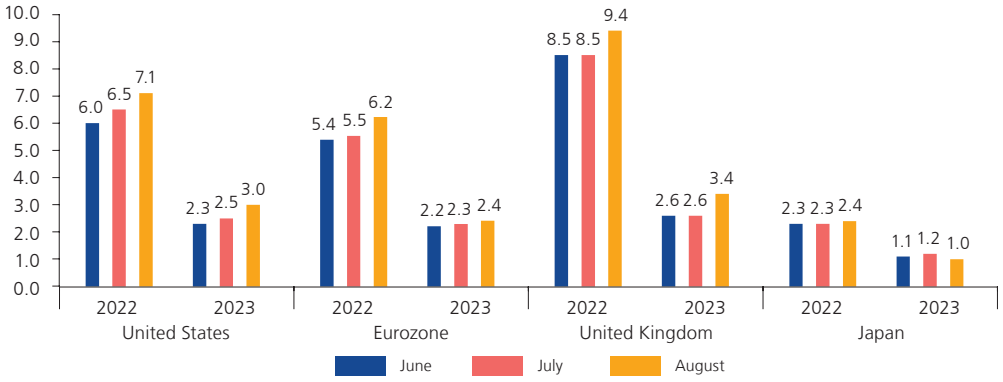
Graph 10
INFLATION IN DEVELOPED ECONOMIES 2021-2022
(12-months % chg.)



Source: Central banks and statistical institutes.

As the upward trend in inflation has continued, inflation expectations for December 2022 and December 2023 have been revised up. According to forecasts by banks and investment houses, the expected rate of inflation at year-end is substantially higher than the targets set by their respective central banks, A substantial reduction in inflation is expected by the end of 2023 (although inflation would register higher rates than those foreseen in the June Report).

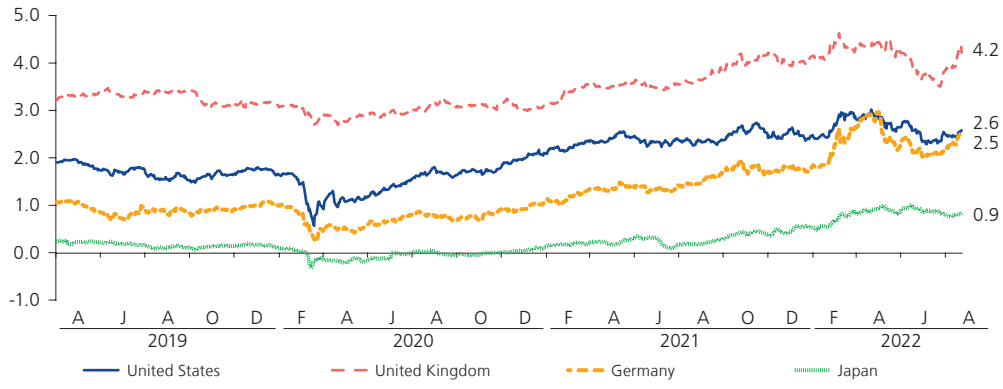
Graph 11
END OF PERIOD INFLATION EXPECTATIONS FOR 2022 AND 2023
(%)



* Estimated based on the median of investment houses.
Source: Investment houses.

In contrast, medium- and long-term inflation expectations –estimated on the basis of the difference between nominal bond yields and inflation-indexed yields– have remained relatively stable, with the exception of these expectations in the United Kingdom, which reversed the downward trend of previous months. In Germany, expectations also showed a slight upward trend, but reached rates close to the 2 percent target, while in Japan expectations remain below the target.

Graph 12
10-YEAR BREAKEVEN INFLATION RATES
(%)



Source: Reuters.

6. In the economies with inflation targeting, year-on-year inflation rates have been above the target range in both developed and emerging economies. In addition to global shocks,

inflation in emerging economies has been affected by the depreciation of their currencies against the dollar. In Europe, America and Asia, these economies show inflation rates above the upper limit of their target ranges.

Table 3
CONSUMER PRICE INDEX
(12-months % chg.)

Región/Country	Dec.20	Dec.21	Jun.22	Jul.22	Aug.22	Maximum from:		Target
America								
United States	1.4	7.0	9.1	8.5	8.3	Nov-81	**	2.0
Canada	0.7	4.8	8.1	7.6	n.d.	Jan-83		2.0+/-1.0
Colombia	1.6	5.6	9.7	10.2	10.8	Apr-99		3.0+/-1.0
Chile	3.0	7.2	12.5	13.1	14.1	Mar-94		3.0+/-1.0
Mexico	3.2	7.4	8.0	8.5	8.7	2000		3.0+/-1.0
Brazil	4.5	10.1	11.9	10.1	8.7	1996	*	3.75+/-1.5
Peru	2.0	6.4	8.8	8.7	8.4	Jul-97	**	2.0+/-1.0
Asia								
Indonesia	1.7	1.9	4.4	4.9	4.7	2015	***	3.0+/-1.0
India	4.6	4.9	7.0	6.7	7.0	May-14	*	4.0+/-2.0
Philippines	3.3	3.2	6.1	6.4	6.3	Oct-18	***	3.0+/-1.0
Korea	0.5	3.7	6.0	6.3	5.7	Nov-98	***	2.0
Thailand	-0.3	2.2	7.7	7.6	7.9	Jul-08		2.5+/-1.5
Israel	-0.7	2.8	4.4	5.2	5.2	Oct-08		1.0-3.0
Europe								
Eurozone	-0.3	5.0	8.6	8.9	9.1	Record		2.0
Germany	-0.3	5.3	7.6	7.5	7.9	1990		2.0
France	0.0	2.8	5.8	6.1	5.8	Jul-85	**	2.0
Italy	-0.2	3.9	7.4	7.9	8.4	1986		2.0
Spain	-0.5	6.7	10.2	10.8	10.4	Apr-85	***	2.0
Serbia	1.3	7.9	11.9	12.8	13.2	May-11		3.0+/-1.5
Hungary	2.7	7.4	11.7	13.7	15.6	May-98		3.0+/-1.0
Norway	1.4	5.3	6.3	6.8	6.5	Jul-88		2.5
Czech Republic	2.3	6.6	17.2	17.5	17.2	Dec-93		2.0+/-1.0
United Kingdom	0.6	5.4	9.4	10.1	9.9	Feb-82		2.0
Russia	4.9	8.4	15.9	15.1	14.3	2002	**	4.0
Poland	2.4	8.6	15.6	15.6	16.1	1996		2.5+/-1.0
Iceland	3.6	5.1	8.8	9.9	9.7	Jul-05	***	2.5
Sweden	0.5	3.9	8.7	8.5	9.8	Jul-91		2.0
Turkey	14.6	36.1	78.6	79.6	80.2	Sep-98		5.0+/-2.0
Romania	2.1	8.2	15.1	15.0	15.3	2003		2.5+/-1.0
Ukraine	5.0	10.0	21.5	22.2	23.8	Feb-16		5.0
Switzerland	-0.8	1.5	3.4	3.4	3.5	Oct-93		<2.0
Oceania								
Australia	0.9	3.5	6.1	-.-	-.-	2001		2.0-3.0
New Zealand	1.4	5.9	7.3	-.-	-.-	1990		2.0+/-1.0

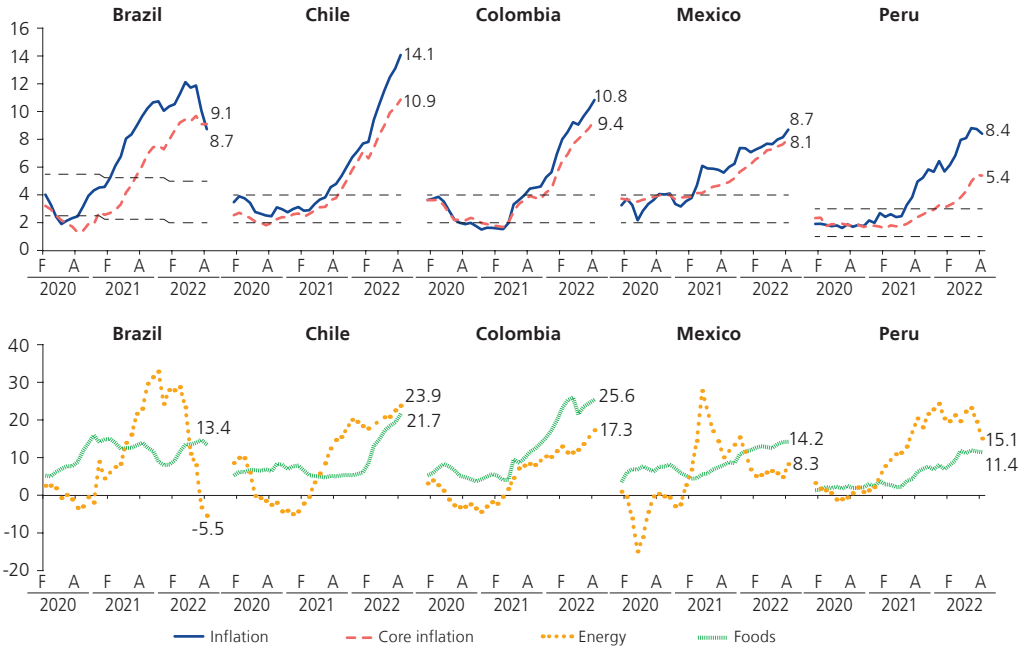
* The maximum rate was recorded in April.
** The maximum rate was recorded in June.
*** The maximum rate was recorded in July.
Note: Data for Australia and New Zealand are quarterly.
Source: Central banks and statistical institutes of each country.

In the Latin American region, inflation in most countries maintained an upward trend, with Chile's inflation rate reaching 14.1 percent in August. In contrast, Peru and Brazil experienced a reduction in total inflation. In the case of Brazil, the lower inflation rate is explained by the implementation of measures to reduce the price of energy (reduction of state taxes on gasoline, ethanol and electricity). For its part, core inflation maintained an upward trend in all countries, but remains below total inflation (with the exception of Brazil).

Graph 13

INFLATION IN LATIN AMERICA 2020-2022

(12-months % chg.)



In Brazil, the Energy component corresponds to the intra-household component. The food indices in Brazil and Peru include the subgroup of meals away from home.
Source: Central banks and national statistical institutes.

In Brazil, the Energy component corresponds to the in-home component. The food indices in Brazil and Peru include the subgroup of meals outside the home.

7. In this context of persistent inflationary pressures, most central banks have continued to **withdraw monetary stimulus**, even at a faster pace than anticipated in the previous Report, and have reaffirmed their commitment to control inflation.

Most central banks have continued with the rate hike cycle in both developed and emerging economies. According to Bloomberg, 80 percent of central banks have raised rates so far this year. Moreover, with the exception of some Asian central banks, the rate level in most central banks is higher than that recorded before the pandemic (December 2019).

In the developed economies, the main central banks, except for the Bank of Japan, have continued with the withdrawal of monetary stimulus initiated towards the end of last year.

This withdrawal has taken the form of an increase in interest rates or a reduction in the size of their assets.

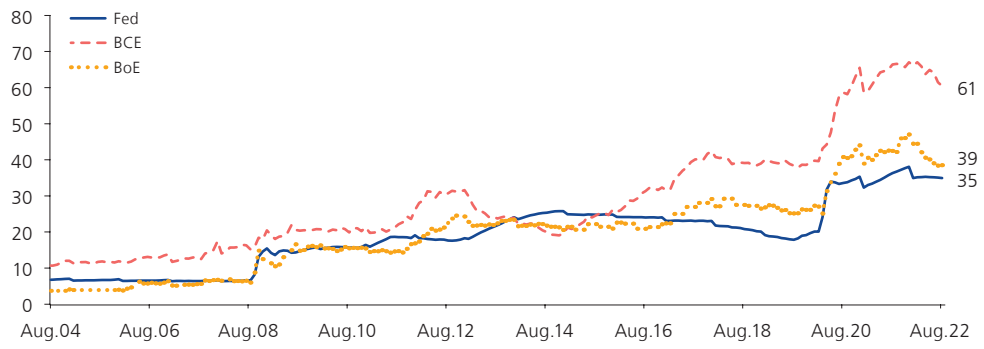
The Fed, after raising the rate by 75 bps in June (a magnitude not seen since 1994), made a similar increase during the July meeting. Fed Chairman Jerome Powell and several officials have signaled their intention to make the necessary interest rate adjustments in order to bring inflation back to its target.

For its part, the Bank of England made its sixth consecutive rate adjustment in August, raising the rate by 50 bps, the largest increase since 1995. The central bank projects that inflation will increase to 13.3 percent in the fourth quarter, leading to additional adjustments during the remainder of this year and next year.

In the same vein, the European Central Bank (ECB) initiated the rate hike cycle in July, raising interest rates by 50 bps for the first time since 2011. The ECB reiterated the need for monetary policy normalization in the following months based on new information and new economic data. It also approved the creation of a new monetary instrument (Transmission Protection Instrument - TPI) to counterbalance undesired developments in the secondary debt market that may hinder the monetary policy transmission mechanism. In September, it raised interest rates by 75 bps and mentioned that it expects to raise them again, given that inflation is still "excessively high".

The exception to this trend among the major developed economies is Japan, whose central bank has maintained its monetary policy rate at -0.1 percent.

Graph 14
CENTRAL BANKS: TOTAL ASSETS
(Percentage of GDP)



Source: Central Banks and International Monetary Fund.
Prepared by: BCRP.

In emerging economies, the trend was similar with the exception of China, Russia and Ukraine. Within Europe, the rate hikes in those economies with the highest inflationary pressures stand out, as in the cases of Hungary (585 bps), Romania (175 bps) and the Czech Republic (125 bps), while in Asia, the largest rate increases were observed in Israel (125 bps) and the Philippines (150 bps). In Latin America, interest rates rose between 50 bps (Brazil) and 300 bps (Colombia).

Table 4
MONETARY POLICY INTEREST RATES
(%)

	Interest rate					Variation in pbs	
	Dec.19	Dec.20	Dec.21 (a)	Jun.22 (b)	Sep.22 (c)	(c)-(b)	(c)-(a)
Developed economies							
United States	1.75	0.25	0.25	1.75	2.50	75	225
Canada	1.75	0.25	0.25	1.50	3.25	175	300
Eurozone	0.00	0.00	0.00	0.00	1.25	125	125
United Kingdom	0.75	0.10	0.25	1.25	1.75	50	150
Sweden	0.00	0.00	0.00	0.25	0.75	50	75
Switzerland	-0.75	-0.75	-0.75	-0.25	-0.25	0	50
Norway	1.50	0.00	0.50	0.75	1.75	100	125
Japan	-0.10	-0.10	-0.10	-0.10	-0.10	0	0
South Korea	1.25	0.50	1.00	1.75	2.50	75	150
New Zealand	1.00	0.25	0.75	2.00	3.00	100	225
Australia	0.75	0.10	0.10	0.85	2.35	150	225
Latin America							
Brazil	4.50	2.00	9.25	13.25	13.75	50	450
Colombia	4.25	1.75	3.00	6.00	9.00	300	600
Peru	2.25	0.25	2.50	5.50	6.75	125	425
Chile	1.75	0.50	4.00	9.00	10.75	175	675
Mexico	7.25	4.25	5.50	7.00	8.50	150	300
Uruguay	-.-	4.50	5.75	9.25	10.25	100	450
Asia							
Philippines	4.00	2.00	2.00	2.25	3.75	150	175
Malaysia	3.00	1.75	1.75	2.00	2.50	50	75
India	5.15	4.00	4.00	4.90	5.40	50	140
Thailand	1.25	0.50	0.50	0.50	0.75	25	25
Indonesia	5.00	3.75	3.50	3.50	3.75	25	25
Israel	0.25	0.10	0.10	0.75	2.00	125	190
Taiwan	1.38	1.13	1.13	1.50	1.50	0	38
Europe							
Czech Republic	2.00	0.25	3.75	5.75	7.00	125	325
Poland	1.50	0.10	1.75	6.00	6.75	75	500
Ukraine	13.50	6.00	9.00	25.00	25.00	0	1600
Russia	6.25	4.25	8.50	9.50	7.50	-200	-100
Iceland	3.00	0.75	2.00	3.75	5.50	175	350
Serbia	2.25	1.00	1.00	2.50	3.50	100	250
Romania	2.50	1.50	1.75	3.75	5.50	175	375
Hungary	0.90	0.60	2.40	5.90	11.75	585	935
Africa							
South Africa	6.50	3.50	3.75	4.75	5.50	75	175

Memo: Data as of September 13.
Source: Central banks, Reuters and others.

8. As regards **fiscal policy**, several countries adopted measures to reduce the impact of high energy prices.

The Inflation Reduction Act (IRA) was enacted in the United States. This act includes measures to promote clean energy and to reduce the price of medicines (to be financed by corporate taxes). It is estimated that the impact of the IRA on growth and inflation will be limited in the short term.

On the other hand, various fiscal measures against rising energy prices introduced In the Eurozone have somewhat offset the price shock. China has announced a package of

measures including economic support for infrastructure and housing projects, the deferral of credit payments, special allocations to local governments, financial assistance to state-owned power generation companies and subsidies to the agricultural sector, among other measures.

Global economic outlook

9. In line with the developments described above, the **global growth** forecast for 2022 and 2023 has been further revised downward, from 3.0 to 2.8 percent in 2022 and from 3.0 to 2.7 percent in 2023. This revision reflects, on the one hand, the data to date, as well as the less favorable outlook for the remainder of the year and for 2023. As pointed out above, the global economy, and particularly Europe, will be affected by winter energy constraints from the fourth quarter onwards. In addition, further tightening in global financial conditions in response to persistent inflationary pressures will also contribute to this revision on the downside.

Table 5
GLOBAL GROWTH
(Annual percentage changes)

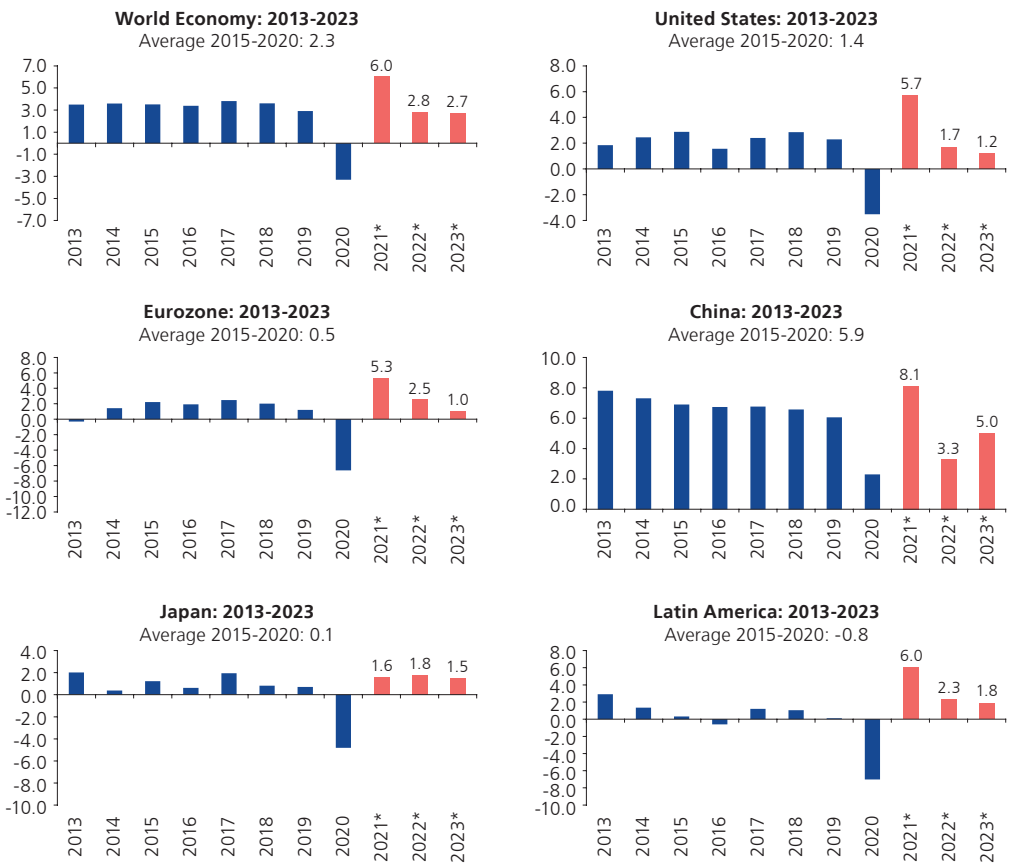
	PPP*	2021**	2022		2023	
			IR Jun.	IR Sep.	IR Jun.	IR Sep.
Developed economies	**42.2**	**5.2**	**2.6**	**2.2**	**1.8**	**1.3**
Of which						
1. United States	15.9	5.7	2.3	1.7	2.0	1.2
2. Eurozone	12.0	5.3	2.7	2.5	1.8	1.0
3. Japan	3.9	1.6	2.0	1.8	1.7	1.5
4. United Kingdom	2.3	7.4	3.7	3.5	1.0	0.1
5. Canada	1.4	4.6	3.9	3.6	2.8	2.0
6. Others	6.8	5.0	2.8	2.4	2.4	1.8
Developing economies	**57.8**	**6.7**	**3.3**	**3.3**	**4.0**	**3.8**
Of which						
1. China	18.7	8.1	3.8	3.3	5.2	5.0
2. India	7.0	8.9	7.6	7.3	6.2	6.0
3. Russia	3.1	4.7	-10.0	-7.0	-0.9	-2.3
4. Latin America and the Caribbean	7.3	6.0	2.0	2.3	2.1	1.8
Argentina	0.7	10.4	2.5	2.8	1.8	0.8
Brazil	2.4	4.6	0.8	1.8	1.4	1.0
Chile	0.4	11.7	2.0	1.9	1.0	0.0
Colombia	0.6	10.7	4.8	6.0	3.1	2.5
Mexico	1.9	4.8	2.0	1.8	1.9	1.6
Peru	0.3	13.6	3.1	3.0	3.2	3.0
5. Others	21.7	5.3	4.7	4.5	4.4	4.0
World Economy	**100.0**	**6.0**	**3.0**	**2.8**	**3.0**	**2.7**

* Base 2021.
** Preliminary.
Source: IMF, Consensus Forecast.

This central scenario presents mostly downside risks. The risk of a severe energy shortage, which affects both prices and the level of activity, has a higher probability of occurrence than estimated in the previous Report. The persistence of high inflation rates that may lead to an even greater than expected adjustment in international interest rates, could affect aggregate demand in the main developed economies. Likewise, a scenario of new outbreaks of COVID-19 in China could reverse the recovery faced by the economy in recent months. Two additional risks are associated with the negative effects of more severe

weather conditions (drought in Europe, floods in Asia and India, among others) and with increased geopolitical tensions at the global level.

Graph 15
GDP GROWTH, 2013-2023
(Real percentage change)



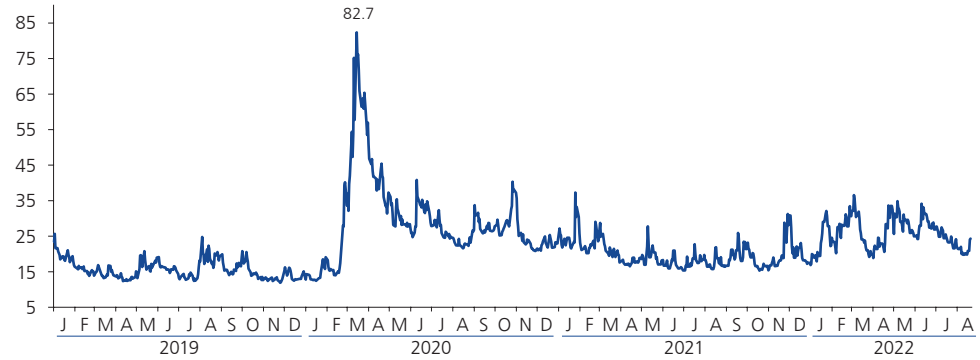
* Projection. Data for 2021 are preliminary.
Source: IMF, Consensus Forecast.

International financial markets

10. **Financial markets** were mainly affected by fears of a sharp global economic slowdown and expectations that central banks would implement more aggressive rate tightening policies in response to persistent inflationary pressures. As in the June Report, new outbreaks of COVID-19 in China, the conflict in Ukraine and restrictions on gas supplies to Europe continued to exert downward pressures on several markets. In such a context, risk aversion increased at the beginning of the third quarter.

However, these factors were partially counterbalanced, particularly during the first half of August, by positive corporate results and the reduction of tensions between Taiwan and China. The downward trend in COVID-19 cases in China, which, In addition, were concentrated in smaller cities, also played a role in offsetting them.

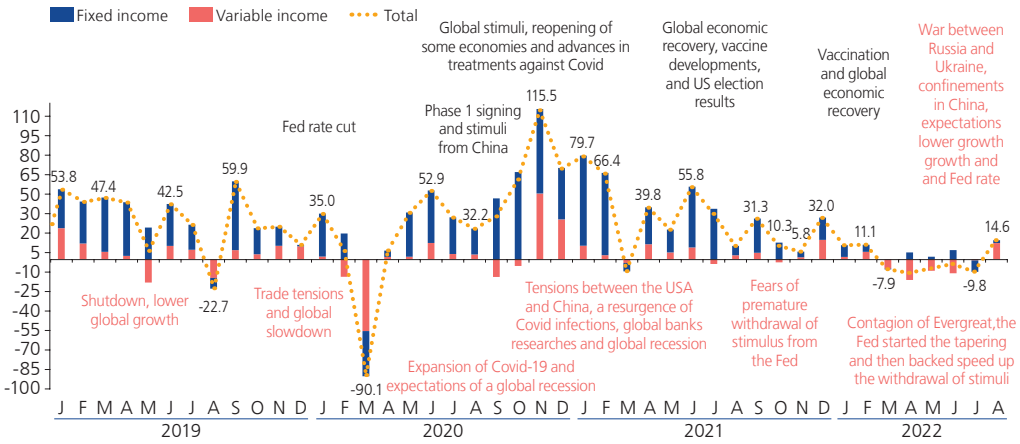
Graph 16
VIX INDEX: VOLATILITY OF THE U.S. STOCK MARKET



Source: Reuters.

Other developments standing out since the last Inflation Report were the appreciation of the dollar against most currencies and the currencies of emerging economies (the DXY index reached 20-year highs) as well as the increase in most sovereign yields in developed economies. For its part, capital flows recorded net outflows in July, but returned in August, particularly to equity markets.

Graph 17
CAPITAL FLOWS FROM NON-RESIDENTS TO EMERGING MARKETS
(Billion US$)



* Data through August 22, 2022.
Source: IIF

11. In the **fixed-income markets**, long-term sovereign yields in developed economies fell during July as a result of global uncertainty and greater risk aversion. However, this trend reversed during August in a context in which the Fed and other central banks adopted a more aggressive stance to reduce inflation and make it converge towards their respective targets.

It is worth pointing out that the rate hikes –and expectations of further significant adjustments in the coming months– affected the shorter tranches to a greater extent: for example, since the end of June, the yields on 3-month bonds increased by 50 bps (to 2.69 percent), while 10-year yields rose by only 2 bps (to 3.03 percent).

Graph 18
U.S. GOVERNMENT BOND YIELDS
(%)

Source: Reuters.

In the emerging economies, the behavior was not uniform. Some high-yielding countries, such as Turkey and Brazil, recorded significant capital inflows. On the other hand, reductions, albeit of a lesser magnitude, were also observed in several net commodity-importing economies. Within the region, increases in Colombia and Chile stood out in a context of idiosyncratic shocks linked to the electoral process and the constitutional referendum, respectively.

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

	Dec.21 (a)	Jun.22 (b)	Aug.22* (c)	Differences (pbs) (c)-(b)	(c)-(a)
United States	1.51	3.02	3.03	2	152
Germany	-0.18	1.33	1.39	5	157
France	0.20	1.91	2.01	10	182
Italy	1.17	3.26	3.69	43	252
Spain	0.56	2.42	2.59	17	203
Greece	1.32	3.61	3.96	35	264
United Kingdom	0.97	2.23	2.60	37	163
Japan	0.07	0.23	0.22	-1	15
Brazil	10.84	13.07	12.24	-82	141
Colombia	8.19	11.55	11.99	44	380
Chile	5.65	6.27	6.74	46	109
Mexico	7.56	9.03	8.89	-13	134
Peru	**5.90**	**7.76**	**7.95**	**19**	**205**
South Africa	9.80	10.99	10.66	-33	86
India	6.45	7.45	7.22	-23	76
Turkey	23.54	18.88	13.15	-573	-1,039
Russia	8.29	8.15	8.32	17	3
China	2.78	2.82	2.66	-16	-12
South Korea	2.26	3.62	3.62	0	137
Indonesia	6.36	7.20	7.05	-15	68
Thailand	1.89	2.82	2.39	-43	50
Malaysia	3.59	4.26	3.96	-31	37
Philippines	4.71	6.67	5.89	-78	118

* Prepared as of August 26, 2022.
Source: Reuters.

12. In the **equity markets**, stock markets in developed countries showed slight changes during July and several of them recovered during August, benefited mainly by positive corporate results. Despite this, however, most of them have accumulated losses so far this year.

Emerging countries stock markets also showed similar movements, although some fell due to idiosyncratic events. Of note was the fall of the Chinese stock market, impacted by the restrictions adopted as a result of the COVID-19 flare-ups and also, albeit temporarily, by the tensions with the United States and Taiwan. On the other hand, Argentina's stock market made significant gains as a result of strong demand from foreign investors (after the significant drop recorded in 2021).

Table 7
WORLD STOCK EXCHANGES
(%)

		Dec.21 (a)	Jun.22 (b)	Aug.22* (c)	% chg.	
					(c)/(b)	(c)/(a)
VIX**	S&P 500	17.22	28.71	25.66	-3.1	8.4
USA	Dow Jones	28,538	32,845	32,283	-1.7	13.1
USA	S&P 500	4,766	3,785	4,058	7.2	-14.9
Germany	DAX	15,885	12,784	12,971	1.5	-18.3
France	CAC 40	7,153	5,923	6,274	5.9	-12.3
Italy	FTSE MIB	27,347	21,294	21,895	2.8	-19.9
Spain	IBEX 35	8,714	8,099	8,064	-0.4	-7.5
Greece	ASE	893	810	894	10.3	0.0
United Kingdom	FTSE 100	7,385	7,169	7,427	3.6	0.6
Japan	Nikkei 225	28,792	26,393	28,641	8.5	-0.5
Brazil	Ibovespa	104,822	98,542	112,303	14.0	7.1
Colombia	COLCAP	1,411	1,323	1,299	-1.8	-7.9
Chile	IPSA	4,308	4,950	5,461	10.3	26.8
Mexico	IPC	53,272	47,524	47,633	0.2	-10.6
Argentina	Merval	83,500	88,450	141,283	59.7	69.2
Peru	**Ind. Gral.**	**21,112**	**18,389**	**19,442**	**5.7**	**-7.9**
South Africa	JSE	73,709	66,223	70,173	6.0	-4.8
India	Nifty 50	17,354	15,780	17,559	11.3	1.2
Turkey	XU100	1,858	2,405	3,146	30.8	69.4
Russia	RTS	1,596	1,345	1,183	-12.0	-25.9
China	Shangai C.	3,640	3,399	3,236	-4.8	-11.1
South Korea	KOSPI	2,978	2,333	2,481	6.4	-16.7
Indonesia	JCI	6,581	6,912	7,135	3.2	8.4
Thailand	SET	1,658	1,568	1,645	4.9	-0.8
Malaysia	KLCI	1,568	1,444	1,500	3.9	-4.3
Philippines	Psei	7,123	6,155	6,753	9.7	-5.2

* Prepared as of August 26, 2022.
** Data and variations are expressed in points.
Source: Reuters.

13. As regards **foreign exchange markets**, the dollar appreciated across the board during the third quarter in a context of greater global uncertainty as a result of the aforementioned factors. This was reinforced by the Fed's adoption of a more aggressive stance towards the end of August. Among the currencies of developed countries, the dollar appreciated against the euro, which reached a 20-year low.

In the case of emerging economies, most currencies depreciated, following the global trend. With the exception of the real, the ruble, the Mexican peso and the Peruvian sol, all currencies register a cumulative depreciation so far this year.

Table 8

EXCHANGE RATE

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

		Dec.21 (a)	Jun.22 (b)	Aug.22* (c)	% chg. **	
					(c)/(b)	(c)/(a)
Dollar Index***	US Dollar Index	95.97	104.69	108.80	3.9	13.4
Euro	Euro	1.137	1.048	0.996	-4.9	-12.4
United Kingdom	Pound sterling	1.353	1.218	1.173	-3.6	-13.3
Japan	Yen	115.08	135.73	137.48	1.3	19.5
Brazil	Real	5.570	5.256	5.070	-3.5	-9.0
Colombia	Peso	4065	4142	4394	6.1	8.1
Chile	Peso	851	916	893	-2.6	4.9
Mexico	Peso	20.49	20.09	20.00	-0.4	-2.4
Argentina	Peso	102.68	125.21	137.70	10.0	34.1
Peru	**Sol**	**3.991**	**3.827**	**3.841**	**0.4**	**-3.8**
South Africa	Rand	15.99	16.27	16.88	3.7	5.6
India	Ruppe	74.47	78.95	79.96	1.3	7.4
Turkey	Lira	13.32	16.69	18.17	8.9	36.5
Russia	Ruble	74.56	52.50	59.88	14.0	-19.7
China	Yuan (onshore)	6.352	6.698	6.872	2.6	8.2
South Korea	Won	1188	1288	1340	4.1	12.8
Indonesia	Rupee	14250	14895	14815	-0.5	4.0
Thailand	Bath	33.23	35.30	36.20	2.5	8.9
Malaysia	Ringgit	4.164	4.406	4.465	1.3	7.2
Philippines	Peso	50.99	55.01	56.20	2.2	10.2

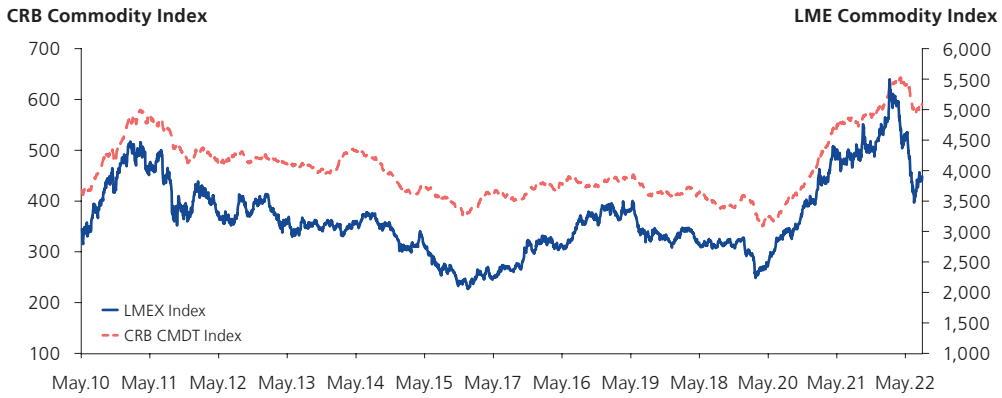
* Prepared as of August 26, 2022.
** An increase (fall) in the index means an appreciation (depreciation) of the US dollar, except in the euro and the pound.
*** An increase (fall) in the index means an appreciation (depreciation) of the US dollar against a currency basket (made up by the euro, yen, the pound, the Canadian dollar, Swedish krona and the Swiss franc).
Source: Reuters.

Commodity prices

14. The prices of most industrial commodities decreased with respect to the price levels mentioned in the June Inflation Report. Fears of a lower dynamism in China, the main consumer of commodities, have accentuated over the last months and global growth prospects have been revised down. Expectations of a more aggressive monetary policy by the main central banks materialized, which also affected prices through the appreciation of the dollar and the reduction of non-commercial positions in most commodities.

However, prices continue to find some support from supply constraints due to supply chain disruptions (associated with China's zero COVID policy) and high energy prices. The latter has implied higher smelting costs that have affected the supply of some metals.

Graph 19
LME AND CRB COMMODITY INDEX



Source: Reuters.

Copper

15. In the last two months, copper prices fell 12 percent, from US$ 4.11 the pound in June to US$ 3.62 in August. With this, so far this year the price of copper accumulates a 17 percent drop since December 2021.

The average price of copper dereased in the last two months due to the deterioration of the outlook for world demand, particularly due to the slowdown in industrial activity in China and the negative impact of the zero tolerance policy for COVID-19 on copper demand in that country. Other factors that explained the fall were the appreciation of the dollar, particularly against the yuan, supported by aggressive interest rate hikes by the Fed, followed by the European Central Bank and the Bank of England.

On the **demand** side, the demand for this metal was affected by the lower activity of intermediate goods companies (copper cathode rods, copper pipes, copper plates and strips, and copper wires and cables). It should be pointed out that, at the close of this Report, Chinese demand and, to a lesser extent supply, continue to be affected by energy restrictions.

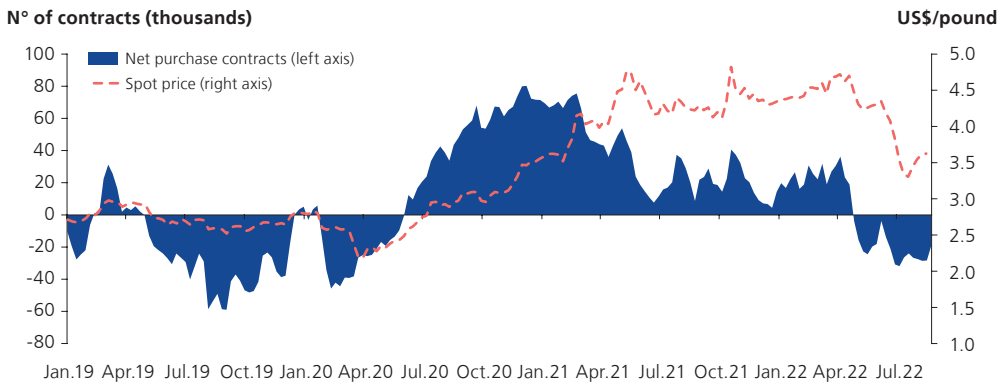
Table 9
SUPPLY AND DEMAND FOR REFINED COPPER
(Thousand metric tons of copper)

	2017	2018	2019	2020	2021	Jan.-Jun. 2021	Jan.-Jun. 2022 2/	% chg. 2022/2021
Global Mining Production	20,067	20,580	20,630	20,662	21,204	10,340	10,654	3.0%
Global Refining Production (Primary + Secondary)	23,551	24,062	24,086	24,546	24,823	12,295	12,686	3.2%
Global Use of Refined Copper	23,693	24,462	24,350	24,963	25,264	12,424	12,758	2.7%
Refined Balance 2/	-142	-399	-264	-417	-441	-130	-72	--

1/ ICSG report for August 2022.
2/ The balance of refined products is calculated as the subtraction between the global production of refined products (supply) and their use (demand).
Source: The International Copper Study Group (ICSG).

These developments have coincided with a contraction in non-commercial demand. The number of non-commercial net purchase contracts for copper continued in negative territory since the end of April, reflecting speculative investors' negative sentiment about the outlook for the copper market.

Graph 20
COPPER: NON-COMERCIAL CONTRACTS



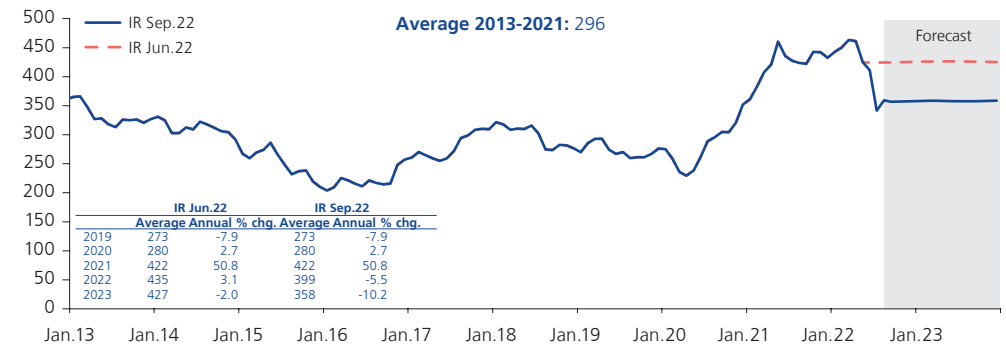
Note: The Copper Speculative Net Positions of the Commodities Futures Trading Commission (Commodity Futures Trading Commission) are reported weekly and reflect the difference between the total volume of the long position (or purchase) and short position (or sale) in the market and opened by non-commercial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

Because of this, the copper price projection has been revised down with respect to the June Inflation Report estimate. This revision reflects the change in the outlook for world growth, particularly in China and the Eurozone and, on the supply side, the increase in refining capacity in China and the expansion of world mine capacity.

Uncertainty factors include future developments in the Russia-Ukraine conflict, COVID-19 developments in China and monetary policy decisions by major central banks in response to inflation.

Other factors of uncertainty are related to the impact that the stimulus measures announced by China, particularly those related to investments in renewable energy infrastructure, high technology and the urbanization of rural areas, will have on copper demand. In addition, the central bank's measures aimed at supporting the real estate sector are also expected to have an impact on copper demand.

Graph 21
COPPER: JANUARY 2013 - DECEMBER 2023
(US$. cents/pd.)



	IR Jun.22		IR Sep.22	
	Average	Annual % chg.	Average	Annual % chg.
2019	273	-7.9	273	-7.9
2020	280	2.7	280	2.7
2021	422	50.8	422	50.8
2022	435	3.1	399	-5.5
2023	427	-2.0	358	-10.2

Source: Reuters and BCRP.

Zinc

16. The average international price of zinc dropped to US$ 1.62 in August 2022, 2 percent below the level recorded in June 2022, but still 5 percent above the December 2021 level. It is worth mentioning that the quotation reached a 12-month low on July 15.

The factors accounting for the downward pressures are similar to those impacting the copper price, i.e., the deterioration of the macroeconomic outlook. On the side of fundamentals, the significant drop in refined zinc consumption in China stands out as this drop was only partially counterbalanced by higher demand in the rest of the world. The International Zinc and Lead Study Group (ILZSG) estimates that the global zinc market recorded a surplus in the first half of the year.

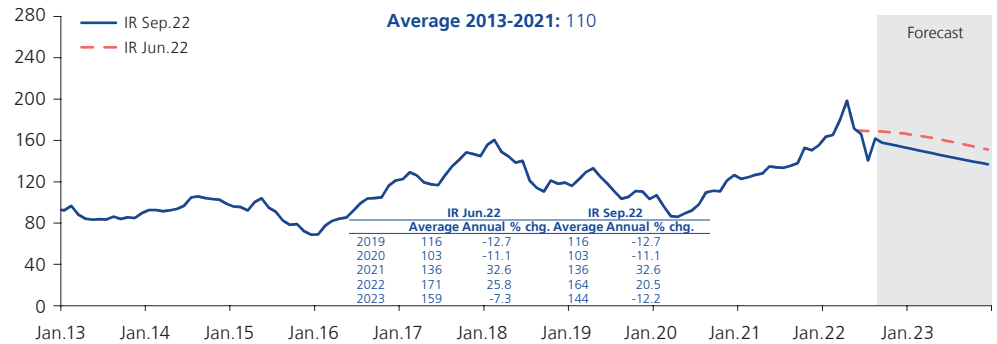
It is worth noting that one factor that is reversing the price decline was the greater supply restriction due to lower refined products production, following the impact of high energy prices on production costs. In the last few months, the increase in energy prices has worsened in Europe, particularly in France, Holland and Belgium. This is reinforced by the impact of the recent fall in the price of zinc on the profitability of smelters, which reduces the likelihood that smelters will reopen in the short term.

In line with these developments, the price of zinc is expected to correct downward over the forecast horizon from the price level observed in the June Inflation Report. Although supply is expected to remain tight in the coming months, the normalization of production and increased mine supply would put downward pressure on the price in the medium term. The main factors of uncertainty in this projection lie in the recovery of Chinese demand and the future evolution of energy prices.

Graph 22

ZINC: JANUARY 2013 - DECEMBER 2023

(US$. cents/pd.)



Source: Reuters and BCRP.

Gold

17. In August, the average price of gold was US$ 1,765 the ounce, 4 percent lower than in June and 1 percent lower than in December 2021.

Gold prices declined as a result of the appreciation of the dollar and the prospects of a more aggressive than expected withdrawal of monetary stimulus by the Fed and other central

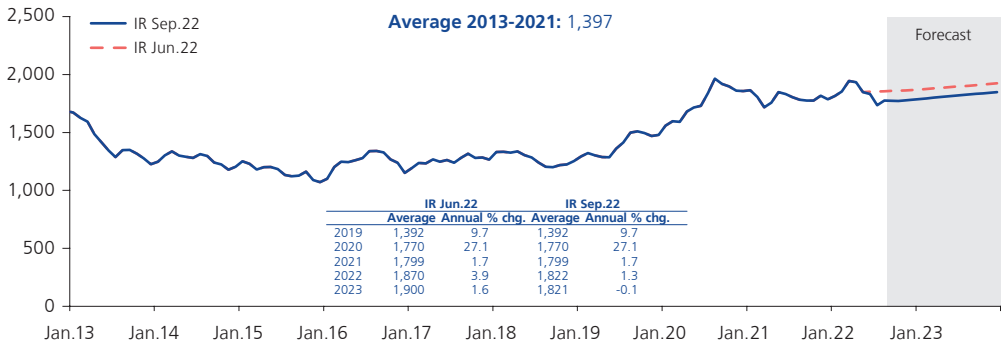
banks in developed economies. In this international context, August saw a significant reduction in gold holdings by Exchange Traded Funds (ETFs), which reversed the strong demand observed in the first quarter[1]. These pressures were in part offset by central banks' increased purchases of gold as well as by geopolitical uncertainty that generated demand for gold as a safe haven asset.

The gold price projected for the forecast horizon has been revised down from that estimated in the June Report for 2023, considering higher interest rates and a gradual correction in global inflationary pressures.

Graph 23

GOLD: JANUARY 2013 - DECEMBER 2023

(US$/tr. ounce)



	IR Jun.22		IR Sep.22	
	Average	Annual % chg.	Average	Annual % chg.
2019	1,392	9.7	1,392	9.7
2020	1,770	27.1	1,770	27.1
2021	1,799	1.7	1,799	1.7
2022	1,870	3.9	1,822	1.3
2023	1,900	1.6	1,821	-0.1

Source: Reuters and BCRP.

Gas

18. The average price of **Henry Hub natural gas** was US$ 8.6 MMBtu in August, 13 percent higher than in June and thus accumulated an increase of 122 percent with respect to December 2021. It should be pointed out that prices in the European and Asian markets remain well above those recorded in the North American market and also register higher increases. The prices corresponding to the European (UK BNP) and Asian (Japan Korean market) markets increased 67 and 54 percent in August with respect to the June 2022 level.

The price of Henry Hub gas has increased to its highest level since 2008, affected by higher domestic and external demand. The higher domestic demand was associated with a period of unusually cold weather in the spring and with extremely hot weather in the summer. On the other hand, the strong external demand for exports of LNG (liquefied natural gas), which account for about 12 percent of total U.S. supply, came primarily from Europe. This increased demand for U.S. gas was reflected in historically low inventory levels in the United States.

For its part, gas prices recorded a strong increase in Europe due to fears of a total supply cut-off from Russia. The European market is dependent on Russian gas supply and there are strong limitations to substitute it with other sources in the short term. This upward trend was accentuated after Gazprom reduced gas flows through the Nord Stream 1 pipeline to 20 percent of its capacity, citing force majeure.

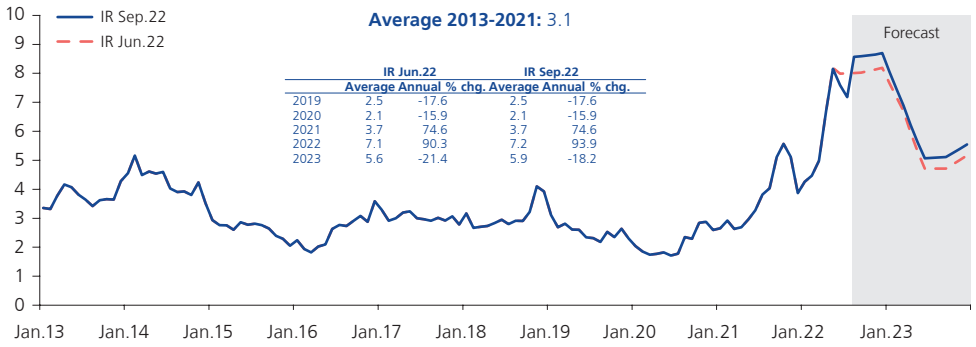
1 The World Gold Council reported that global gold exchange-traded funds (ETFs) recorded net outflows of US$ 4.5 billion in July, the third consecutive month of outflows and the worst since March 2021.

The average price of Henry Hub natural gas projected for the forecast horizon has been revised up, in line with a tighter market at the global level than foreseen in the June Report. Moreover, this price is expected to increase in the near term due to higher European demand and the restart of the Freeport LNG liquefaction plant. In Europe, energy prices are expected to be under upward pressure in the short term due to recent geopolitical events, although the forecast scenario assumes a gradual normalization in supply during 2023.

Graph 24

NATURAL GAS: JANUARY 2013 - DECEMBER 2023

(US$/bl)



	IR Jun.22		IR Sep.22	
	Average	Annual % chg.	Average	Annual % chg.
2019	2.5	-17.6	2.5	-17.6
2020	2.1	-15.9	2.1	-15.9
2021	3.7	74.6	3.7	74.6
2022	7.1	90.3	7.2	93.9
2023	5.6	-21.4	5.9	-18.2

Source: Reuters and BCRP.

Oil

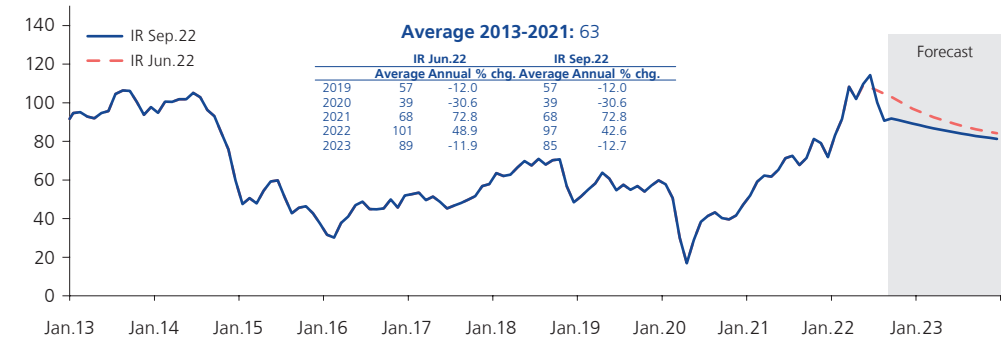
19. In August 2022, the average price of **WTI oil** decreased 18 percent compared to June 2022, reaching a monthly average of US$ 94 the barrel. Despite this decline, the price of oil has accumulated an increase of 31 percent compared to December 2021. The oil price declined in line with signs of a less tight market as a result of increased supply and prospects of lower demand.

On the supply side, OPEC+ countries continued to increase its production target to pre-pandemic levels in August. Russia's production is also recorded at near pre-war levels due to purchases by major consuming countries (including Europe) ahead of the entry into force of European Union sanctions later this year. Likewise, U.S. production would increase above expectations in 2022, although it is foreseen to slow down next year.

At the same time, fears of global recession and China's slowdown have limited demand growth. In recent months, demand pressures have come from the substitution of gas for oil in the face of shortages and high oil prices.

Prices in the projection horizon are expected to decrease compared to the June Inflation Report estimates, but would remain above the average of the last ten years. Some factors limiting a larger correction in prices are low inventory levels and the limited spare production capacity of OPEC+ countries (which are even recording problems in meeting production quotas). On the contrary, downward pressures would occur in the event that production from Venezuela and Iran returns to the market.

Graph 25
WTI OIL: JANUARY 2013 - DECEMBER 2023
(US$/bl)



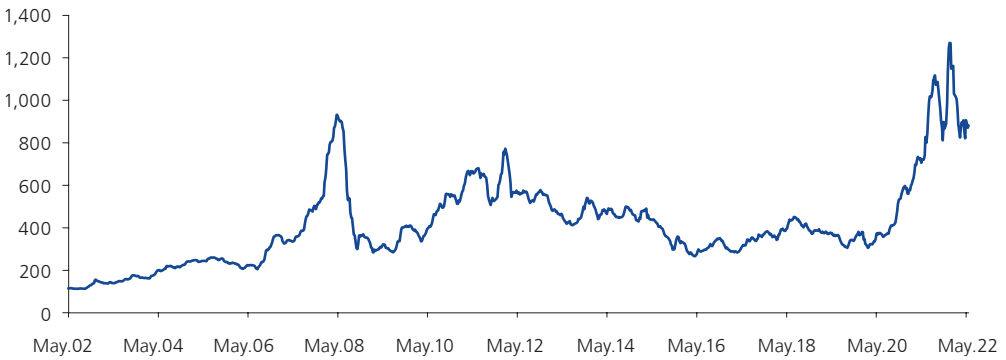
Source: Reuters and BCRP.

Food

20. Food prices partially reversed their upward trend after reaching historical highs in March. The grain market is still tight due to the war in Ukraine, the impact of weather conditions on crops in major exporting countries, and rising oil and fertilizer prices. However, the outlook improved after international grain trade in the Black Sea was restored following the agreement signed on July 22 to facilitate the export of Ukrainian grain.

World grain production is expected to decline in the coming months as a result of falling production in Ukraine, fears of fertilizer shortages from Russia and extreme weather in some major producing regions.

Graph 26
GREEN MARKETS NORTH AMERICA FERTILIZER PRICES
(Index, 07-Jan-2002 = 100)



Source: Reuters and BCRP.

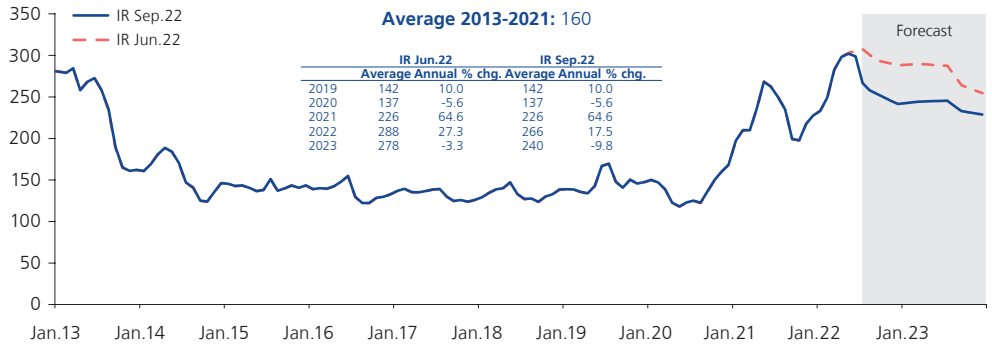
The lower food supply has led many countries to adopt restrictions on their food exports, which has kept food prices at high levels. The likelihood of a food crisis at the global level is considered among the downside risks to global growth.

(a) The price of **maize** fell 14 percent in the last two months, reaching a monthly average price of US$ 259 per ton in August 2022. With this, the price of maize accumulated an increase of 14 percent with respect to December 2021.

The price of maize decreased due to the seasonal inflow of South American production. Crop results in Brazil and Argentina were better than expected in the previous Inflation Report, despite weather problems related to La Niña event. Brazil's strong increase in exports partially offset the lower supply from Ukraine. The price drop was accentuated by the resumption of maize exports from Ukraine as a result of the agreement between Ukraine and Russia that allows the safe flow of Ukrainian agricultural exports from three of its Black Sea ports.

In line with these developments, the average price of maize for 2022 and 2023 has been revised down. Despite the reduction, prices would remain at historically high levels because the market would remain tight over the forecasts horizon. The USDA estimates a drop in U.S. maize production in the 2022/23 season due to unfavorable weather conditions, smaller planted areas, and lower yields. Another factor supporting prices is that lower plantings are expected in Ukraine for the 2022/23 season.

Graph 27
MAIZE: JANUARY 2013 - DECEMBER 2023
(US$/Ton)



	IR Jun.22		IR Sep.22	
	Average	Annual % chg.	Average	Annual % chg.
2019	142	10.0	142	10.0
2020	137	-5.6	137	-5.6
2021	226	64.6	226	64.6
2022	288	27.3	266	17.5
2023	278	-3.3	240	-9.8

Source: Reuters and BCRP.

(b) Since the last Report, **wheat** prices decreased 18 percent, reaching a monthly average of US$ 339 the ton in August 2022. This represents an increase of 14 percent compared to December 2021.

The wheat price declined affected by prospects of lower demand due to persistent fears regarding global economic growth, particularly due to deteriorating indicators in China as well as due to the logistical and financial constraints faced by global exporters. The price fall was also explained by the seasonal arrival of the winter wheat crop in the northern hemisphere and by the favorable outlook for the U.S. spring wheat crop (despite the slower-than-normal progress of the harvest).

This was accentuated by prospects of higher supply from Ukraine, following the agreement between Russia and Ukraine to unblock Black Sea ports. Another

factor behind the price drop was the revision of Russia's production estimate on the upside, although this partially offset by possible rain-related crop quality problems.

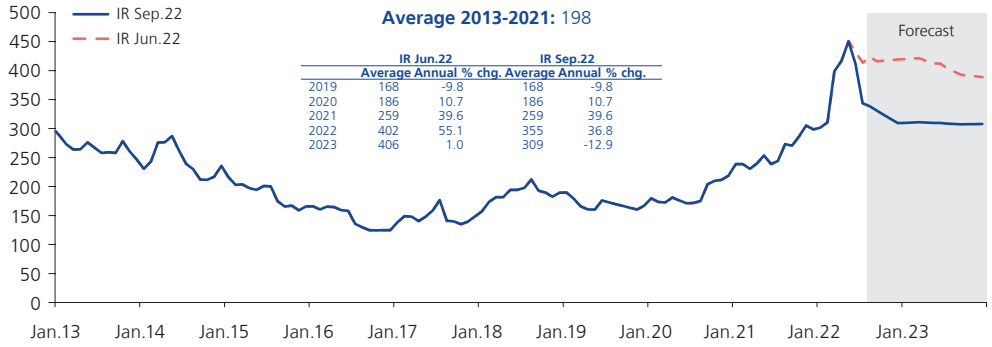
During the forecast horizon, the price of wheat would continue to be under slight downward pressure, but would reach higher prices than those estimated in the June Report. This will be favored by the inflow of Black Sea production and also by the correction in the prices of substitute grains (such as maize and soybeans) used as livestock feed.

Notwithstanding this decline, prices will remain at high levels because, as in the case of other grains and foods, the world wheat market is still tight. Global inventories for the 2022/23 season would be reduced to a four-year low (despite record levels in China), while inventories in major exporting countries would be at a nine-year low. In this context, prices will be very sensitive to any unforeseen increase in demand, trade restrictions or adverse weather conditions.

Graph 28

WHEAT: JANUARY 2013 - DECEMBER 2023

(US$/Ton)



	IR Jun.22		IR Sep.22	
	Average Annual	% chg.	Average Annual	% chg.
2019	168	-9.8	168	-9.8
2020	186	10.7	186	10.7
2021	259	39.6	259	39.6
2022	402	55.1	355	36.8
2023	406	1.0	309	-12.9

Source: Reuters and BCRP.

(c) In August, the average price of **soybean oil** was US$ 1,573 the ton, 11 percent lower than in the previous Inflation Report. This lower price only reverses in part the strong increase recorded in the first half of the year, so the price of soybean oil accumulates an increase of 12 percent compared to December 2021.

The price of soybean oil decreased in the last two months due to the significant drop in oil prices, the growth of soybean and soybean oil production in the United States for the 2021/2022 season, and the greater availability of the supply of other substitute vegetable oils. Soybean oil prices were supported by the lifting of restrictions on the export of palm oil from Indonesia, as well as by the agreement between Russia and Ukraine that allows the resumption of exports through Black Sea ports.

On the other hand, however, the soybean oil market finds support in the better outlook for global demand, the demand for U.S. soybean oil being driven primarily

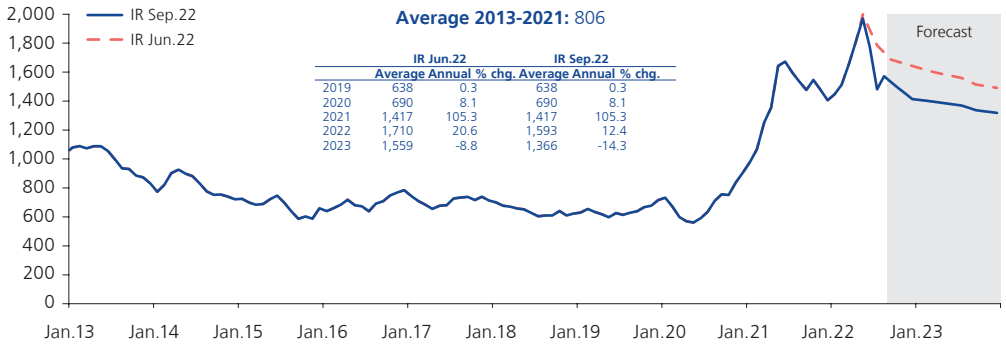
by the expansion of renewable diesel capacity. In addition, many governments[2] are increasing their use of biofuels to alleviate high fuel prices. For its part, India increased its demand after eliminating import taxes on vegetable oils (in response to a shortfall in sunflower oil production).

Takiung into account these recent developments, soy prices are projected to be below the previous report's estimate. The main uncertainties in this projection are oil prices, protectionist measures in producing countries, and the impact of weather on planting in the United States.

Graph 29

SOYBEAN OIL: JANUARY 2013 - DECEMBER 2023

(US$/TM)



	IR Jun.22		IR Sep.22	
	Average	Annual % chg.	Average	Annual % chg.
2019	638	0.3	638	0.3
2020	690	8.1	690	8.1
2021	1,417	105.3	1,417	105.3
2022	1,710	20.6	1,593	12.4
2023	1,559	-8.8	1,366	-14.3

Source: Reuters and BCRP.

2 Argentina's temporarily increase in the use of biodiesel made from soybean oil and Indonesia's promotion of palm oil-based biodiesel stand out among the measures taken by governments.

Box 1
NEW RESTRICTIONS IN THE EUROPEAN GAS MARKET: IMPACT ON GLOBAL GROWTH AND INFLATION

The recent reduction in Russian gas exports to Europe reinforces the imbalance recorded in the market since the middle of last year, accentuated by the war in Ukraine. This Box delves into the impact of this situation on Europe's growth (given the existing constraints to substitute Russian gas with other alternatives, such as liquefied natural gas) and global inflation should it last longer and extend through the winter.

Russia's lower gas supply to Europe is one of the risks outlined in the June Inflation Report. Although it was assumed that this risk could materialize if the countries of the European Union imposed sanctions on gas, the lower supply risk has been materializing due to the lower gas distribution carried out by the Russian government, which argues reasons of force majeure.

According to Reuters data, Russia's exports of natural gas through pipelines to the European Union and the United Kingdom fell by almost 40 percent year-on-year during the first seven months of 2022 and by almost 50 percent compared to the average of the previous five years (2017-2021). This situation worsened in July 2022, when Russian gas exports reached their lowest level in nearly 40 years.

Russia's importance as a gas supplier to Europe is evident: in 2020 it accounted for 40 percent of Europe's imports by pipeline and 15 percent of LNG imports[3]. For its part, Europe accounted for 76 percent of Russian gas exports, most of which are distributed through the Nord Stream 1 pipeline (Russia-Germany), the Yamal pipeline (Russia-Belarus-Belarus-Poland-Germany) and the Brotherhood pipeline (Russia-Ukraine). Gas exports account for 5 percent of Russia's total exports.

GAS IMPORTS FROM EUROPE, 2020
(Percentage participation)

	Gas pipeline	GNL	Total
Russia	40.0%	15.0%	34.6%
Norway	25.5%	3.6%	20.8%
Algeria	5.0%	12.1%	6.5%
Qatar	0.0%	26.3%	5.7%
United States	0.0%	22.3%	4.8%
Nigeria	0.0%	12.7%	2.7%
Azerbaijan	3.2%	0.0%	2.5%
Others	26.3%	8.0%	22.3%
Total	**100.0%**	**100.0%**	**100.0%**

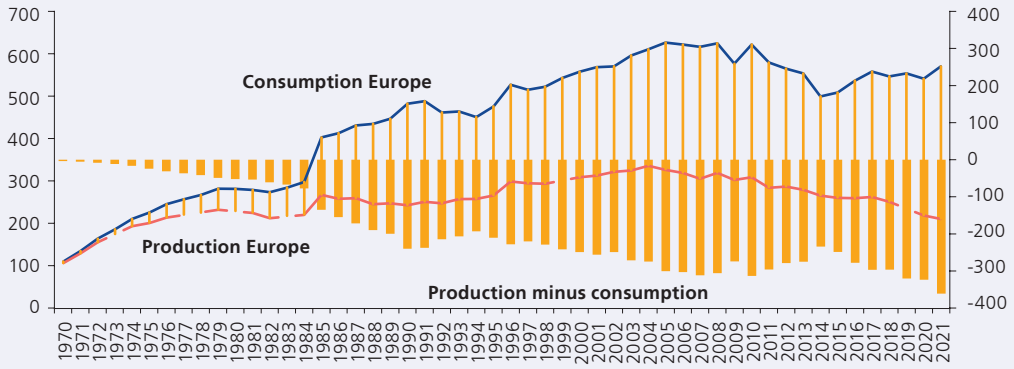
Source: British Petroleum.

Europe is likely to face difficulties in substituting Russian gas for other alternative sources. The situation finds Europe in a decline of domestic gas production as a result of the lack of investment in fossil energies[4] (only Norway has maintained production levels in recent years). This has halved Europe's gas production in the last 10 years (it only represents 37 percent of consumption in 2021) and prevents the possibility of replacing imports with new domestic production.

3 According to BP, in 2020, about 80 percent of Europe's gas imports were delivered by pipeline.

4 In contrast with the United States, Europe has not allowed fracking on its territory, and some countries have opted to gradually close their nuclear power plants and coal-fired thermal power plants. At the same time, they have opted only for renewable energies and for importing fossil fuels, especially oil and gas from Russia.

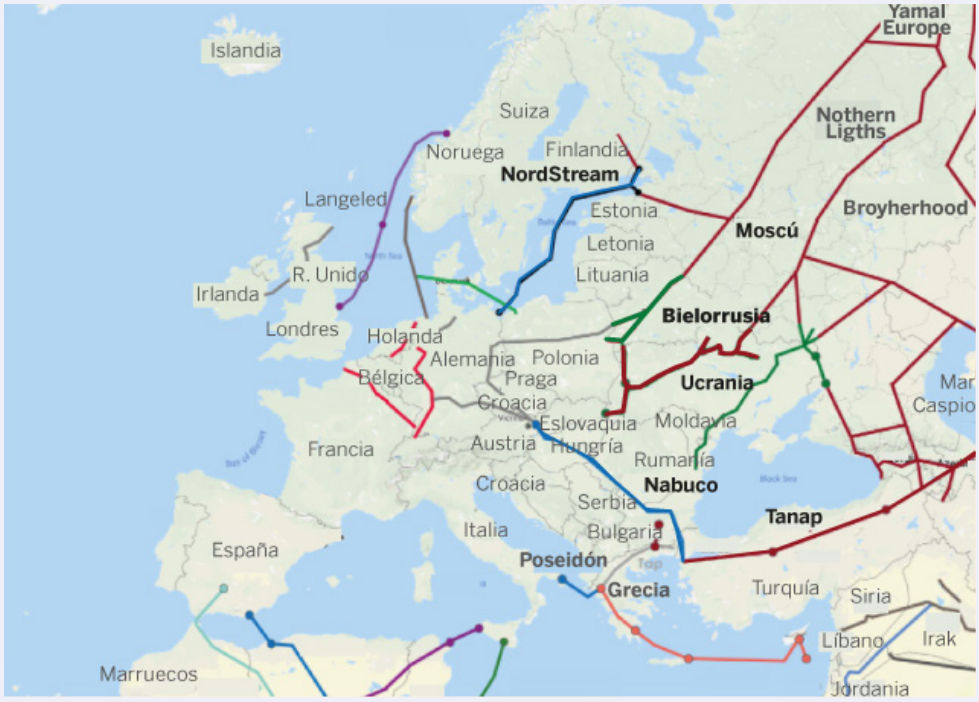
EUROPEAN GAS SUPPLY AND DEMAND BALANCE SHEET
(Billions of cubic meters)



Source: British Petroleum.

Similarly, production from other pipeline gas suppliers, such as Algeria and Azerbaijan, are proving insufficient to replace imports from Russia. To compensate for lower exports from Russia, the European Union and the United Kingdom have been importing record volumes of liquefied natural gas (LNG) this year, especially from the United States.

GAS DISTRIBUTION CHANNELS TO EUROPE



Source: Expansión.

Replacing pipeline imports of natural gas from Russia with LNG from other sources (particularly the United States) is a limited solution in the short term, the main difficulties for Europe to replace gas imports from Russia with LNG including the following: (i) limited exploration, production, liquefaction and transportation capacity in the world; (ii) economic and legal constraints that prevent redirecting LNG flows, and (iii) infrastructure problems in the European Union.

Regarding the latter, it is worth pointing out that the European Union's import infrastructure and gas markets were not designed to supply all of Central and Eastern European countries from the West. Moreover, Europe's regasification capacity is concentrated in Spain, which has little interconnection with the rest of Europe.

In addition, importing liquefied natural gas entails an increase in costs compared to importing natural gas. Liquefying natural gas is a costly process that requires the construction of liquefaction plants, methane tankers and regasification plants, which allow natural gas to be transported in liquid form and in a compressed form over greater distances than those used with gas pipelines.

A table of the cost structure in the LNG value chain is presented below to give you an idea of the additional cost of the liquefaction and transportation process,. Combined figures from PwC and a publication in the journal Industrial & Engineering Chemistry Research (I&EC) break down the operating cost of an overall LNG value chain as follows[5]:

LIQUEFIED NATURAL GAS COST STRUCTURE

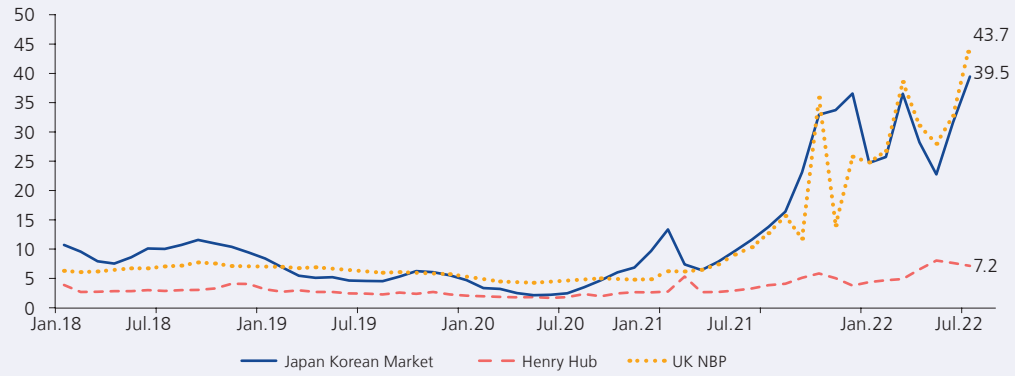
Value Chain	Weight in costs
Exploration and production development	10%-11%
Refrigeration and liquefaction	40%-42%
Shipping / transportation	20%-30%
Regasification and distribution	20%-27%

Source: Econnec Energy.

In this context of lower gas supply via pipelines and an increased supply of liquefied natural gas from the United States, gas prices in the main markets will be under upward pressure.

Gas supply constraints and high prices in Europe have led to an increase in U.S. liquefied gas exports that has reduced the supply of natural gas in its market. After the sharp rises recorded in 2021, the average monthly price of gas in Europe, measured with the UK marker, increased 70 percent compared to December 2021, whereas in the same period the Henry Hub increased its price by 92 percent, although it remains at lower levels than other markets. It should be pointed out that the United States became the world's largest exporter of LNG in the first half of 2022.

INTERNATIONAL NATURAL GAS QUOTATIONS
(US$/MBTU)



Note: International quotations are monthly averages as of July 31, 2022.
Source: Reuters.

5 Magnus Eikens, Nov 24, 2020, "ECONOMICS OF THE LNG VALUE CHAIN, ECONNECT," https://www.econnectenergy.com/articles/economics-of-the-lng-value-chain.

Therefore, this supply shock has a downward impact on the level of activity (mainly in Europe) and an upward impact on global inflation.

As regards activity, the risk of a Russian gas cut-off has the potential to cause significant damage to the European economy and, indirectly, to the rest of the world economy, particularly to the countries with major trade links (such as China).

The International Monetary Fund estimates, in its most extreme scenario, that a total cut-off of Russian gas could cost the European Union up to 2.7 percentage points of economic growth. The greatest impact would be seen in Central and Eastern European countries (where the intensity of Russian gas use is high and alternative supplies are scarce) and Italy (due to its high dependence on gas in electricity production). On the other end, the impact would be minor in countries such as Spain and Portugal, given the access that these countries already have to LNG in international markets.

Furthermore, according to European Commission estimates, in a worst-case scenario, a total interruption of Russian gas supplies would result in a 1.5 percent cut in the European Union's GDP, if the coming winter is cold and the region does not take preventive measures to save energy. The measures being taken by the European Union are aimed at reducing gas demand, particularly during the winter, in order to reduce the potential impact on the economy.

As for prices, the substitution of Russian gas for liquefied natural gas imported from the United States and other countries would imply a higher price which, as previously pointed out, is not limited to the European market, but would extend to all the main markets. This situation would keep upward pressure on energy prices, after having been the CPI component that most contributed to the increase in inflation in the last year.

CPI COMPONENTS

	United States	Eurozone	United Kingdom
		Energy	
Participation in IPC	9.2	10.9	3.6
Variation last twelve months	32.9	39.7	70.3
		Transportation	
Participation in IPC	5.6	6.6	1.7
Variation last twelve months	9.2	12.7	10.4

1/ Includes transportation and maintenance expenses of transportation equipment.

II. Balance of Payments

Balance of external accounts

21. Between 2021 and the first half of 2022, the current account deficit increased mainly due to higher international food and energy prices, higher freight costs and higher profits of companies with foreign direct investment (FDI) in the country.

The 2022 current account is foreseen to show a higher deficit than estimated in the previous Report due to lower private savings and to a further reduction in the terms of trade. On the other hand, the current account deficit In 2023 would narrow due to a correction in freight cost, the normalization of mining production, and lower FDI corporate profits. The balance of payments position remains strong.

Table 10
BALANCE OF PAYMENTS
(Million US$)

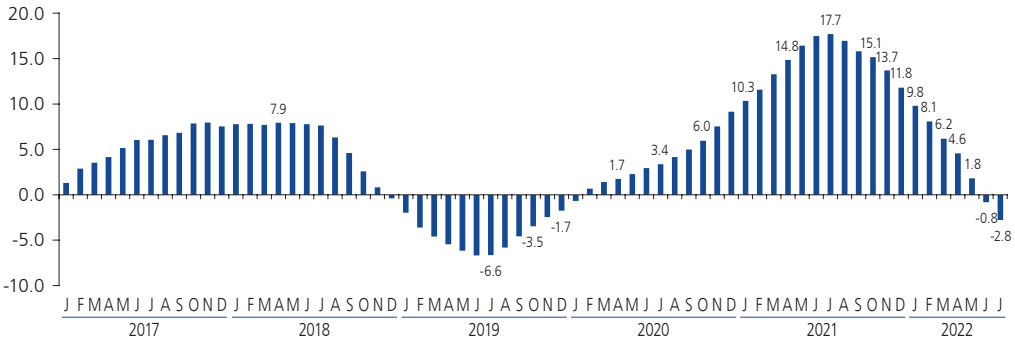
	2021	2022*			2023*	
		Jan.-Sep.22	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
I. CURRENT ACCOUNT BALANCE	**-5,273**	**-5,986**	**-8,571**	**-9,305**	**-3,025**	**-4,897**
% GDP	-2.3	-5.1	-3.4	-3.8	-1.1	-1.8
1. Trade Balance	14,833	6,139	13,441	12,346	14,521	12,226
a. Exports	63,151	33,381	71,147	68,725	74,330	70,242
Of which:						
i) Traditional	46,585	24,857	52,074	49,417	53,687	49,266
ii) Non-Traditional	16,373	8,406	18,813	19,053	20,427	20,751
b. Imports	48,317	27,243	57,707	56,379	59,810	58,017
2. Services	-7,347	-4,093	-8,993	-8,704	-7,609	-7,853
3. Primary income (factor income)	-18,127	-10,664	-18,354	-18,318	-15,507	-14,783
4. Secondary income (transfers)	5,367	2,632	5,336	5,371	5,571	5,514
Of which: Remittances	3,592	1,835	3,758	3,720	3,882	3,869
II. FINANCIAL ACCOUNT 1/	**-15,627**	**-2,490**	**-7,223**	**-6,818**	**-3,025**	**-4,897**
1. Private Sector	-37	-2,729	-5,293	-5,498	-1,449	-2,869
a. Long-term	-16,675	-7,772	-6,957	-9,638	-1,449	-2,869
b. Short-term	16,638	5,043	1,664	4,140	0	0
2. Public Sector 2/	-15,590	239	-1,931	-1,320	-1,575	-2,028
III. NET ERRORS AND OMISSIONS	**-5,944**	**-368**	**0**	**0**	**0**	**0**
IV. BALANCE OF PAYMENTS	**4,410**	**-3,864**	**-1,347**	**-2,487**	**0**	**0**
IV= (I+III) - II = (1-2)						
1. Change in NIR balance	3,789	-5,161	-1,972	-3,783	0	0
2. Valuation effect	-622	-1,296	-625	-1,296	0	0

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

Terms of trade

22. The **terms of trade** fell 5.8 percent year-on-year in the first half of 2022 due to higher increase in import prices –especially for imports of oil, food, and industrial inputs– than that observed in export prices. While prices of foodstuffs such as maize, wheat, and soybean oil have corrected in recent months, they remain high relative to those recorded before the pandemic due to the conflict between Russia and Ukraine, the high levels of oil prices, and supply constraints.

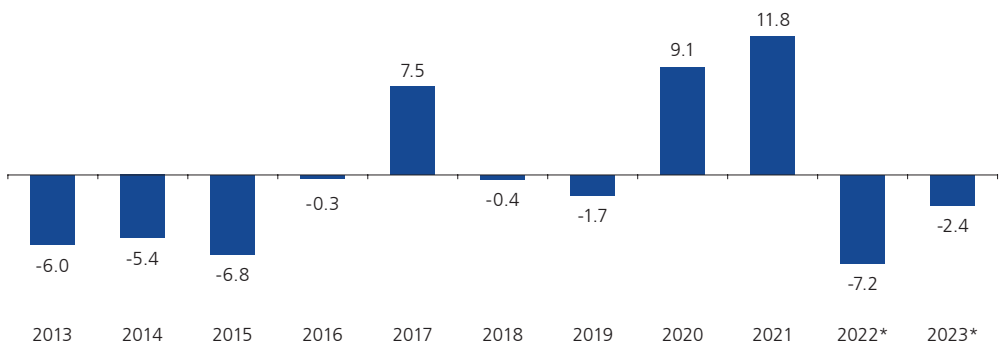
Graph 30
TERMS OF TRADE
(Accumulated 12 months % change)



Source: BCRP.

The terms of trade are projected to contract by 7.2 percent in 2022, more than foreseen in the previous report (6.3 percent). Likewise, the current forecasts assume a 2.4 percent drop in 2023 (versus zero change in the previous report). Despite the fact that export and import prices have both been revised downwards in the forecast horizon, the major correction of industrial metal prices stands out as a result of the change in global growth forecasts, particularly in the growth projected for China and the Eurozone, as well as due to the expected expansion of supply in the medium term. On the other hand, a downward trend is expected In the case of gold considering higher interest rates and a gradual correction in global inflationary pressures.

Graph 31
TERMS OF TRADE: 2012-2023
(Annual average % change)



* Forecast.
Source: BCRP.

For their part, average import prices have been revised on the downside in line with the correction in the price of wheat, maize and soybean oil following the reestablishment of international grain trade in the Black Sea as a result of the agreement signed on July 22 to facilitate the export of Ukrainian grains. This is compounded by the lower price of oil due to higher production from OPEC+ countries, Russia and the United States, and by a lower outlook for demand due to fears of a global slowdown.

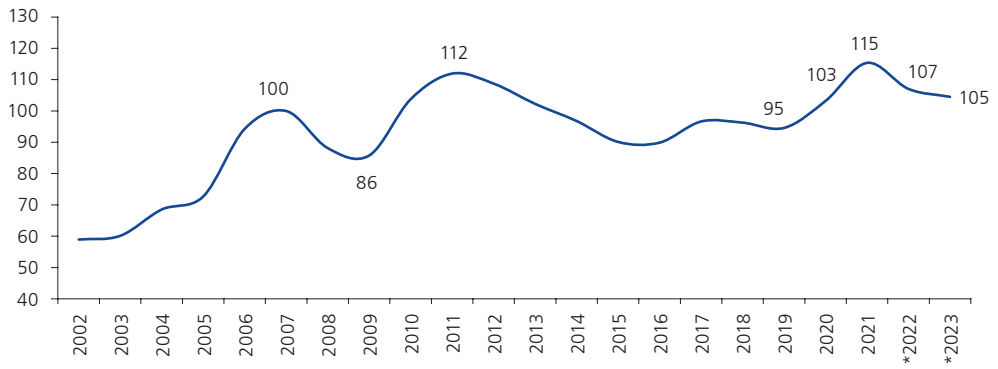
The current forecast incorporates a higher average price for natural gas, in line with a tighter market at the global level.

Table 11
TERMS OF TRADE: 2021 - 2023

	2021	2022*			2023*	
		I Sem.22	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
Terms of Trade						
Annual average % chg.	**11.8**	**-5.8**	**-6.3**	**-7.2**	**0.0**	**-2.4**
Price of exports						
Annual average % chg.	**30.3**	**11.2**	**8.0**	**5.4**	**-1.6**	**-4.3**
Copper (US$ cents per pound)	422	443	435	399	427	358
Zinc (US$ cents per pound)	136	174	171	164	159	144
Lead (US$ cents per pound)	100	103	100	99	97	94
Gold (US$ per troy ounce)	1,799	1,874	1,870	1,822	1,900	1,821
Price of imports						
Annual average % chg.	**16.6**	**18.1**	**15.3**	**13.6**	**-1.6**	**-2.0**
Oil (US$ per barrel)	68	102	101	97	89	85
Wheat (US$ per ton)	259	383	402	355	406	309
Maize (US$ per ton)	226	278	288	266	278	240

* Forecast.
Source: BCRP.

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



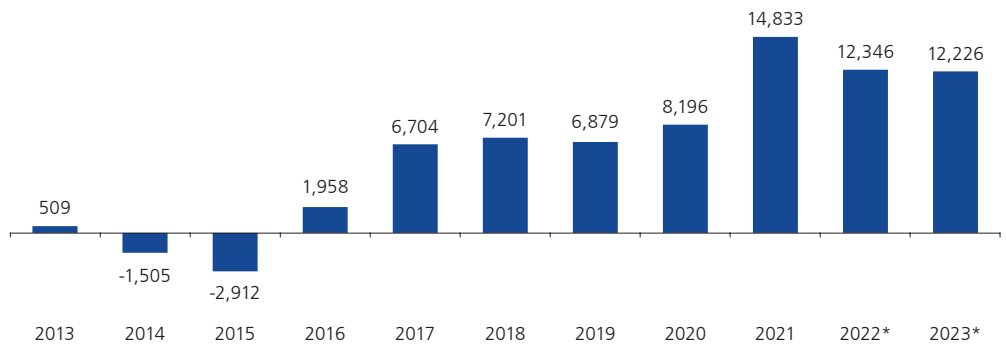
* Forecast.
Source: BCRP.

Balance of trade in goods

23. The **goods trade balance** registered a surplus of US$ 6,139 million in the first half of 2022, a balance US$ 782 million higher than that recorded in the same period of 2021 (US$ 5,356 million). The year-on-year increase was due to higher exports, which increased from US$ 28,213 million to US$ 33,381 million, while imports increased from US$ 22,857 million to US$ 27,243 million.

The trade balance surplus is projected to reach US$12.3 billion in 2022 and US$ 12.2 billion in 2023. These amounts are lower than those forecast in the June Report, the revision being explained by lower terms of trade in both years, as well as by lower primary production in 2022. Moreover, although the volume of exports of traditional products in 2023 is expected to be higher because of the normalization of mining production, favorable conditions for fisheries and agriculture, the volume of shipments of non-traditional products in that year will be affected by lower world demand.

Graph 33
BALANCE OF TRADE IN GOODS
(Million US$)



* Forecast.
Source: BCRP.

24. **Exports** amounted to US$ 33,381 million in the first half of 2022, a balance US$ 5,169 million (18.3 percent) higher than the value of exports in the same period in 2021. This higher balance is explained by the higher value of shipments of non-traditional products (18.9 percent year-on-year) and the 18.1 percent year-on-year increase in the value of shipments of traditional products, such as mining and natural gas. In addition, this result was influenced by the increase in export prices of traditional products (12.1 percent), especially natural gas, oil, crude oil and oil derivatives, coffee, and mining products such as zinc. To a lesser extent, the higher balance is also explained by a 6.4 percent increase in the volume of shipments, particularly of non-traditional exports (textiles and non-metallic mining).

The lower growth in the value of exports in 2022 compared to that projected in the previous report is supported by lower average export prices and lower export volumes. As mentioned above, lower prices are expected for industrial metals (mainly copper and zinc) and precious metals (gold), which would offset higher gas prices, while the export volumes projected for 2022 would also show lower growth in shipments of traditional products (mainly fishmeal, zinc and oil), in line with the projection of local primary production. The forecasts for export volumes in 2023 take into account the normalization of mining production at Las Bambas and Cuajone, as well as projects that started activities, such as Quellaveco.

25. **Imports** totaled US$ 27,243 million in the first half of 2022, which represented an increase of US$ 4,386 million (19.2 percent) compared to the same period of 2021. This increase is in line with the growth of domestic demand, mainly private spending, and with the rise in the international prices of oil, industrial inputs and grains, which accentuated because of the war in Ukraine.

The downward revision in the value of imports in 2022 responds to lower growth in the average price of imports and to a lower imported volume. In 2023, the lower projected value is explained by the gradual correction of food and oil prices.

Table 12
TRADE BALANCE
(% change)

	2021	2022*			2023*	
		I Sem.22	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
1. Value:						
Exports	47.2	18.3	12.7	8.8	4.5	2.2
Traditional products	*55.2*	*18.1*	*11.8*	*6.1*	*3.1*	*-0.3*
Non-traditional products	*28.2*	*18.9*	*14.9*	*16.4*	*8.6*	*8.9*
Imports	39.2	19.2	19.4	16.7	3.6	2.9
2. Volume:						
Exports	12.9	6.4	4.3	3.2	6.2	6.8
Traditional products	*10.5*	*5.4*	*3.2*	*1.7*	*6.7*	*7.8*
Non-traditional products	*20.2*	*9.3*	*7.3*	*7.5*	*5.0*	3.7
Imports	19.4	0.9	3.6	2.7	5.3	5.1
3. Price:						
Exports	30.3	11.2	8.0	5.4	-1.6	-4.3
Traditional products	*40.5*	*12.1*	*8.3*	*4.4*	*-3.4*	*-7.6*
Non-traditional products	*6.7*	*8.7*	*7.1*	*8.3*	*3.4*	*5.0*
Imports	16.6	18.1	15.3	13.6	-1.6	-2.0

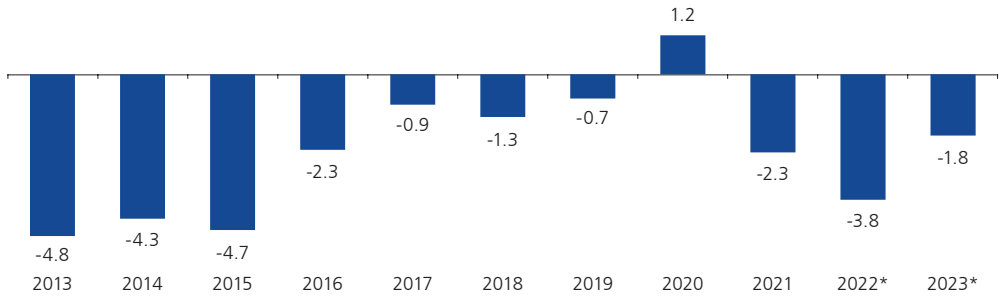
* Forecast.
Source: BCRP.

Current account

26. The accumulated **current account balance** in the last 4 quarters went from a deficit of 2.3 percent of GDP in 2021 to a deficit of 3.4 percent in the second quarter of 2022, reflecting: (i) the higher profits of companies with FDI in the country, as a result of high metal prices; (ii) the higher value of imports, associated with the growth of domestic demand and the prices of food, fuel and industrial inputs; and (iii) the widening of the services deficit explained by high freight costs, and accentuated by confinement policies in China. These factors offset the higher value of exports, mainly exports of traditional products. The current account in the first half of 2022 registered a deficit of US$ 5,986 million.

In 2022, the current account is expected to register a deficit equivalent to 3.8 percent of GDP, considering a lower trade surplus as a result of lower estimated mining production and lower projected growth in export prices. In 2023, the deficit would narrow to 1.8 percent of output, following the correction of freight costs, the normalization of mining production, lower profits for FDI companies, and the recovery of inbound tourism. This deficit level would be lower than the historical average level of 2.5 percent (1980-2021).

Graph 34
CURRENT ACCOUNT: 2013-2023
(% GDP)



* Forecast.
Source: BCRP.

27. According to data in the second quarter of 2022, the current account deficit of some countries in the region has continued to widen. In Chile, this increase resulted from a more negative trade balance associated with higher imports of machinery and equipment. A higher deficit is also forecast for 2022 based on the revision of consumption on the upside, the deterioration of the terms of trade and lower growth in trading partners. For its part, Colombia recorded a higher deficit due to the ongoing increase in the profits of companies with FDI, especially oil and coal exporters.

Table 13
LATIN AMERICA: CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS
(Annualized, in % of GDP)

	2019	2020	2021	Q2.22*	2022**
Brazil	-3.5	-1.7	-1.7	-1.9	0.2
Chile	-5.2	-1.7	-6.6	-8.5	-6.3
Colombia	-4.6	-3.4	-5.6	-6.2	-5.1
Mexico	-0.3	2.5	-0.4	-0.8	-1.0
Peru	-0.7	1.2	-2.3	-3.4	-3.8

* Cumulative current account for the last 4 quarters to the second quarter of 2022, except for Brazil, for which the cumulative last 12 months to May 2022 is calculated.
** Projection. For Brazil, approximated using the latest central bank projections in billions of dollars for the current account and 2022 growth for GDP.
Source: Central banks of each country.

Financial account

28. The **financial account** for the first half of 2022 showed a net capital inflow of US$ 2.49 billion, equivalent to 2.1 percent of GDP. The inflow for the period was composed of higher long-term private sector financing, mainly from FDI liabilities associated with the reinvestment of profits. These capital inflows were offset by sales of sovereign bonds by non-residents and purchases of net short-term external assets.

A lower external position of the financial account is expected for 2022 as a result of higher acquisitions of short-term external assets and by non-residents' sales of sovereign bonds so far this year. This would be offset in part higher FDI liabilities (reinvestment of profits), and sales of external portfolio assets by AFPs and mutual funds. On the other hand, a more

progressive recovery of investment in foreign assets by AFPs is assumed for 2023, which would imply a greater net inflow of long-term capital.

29. The **private sector's long-term external financing** totaled US$ 7,772 million in the first half of 2022, a sum US$ 443 million higher than that recorded in the same period of the previous year. This result is explained by higher flows of foreign direct investment and net long-term loans. On the assets side, there was a slight reduction in portfolio investment abroad.

The long-term financial account of the private sector in 2022 includes higher FDI liabilities than estimated in the previous Report. This revision is in addition to the higher expected liquidation of portfolio investments abroad by AFPs and higher long-term loans. The current projection incorporates the increase in short-term foreign assets observed so far this year, both in the banking and 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 rate of portfolio investment abroad by AFPs is assumed as well as higher disbursements of long-term loans.

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

	2021	2022*			2023*	
		I Sem.22	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
Private Sector (A+B)	**-37**	**-2,729**	**-5,293**	**-5,498**	**-1,449**	**-2,869**
% GDP	0.0	-2.3	-2.1	-2.2	-0.5	-1.1
A. Long-term (1-2)	**-16,675**	**-7,772**	**-6,957**	**-9,638**	**-1,449**	**-2,869**
1. ASSETS	**-8,731**	**-229**	**-1,063**	**-2,424**	**3,286**	**1,262**
Direct investment	1,735	-227	324	184	144	144
Portfolio investment 2/	-10,466	-2	-1,387	-2,609	3,142	1,118
2. LIABILITIES 3/	**7,944**	**7,543**	**5,894**	**7,214**	**4,735**	**4,132**
Direct investment	7,455	7,102	7,239	8,368	6,445	5,399
Portfolio investment 4/	1,097	-391	593	-382	1,078	577
Long-term loans	-608	832	-1,938	-772	-2,789	-1,845
B. Short-term	**16,638**	**5,043**	**1,664**	**4,140**	**0**	**0**

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.

30. **Public sector external financing** was negative by US$ 239 million in the first half of 2022, in contrast to the debit position of US$ 5,037 million recorded in the same period of 2021. The flow for the period is mainly explained by the sale of sovereign bonds by non-residents (US$ 631 million) and by portfolio amortizations (US$ 658 million). This lower financing compared to the first half of 2021 is due to the issuance of global bonds in dollars for a total of US$ 4 billion and to the issuance of bonds in euros for a total of € 825 million in the first half of 2021.

Compared to the previous Report, the 2022 public financial account incorporates lower portfolio investment liabilities since a more gradual recovery of non-residents' purchases

of sovereign bonds is assumed. Likewise, a lower level of net borrowing from international organizations is projected. Lower amortizations by Mivivienda are expected for 2023.

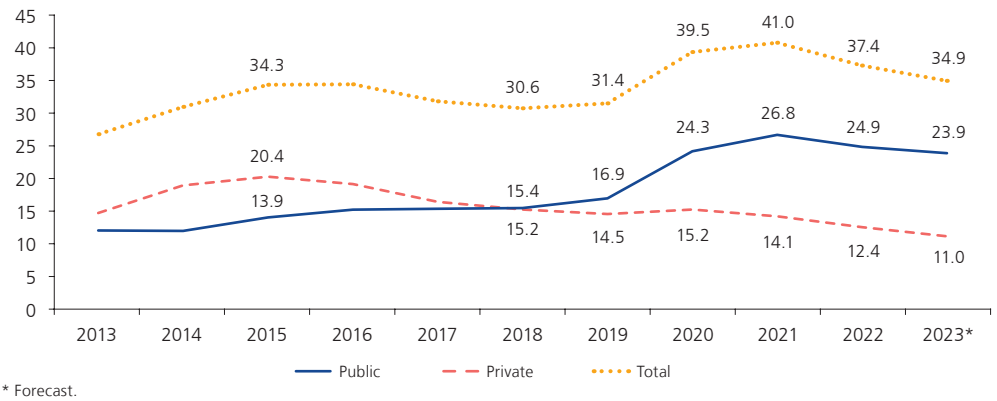
Table 15
FINANCIAL ACCOUNT OF THE PUBLIC SECTOR 1/
(Million US$)

	2021	2022*			2023*	
		I Sem.22	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
I. ASSETS	**57**	**-292**	**-103**	**-191**	**140**	**140**
II. LIABILITIES (1+2+3) 2/	**15,647**	**-531**	**1,828**	**1,129**	**1,715**	**2,168**
1. Portfolio investment	**11,481**	**-687**	**751**	**81**	**1,530**	**2,007**
Issuance	11,172	600	600	600	0	0
Amortizations	0	-658	-627	-658	-650	-173
Other operations (a - b) 3/	310	-629	778	139	2,180	2,180
a. Sovereign bonds purchased by non-residents	-316	-631	668	169	2,180	2,180
b. Global bonds purchased by residents	-626	-2	-110	30	0	0
2. Loans	**2,354**	**156**	**1,077**	**1,048**	**185**	**160**
Disbursements	2,789	664	2,137	2,103	1,241	1,241
Amortizations	-435	-508	-1,060	-1,054	-1,056	-1,081
3. BCRP: other operations 4/	**1,811**	**0**	**0**	**0**	**0**	**0**
III. TOTAL (I-II)	**-15,590**	**239**	**-1,931**	**-1,320**	**-1,575**	**-2,028**

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.

31. In 2021 the private sector's medium- and long-term external debt balance is expected to fall from 14 percent of GDP to 11 percent at the end of the forecast horizon, its lowest level in the last 10 years. For its part, the public external debt would fall by a smaller amount, from 27 to 24 percent, over the same period.

Graph 35
BALANCE OF MEDIUM- AND LONG-TERM EXTERNAL DEBT
(% GDP)



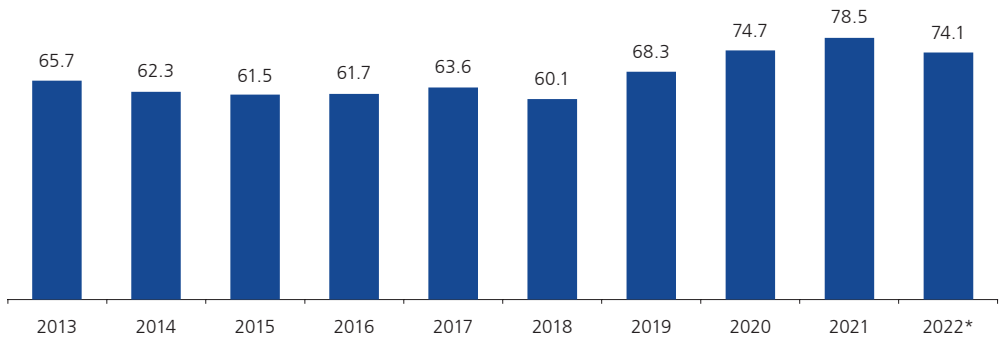
* Forecast.
Source: BCRP.

Coverage indicators

32. At the end of August, NIRs have accumulated a reduction of US$ 4,386 million with respect to the end of last year and amount to US$ 74,110 million. This reduction results mainly

from foreign exchange operations with the public sector amounting to US$ 1,734 million and net sales of foreign currency for a total of US$ 1,126 million aimed at mitigating exchange rate volatility.

Graph 36
NET INTERNATIONAL RESERVES: 2013 - 2022
(Billion US$)



* August 2022.
Source: BCRP.

33. The soundness of the balance of payments in the face of negative external events can be evaluated 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$ 5.2 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 COVERAGE INDICATORS

	2017	2018	2019	2020	2021*	2022*	2023*
International Reserves as a percentage of:							
a. GDP	29.5	26.5	29.4	36.3	34.8	30.1	27.9
b. Short-term external debt 1/	413	343	498	543	559	521	521
c. Short-term external debt plus current account deficit	367	295	444	657	406	316	388

1/ Includes short-term debt balance plus redemption (1-year) of private and public sector.
* Forecast
Source: BCRP.

III. Economic Activity

Sectoral GDP

34. Economic activity in the first half of 2022 recorded a year-on-year increase of 3.5 percent, driven by the easing of sanitary measures and the progress of the vaccination process. This was reflected in the growth of non-primary sectors (4.7 percent), including non-primary manufacturing, commerce, and services (especially the services related to restaurants and transportation).

However, the rate of expansion in the first half of the year was offset by the contraction of output in the primary sectors (-0.5 percent) due to the decline of activity in the sectors of metal mining, manufacturing and fishing. Production in the sector of metal mining declined due to the impact of social conflicts in some important mines, while the fishing sector was affected by the lower catch of species for human and industrial consumption, which in turn affected manufacturing, with a lower production of fishmeal and fish oil, canned fish, and frozen fish products being recorded. In addition, there was a decrease in oil refining.

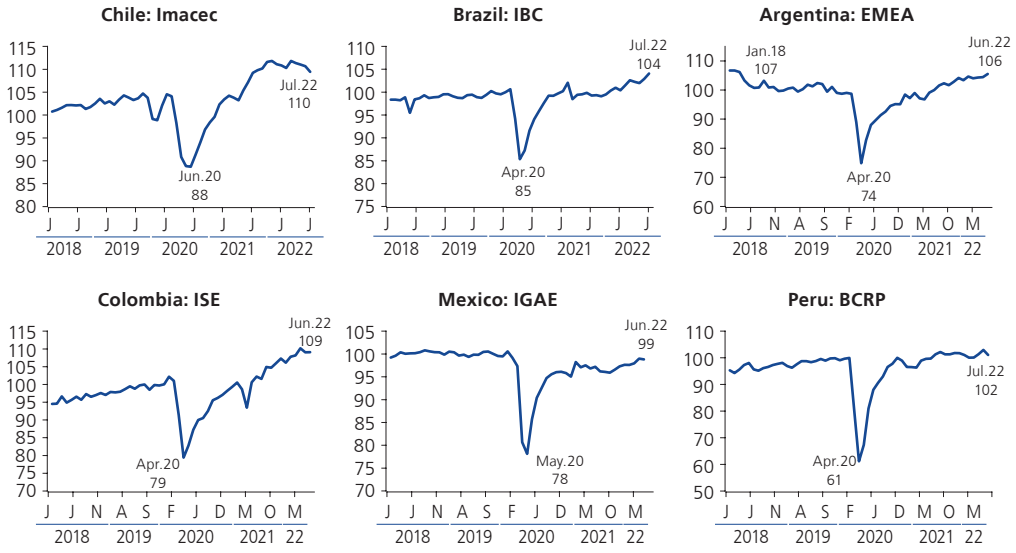
In July, economic activity grew 1.4 percent year-on-year (3.2 percent in the January-July period), this result being mainly explained by the growth of activity in the services sectors, especially transportation, lodging and restaurants. Also contributing to the month's growth were the sectors of commerce, primary manufacturing, fishing, and electricity and water, although this increase was counterbalanced in part by the contraction of activity in the sectors of agriculture and livestock and metal mining.

35. From January to March 2022, the seasonally adjusted indicator of Peruvian economic activity showed consecutive monthly declines, while from April to June it has shown positive growth rates. Despite this trend, however, in July it recorded a contraction of 1.9 percent compared to the previous month, placing it 1.6 percent above the level recorded prior to the crisis (fourth quarter of 2019). It is worth mentioning that, compared to the main economies in the region, the recovery of the level of activity in June with respect to the pre-crisis level is higher than that observed in Mexico and close to that of Brazil.

Graph 37

SEASONALLY ADJUSTED INDEXES OF ECONOMIC ACTIVITY IN THE REGION

(Base 100 = Q4.19)



Source: Central banks and statistical institutes of each country.

36. In addition, the Peruvian economy grew at a year-on-year rate of 3.3 percent in the second quarter of the year, recording a higher rate than the growth rates registered by developed countries, such as Germany, the United Kingdom and the United States, and by countries in the region, such as Brazil and Mexico.

Table 17

REAL GDP

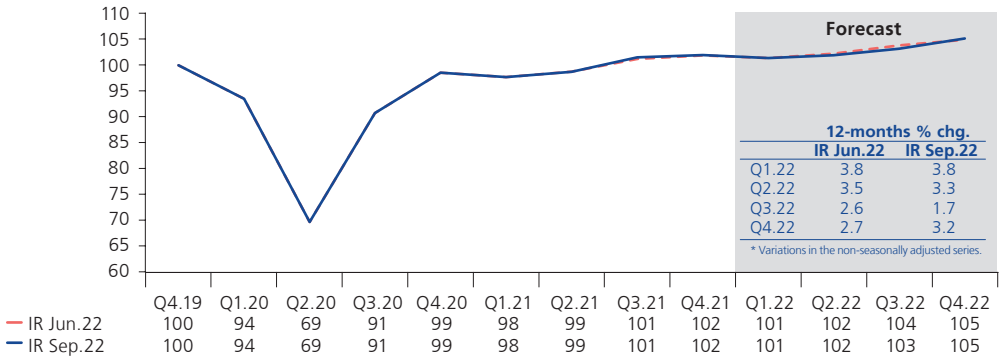
(Annual % change)

	2021				2022	
	1st. Sem.	2nd. Sem.	3rd. Sem.	4th. Sem.	1st. Sem.	2nd. Sem.
Germany	-2.1	10.1	1.9	1.2	3.6	1.7
France	1.5	18.6	3.6	5.1	4.8	4.2
Italy	-0.7	17.0	3.9	6.2	6.2	4.7
Spain	-4.1	17.8	3.5	5.5	6.3	6.3
Netherlands	-2.2	10.2	5.4	6.2	6.7	5.3
United Kingdom	-5.0	24.5	6.9	6.6	8.7	2.9
USA	0.5	12.2	4.9	5.5	3.5	1.7
Argentina*	3.1	18.1	11.8	8.9	6.0	7.5
Brazil	1.3	12.3	4.0	1.6	1.7	3.2
Chile	0.0	18.9	17.2	12.0	7.2	5.4
Colombia	0.8	17.5	13.5	10.8	8.6	12.6
Mexico	-3.8	19.9	4.5	1.1	1.8	2.0
Peru	4.5	42.0	11.9	3.5	3.8	3.3

* Data as of second quarter of 2022 is estimated from the monthly activity indices.
Source: Central banks and statistical institutes of each country.

37. In 2022, the Peruvian economy is expected to grow 3.0 percent –a lower rate than that projected in the previous Report (3.1 percent)– due to a downward revision of primary sectors' production mainly because of the lower production forecast in the mining sector in the second half of the year. Likewise, lower refining of oil and metals are expected in the manufacturing sector, the decline in the former being explained by standstills of the sector's activities and the slower start-up of the Talara refinery, while the decline in the latter being explained by the lower production in the sector caused by social conflicts.

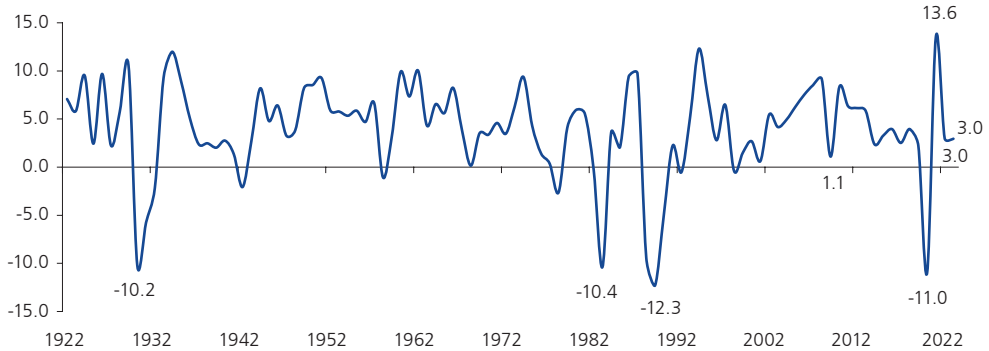
Graph 38
GDP PROJECTION, 2019-2022
(Seasonally adjusted index, Q4.19 = 100)



Source: BCRP.

38. In the forecasts horizon, mining production would recover in 2023 due to projects that started operations (e.g. Quellaveco) and the reactivation of mines that came to a standstill this year, with Cuajone and Las Bambas standing out among them. However, lower activity is expected in non-primary sectors such as manufacturing, construction and services, due to lower forecasts for private consumption and investment. Therefore, a revision on the downside in the economy's growth rate, from 3.2 percent in the June Report to 3.0 percent in this report, is projected for 2023.

Graph 39
TOTAL GDP, 1922-2023
(Real % change)



* Forecast.
Source: BCRP.

Table 18
GDP BY ECONOMIC SECTORS
(Real % change)

	2021	2022*			2023*	
		1st. Sem.	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
Primary GDP	**6.3**	**-0.5**	**3.4**	**1.9**	**5.8**	**5.8**
Agriculture and livestock	4.5	4.4	2.4	2.4	2.4	2.4
Fishing	9.9	-21.5	3.1	-5.7	4.4	5.3
Metallic mining	10.5	-2.6	2.9	1.6	8.4	8.4
Hydrocarbons	-4.6	15.7	12.5	8.0	4.7	4.7
Manufacture	3.2	-7.0	2.4	-0.2	4.6	4.9
Non-Primary GDP	**15.7**	**4.7**	**3.1**	**3.3**	**2.5**	**2.3**
Manufacture	25.2	6.5	2.4	3.6	3.3	2.6
Electricity and water	8.5	3.0	2.3	3.0	5.0	5.0
Construction	34.5	1.6	0.5	0.5	2.5	2.0
Commerce	17.8	4.2	2.6	2.6	2.5	2.5
Services	11.8	4.9	3.7	3.7	2.3	2.2
GDP	**13.6**	**3.5**	**3.1**	**3.0**	**3.2**	**3.0**

IR: Inflation Report.
* The last two columns correspond to the annual projection of the previous and current RI.
Source: BCRP.

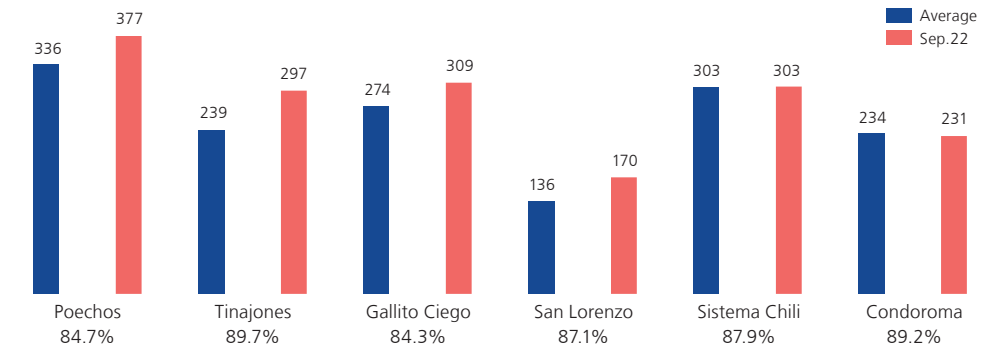
a) The **agriculture sector** grew 4.7 percent in the second quarter of the year, mainly due to improvements in rice and potato yields. On the livestock side, poultry production increased to meet domestic demand.

This year's better weather scenario allowed for the normalization of the crop calendar (altered in 2021 due to the delay in plantings resulting from the water deficit in 2020). This implied a return to the seasonality of the peak months of potato and rice crops (which weigh significantly in the structure of the sector). In the previous year, these peak months were concentrated in the third quarter of the year, but now they are concentrated in the second quarter of 2022. Because of this, the sector is expected to grow at rates of less than one percent in the last two quarters of the year.

Considering the higher growth in the first half of the year and the moderation of growth in the second half of the year, the forecasts for the agriculture sector are maintained at 2.4 percent for **2022** and **2023**.

As of September 13, water storage is high with respect to its total useful volume capacity. The reservoirs on the north coast (Poechos, Tinajones, Gallito Ciego and San Lorenzo) accumulated more than 84 percent of their useful volume and those in the south (Chili System and Condoroma) accumulated more than 87 percent of their useful volume. This guarantees good water availability at the beginning of the August 2022-July 2023 agricultural season.

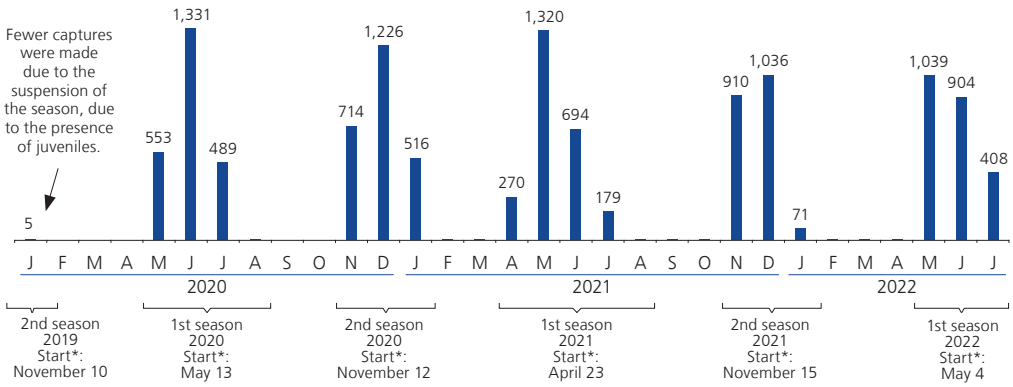
Graph 40
STORED VOLUME OF MAIN RESERVOIRS 1/
(MCF)



1/ As of September 13, 2022, average in the last five years (2017-2021) of the same date and percentage with respect to the total useful volume.
Source: ANA.

b) Output in the **fishing sector** decreased 12.8 percent year-on-year in the second quarter of 2022, mainly due to the lower catch of anchoveta (13.8 percent) associated with the late start of the first fishing season, as well as with the temporary fishing suspensions, applied in May and June, due to the high presence of young fish reported. In addition, the lower catch of squid and scallops in the category of frozen seafood also contributed to the quarter's result. The presence of negative anomalies in sea temperature resulted in lower availability of the aforementioned resources.

Graph 41
ANCHOVY EXTRACTION FOR INDUSTRIAL CONSUMPTION NORTH-CENTRAL ZONE
(Thousand tons)



* Start date of exploratory fishing in the seasons that occurred.
Source: IMARPE and Produce.

The first anchovy fishing season in the north-central zone concluded on July 22 because the expected quota of young fish catch was about to be reached. According to Imarpe, at the end of the season about 83 percent of the quota (2.3 million MT) was caught. This represented a 3 percent lower catch during the same period of time (first 80 days) than in the first fishing season of 2021.

Because of the preventive suspension of the fishing season and the lower-than-expected activity, the sector's output is projected to decline 5.7 percent in 2022 and to increase 5.3 percent in 2023.

c) In the second quarter of 2022, production in the sector of **metal mining** declined 4.6 percent due to lower extraction of: (i) zinc (-20.8 percent), mainly due to lower production from Antamina and Compañía Minera Los Quenuales because of the depletion of the Iscaycruz unit; (ii) silver (-8.3 percent), due to lower production at Los Quenuales, Ares and Buenaventura resulting from the suspension of operations at the Uchucchacua unit to implement actions to improve operating efficiency, and (iii) copper (-2.8 percent) due to lower production at Las Bambas and Southern, since these companies were affected by conflicts with the communities. Likewise, lead production decreased 7.4 percent.

On the other hand, molybdenum production increased 6.3 percent due to higher extraction at Cerro Verde and Toromocho as a result of increased ore processing. In the first half of the year, output in the sector fell 2.6 percent due to lower zinc, silver and lead production.

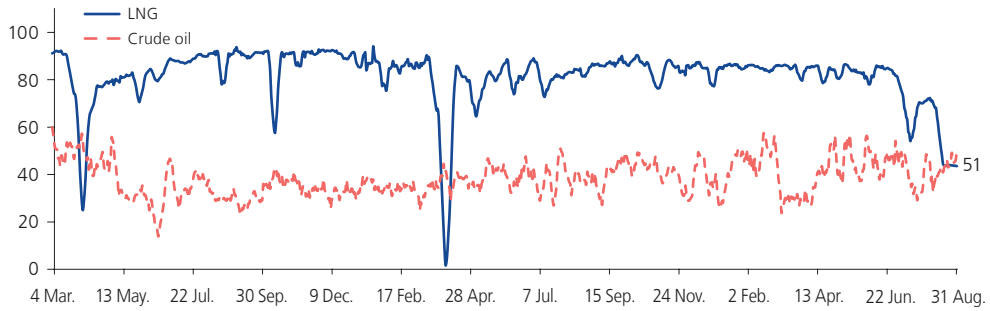
In **2022,** production in the sector of metal mining is expected to increase 1.6 percent, due to higher production from Mina Justa, Constancia (Pampacancha) and the entry into operation of the Quellaveco project. The forecast revision is mainly associated with the reduction of the Las Bambas production plan. In **2023,** the sector is expected to grow 8.4 percent due to higher production from Quellaveco.

d) Activity in the sector of **hydrocarbons** grew 19.9 percent in the second quarter of 2022 compared to the same period of 2021 due to higher extraction in all its components. The higher oil production (14.2 percent) was due to the higher extraction of Lot 95 as a result of the drilling of new wells, while the production of natural gas and natural gas liquids increased by 53.3 and 8.0 percent, respectively, due to higher extraction from Block 88 (domestic market) and from Blocks 56 and 57 (foreign market), since extraction in the second quarter of 2021 was affected by maintenance and various failures at the plants. During the first six months of the year, the sector grew 15.7 percent, driven by higher extraction of natural gas and oil.

Graph 42

LIQUID HYDROCARBON PRODUCTION

(Thousands of barrels per day, 7-day moving average)



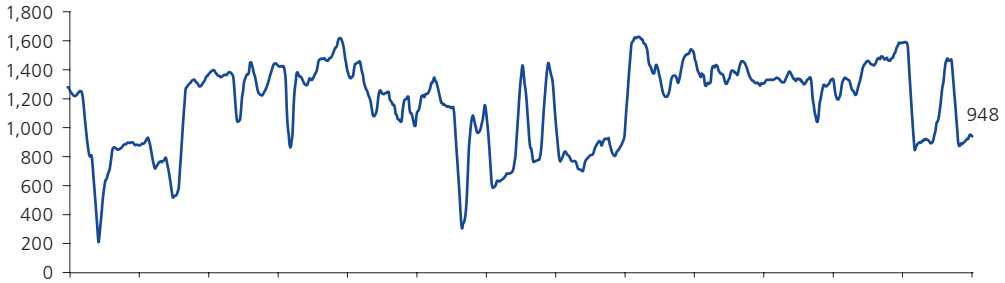
	Jul.21	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.22	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.
LNG (% chg.)	-10.1	-5.0	-4.2	1.3	-6.7	-7.6	0.7	-0.4	26.0	22.2	3.4	0.9	-15.7	-38.1
Crude oil (% chg.)	12.0	20.8	41.6	17.0	13.3	22.1	20.2	40.6	-16.9	14.7	10.4	17.8	2.5	14.1

* Obtained with respect to monthly average of each month.

So far in the third quarter of 2022, oil production has been affected by the presence of abnormal swells, while operations at lots 192 and 8 continue to be at a standstill.

On the other hand, compared to the same quarter of 2021, natural gas extraction has increased due to higher domestic demand as well as due to the statistical effect of the previous year (associated with maintenance and failures at the Melchorita Plant), whereas the production of natural gas liquids has decreased due to failures and the maintenance processes recorded in the quarter.

Graph 43
NATURAL GAS PRODUCTION
(12-months % change of 7-days moving average)



	Jul.21	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.22	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.
LNG (% chg.)	-38.8	-34.5	-5.2	9.0	-4.2	0.4	17.9	14.7	18.0	48.2	80.6	37.0	19.4	28.5

* Obtained with respect to monthly average of each month.

In **2022,** the sector would grow 8.0 percent due to a normalization in natural gas production as well as due to an expected higher oil extraction. This implies a revision on the downside of the sector's output due to maintenance and a failure recorded in a cryogenic unit, which affected the extraction of Lots 56 and 57. Finally, in **2023** the sector is expected to grow 4.7 percent, this rate being associated with a normalization of natural gas and natural gas liquids production.

e) Activity in the primary manufacturing subsector showed a contraction of 5.0 percent in the second quarter of 2022, mainly due to a lower production of fishmeal and fish oil (as a result of lower catch of anchovy during the quarter) and canned and frozen fish products, as well as due to lower oil refining because of the partial shutdown of Repsol and the gradual start-up of the new Talara refinery.

The growth projection for the subsector in **2022** is revised down from 2.4 to -0.2 percent due to lower fishing activity as well as to lower expected oil refining (associated with the partial shutdown of Repsol and the progressive start of operations of the new Talara refinery). Lower metal refining is also expected because of mining social conflicts. On the other hand, a year-on-year increase of 4.9 percent is expected in **2023**.

f) Ouput in **non-primary manufacturing** increased 7.2 percent in the second quarter of 2022. This increase was due to higher production of goods oriented to investment and inputs, as well as due to higher production of goods oriented to the foreign market. The growth in metal products, iron and steel products, cement, and industrial services stand out among the goods oriented to investment, while the increased production of processed wood, explosives and essences, and glass products stand out among the ones oriented to inputs. Moreover, the increase in fabrics and knitted articles and clothing was noteworthy among those oriented to the foreign market.

The recovery in non-primary manufacturing is projected to continue in **2022** with a growth rate of 3.6 percent, above pre-pandemic levels. A rate of of 2.6 percent is expected in **2023**.

g) Activity in the **construction sector** grew by 3.7 percent in the second quarter of 2022 due to the continuation of private works and the increased execution of public works. During this period, domestic cement consumption, the main indicator of the sector's activity, increased 3.4 percent compared to the second quarter of 2021.

Activity in the construction sector is estimated to grow 0.5 percent in **2022** and 2.0 percent in **2023,** driven by higher private investment.

h) During the second quarter of 2022, the **commerce** sector grew 2.6 percent, in line with higher sales in all branches given the lower operating restrictions compared to 2021. Wholesale and retail trade grew by 2.3 percent; and vehicle sales and repair grew by 6.7 percent. In the first half of the year, the trade sector grew 4.2 percent, driven by higher wholesale sales (4.1 percent) and by vehicle sales and repairs (9.3 percent).

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

i) The **services** sector grew 4.4 percent in the second quarter of the year, outweighing the pre-pandemic level (2019). The sector's recovery was driven by the elimination of curfews, higher visitor capacity at establishments, and mass vaccination campaigns. In the first six months of the year, the sector grew 4.9 percent.

The sector's growth in the quarter was associated with the greater dynamism in the areas of: (i) lodging and restaurants (38.9 percent), due to lower restrictions on visitor capacity and higher delivery services; (ii) transportation and storage (13.5 percent) due to higher air and land passenger transportation as a result of lower travel restrictions, and (iii) other services (6.0 percent).

In **2022**, the sector is expected to grow by 3.7 percent. This forecasts considers a longer impact of the pandemic on tourism-related industries, such as transportation and lodging. In **2023, the** sector would grow 2.2 percent and most tourism-related sectors are expected to reach pre-pandemic levels.

Expenditure-side GDP

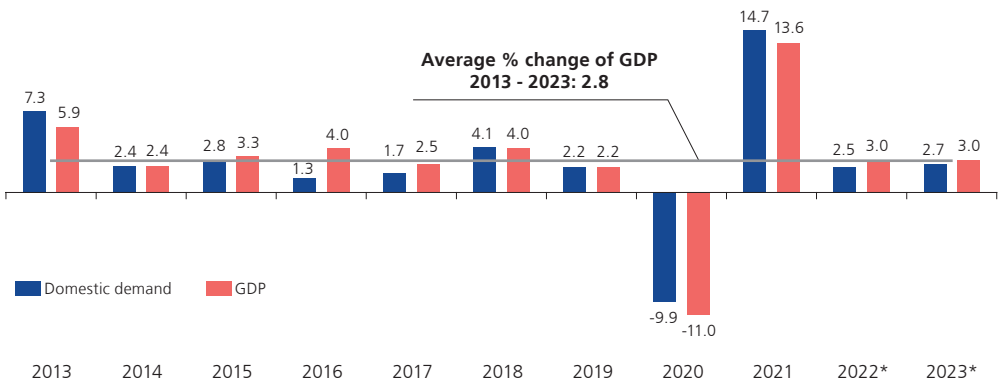
39. On the expenditure side, growth in the first half of 2022 is mainly explained by private consumption, which was driven by the recovery of employment and income, government monetary transfers and the full availability of CTS funds. Progress in vaccination also played a role (71.3 percent of the population had received the third dose on August 31) and allowed for the elimination of practically all sanitary restrictions, which accelerated the demand for services. In addition, exports, public consumption and private investment (mainly from the mining sector) also contributed positively. Private investment, however, grew at low rates due to the deterioration of business confidence and the lower momentum of self-construction.

These effects were partially counterbalanced by the deaccumulation of inventories and the decrease in public investment. The use of inventories took place in a context of low local production and high volumes of exports, mainly of copper.

Economic activity is forecast to grow 3.0 percent in 2022, less than foreseen in the previous report (3.1 percent). The revised projection is supported by the expected slowdown in exports of traditional products in the second half of the year due to lower mining production, as well as by the lower availability of inventories observed in the first half of the year This would be partially offset by higher growth in private consumption associated with the recovery of the labor market and with the boost in the availability of extraordinary income during the second half of the year (availability of 100 percent of the CTS and approved withdrawals from private pension funds).

It is expected that the normalization of spending habits will continue to support employment and domestic demand in the forecast horizon, with the economy growing in 2023 at the same rate as in 2022. This momentum would be lower than that estimated in the previous report (3.2 percent) because of a more gradual recovery of business and consumer confidence and less favorable terms of trade, factors that could discourage new investment projects and household spending.

Graph 44
DOMESTIC DEMAND AND GDP: 2013 - 2023
(Real percentage changes)



* Forecast.
Source: BCRP.

Table 19
DOMESTIC DEMAND AND GDP
(Real % change)

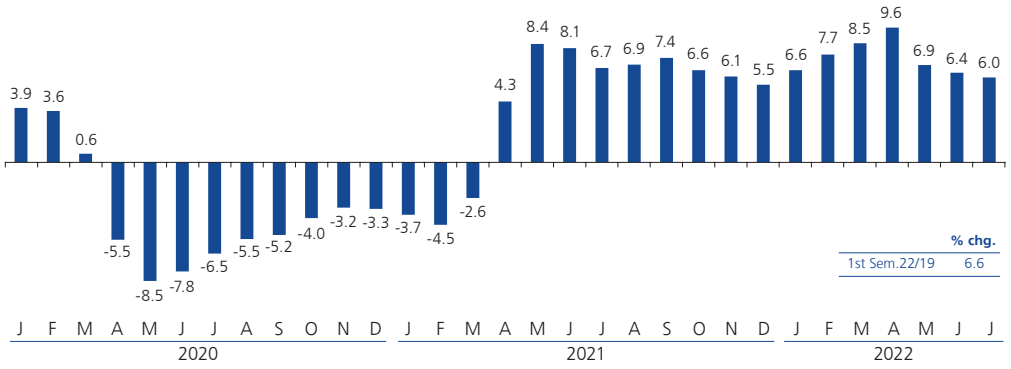
	2021	2022*			2023*	
		1st. Sem.	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
Domestic demand	**14.7**	**2.0**	**2.8**	**2.5**	**3.0**	**2.7**
Private consumption	11.7	5.8	4.1	4.2	3.5	3.1
Public consumption	10.6	3.1	1.5	1.5	2.0	2.0
Private investment	37.4	0.9	0.0	0.0	2.0	1.8
Public investment	24.9	-5.1	2.1	2.1	1.6	0.0
Change on inventories (contribution)	-2.1	-2.2	-0.1	-0.5	0.0	0.0
Exports	**13.7**	**8.9**	**6.1**	**5.5**	**7.7**	**7.7**
Imports	**18.6**	**2.4**	**4.5**	**3.8**	**6.7**	**6.5**
Gross Domestic Product	**13.6**	**3.5**	**3.1**	**3.0**	**3.2**	**3.0**

IR: Inflation Report.
* The last two columns correspond to the annual projection of the previous and current RI.
Source: BCRP.

40. Indicators of **private consumption** grew steadily in June and July, driven by the extraordinary liquidity provision measures and the ongoing normalization of consumption habits, the latter being explained by the progress of the vaccination process and the easing of sanitary restrictions.

a) Formal employment continued to increase as the negative effects of the pandemic dissipate. Thus, in July formal jobs increased 6.0 percent year-on-year and 7.6 percent in the first half of the year.

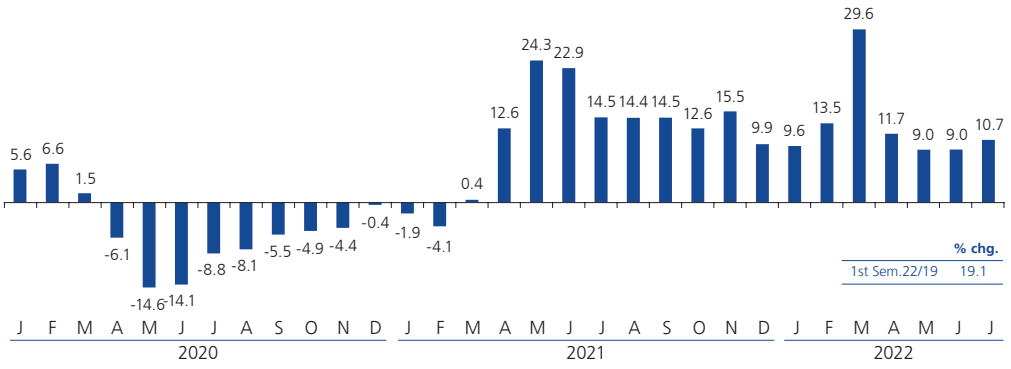
Graph 45
FORMAL EMPLOYMENT
(Annual % change)



Source: SUNAT- Payroll

b) The nominal formal wage bill grew 10.7 percent year-on-year in July (1.8 percent in real terms), which is mainly explained by the increase in employment in the service sector. In the first half of the year, year-on-year growth was 14.4 percent (6.7 percent in real terms).

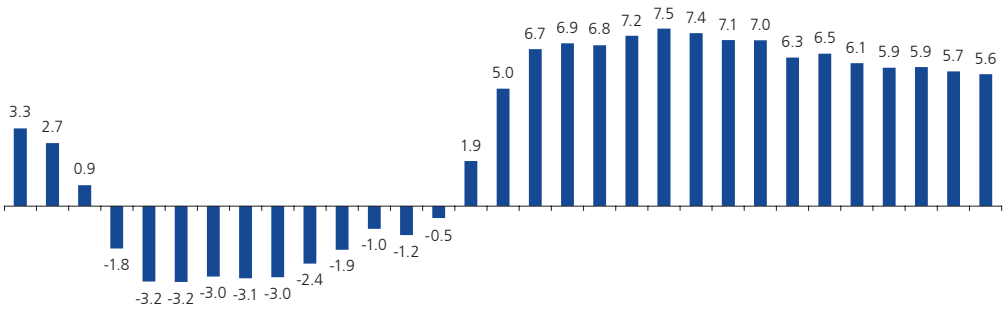
Graph 46
FORMAL WAGE MASS
(Annual % change)



Source: SUNAT- Payroll.

c) In July, 343,000 private sector companies reported employment information, with the number of companies growing 5.6 percent year-on-year. This rate is explained by companies in the services sector.

Graph 47
PRIVATE SECTOR COMPANIES REPORTING FORMAL EMPLOYMENT
(Annual % change)

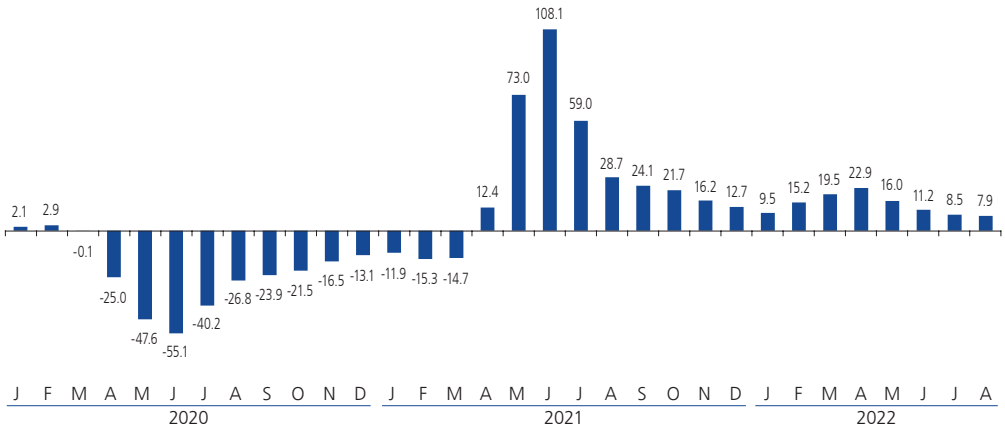


Companies	Jul.20	Jul.21	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.22	Feb.	Mar.	Apr.	May.	Jun.	Jul.
Total in thousand	304	325	327	329	331	332	332	332	334	336	338	340	342	343

Source: SUNAT- Payroll.

d) According to INEI's Permanent Employment Survey, the employed population in Metropolitan Lima has continued to show significant growth rates in recent months. In August, it recorded a growth rate of 7.9 percent year-on-year.

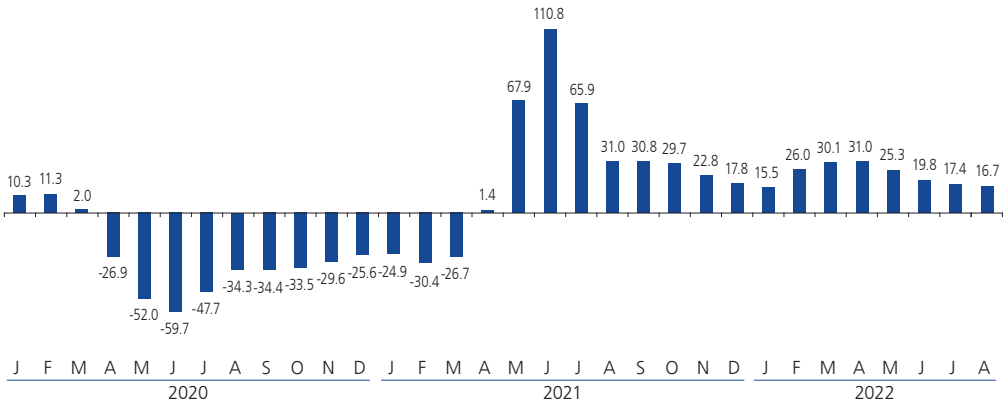
Graph 48
EMPLOYED POPULATION OF METROPOLITAN LIMA, MOVING QUARTER
(Annual % change)



Source: INEI.

e) The higher year-on-year growth rate of the number of workers and average income, mainly in the formal sector, led the nominal wage bill in Metropolitan Lima to increase 16.7 percent year-on-year in the moving quarter to August (7.7 percent in real terms).

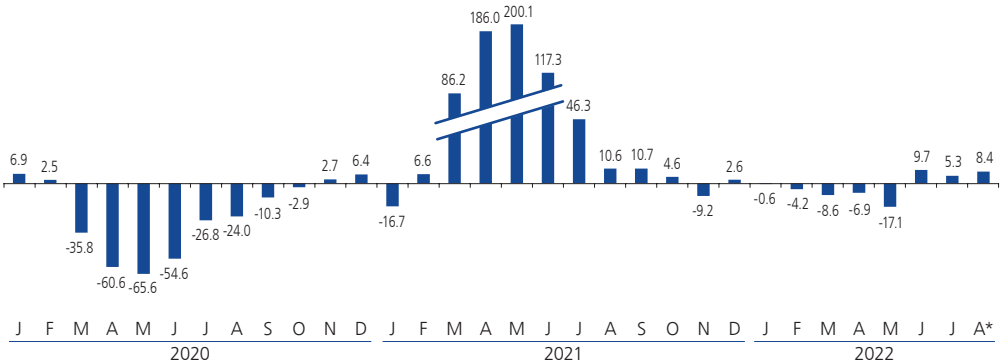
Graph 49
WAGE MASS OF METROPOLITAN LIMA, MOVING QUARTER
(Annual % change)



Source: INEI.

f) The volume of imports of consumer durables increased 5.3 percent year-on-year in July, this being explained by the increase in automobile imports. This indicator is estimated to have grown 8.4 percent in August.

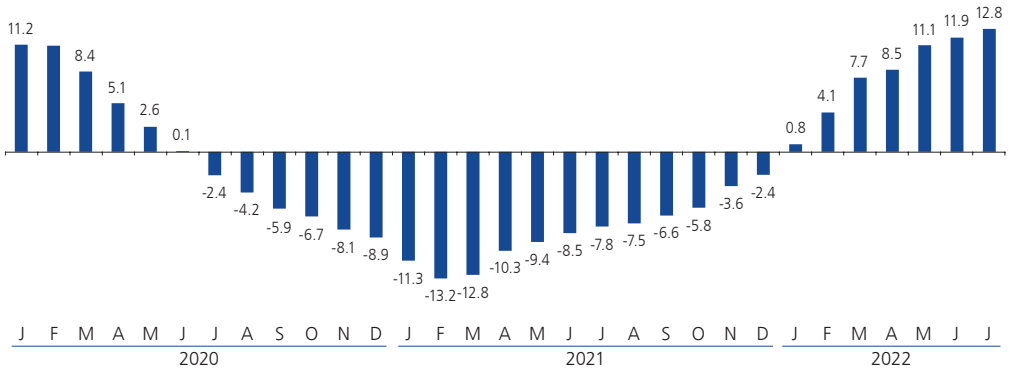
Graph 50
VOLUME OF IMPORTS OF DURABLE CONSUMER GOODS
(Annual % change)



* Preliminary.
Source: SUNAT - Customs.

g) Consumer credit in real terms accelerated its growth pace for the sixth consecutive month and grew 12.8 percent in July. This result is attributed to the increase in vehicle loans and the use of credit cards.

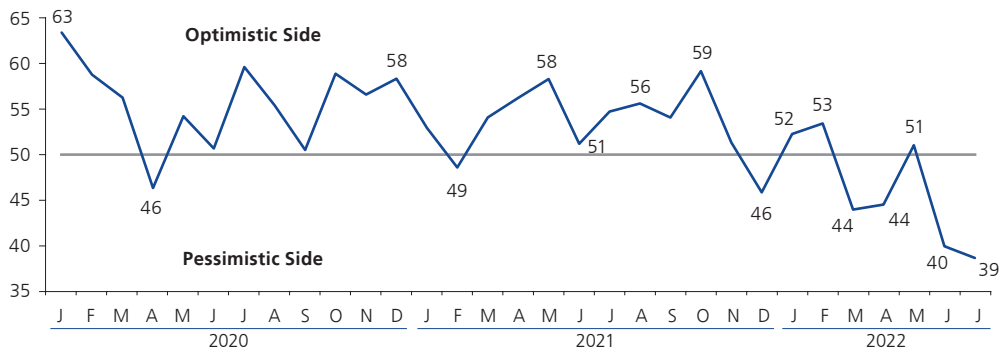
Graph 51
REAL CONSUMER LOANS
(Annual % change)



Source: BCRP.

h) Consumer confidence, measured as agents' expectations about their family's economic situation for the next 12 months, declined for the second consecutive month in July and registered a level in the pessimistic range.

Graph 52
EXPECTATIONS ABOUT THE HOUSEHOLD SITUATION IN 12 MONTHS AHEAD INDICCA, METROPOLITAN LIMA
(Index)

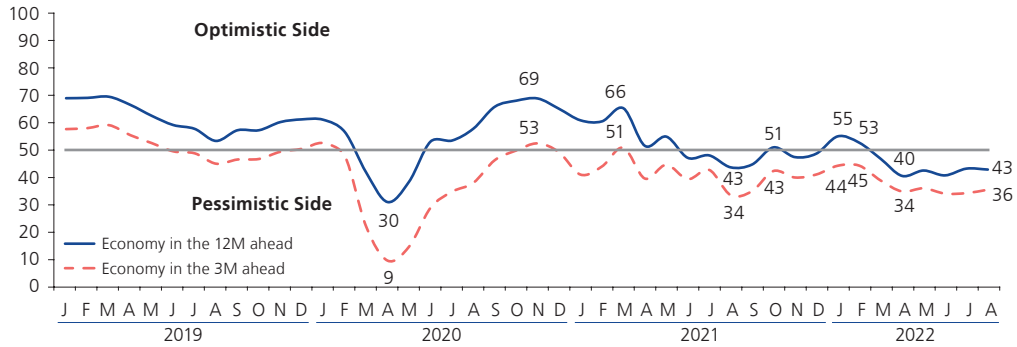


Source: Apoyo.

41. Leading indicators related to private investment have shown a deterioration in recent months due to the persistence of political uncertainty and its negative impact on investment decision making.

a) Although business expectations about the future of the economy in 3 months and 12 months' time recovered slightly in July and August compared to June, they remain in the pessimistic range.

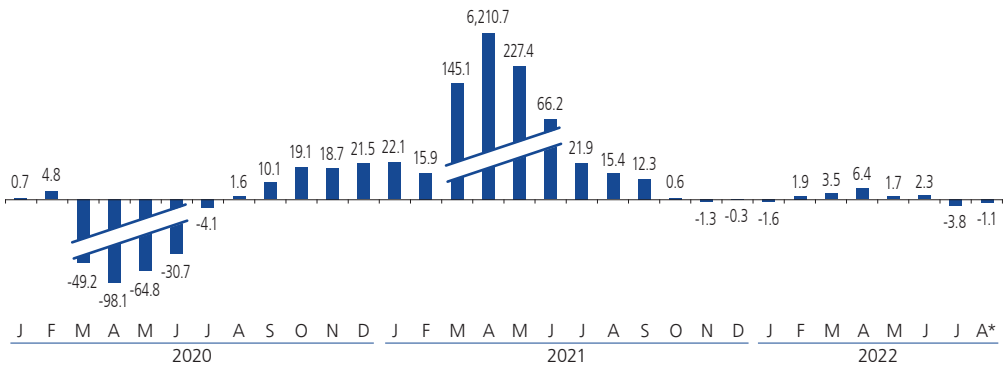
Graph 53
EXPECTATIONS ABOUT THE ECONOMY IN 3 AND 12 MONTHS AHEAD
(Index)



Source: BCRP.

b) Domestic consumption of cement –an indicator related to construction investment– fell 3.8 percent in July due to lower dynamism in the execution of private works and the slowdown observed in self-construction since the end of 2021. This indicator is estimated to have fallen 1.1 percent in August.

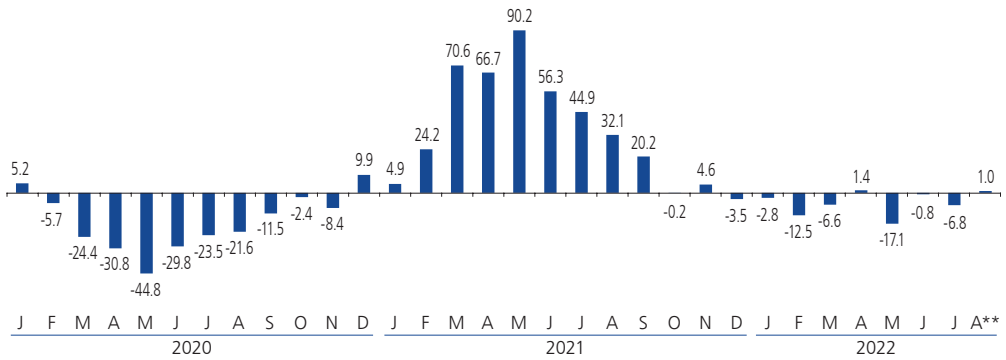
Graph 54
DOMESTIC CONSUMPTION OF CEMENT
(Annual % change)



* Preliminary.
Source: Cement companies.

c) The volume of imports of capital goods, excluding construction materials and cell phones, decreased 6.8 percent year-on-year in July, mainly due to lower purchases by mining and trading companies, and lower purchases of capital goods in the sectors of transportation and information technologies. In August, this indicator is estimated to have recorded a growth rate of 1.0 percent.

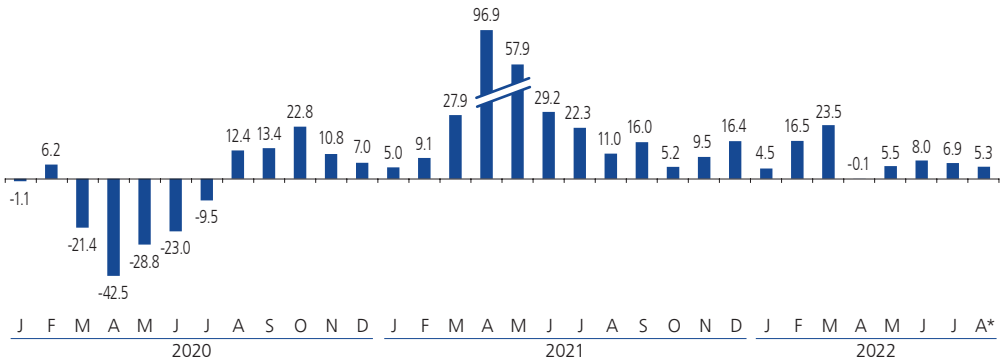
Graph 55
VOLUME OF IMPORTS OF CAPITAL GOODS*
(Annual % change)



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

42. The volume of non-traditional exports increased by 6.9 percent year-on-year in July and is estimated to have grown by 5.3 percent in August.

Graph 56
VOLUME OF NON TRADITIONAL EXPORTS
(Annual % change)



* Preliminary.
Source: SUNAT - Customs.

43. Private expectations for GDP growth have been updated in line with economic and political developments so far this year. The latest **Survey on Macroeconomic Expectations** indicates that agents project growth rates between 2.5 and 3.0 percent for this year and a similar range for 2023 (between 2.4 and 3.0 percent).

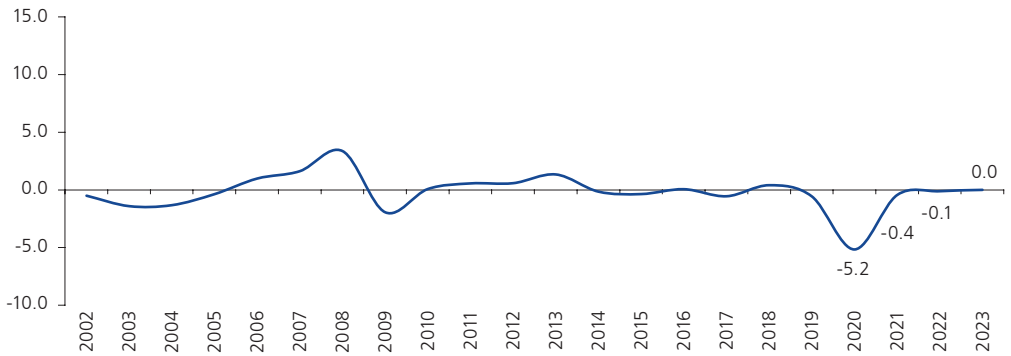
Table 20
MACROECONOMIC EXPECTATIONS SURVEY: GDP GROWTH
(% change)

	IR Dec.21	IR Mar.22	IR Jun.22	IR Sep.22*
Financial entities				
2022	2.3	2.5	2.5	2.5
2023	2.7	3.0	2.6	2.5
Economic analysts				
2022	3.0	2.7	2.7	2.7
2023	2.8	2.8	2.7	2.4
Non-financial firms				
2022	3.1	3.0	3.0	3.0
2023	3.2	3.0	3.0	3.0

* Survey conducted on August 31.
Source: BCRP.

44. The output gap, calculated as the difference between GDP and potential GDP, is estimated at -0.1 percent for 2022. This gap measures inflationary demand pressures on the level of activity, as potential GDP characterizes the short- and medium-term productive capacity of the economy over the business cycle. The gap is estimated to close in 2023, in line with the normalization of the economy's spending habits, the favorable development of the formal labor market, and taking into account that potential GDP after COVID-19 was considerably affected.

Graph 57
OUTPUT GAP
(As a percentage of potential GDP)



Source: BCRP.

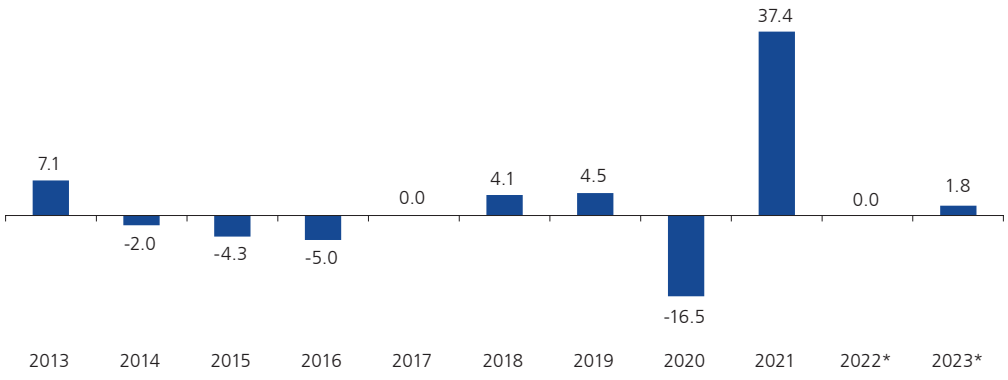
45. **Private consumption** in the first half of 2022 grew 5.8 percent, a result explained by the easing of health restrictions in most businesses, the recovery of the labor market (mainly in the formal sector), the monetary incentives provided by the government and the free availability of CTS deposits, which allowed sales to continue accelerating. In the second half of the year, household spending would continue to grow, although at a slower pace, driven by a favorable labor market and by the availability of the full CTS deposits and the possibility of withdrawing up to 4 tax units from AFPs funds.

In this context, given the higher than expected result during the first half of the year, the projected growth rate of private consumption has been revised up from 4.1 percent to 4.2 percent in 2022. On the other hand, a lower growth rate is forecast for 2023 (3.1 percent) than that estimated in the previous Report (3.5 percent) as consumption is expected to decline once the sources of savings available in 2022 have dissipated and due to lower household expectations about the future of the economy. The projection of private consumption for 2022 takes into account the temporary support measures for vulnerable households considered in the Impulso Peru plan.

46. Showing a lower rate than in 2021, **private investment** grew 0.9 percent in the first half of 2022, influenced by the low levels of business confidence that remain in the pessimistic range and by the lower momentum of self-construction due to the normalization of household spending habits. Likewise, the volume of imports of capital goods contracted 6.5 percent year-on-year in the same period. The projection of zero growth for private investment in 2022 is maintained due to the impact of lower business expectations in the second half of the year. Along the same lines, mining investment is projected to decline due to the persistence of social conflicts and less favorable terms of trade.

The growth rate of private investment projected for 2023 is revised down to 1.8 percent from 2.0 percent in the previous report because of a more gradual recovery of business confidence and the foreseen contraction of the terms of trade, which would negatively impact new investment project decisions, mainly in the mining sector. A contraction in this component of investment is expected as large projects, such as Quellaveco and Toromocho, will complete their disbursements in 2022. These effects would be partially offset by the measures proposed by the Impulso Peru plan aimed at facilitating, strengthening and unblocking private investment.

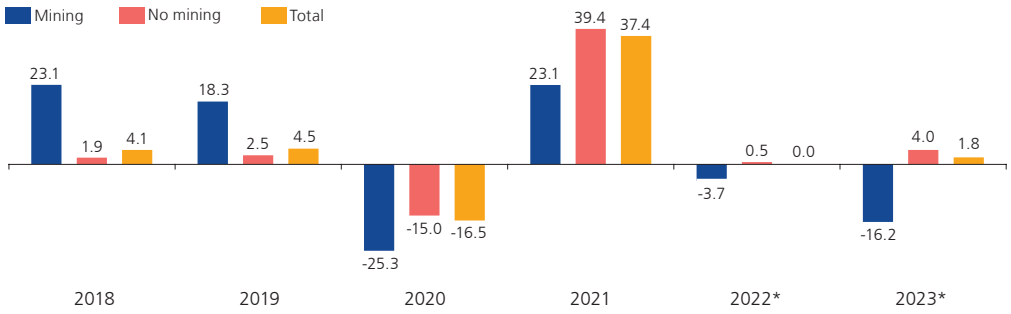
Graph 58
PRIVATE INVESTMENT: 2013-2023
(Real % change)



* Forecast.
Source: BCRP.

a. Investments in the **mining sector** between January and July 2022 totaled US$ 2.78 billion, with the investments made by Anglo American Quellaveco (US$ 705 million), Antamina (US$ 225 million) and Yanacocha (US$ 172 million) aacounting mainly for this figure. 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) projects in 2022. Additionally, the construction phase of San Gabriel (US$ 0.4 billion) is expected to start in 2022.

Graph 59
PRIVATE INVESTMENT
(Real annual % change)



* Forecast.
Source: BCRP.

b. Progress continues to be made in the construction of the main infrastructure projects. According to OSITRAN, Line 2 of the Lima Metro is 43.2 percent complete as of July 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 drinking water and sewage networks is completed. For its part, the expansion of Jorge Chávez International Airport, the construction of the second runway and the new control tower will be operational as from 2023. The new passenger terminal is in its initial stage, the delivery being due in 2025. As for the modernization of the Callao North Pier, it recorded 48.2 percent progress in July 2022. In May 2022, the concessionaire reached an agreement with the government to expand the 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 said that the Muelle Bicentenario project, which began construction works in September last year, recorded an accumulated progress of 57.1 percent in July 2022. The company estimates that the dock will start operating in early 2024.

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

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

Source: Information on companies, newspaper and specialized media.

c. For the 2022-2023 period, **Proinversion** reports a portfolio of more than US$ 8.9 billion in investment projects to be awarded according to its latest report of September 2022.

Table 22

MAIN PROJECTS TO BE IMPLEMENTED THROUGH CONCESSION ARRANGEMENTS IN 2022-2023

(Million US$)

	Estimated investment
To be called	**8,960**
Peripheral Ring Road	2,380
Longitudinal of the Sierra road project, Section 4	929
Ancon Industrial Park	762
500 kV Transmission Line Huanuco –Tocache - Celendín - Trujillo and 500 kV Transmission Line Celendín - Piura link	611
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
Schools in risk: Metropolitan Lima	255
National Hospital Hipólito Unanue	250
500 kV Transmission Line and Piura Nueva - Frontera Substation	217
Treatment system for wastewater Huancayo	172
Essalud Piura	144
Schools in Risk: Ate-San Juan de Lurigancho	140
220 kV Transmission Line Piura Nueva - Colán	139
220 kV Transmission Line Ica - Poroma and 220 kV Transmission Line Caclic - Jaen Norte	130
IPC- Wastewater Treatment for effluent dumping or reuse - Trujillo	129
Central Military Hospital	115
Essalud Chimbote	109
Schools at Risk: Comas - San Martín de Porres	91
IPC -Wastewater Treatment for effluent dumping or reuse, Chincha province, Ica, Peru	73
Schools at Risk: Villa María del Triunfo	68
IPC -Wastewater Treatment System for Puerto Maldonado	59
High Performance Schools: COAR Centro	59
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
Transmisson 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	16
Wide-Scale Use of Natural Gas in Central ad South Region	*
Rural sanitation in Loreto	*
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.

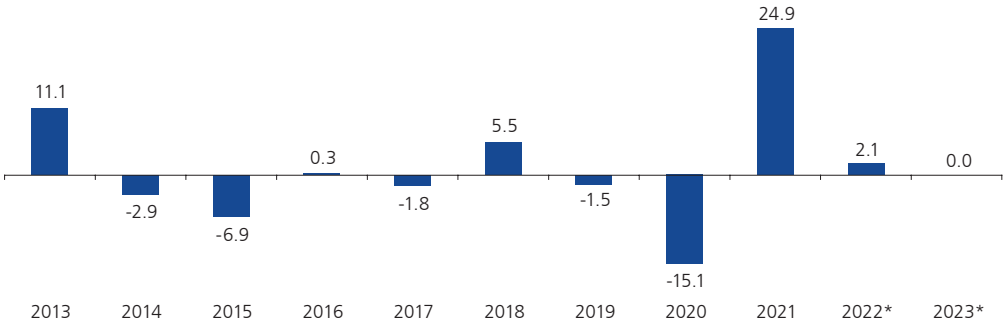
47. **Public investment** decreased 5.1 percent in the first half of 2022 as a result of lower spending for the COVID-19 health emergency and reactivation (Arranca Perú) at all levels of government, as well as due to lower disbursements for the Reconstruction program at the level of subnational governments.

In the second half of the year, public sector investment is expected to recover due to disbursements from the Impulso Peru plan and reconstruction works. This plan is expected to contribute to the recovery of public investment through measures aimed at accelerating and unblocking public investment such as: (i) boosting project management, (ii) reactivation and unblocking of paralyzed works, (iii) inter-institutional coordination for the application of concurrent control, (iv) raising quality standards and (v) providing greater resources

for investments in areas with the greatest gap. Other actions standing out related to the reconstruction program include the Government to Government Agreement with the United Kingdom, projects within the framework of the National Infrastructure Plan for Competitiveness (PNIC), Special Public Investment Projects, the increase in the budget allocation, the unblocking of irrigation megaprojects –e.g. Majes Siguas and Chavimochic– and the greater execution of public spending by sub-national governments since this is the last year of current authorities' term of office. Thus, as forecast in the June Report, public investment is projected to grow 2.1 percent in 2022.

On the other hand, the public investment forecast for 2023 has been revised down from 1.6 percent in the previous report to zero. This forecast assumes that national the growth of public investment at the level of the national government will be offset by the drop in subnational governments' investment that is usually observed in the year following municipal elections.

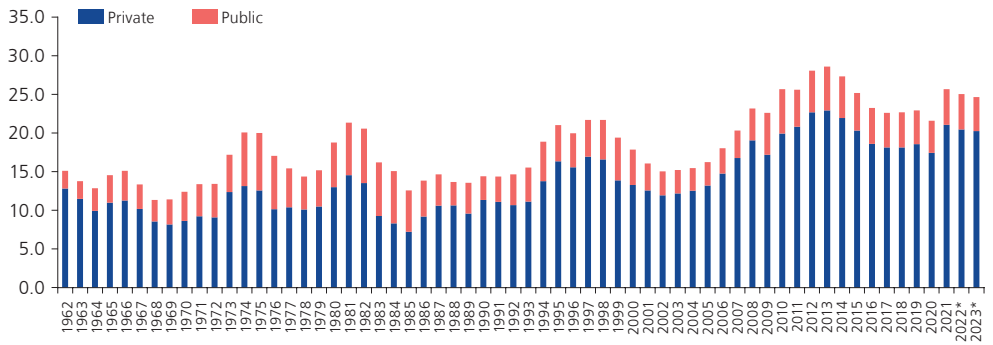
Graph 60
PUBLIC INVESTMENT: 2013-2023
(Real % change)



* Forecast.
Source: BCRP.

48. **Gross fixed investment**, as a percentage of real GDP, is expected to decline from 25.7 to 25.0 percent between 2021 and 2022, showing a slightly lower level than in 2015. Moreover, this indicator is expected to contract again and represent 24.7 percent of output at the end of the forecast horizon due to the impact of low confidence and less favorable terms of trade. For investment to recover, it is necessary to preserve economic and financial stability, consolidate an adequate business environment, and carry out reforms to support the economy's productivity.

Graph 61
GROSS FIXED INVESTMENT: PRIVATE AND PUBLIC, 1962-2023
(% of real GDP)



* Forecast.
Source: BCRP.

49. **Domestic savings** are projected to decrease from 19.7 percent of GDP in 2021 to 17.7 percent in 2022 because of the fall in private savings (2.6 percentage points of GDP) associated with the normalization of household consumption habits and the approval of the availability of CTS deposits and part of AFPs funds. Since the drop in private savings would outweigh the higher public savings derived from the recovery of tax collection and lower expenditures, the external financing requirement is estimated to increase from 2.3 to 3.8 percent as a percentage of GDP between 2021 and 2022.

In 2023, following the normalization of the health scenario at the global level and the recovery of economic activity, private savings are expected to increase by 1.8 percentage points of GDP as a result of the increase in interest rates in the economy. Thus, the external gap is projected to narrow to 1.8 percent of GDP in that year.

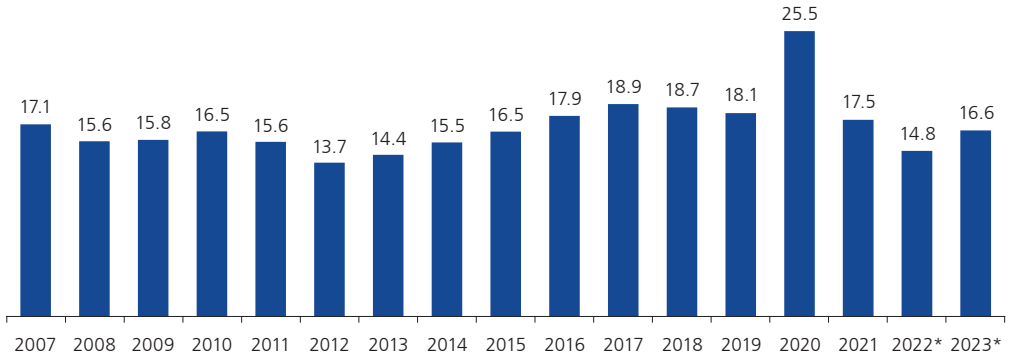
Table 23
SAVING-INVESTMENT GAP
(Accumulated last 4 quarters, % of nominal GDP)

		2021	2022*			2023*	
			1st. Sem.	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
1	Domestic Gross Investment 1/	22.0	20.7	21.7	21.4	21.2	21.2
2	Domestic Saving	19.7	17.3	18.2	17.7	20.1	19.4
	External Gap (=2-1)	-2.3	-3.4	-3.4	-3.8	-1.1	-1.8
	1.1 Private Domestic Gross Investment 1/	17.3	16.2	16.9	16.6	16.6	16.6
	1.2 Private Saving	17.5	13.8	15.4	14.8	17.3	16.6
	Private Gap (=1.2-1.1)	0.2	-2.4	-1.5	-1.9	0.7	0.0
	2.1 Public Investment	4.7	4.5	4.8	4.8	4.7	4.6
	2.2 Public Saving	2.1	3.5	2.8	2.9	2.9	2.8
	Public Gap (=2.2-2.1)	-2.5	-1.0	-1.9	-1.9	-1.8	-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.

Private savings in 2022 would register their lowest level since 2013 (14.4 percent), when despite positive public savings and a high requirement for foreign financing, a certain amount was used to finance high gross domestic investment. This reduction in savings, particularly in household savings, has also been observed in other countries in the region, such as Chile and Colombia.

Graph 62
PRIVATE SAVINGS: 2007-2023
(% GDP)



* Forecast.
Source: BCRP.

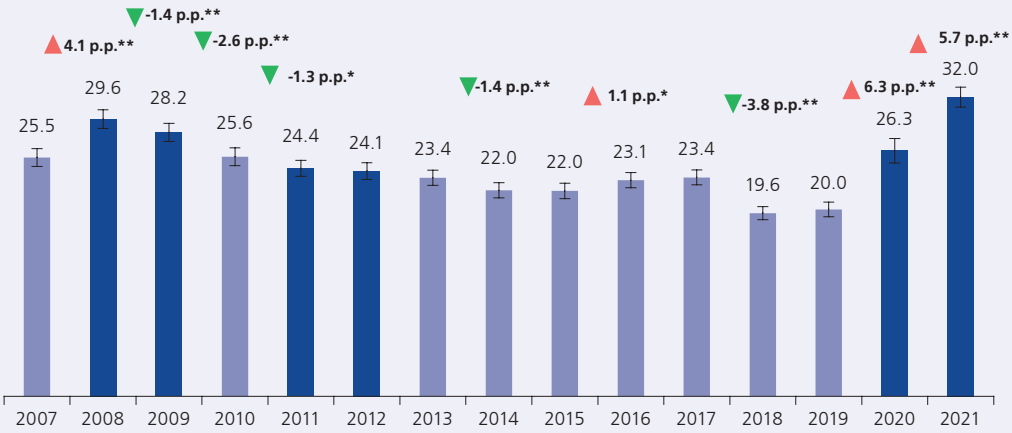
Box 2
ADVERSE SHOCKS FACED BY PERUVIAN HOUSEHOLDS IN THE LAST 15 YEARS

A household's income and wealth can be affected by an adverse shock at any time. Therefore, an adequate analysis of the vulnerability of Peruvian households during an economic crisis should include an assessment of the nature, distribution and consequences of the shocks they face. This Box describes the dynamics of the exogenous shocks faced by Peruvian households, emphasizing the crisis period cause by the COVID-19 pandemic.

Nature of shocks faced by households

Peru's National Household Survey (ENAHO), published by INEI, reports information on whether a household has been affected by: (i) a household member's loss of employment, (ii) bankruptcy of the family business, (iii) illness or serious accident of a household member, (iv) abandonment by the head of household, (v) a criminal act, (vi) natural events[6], or (vii) other adverse situation in the last 12 months. The following graph shows the percentage of Peruvian households that have experienced at least one of these adverse shocks since 2007, with two periods being highlighted: 2008-2009 and 2020-2021. The first period is an unfavorable juncture due to the confluence of three phenomena: the International Financial Crisis at the end of 2008, the impacts the Pisco earthquake of August 2007 and the proliferation of H1N1 flu. The second period corresponds to the years of the COVID-19 pandemic.

HOUSEHOLDS THAT FACED AT LEAST ONE ADVERSE SITUATION 2007-2021 1/
(In percentage of total households)



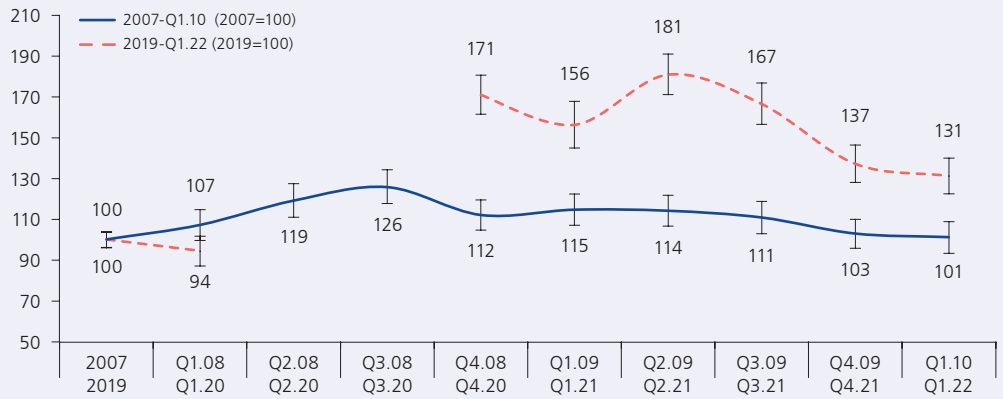
Memo: Confidence intervals are shown at 95 percent confidence, and significant differences are highlighted (insignificant differences are omitted).
* Significant difference: p-value <0.10.
** Significant difference: p-value <0.05.
1/ In 2020, the second and third quarters are omitted due to the availability of information.
Source: INEI – ENAHO.

One can see that both crisis periods are associated with an increase in the incidence of shocks with respect to "normal" times[7], where the average incidence is 23.0 percent. It is also observed that the COVID-19 shock is more persistent, which is more noticeable when analyzing the quarterly dynamics. In the first quarter of 2022, two years after the COVID-19 crisis started in March 2020, the incidence of shocks remained 31 percent above the incidence level in 2019. In contrast, by the first quarter of 2010, the increase in adverse situations observed between 2008 and 2009 had already been fully reversed.

6 Originally, the ENAHO survey classifies these events as "natural disasters", providing examples such as a "drought, storm, plague, flood, etc.". A more appropriate classification, which will be used throughout this box, is "natural events".

7 With "normal" times, we refer to the years excluding the periods 2008-2009 and 2020-2021.

HOUSEHOLDS THAT FACED AT LEAST ONE ADVERSE SITUATION, Q4.07-Q1.10 AND Q1.20-Q1.22 1/
(Index 2007=100 and 2019=100)



Memo: Confidence intervals are shown at 95 percent confidence. The values for 2007 and 2019 are the annual averages.
1/ In 2020, the second and third quarters are omitted due to the availability of information.
Source: INEI – ENAHO. Data for Q1.22 corresponds to the quarterly base for that period, while the rest of the observations are obtained from the annual bases.

Obviously, this is linked to the particularities of each crisis. The following table groups shocks into four categories: (1) economic shock (job loss and bankruptcy of family business), (2) health shock (serious illness or accident), (3) natural events (natural disasters), and (4) other (abandonment by the head of household, criminal acts and other events).

INCIDENCE OF ADVERSE SHOCKS BY CATEGORY, 2007 - 2021 1/
(In percentage of total households)

	Annual										Quarter		Difference	
	2007	2008	2009	2011	2013	2015	2017	2019	2020	2021	Q4.20	Q4.21	Q4.20/ 2019	Q4.21/ 2019
Economic shocks	4.8	5.4	6.1	4.9	4.8	4.8	4.5	4.4	12.0	16.9	20.1	11.4	15.7**	7.1**
Health shock (serious illness or accident)	8.0	9.9	9.4	8.9	8.4	7.9	6.6	6.4	6.5	8.3	7.0	8.7	0.7	2.3**
Natural events (natural disasters)	8.2	10.3	7.9	6.7	7.3	6.4	9.5	6.8	6.2	6.6	6.2	7.0	-0.7	0.2
Others	6.1	6.0	6.7	5.3	5.4	4.8	4.6	4.0	4.5	4.7	5.3	4.1	1.3**	0.1
Some shock	**25.5**	**29.6**	**28.2**	**24.4**	**23.4**	**22.0**	**23.4**	**20.0**	**26.3**	**32.0**	**33.7**	**26.8**	**13.7****	**6.9****

* Significant difference: p-value <0.10. Differences are in percentage points.
** Significant difference: p-value<0.05.
1/ In 2020, only information from the first and fourth quarters according to data availability.
Source: INEI - ENAHO.

Although there was a significant change in the frequency of economic shocks between 2007 and 2008-2009, the increase is slight in relative terms.[8] This is associated with the transience of the International Financial Crisis in Peru, as it was followed by a rapid economic recovery induced by favorable external conditions (high metal prices and loose international monetary conditions) and by the country's strong macroeconomic fundamentals (low inflation and low public debt). In contrast, the COVID-19 pandemic sparked two waves of contagions (in both 2020 and 2021) that were highly detrimental to the economy and household health, given the severity of restrictions on mobility and economic activity and the rapid spread of the disease among an unvaccinated population.[9]

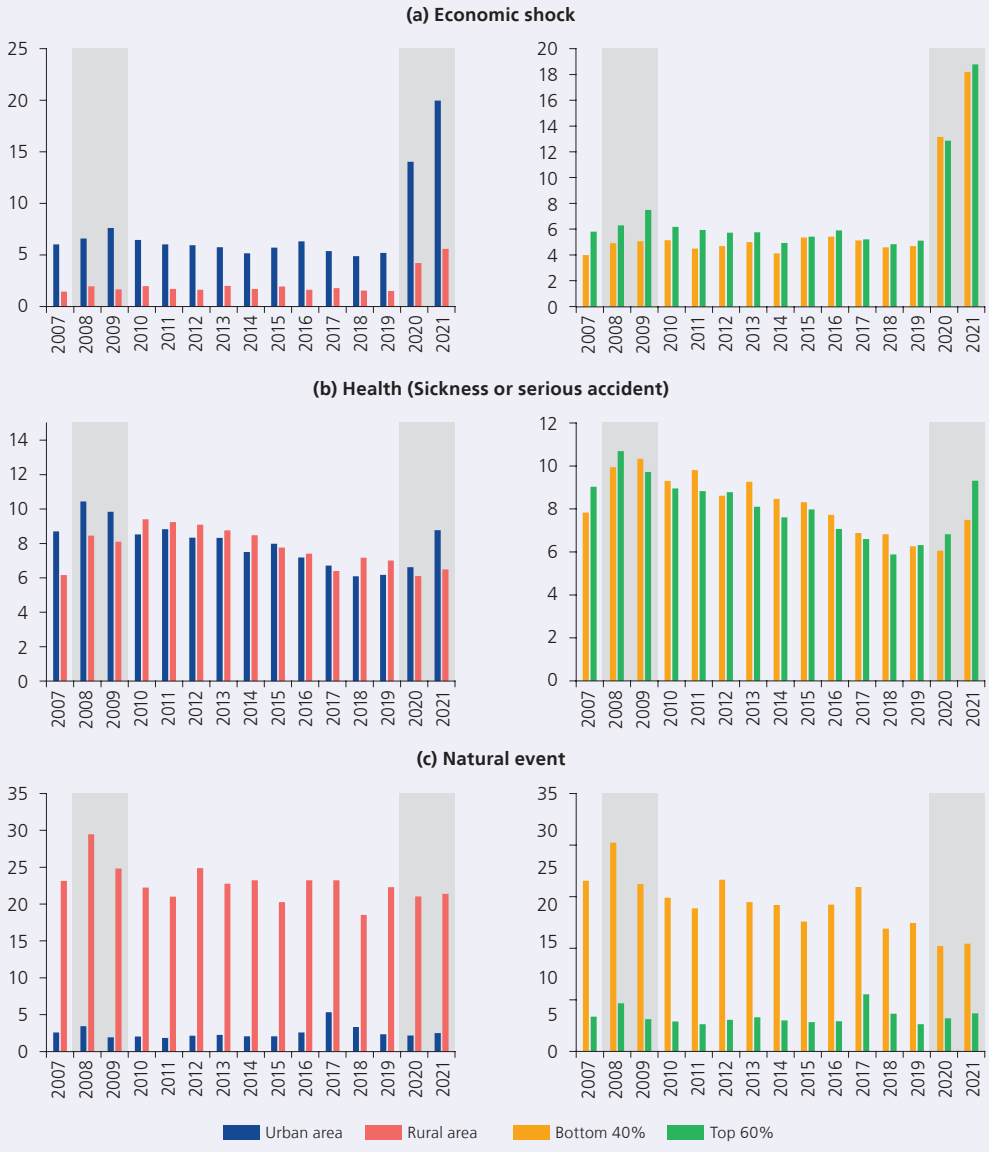
8 The categories that showed the largest increase between 2007 and 2008 are the shocks caused by natural events and the health shocks (which includes accidents), both probably linked to the 2007 earthquake (since the question is asked for the last 12 months, and not only for the current year). In 2009, the small reversal of health shocks may be due to the emergence of H1N1 flu.

9 The period with the most deaths and the most restrictions during the years of the pandemic was the one with the first wave of Covid in the second quarter of 2020. If data were available for this period, it would most likely show a higher incidence of crashes than that calculated for the Q4-2020 period.

Heterogeneity in the incidence of shocks

A comparison of the incidence of adverse shocks by urban and rural areas and by income levels shows that economic shocks are mainly a problem for urban households in normal times (excluding periods of crisis), and that there is not a very strong distinction among income groups. On the other hand, natural events affect rural and low-income households in particular, while health shocks have a similar impact among the subgroups analyzed.

INCIDENCE OF ADVERSE SHOCKS BY AREA AND INCOME LEVEL, 2007 - 2021 1/
(Percentage of total households in each group)



1/ In 2020, only information from the first and fourth quarters according to data availability.
Memo: Red lines mean periods of crisis. Income quintiles were calculated based on total real per capita household income (Soles in 2021 and prices of Metropolitan Lima). The bottom 40% corresponds to the bottom two quintiles, and the top 60% corresponds to the top three quintiles.
Source: INEI - ENAHO.

In general, the above results hold for crisis periods, but there are two specific differences. First, the economic shock incidence gap between urban and rural households grew wider in the 2008-2009 and 2020-2021 periods. This is more noticeable in the COVID-19 crisis, which is explained by the fact

that the containment measures affected economic activities and employment more severely in urban areas.[10] Second, the expansion of the disease shock during the pandemic has been more linked to urban households[11], which is consistent with the higher rate of infections in cities.

Responses to adverse shocks

On average, around 9 out of 10 households that experience an adverse shock report a decrease in income or loss of assets (property or wealth). Therefore, it is key to analyze what type of response households implement to alleviate this situation.

Between 2007 and 2019, the use of savings or equity became the most important response. Such was the further increase of its relevance caused by the pandemic that 4 in 10 households with income loss reported responding in this way in 2021 (the frequency was 2 in 10 households in pre-crisis times). However, cutbacks in food or consumption also became more common in the COVID-19 crisis. Thus, households that made use of this option increased from 16.5 to 22.1 percent between 2019 and 2021 (a significant increase of 5.6 percentage points). Government support is another type of response that increased markedly from 2.0 to 15.0 percent between 2019 and 2021, which is directly related to cash transfer policies, social programs, and temporary interventions by the MIDIS.

ACTIVITIES TO FACE REVENUE SHORTFALLS OR LOSS OF ASSETS, 2007-2021 1/
(%)

	2007	2008	2009	2011	2013	2015	2017	2019	2020	2021
Spent their savings or capital	13.8	16.1	16.4	18.0	21.0	22.0	21.5	22.0	33.1	40.5
Cutback in food or consumption	18.0	15.8	16.0	12.9	9.2	11.9	13.8	16.5	19.1	22.1
Got other jobs	10.7	10.6	12.0	11.7	11.2	12.3	11.5	12.2	13.8	18.3
Received government assistance	1.1	2.6	1.3	1.0	1.8	1.7	2.5	2.0	10.7	15.0
Obtained loans	21.7	21.5	20.8	20.7	17.5	14.6	13.8	13.3	12.0	11.8
Pawned or sold goods	4.6	4.4	4.9	4.6	4.2	4.3	2.6	2.4	3.0	2.4

Memo: Percentages are calculated on the total number of households that faced income or asset losses as a result of the shocks.
1/ In 2020, only information from the first and fourth quarters according to data availability.
Source: INEI - ENAHO.

Apart from social assistance policies, two other policies favored households' income during the pandemic: (i) the optional withdrawal of Compensation for Time of Service (CTS) deposits because of confinement, and (ii) the early withdrawal of funds from individual capitalization accounts in AFPs[12]. According to ENAHO, the withdrawal of AFP funds was a more widely used response than the withdrawal of CTS deposits in 2020 and 2021, both in households that had and had not experienced adverse shocks[13].

When comparing households that did and did not suffer adverse shocks, there is a significant difference in the withdrawal of AFP funds. In 2020, the percentage of households that made use of this measure was almost double among households with negative shocks than in the rest of families. While this gap narrowed in 2021, in both years there is a higher probability of withdrawal of AFP funds among households with adverse situations. This is consistent with the fact that savings in AFPs are intended to be long-term in order to sustain consumption during retirement, so families should be somewhat reluctant to use them in advance.

10 The contractions observed in the sectors of services and manufacturing were more pronounced than in the agriculture sector since the latter did not have such severe sanitary restrictions.

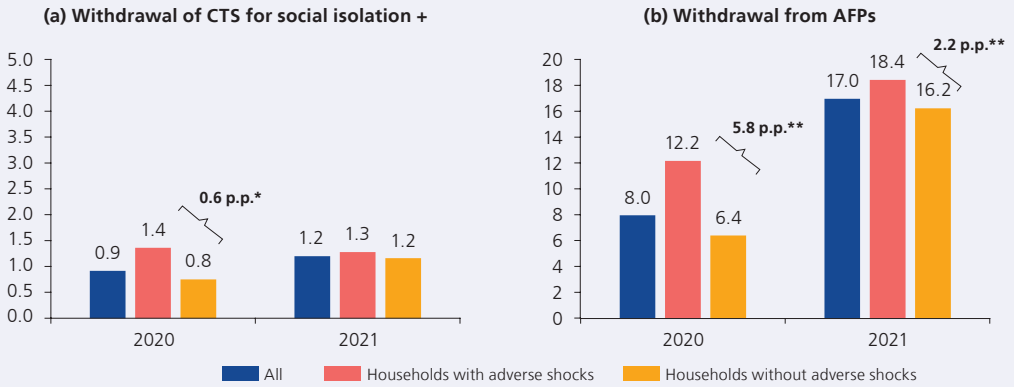
11 This also explains the higher incidence in higher income households in this period.

12 Both deposit accounts were previously intangible. The CTS is a contribution from the employer that is released upon termination of labor relations (it works as an unemployment insurance), while the AFP deposits are mandatory pension savings.

13 This could be partly explained because the households that were affected by unemployment withdrew their CTS funds under the standard modality and not because of "social isolation" (confinement).

WITHDRAWAL OF CTS AND AFPS DUE TO PANDEMIC, 2020-2021 1/

(In percentage of total households in each group)

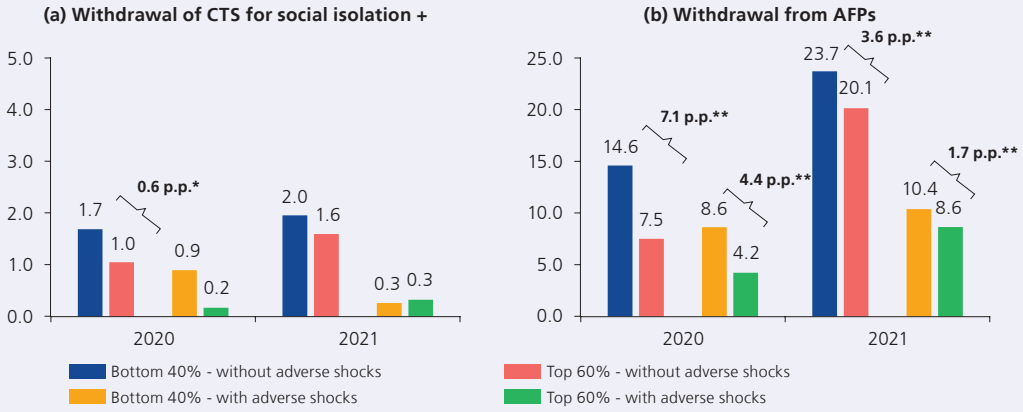


Memo: ENAHO asks the head of household about the perception of "other economic income by COVID-19" of him/her or any member of the household.
+It only specifies the "withdrawal of the CTS for social isolation", so it does not allow us to identify if there was a withdrawal of the CTS under the standard modality. Thus, the percentage of households that finally had their CTS withdrawn would be higher.
1/ In 2020, only information from the first and fourth quarters according to data availability.
* Significant difference: p-value <0.10.
** Significant difference: p-value <0.05.
Source: INEI - ENAHO.

In addition, if we contrast the frequency of withdrawals according to per capita income levels, we see that higher-income households made more intensive use of both types of fund withdrawals. This, however, could simply reflect the fact that CTS and AFPs accounts are for formal workers, who usually are part of higher-income households. On the other hand, if we analyze the incidence for households with and without shocks within each income group, we find again that households facing adverse situations made more use of withdrawals of AFP funds in both years and of withdrawals of CTS funds in 2020.[14]

WITHDRAWAL OF CTS AND AFPS DUE TO THE PANDEMIC ACCORDING TO POSITION IN THE INCOME DISTRIBUTION, 2020-2021 1/

(In percentages of total households in each group)



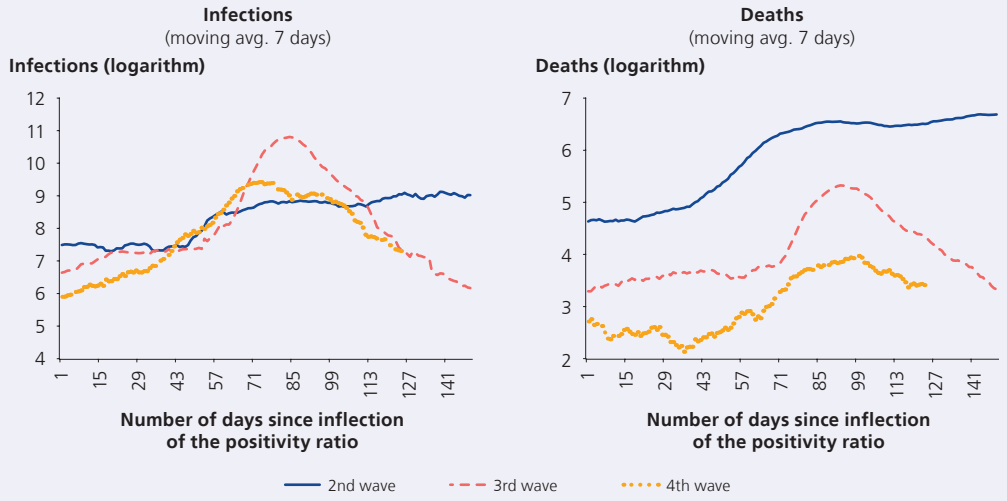
Memo: Income quintiles were calculated based on total real per capita household income (Soles 2021 and prices in Metropolitan Lima). The bottom 40% corresponds to the bottom two quintiles, and the top 60% corresponds to the top three quintiles. The ENAHO asks the head of household about the perception of "other economic income by COVID-19" of him/her or any member of the household.
+It only specifies the "withdrawal of the CTS for social isolation", so it does not allow us to identify if there was a withdrawal of the CTS under the standard modality. Thus, the percentage of households that finally had their CTS withdrawn would be higher.
1/ In 2020, only information from the first and fourth quarters according to data availability.
* Significant difference: p-value <0.10.
** Significant difference: p-value <0.05.
Source: INEI - ENAHO.

14 The greater use of AFPs withdrawals in 2021 could be due to the political uncertainty that was reflected in capital outflows. As shown in the graph, this withdrawal of funds has occurred both in households that experienced adverse shocks and those that did not, which affects their ability to sustain consumption during old age (less pension savings).

Finally, the data suggest that both measures may have supported private consumption during the crisis, especially among higher-income households. In lower-income households, monetary transfers are likely to have been the factor that prevented deeper drops in spending. However, considering that most of the affected households are using their savings or equity, reducing their food or consumption, or receiving state support, access to new income-generating opportunities becomes indispensable. This is linked to measures to raise potential GDP, such as improving the quality of infrastructure services and other actions aimed at increasing the flexibility of the labor market to facilitate the absorption of workers into quality jobs.

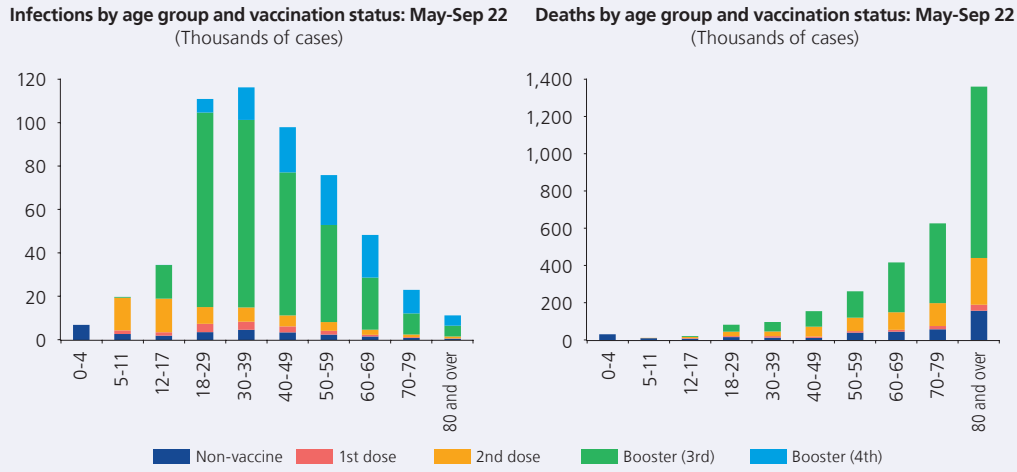
Box 3
FOURTH WAVE OF COVID-19 INFECTIONS

A steady increase in the COVID-19 positivity rate of infections –positive cases among number of tests, in percentage terms– was observed since the third week of May, recorded. In line with this, on June 26, 2022, the Ministry of Health officially declared the fourth wave of infection. According to the National Center for Epidemiology, Disease Control and Prevention (CDC), the increase in infections is attributed to sublineages BA.4 and BA.5 of the Omicron variant, which rapidly displaced sublineages BA.1 and BA.2, which were predominant during the third wave.[15]



During the months of June and July, the increase in the number of cases was similar to that observed in previous outbreaks, but did not reach the peak of the third wave (12,000 cases per day in the last week of July, in contrast to the 50,000 cases recorded at the end of January). Likewise, the average number of deaths per day remained below that of the second and third waves. A total of 556,000 people have been infected and 3,164 deaths have been recorded so far in the fourth wave.[16]

One of the factors that could explain the significant reduction in the number of deaths caused by COVID-19 is the progress of vaccination. Nearly 81 percent of those infected during this fourth wave had already received booster doses and 92 percent had received at least two doses.

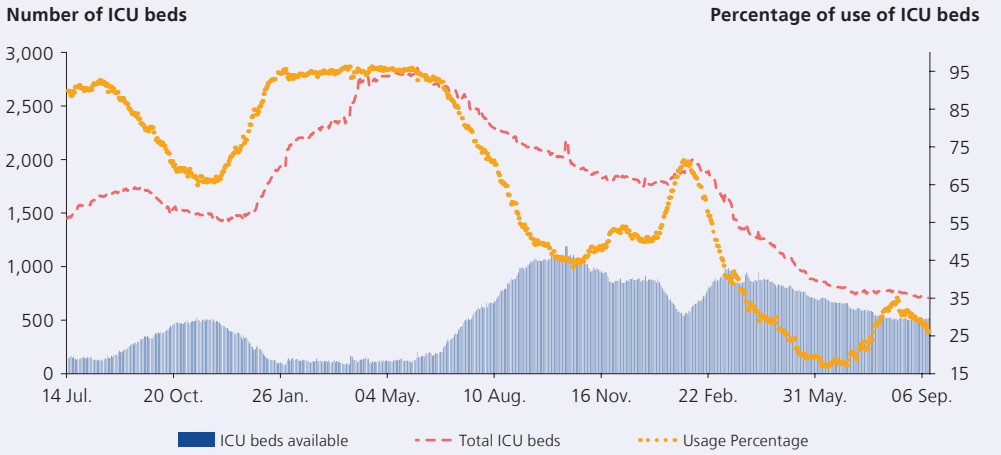


15 Epidemiological Alert 015-2022.

16 Information from the COVID19 Situation Room of the Peruvian Ministry of Health as of September 13.

Similarly, the higher vaccination coverage would have contributed to the lower hospital demand for intensive care. As a result, the percentage of ICU bed use peaked at 35 percent occupancy during the fourth wave (versus 72 and 95 percent in the third and second waves, respectively), despite the continued reduction in the total number of ICU beds for Covid care (from the peak of 2,003 beds registered in early February 2022).

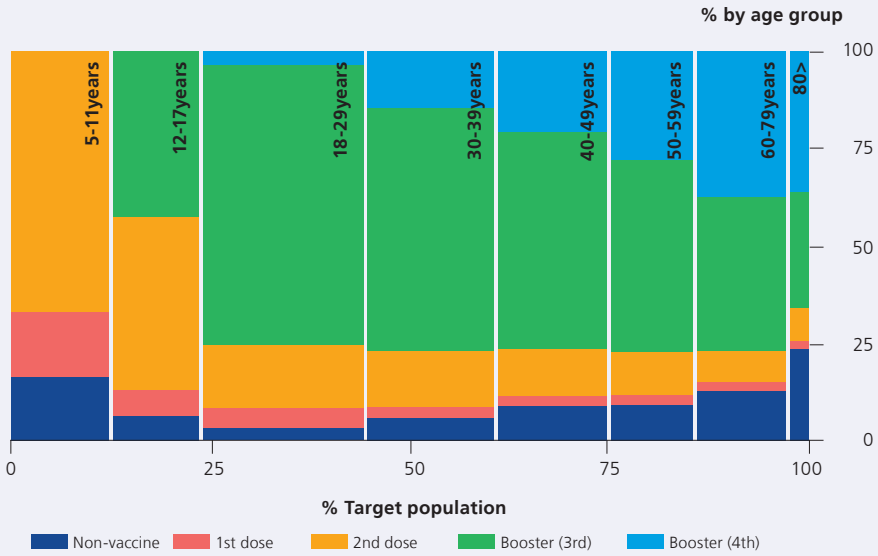
AVAILABILITY OF ICU BEDS IN THE COVID ZONE



As of April, the information includes adult, neonatal, and pediatric ICU and temporary critical care setting (AACT) beds exclusively for the treatment of COVID.

Therefore, it is important to highlight the importance of continuing the vaccination process in the coming months. Although the coverage of the booster dose (3rd dose) has outweighed 70 percent of the target population, the application of the second booster dose is still below 25 percent and approximately 9 percent of the population have not received any dose.

VACCINATION PROGRESS BY AGE GROUP



IV. Public finances

50. The fiscal deficit accumulated over the last twelve months decreased from 2.5 to 1.6 percent of GDP between December 2021 and August 2022. The decrease with respect to the end of 2021 is explained mostly by the increase in current income of the General Government and, to a lesser extent, by the reduction of non-financial expenditures as a percentage of GDP. This decrease was in part offset by the deficit in the primary balance of state-owned enterprises, which contrasts with the slight surplus recorded in 2021.

The increase in annualized current income of the General Government in GDP terms mainly due to higher tax revenues of the National Government and, to a lesser extent, to the increase in non-tax revenues. The increase in tax revenues is explained by the recovery of economic activity and the favorable context for the prices of export minerals and hydrocarbons. By components, higher revenues from income tax was observed, mostly due to regularization of tax payments for FY 2021 and from domiciled legal entities, together with higher revenues from the value added tax (VAT), especially duties on imports. On the other hand, the increase in income from *canon* and oil and gas royalties and interest received from Public Treasury deposits stand out among non-tax revenues.

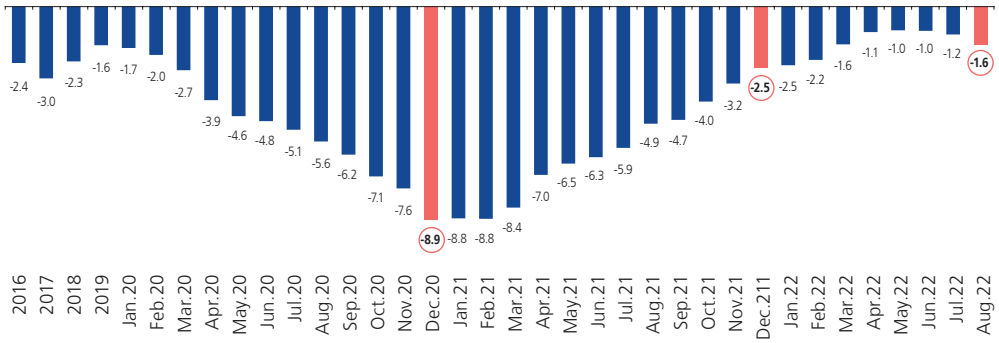
Although the General Government's non-financial expenditures in the last twelve months to August 2022 decreased as a percentage of GDP, they increased in nominal terms. The nominal increase results from higher expenditures in: (i) gross capital formation at the levels of local and regional governments; (ii) salaries, due to higher payments to teachers' personnel; (iii) other capital expenditures, mainly due to the honoring of credit guarantees of the Reactiva Peru Program; (iv) current transfers, mainly to the Fuel Price Stabilization Fund (FPSF), and (v) goods and services, due to the recovery of non-COVID-19 expenditures. It is worth mentioning that the largest increase in revenues associated with gross capital formation was recorded in the sectors of Health, Agriculture and Education.

The annualized primary balance of state-owned companies as of August 2022 was a negative balance, with Petroperu's deficit standing out. In nominal terms, the higher deficit was due to the increase in expenses, which outweighed the increase in revenues.

Graph 63

ECONOMIC BALANCE OF THE NON-FINANCIAL PUBLIC SECTOR: 2016 - 2022

(Accumulated last 12 months - % GDP)

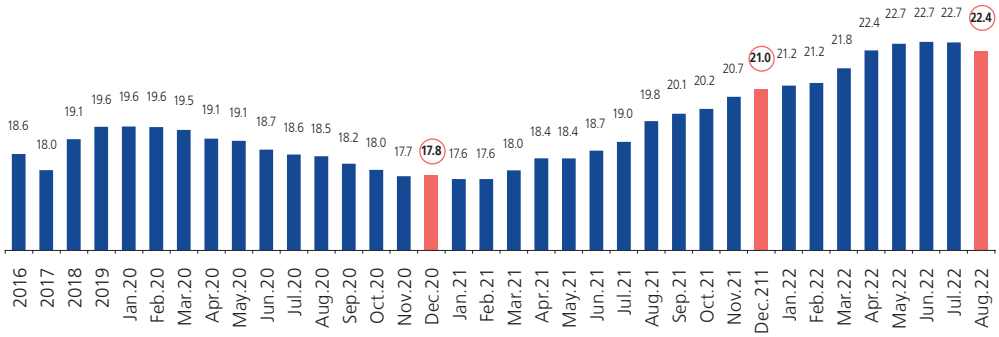


Source: MEF, SUNAT and BCRP.

Graph 64

CURRENT REVENUES OF THE GENERAL GOVERNMENT: 2016 - 2022

(Accumulated last 12 months - % GDP)

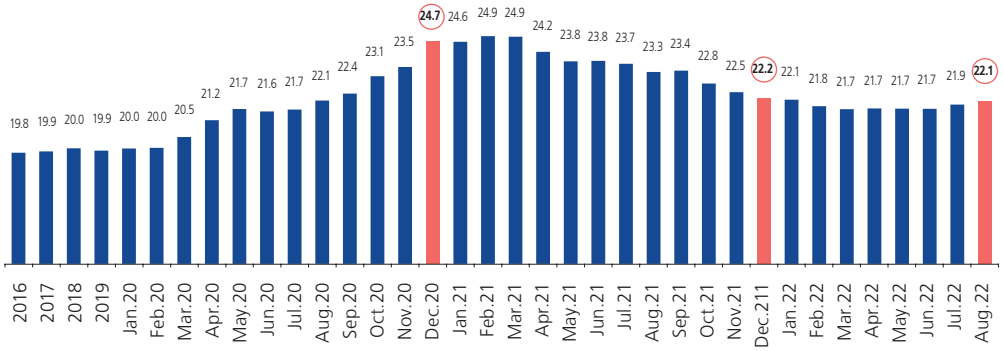


Source: SUNAT and BCRP.

Graph 65

NON-FINANCIAL EXPENDITURE OF THE GENERAL GOVERNMENT: 2016 - 2022

(Accumulated last 12 months - % GDP)



Source: MEF and BCRP.

51. The **fiscal deficit** would decline from 2.5 percent of GDP in 2021 to 1.9 percent of GDP in 2022, a level 1.8 percentage points lower than the deficit of 3.7 percent of GDP established

by the fiscal rule (Emergency Decree No. 079-2021). Current income is expected to continue to show positive growth rates this year, in line with the progress recorded so far, while spending is expected to decrease slightly as a percentage of GDP with respect to the previous year, reflecting lower current expenditures, mainly in transfers. This result would be offset in part by higher expenditures in gross capital formation and by the deficit in state-owned companies' primary balance.

In 2023, the deficit in terms of output is expected to decline slightly to 1.8 percent, a level 0.6 percentage points of GDP lower than the fiscal rule of 2.4 percent (Law No. 31541[17]). Despite the expected lower dynamism of revenues (in line with the correction of commodity prices), non-financial expenditures –mainly current expenditures and, to a lesser extent, gross capital formation– would decrease in terms of output. This would be partially offset by a surplus in the primary balance of state-owned enterprises.

Like in the June Report, the fiscal deficit projected for 2022 is 1.9 percent of GDP, but this year's projection incorporates a revision on the upside for current income due to the higher revenue collection observed in recent months. These effects would be offset by a higher projection of non-financial expenditures of the General Government and a deficit in the primary balance of state-owned enterprises.

Likewise, the projection for 2023 remains at the same level projected in the previous report (1.8 percent of GDP). This is supported by the fact that the reduction in current income due to lower projected metal prices and a more gradual economic recovery would be offset by lower debt interest payments, mainly due to lower placements of sovereign bonds in 2022. In addition, the non-financial expenditure of the General Government and the primary surplus of state-owned enterprises would remain relatively constant.

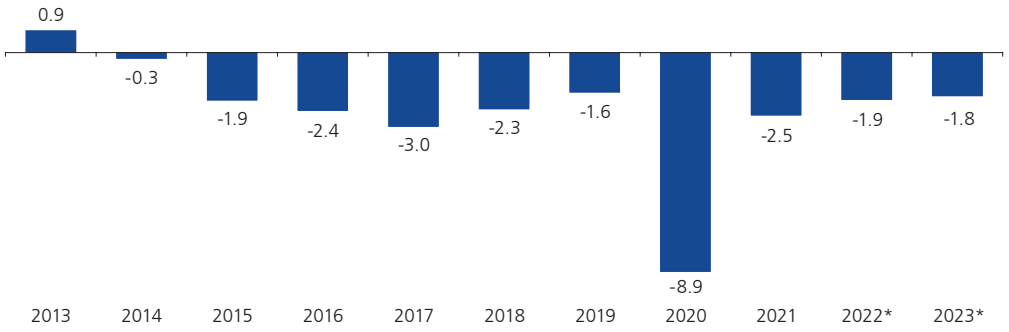
Table 24
NON-FINANCIAL PUBLIC SECTOR
(% GDP)

	2021	2022*			2023*	
		August 1/	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
1. General government current revenues	**21.0**	**22.4**	**21.6**	**21.8**	**21.1**	**20.9**
Real % change	*38.1%*	*16.0%*	*4.1%*	*4.6%*	*1.2%*	*-1.5%*
2. General government non-financial expenditure	**22.2**	**22.1**	**22.0**	**22.1**	**21.4**	**21.4**
Real % change	*5.1%*	*-3.1%*	*0.2%*	*-0.3%*	*1.0%*	*0.0%*
Of which:						
Current expenditure	17.1	16.9	16.8	16.8	16.3	16.2
Real % change	*-0.6%*	*-4.5%*	*-1.1%*	*-2.0%*	*0.8%*	*-0.2%*
Gross capital formation	4.2	4.2	4.5	4.4	4.4	4.4
Real % change	*30.9%*	*-4.5%*	*6.6%*	*5.2%*	*2.8%*	*2.5%*
3. Others 2/	**0.2**	**-0.3**	**0.1**	**-0.1**	**0.2**	**0.2**
4. Primary balance (1-2+3)	**-1.0**	**0.0**	**-0.4**	**-0.3**	**-0.2**	**-0.3**
5. Interests	**1.5**	**1.5**	**1.5**	**1.5**	**1.6**	**1.6**
6. Overall Balance	**-2.5**	**-1.6**	**-1.9**	**-1.9**	**-1.8**	**-1.8**

1/ Ratios on % of GDP and real % changes represent accumulated in the last 12 months as of August.
2/ Includes capital income of the general government and primary balance from state-owned companies.
* Forecast.
IR: Inflation Report.

17 Approved on August 4, 2022.

Graph 66
ECONOMIC BALANCE OF THE NON-FINANCIAL PUBLIC SECTOR: 2013 - 2023
(% GDP)



* Forecast.
Source: BCRP.

Current income

52. **Current income** would show real growth of 4.6 percent in 2022 and represent 21.8 percent as a percentage of GDP, a level 0.8 percentage points higher than at the end of 2021. This increase results from higher revenue collection as of August, the still positive growth rate levels of export prices projected for 2022, and the continued economic recovery. By components, higher revenues from income tax collection is expected, mainly from domiciled legal entities and from the regularization of tax payments. In addition, the increase in revenues from the VAT, especially from that applied to imports and the increase in revenues from *canon* and oil royalties will contribute to a lesser extent.

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

	2021	2022*			2023*	
		August 1/	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
TAX REVENUES	**16.3**	**17.5**	**16.9**	**17.0**	**16.4**	**16.3**
Income tax	6.3	7.5	7.3	7.4	6.6	6.4
Value Added Tax (VAT)	8.9	9.4	9.3	9.3	9.3	9.3
Excise tax	1.0	1.0	0.8	1.0	0.9	1.0
Import duties	0.2	0.2	0.2	0.2	0.2	0.2
Other tax revenues	2.2	2.0	1.9	1.9	1.8	1.8
Tax returns	-2.3	-2.6	-2.5	-2.7	-2.4	-2.5
NON-TAX REVENUES	**4.6**	**4.9**	**4.7**	**4.8**	**4.6**	**4.6**
Contributions to social security	2.1	2.0	2.0	2.0	2.0	2.0
Own resources and transfers	1.3	1.3	1.2	1.3	1.3	1.3
Royalties and likely	1.0	1.1	1.2	1.1	1.0	0.9
Rest	0.3	0.4	0.3	0.4	0.4	0.4
TOTAL	**21.0**	**22.4**	**21.6**	**21.8**	**21.1**	**20.9**

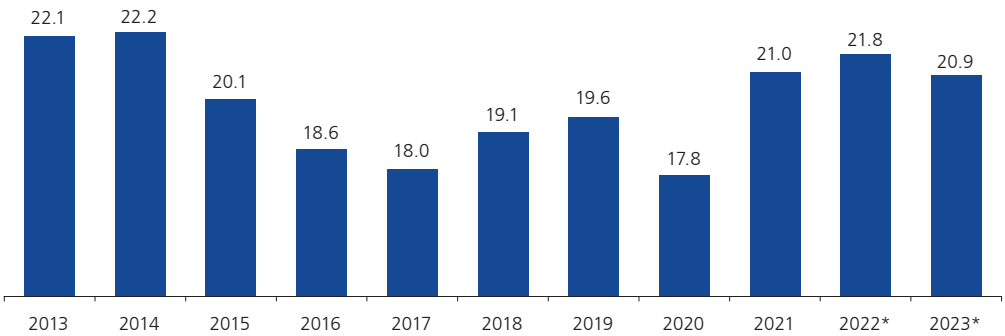
1/ Represents accumulated in the last 12 months as of August.
* Forecast.
IR: Inflation Report.

In 2023, current income would fall by 1.5 percent in real terms with respect to the previous year and thus represent 20.9 percent of output, 0.9 percentage points lower than in 2022. This decline is explained by a an expected lower income tax collection, mainly due to the regularization of tax payments given the revision on the upside of the coefficients for payments on account during 2022 compared to 2021. Another factor explaining this is a contraction in the collection of corporate income from the mining and hydrocarbon sector, given the reversal of export prices and a less favorable international outlook.

Compared to the previous report, revenue forecasts for 2022 are revised up from 21.6 to 21.8 percent of output, considering a higher revenue outturn than expected in June.

The revenue projection for 2023 is revised from 21.1 to 20.9 percent of GDP, reflecting lower expected export prices and a slower projected pace of recovery in economic activity.

Graph 67
CURRENT REVENUES OF THE GENERAL GOVERNMENT: 2013 - 2023
(% GDP)



* Forecast.
Source: BCRP.

Non-financial expenditures

53. **Non-financial expenditure** would record a real reduction of 0.3 percent in 2022, and show a rate of 22.1 percent as a percentage of GDP, 0.1 percentage points lower than in 2021. This expected lower dynamism is associated with the reduction in COVID-19 and reactivation-related public spending, which is estimated to represent 1.4 percent of GDP in 2022, in contrast to the 3.2 percent of GDP recorded in 2021. This reduction would be offset by higher expenditures in gross capital formation, mainly in local governments, as this type of expenditure is expected to grow 11.6 percent in real terms in the second half of this year, after recording a 4.2 percent drop in the first half.

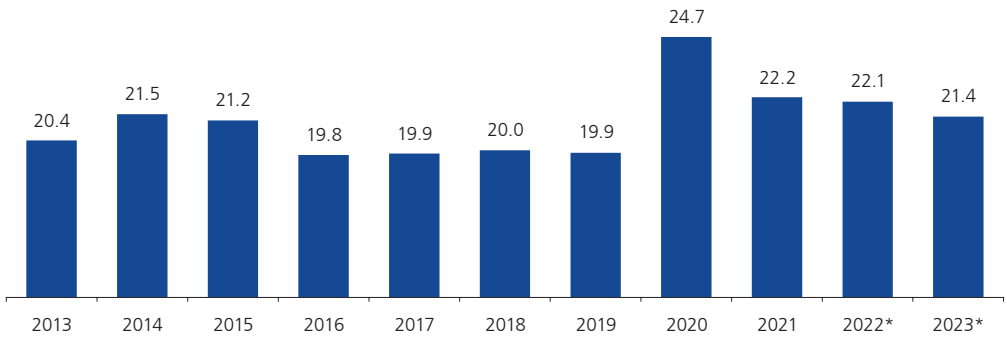
Non-financial expenditures as a percentage of GDP are expected to continue to decline to 21.4 percent in 2023. The projected lower expenditures are mostly the result of the withdrawal of expenditure in response to the pandemic, notably transfers to households and workers, procurement of medical supplies, and contracting of services. The projected path of expenditure

over the projection horizon is in line with compliance with the macro-fiscal rules for the non-financial public sector (Emergency Decree No. 079-2021 and Law No. 31541).

On the other hand, the General Government's gross capital formation is projected to grow 2.5 percent in real terms in 2023, supported by the public investment acceleration measures of the Impulso Peru program. The latter include the implementation of a law to unblock stalled works, technical assistance and support for compliance with the execution schedule and budgetary authorizations for targeted interventions, among other measures. These disbursements are expected to outweigh the slowdown in investment spending that is usually observed in the year following regional and municipal elections.

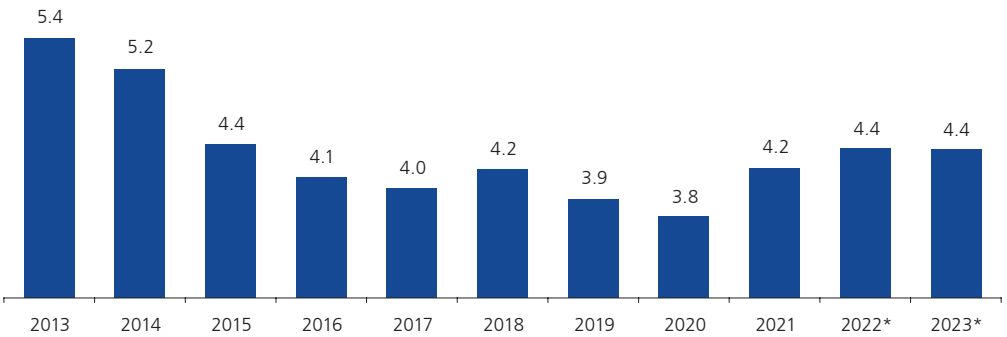
The expenditure projection for 2022 is increased from a forecast rate of 22.0 percent in the last report to 22.1 percent of GDP, with this higher projected expenditure corresponding to higher transfers to the FPSF, transfers to social programs, honoring credit guarantees, and spending on goods and services at the level of subnational governments. In contrast, real growth rates for both years have been revised on the downside, in line with the revision of inflation on the upside. Expenditures are projected to remain above pre-pandemic levels at the end of the projection horizon (with a peak of 19.2 percent in the 2003-2019 period), while General Government non-financial spending is expected to remain constant in 2023.

Graph 68
NON-FINANCIAL EXPENDITURE OF THE GENERAL GOVERNMENT: 2013 - 2023
(% GDP)



* Forecast.
Source: BCRP.

Graph 69
GROSS CAPITAL FORMATION OF THE GENERAL GOVERNMENT: 2013 - 2023
(% GDP)



* Forecast.
Source: BCRP.

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

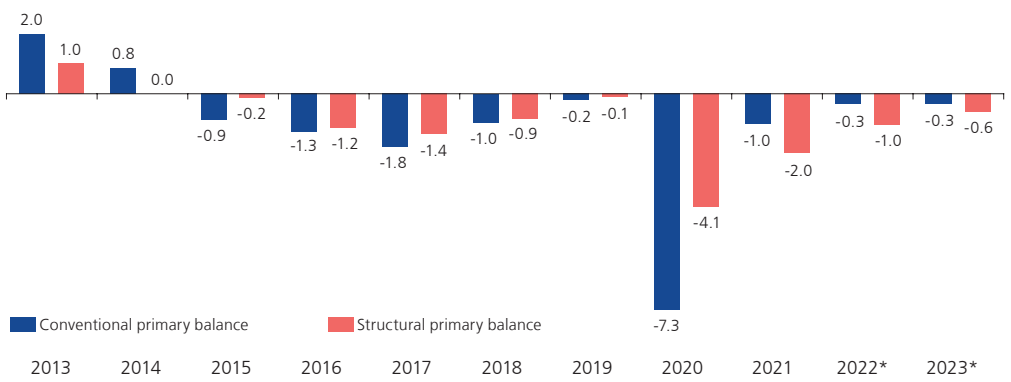
	2021	2022*			2023*	
		August 1/	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
CURRENT EXPENDITURE	**17.1**	**16.9**	**16.8**	**16.8**	**16.3**	**16.2**
National Government	11.6	11.3	11.4	11.4	11.2	11.2
Regional Governments	3.8	3.8	3.5	3.6	3.3	3.3
Local Governments	1.8	1.8	1.9	1.9	1.7	1.7
GASTO,DE,CAPITAL	**5.0**	**5.2**	**5.2**	**5.3**	**5.1**	**5.1**
Gross capital formation	4.2	4.2	4.5	4.4	4.4	4.4
National Government	1.6	1.5	1.7	1.6	1.7	1.7
Regional Governments	0.8	0.8	0.9	0.9	0.9	0.9
Local Governments	1.8	1.9	1.9	2.0	1.9	1.9
Others	0.8	1.0	0.8	0.8	0.7	0.7
TOTAL	**22.2**	**22.1**	**22.0**	**22.1**	**21.4**	**21.4**
National Government	14.0	13.8	13.8	13.7	13.6	13.5
Regional Governments	4.6	4.6	4.4	4.5	4.2	4.2
Local Governments	3.6	3.7	3.8	3.9	3.6	3.6

1 / Represents accumulated in the last 12 months as of August.
* Forecast.
IR: Inflation Report.

Fiscal Stance

54. The **structural primary balance** excludes the effects of discretionary fiscal policy decisions and cyclical and transitory components affecting the economy on government revenues and expenditures. The structural primary deficit is estimated at 1.0 percent of potential GDP in 2022 and 0.6 percent of potential GDP at the end of the forecast horizon (higher than the estimate of 0.1 percent of potential GDP for 2019). The trend in the structural primary deficit reflects a gradual reduction in the expansionary fiscal stance, in line with the closing of the output gap.

Graph 70
CONVENTIONAL AND STRUCTURAL PRIMARY BALANCE OF THE NON-FINANCIAL PUBLIC SECTOR: 2013 - 2023
(% GDP and Trend GDP)



* Forecast.
Memo: For 2020, the structural primary balance is calculated using trend GDP.
Source: BCRP.

Financing and debt

55. Compared to the previous report, the projection of **financing requirements** for 2022 has been reduced, whereas the projection for 2023 has been increased, these adjustments being associated mostly with the expected evolution of nominal fiscal deficits in both years. As for **financing sources**, a lower issuance of sovereign bonds and a greater use of public deposits are expected in 2022. The revision of bond issuance on the downside is in line with anticipated tighter and more volatile international financial conditions, while on the other hand, a greater use of public deposits and a slight increase in external credits are expected in 2023.

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

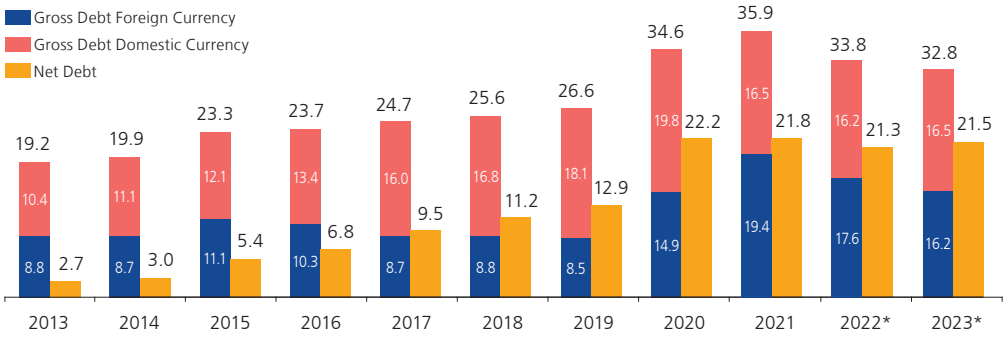
	2021	2022*			2023*	
		Jan-Aug	IR Jun.22	IR Sep.22	IR Jun.22	IR Sep.22
I. USES	**25,220**	**18,072**	**22,749**	**22,381**	**23,990**	**25,005**
1. Amortization	2,937	3,472	4,589	4,611	5,815	6,010
a. External	1,554	2,662	3,821	3,853	3,795	3,990
b. Internal	1,383	811	768	758	2,020	2,020
Of which: recognition bond	*627*	*581*	*511*	*522*	*550*	*550*
2. Economic balance 1/	22,283	14,599	18,160	17,770	18,175	18,995
II. SOURCES	**25,220**	**18,072**	**22,749**	**22,381**	**23,990**	**25,005**
1. Disbursements and others	59,139	35,335	25,659	17,827	22,222	22,324
a. External	11,185	8,374	8,055	8,051	4,667	4,769
b. Bonds	47,954	26,961	17,604	9,776	17,555	17,555
2. Variation in deposits and others 2/	-33,919	-17,264	-2,910	4,554	1,768	2,681
Memo:						
Percentage of GDP						
Gross public debt balance	35.9	33.7	34.3	33.8	33.2	32.8
Net public debt balance	21.8	19.5	21.2	21.3	21.3	21.5
Balance of public deposits	14.2	14.2	13.1	12.5	11.9	11.3

1/ Negative sign indicates surplus.
2/ Positive sign indicates reduction of deposits.
* Forecast.
IR: Inflation Report.

56. The **gross debt** of the Non-Financial Public Sector would fall from 35.9 to 33.8 percent of GDP between 2021 and 2022, to finally stand at 32.8 percent at the end of the projection horizon. Gross debt forecasts for 2022 and 2023 would be lower than the maximum established by the macro-fiscal debt rule of 38.0 percent of GDP for both years, set by Emergency Decree No. 079-2021 and Law No. 31541, respectively.

For its part, **debt net of** non-financial Public Sector deposits would decline from 21.8 to 21.3 percent of GDP between 2021 and 2022 and would represent 21.5 percent of output in 2023. The forecasts for fiscal deficits and the expected management of public deposits explain the evolution of net debt.

Graph 71
NON-FINANCIAL PUBLIC SECTOR DEBT: 2013 - 2023
(% GDP)



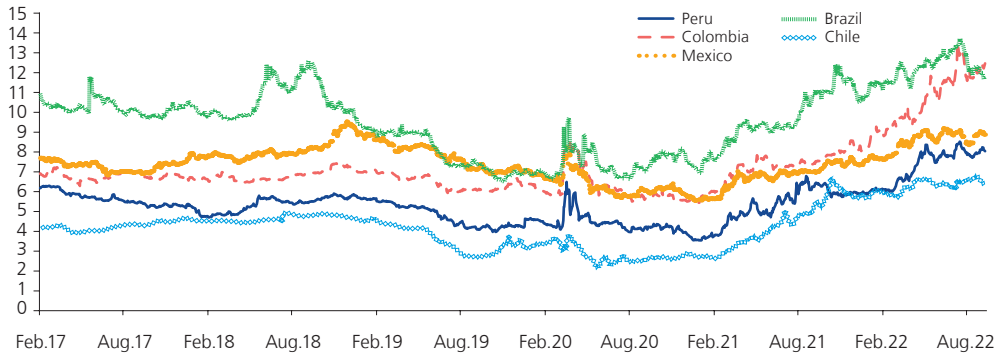
* Forecast.
Source: BCRP.

57. The yields on government bonds in the region were influenced by: (i) the recent evolution of U.S. bond yields; (ii) inflationary expectations at the global level; (iii) fears of a slowdown in China; and (iv) idiosyncratic political factors in each country. In this context, the interest rates of Latin American government bonds in local currency continue to show higher levels than in previous quarters, although with smaller variations than in the second quarter of 2022. No clear trends have been observed in interest rates in recent months: on the one hand, 10-year bond rates in Brazil, Chile, Peru and Colombia increased by 27, 29, 38 and 131 basis points, respectively, in July, while bonds in the United States rose by an average of 14 basis points. On the other hand, bond rates in August decreased in Peru[18], Colombia and Brazil by 26, 80 and 103 basis points, respectively, while rates in Chilean and Mexican bonds increased by 16 and 23 basis points, respectively. In sum, the rate of the 10-year Peruvian bond in soles has risen from 7.86 to 8.08 percent so far in the third quarter.

On the other hand, the yield rates for 10-year bonds denominated in dollars showed differentiated behaviors between June 30 and September 12, 2022. The rates in Mexican and Peruvian bonds showed increases of 12 and 5 basis points, respectively; while for the rates on Chilean, Colombian and Brazilian bonds registered reductions of 3, 46 and 70 basis points, respectively. In contrast, the U.S. bond rose 34 basis points, from 3.02 percent to 3.36 percent.

18 In the second half of August, considering that Peruvian bond prices had already incorporated political uncertainty and because the fundamentals of the economy remain solid. Morgan Stanley removed the "dislike" stance on Peruvian external sovereign bonds and replaced it by a "neutral" stance.

Graph 72
10 YEAR SOVEREIGN BOND YIELDS IN LOCAL CURRENCY
(%)

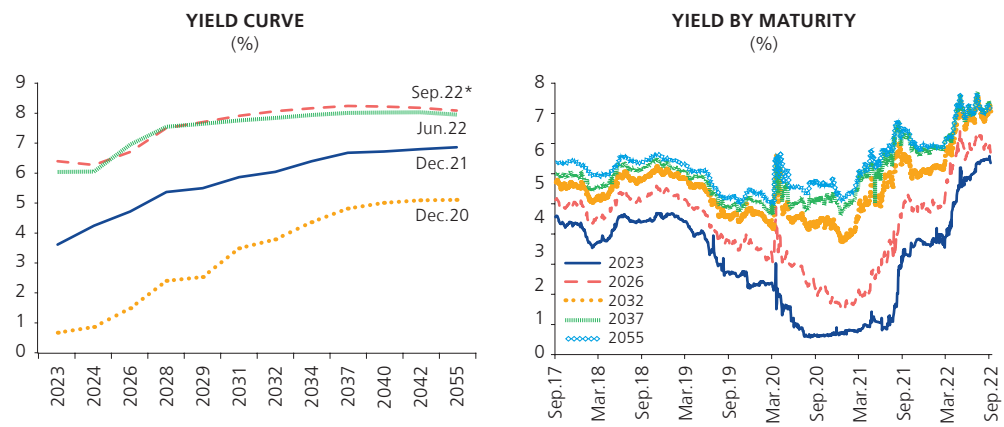


As of September 12.
Source: MEF and Reuters.

In Peru, the yield curve of fixed-rate Public Treasury Bonds (BTP) showed an average increase of 15 basis points between June and September 2022. The largest devaluations occurred in the short section of the curve. Thus, the yield on the 2023 BTP increased by 37 basis points, from 6.01 percent in June to 6.37 percent in September. Bonds maturing in 2028, 2029, 2032, 2034, 2040, 2042 and 2055 reached new historical highs in July since they were placed. In terms of liquidity, a total of S/ 16,006 million was traded in the secondary market in July through the Datatec platform, this amount being higher than that recorded in the second quarter of 2022 (S/ 13, 576 million) and higher than the monthly average of 2021 (S/ 17,578 million).

Inflationary pressures have been reflected in the bond market through an increase in the spread between nominal BTPs and bonds with Constant Purchasing Value (VAC). Specifically, the spread for 10-year bonds has risen from 3.29 to 3.45 percent between June and September 2022, while the spread for the 2-year bonds declined from 3.75 to 3.62 percent.

Graph 73



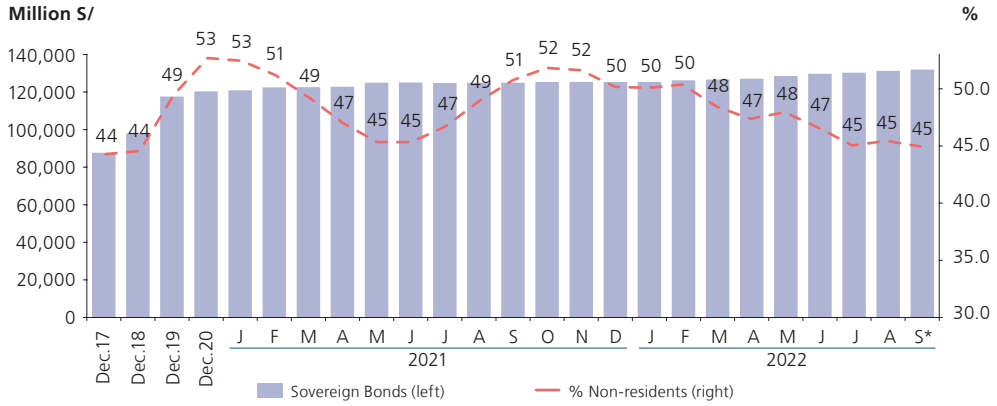
As of September 12.
Source: MEF.

The balance of sovereign bonds amounted to S/ 131.7 billion as of September 14, 2022, a sum S/ 2.3 billion higher than the balance on June 30. So far in the third quarter, banks are the main bond demanders, while non-resident investors and AFPs stand out on the supply side. Non-resident investors reduced their holdings of sovereign bond by S/ 1.2 billion between June and September 2022, reducing their share from 47 to 45 percent.

Graph 74

SOVEREIGN BOND BALANCE AND PARTICIPATION OF NON-RESIDENT INVESTORS

(Amounts in millions of soles and participation in %)



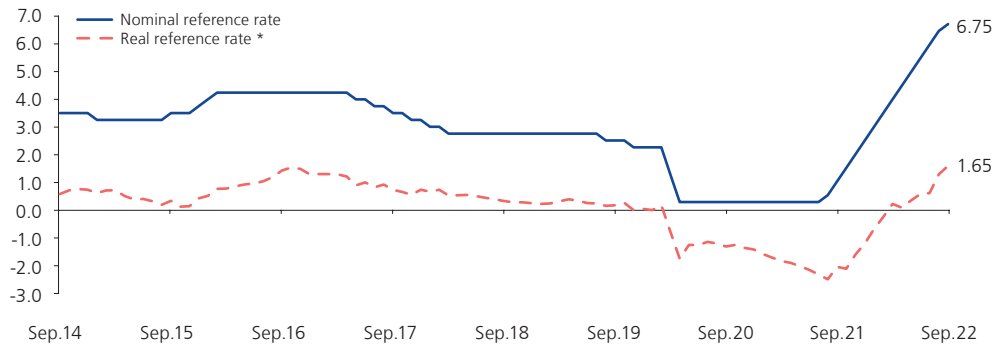
* As of September 145.
Note: As of February 2022, excludes inflation-linked bonds, Global Depositary Notes (GDN) and Euroclear transactions of non-residents. As of March, nominal sovereign bonds and VAC are included and GDN are excluded.
Source: BCRP, CAVALI, MEF, and SBS.

V. Monetary policy and financial conditions

Monetary policy actions

58. Between July and September 2022, the Board of Directors of BCRP continued with the normalization of the monetary policy stance initiated in August 2021. Thus, after increasing the benchmark rate by a total of 525 basis points in their policy meetings between August 2021 and June 2022, the BCRP Board of Directors decided to raise the monetary policy benchmark rate by 125 additional basis points between July and September of this year (50 basis points in July and August, and 25 basis points in September), thus accumulating fourteen increases in total. As a result, the benchmark rate was raised from 0.25 percent in July 2021 (historical minimum) to 6.75 percent in September 2022. It is worth mentioning that the real benchmark rate in September 2022 is 1.65 percent (slightly above the estimated neutral real rate of 1.50 percent), after having reached a historical low of -2.53 percent in August 2021.

Graph 75
REFERENCE INTEREST RATE
(%)



* With expectation on inflation.
Source: BCRP.

59. Monetary policy decisions between July and September 2022 took into account the following factors:

- The twelve-month inflation rate was 8.40 percent in August 2022 –above the BCRP's inflation target range (1 – 3 percent)– due to significant increases in international food and fuel prices.

- In August 2022, the 12-month inflation rate, excluding food and energy prices (5.39 percent), was also above the upper limit of the target range, although to a lesser extent.

- The significant increase in international energy and food prices registered since the second half of last year, accentuated by international conflicts, has led to a strong increase in global inflation rates to levels not seen in many years and to levels significantly above the inflation targets of central banks, both in advanced economies and in the region.

- Year-on-year inflation is projected to show a downward trend and to return to the target range in the second half of next year due to the moderation of the effect of international food and energy prices, as well as due to a reduction in inflation expectations.

- Twelve-month inflation expectations fell from 5.16 percent in July to 5.10 percent in August, a level still above the upper limit of the inflation target range.

- Several leading indicators and expectations about the economy recovered in August, but most remain in the pessimistic range.

- The outlook for world economic growth for this year and next year has been declining due to expectations of a reversal of stimulus in advanced economies, international conflicts and the persistence of bottlenecks in the global supply of goods and services, despite some improvement in recent months.

60. The Board's decision on the benchmark rate takes into account inflation forecasts and inflation 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[19] .

    Since last year, BCRP 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 a context of higher international food and energy prices. In the absence of a timely response, the central bank would have had to adopt a tighter monetary policy stance in the future in order to regain credibility regarding inflation control. In such a scenario, 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.

61. In the policy meetings held between July and September, the Board of Directors also agreed to modify the interest rates for BCRP's window facility operations in domestic currency with the financial system. The current levels are as follows:

19 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 will companies and households be able to make.

i. Overnight deposits: 4.75 percent per year.

ii. Direct securities and currency repos and rediscount operations: i) 7.25 percent per year for the first 10 operations carried out by a financia entity in the last 3 months, and ii) the interest rate set by the Monetary and Exchange Operations Committee for additional operations to these 10 operations in the last 3 months. In addition, the Committee for Monetary and Exchange Operations may establish higher rates depending on the amount of the operations.

Since over-the-counter operations are operations of last resort, the (lower and upper) limits of this corridor are set with the objective of encouraging financial institutions to channel their liquidity surpluses through the interbank market.

62. In terms of communication, the Board of Directors of BCRP maintained the statement on future monetary policy outlook between July and September.

Table 28

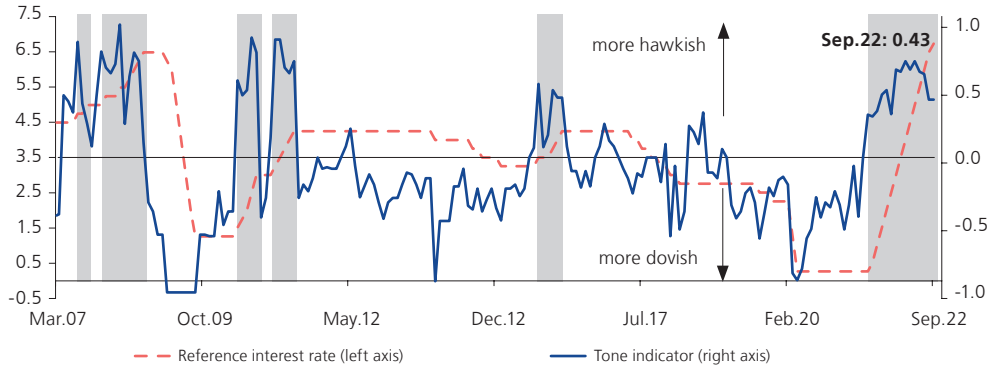
MESSAGES FROM THE MONETARY POLICY DECISIONS OF THE BCRP

Session	Information Note Message
June 2022	• 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. • 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.
July 2022	• The Board of Directors of the Central Reserve Bank of Peru (BCRP) decided to raise the reference interest rate by 50 bps to 6.00 percent, thus continuing to normalize its monetary policy stance. • 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.
August 2022	• The Board of Directors of the Central Reserve Bank of Peru (BCRP) decided to raise the reference interest rate by 50 bps to 6.50 percent, thus continuing to normalize its monetary policy stance. • 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.
September 2022	• The Board of Directors of the Central Reserve Bank of Peru (BCRP) decided to raise the reference interest rate by 25 bps to 6.75 percent, thus continuing to normalize its monetary policy stance. • The Board is particularly attentive to new information on inflation and its determinants, including the evolution of inflation expectations and economic activity, to consider changes in the monetary stance. The Board reaffirms its commitment to adopt necessary actions to ensure the return of inflation to the target range over the forecast horizon.

63. Regarding the tone of monetary policy, the tone indicator used by the BCRP shows a stance of withdrawal of monetary stimulus since July 2021, one month before the August

2021 interest rate hike. The indicator also shows that the monetary policy statement subsequently took a more favorable trend towards the withdrawal of monetary stimulus in the following months, although the value has recently decreased (in September it remained at the previous month's level).

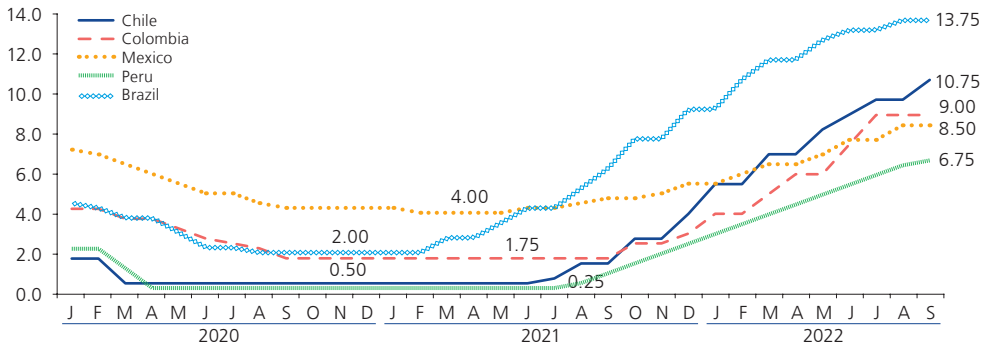
Graph 76
REFERENCE INTEREST RATE AND MONETARY POLICY TONE INDICATOR*
(% and index value)



* 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.

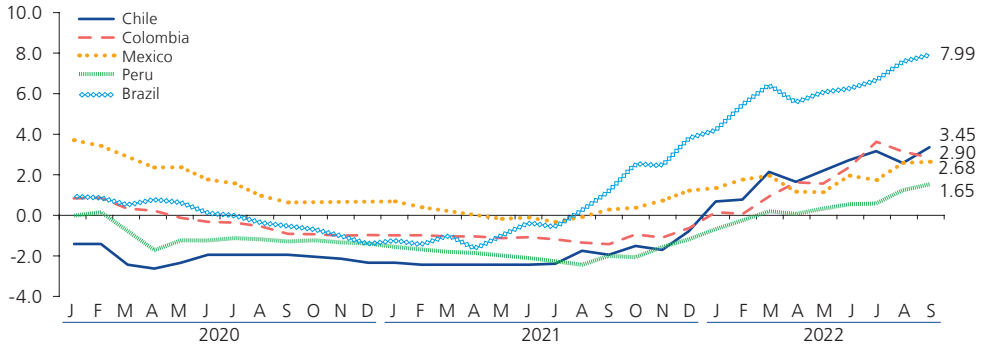
64. In a context of inflationary pressures and a faster recovery of economic activity than initially expected, the normalization of the monetary policy stance has been more accelerated than in other episodes. Peru's monetary policy interest rate is one of the lowest in the region, both in nominal and real terms (6.75 and 1.65 percent, respectively), which reflects the different macroeconomic conditions of the countries in terms of inflation and inflation expectations, and the output gap, among other indicators.

Graph 77
MONETARY POLICY INTEREST RATE IN LATIN AMERICA: SEPTEMBER 2022*
(%)



* As of September 12.
Source: Central banks.

Graph 78
MONETARY POLICY REAL INTEREST RATE IN LATIN AMERICA: SEPTEMBER 2022*
(%)



* Monetary Policy rates on September 12, 2022, 12-month inflation expectations as of August 2022. In the cases of Brazil and Mexico, 12-month inflation expectations have been obtained through interpolation.
Source: Central banks.

65. In 2021, based on their inflation forecasts, the central banks in the region began to implement a cycle of monetary policy interest rate hikes. This occurred in a context in which inflationary pressures were progressively appearing at the global level due to higher fuel and food prices and, in general, due to the crisis in the post-pandemic global supply chain.

Table 29
EX ANTE REAL MONETARY POLICY INTEREST RATE IN LATAM
(%)

Country	MPR	Expectation on inflation 12 months ahead**	Ex ante real rate
Argentina	69.50	70.00	-0.50
Brazil	13.75	5.76	7.99
Canada	3.25	6.82	-3.57
Chile	10.75	7.30	3.45
Colombia	9.00	6.10	2.90
USA	2.50	5.70	-3.20
Mexico	8.50	5.82	2.68
Peru	6.75	5.10	1.65

* Policy rates and expectations on inflation as of September 12, 2022.
** Obtained by interpolation based on expectations as of December 2022 and 2023 in the cases of Brazil and Mexico (the other central banks publish the data directly).
Source: Central banks.

Additional BCRP actions

66. The balance of liquidity injection operations in domestic currency decreased from S/ 56.7 billion at the end of 2021 to S/ 49.0 billion on September 12, 2022, mainly due to the amortization of government-secured portfolio repos under the Reactiva Perú program (S/ 7.6 billion) and, to a lesser extent, due to maturities of currency repos (S/ 1.7 billion). This decline was in part offset in part by securities repo transactions (S/ 7.1 billion). This balance of liquidity injection operations is equivalent to 5.4 percent of GDP, of which S/ 25.8 billion corresponds to government-secured repos of credit portfolio.

Securities repos with a 3-month maturity term amounting to S/ 4,250 million were carried out with AFPs between July 4 and September 1, 2022, in a context marked by AFP members' withdrawal of funds from their capitalization accounts. The facilities granted by BCRP for approved withdrawals of pension funds are made with the purpose of avoiding the liquidation of significant amounts of securities in short periods of time, which would have an undesirable impact on interest rates and the stability of the financial markets.

Table 30

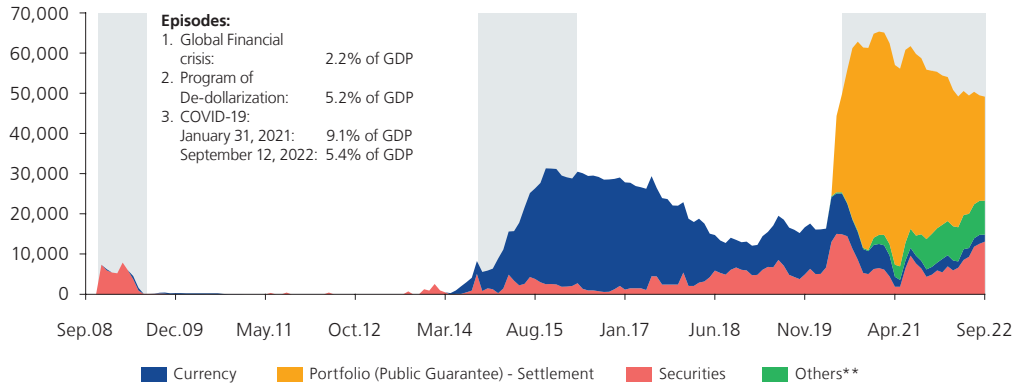
BALANCE OF INJECTION OPERATIONS OF BCRP

(Million S/)

Episode	Date	Values	Currency (Regular)	Currency (Expansion)	Currency (Substitution)	Portfolio (Government-backed) Settlement	Others**	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
COVID-19 crisis	Feb-20	5,100	9,650	0	0	0	0	14,750
	Mar-20	6,675	11,150	0	0	0	0	17,825
	Apr-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
	Apr-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	9,362	2,077	0	0	29,418	8,461	49,318
	Jul-22	11,858	2,247	0	0	27,954	8,458	50,517
	Aug-22	12,558	1,747	0	0	26,222	8,454	48,981
	Sep-22	13,108	1,647	0	0	25,800	8,451	49,006

* As of September 12.
**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.

Graph 79
BALANCE OF MONETARY INJECTION OPERATIONS OF BCRP
(In mill. S/)



* As of September 12.
** 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.

67. The maximum balance of injection operations was recorded at the end of January 2021. Since then, the balance 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 in part offset by other programs such as credit rescheduling repos and long-term credit expansion repos, in addition to purchases of Treasury bonds.

Table 31
LIQUIDITY INJECTION PROGRAMS
(Billion S/)

Program	Dec.19	Dec.20	Jan.21	Jun.21	Sep.21	Dec.21	Sep.22*
Repos of loans with Government-backed	0	50.7	50.5	48.0	43.8	38.8	25.8
of which: balance of repos for rescheduling	0	0.0	0.0	0.0	9.2	14.3	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	10.9
Total	**17.4**	**64.8**	**65.3**	**60.8**	**58.7**	**56.7**	**49.0**

* As of September 12.
** At acquisition value.
*** Regular Repos as currency and security repos.
Source: BCRP.

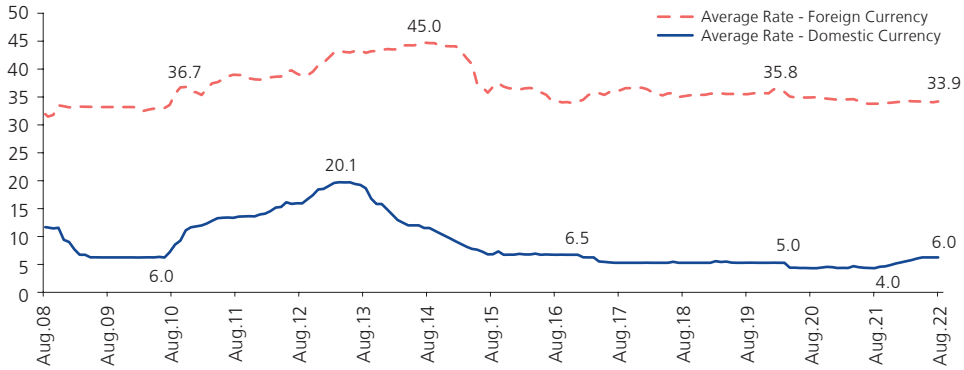
68. Additionally, BCR continued with the placement of interest rate swaps (ÎRS) with maturity terms between 3 and 9 months Created in December 2020, the IRS are derivative instruments denominated in domestic currency, in which BCRP undertakes to pay a variable interest rate –capitalization of the Interbank 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 match the maturities in a context of expectations of rising interest rate, and to the development of the swap market in soles. On August 31, 2022, the balance of IRS amounted to S/ 3,710 million, of which S/ 535 million correspond to 3-month IRS, S/ 1,430 million correspond to 6-month IRS and S/ 1,745 million correspond to 9-month IRS.

69. On the monetary sterilization side, BCRP has continued to place variable rate certificates (CDV BCRP). This instrument –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 September 12, 2022, the balance of CDV BCRP was S/ 20,174 million.

70. As for actions related to the reserve requirement regime in domestic currency, a minimum legal reserve requirement rate of 6 percent has been in effect since May 2022, following a period of increased requirements aimed at strengthening the BCRP's monetary control in a context of gradual withdrawal of the monetary stimulus.

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 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 ttotal 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 pbligations 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.

Graph 80
RESERVE REQUIREMENTS IN DOMESTIC AND FOREIGN CURRENCY
(As % banks' liabilities)



Information as of August 31, 2022.
Source: BCRP.

Monetary Operations

71. The **Central Bank's operations** continued to be oriented to ensure adequate liquidity levels in the interbank market between June and August 2022. To this end, the BCRP injected liquidity through the net placement of securities repos (S/ 3,996 million), Public Treasury deposits (S/ 268 million) and the net maturity of term and overnight deposits (S/ 174 million). These operations were in part offset by the amortization of government-secured credit repos (S/ 4,581 million), the net placement of CDV BCRP (S/ 2,420 million), the sale of foreign currency (US$ 326 million, equivalent to S/ 1,256 million), the net placement of BCRP CDs (S/ 857 million), the net maturity of currency repos (S/ 430 million), the net placement of BCRP CDRs (S/ 200 million) and the net maturity of loan portfolio repos (S/ 24 million).

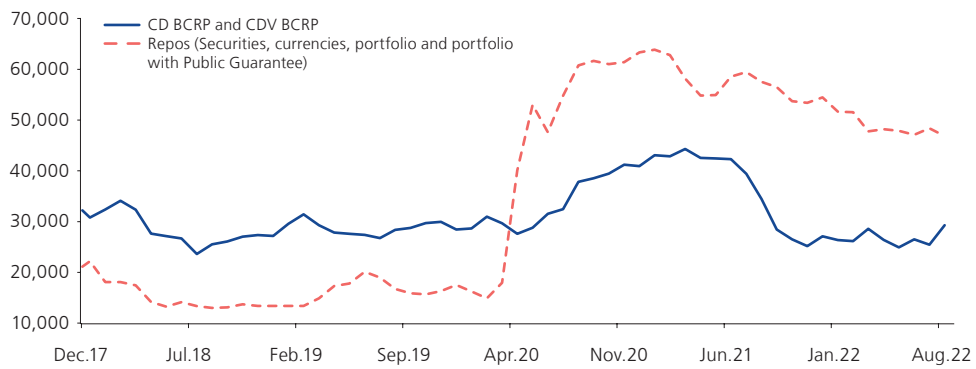
As a result, the balance of repo operations declined from S/ 54,573 million in December 2021 to S/ 46,904 million at the end of August 2022, while the balance of CDBCRP, CDV BCRP and BCRP CDRs rose from S/ 28,361 million in December 2021 to S/ 29,425 million in August 2022.

Table 32
BALANCE OF BCRP MONETARY OPERATIONS

	Balance (mill. S/)			Average intesrest rate (%)		
	Dec.20	Dec.21	Aug.22	Dec.20	Dec.21	Aug.22
Monetary sterilization						
1. CDBCRP	41,067	14,347	8,670	0.74	0.84	6.11
2. CDRBCRP	6,392	1,350	200	0.18	0.57	2.33
3. CDVBCRP	-	12,664	20,555	-	-	-
4. Term and overnight deposits	43,714	15,110	6,380	0.23	2.35	6.13
Monetary injection						
5. Currency repos	5,970	3,342	1,747	2.80	2.29	3.11
6. Security repos 1/	6,309	5,963	12,558	1.09	1.81	5.51
7. Portfolio	464	6,441	6,376	0.50	1.26	1.27
8. Government-backed portfolio repos *	50,729	38,827	26,222	0.50	0.50	0.50
9. Public Treasury fund auctions	200	4,632	6,642	3.18	2.37	6.32
Memo						
Repos of loans with Government-backed	-	14,294	15,335	0.50	0.50	0.50
Credit rescheduling repos	497	4,803	4,733	0.50	0.71	0.72
- Security repos	34	657	652	0.50	0.76	0.76
- Portfolio repos	463	4,146	4,081	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	3,840	-	0.45	5.59
FX Swaps-sell (Fixed rate)	-	19,391	32,926	-	0.53	5.31
FX Swaps-sell (Variable rate)	8,135	18,386	400	0.20	0.36	2.33

* The disbursed amount of the instrument is considered as of August 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.

Graph 81
BALANCE OF REPO OPERATIONS, CD BCRP AND CDV BCRP
(Million S/)



Source: BCRP.

The balance of repo operations went from representing 14.8 percent of the BCRP's net assets in December 2021 to 14.1 percent on August 31, 2022. On the liabilities side of BCRP, Public Sector deposits increased their share from 26.0 percent in December 2021 to 29.6 percent in August 2022. For their part, BCRP instruments (BCRP CDs, BCRP CDVs, BCRP CDRs, and term and overnight deposits) decreased their share of BCRP net liabilities from 11.8 percent in December 2021 to 10.8 percent in August 2022. In addition, currency in circulation increased its share from 22.6 percent in December 2021 to 23.4 percent in August 2022.

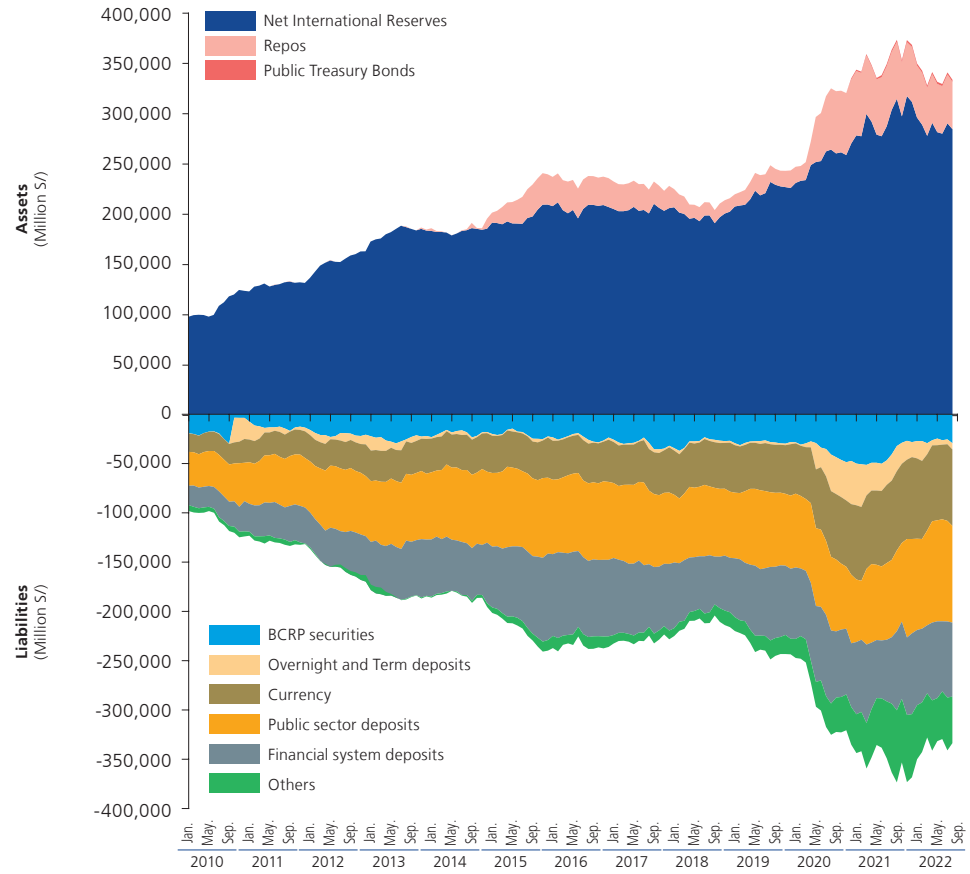
Table 33
SIMPLIFIED BALANCE SHEET OF THE BCRP*
(As % of Net Assets)

	Dec.20	Dec.21	31 Aug.22
I. Net assets	**100%**	**100%**	**100%**
Net International Reserves	80.7%	84.6%	85.3%
	(US$74,707 mills.)	(US$78,495 mills.)	(US$74,110 mills.)
Repos	18.9%	14.8%	14.1%
Sovereign bonds	0.4%	0.6%	0.6%
II. Net liabilities	**100%**	**100%**	**100%**
1. Total public sector deposits	**20.7%**	**26.0%**	**29.6%**
In domestic currency	17.4%	23.9%	26.2%
In foreign currency	3.3%	2.1%	3.4%
2. Total financial system deposits	**19.3%**	**22.2%**	**22.6%**
In domestic currency	4.3%	3.9%	4.0%
In foreign currency	15.0%	18.4%	18.6%
3. BCRP instruments	**27.2%**	**11.8%**	**10.8%**
CD BCRP	12.3%	3.9%	2.6%
CDV BCRP	0.0%	3.4%	0.1%
CDR BCRP	1.9%	0.4%	0.0%
Term deposits	10.6%	3.2%	0.0%
Overnight deposits	2.4%	0.9%	6.2%
4. Currency	**21.4%**	**22.6%**	**23.4%**
5. Others*	**11.4%**	**17.4%**	**13.6%**

* Includes assets and other accounts.

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 August 31, 2022, BCRP assets amounted to S/ 333,569 million, a sum equivalent to 35.2 percent of GDP, below the level observed in 2015 during the de-dollarization program (39.3 percent of GDP).

Graph 82
EVOLUTION OF THE BCRP BALANCE SHEET: 2010 - 2022



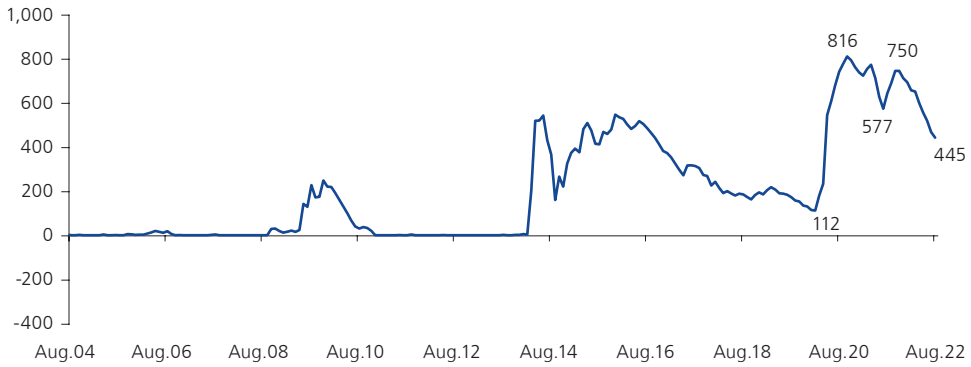
Source: BCRP.

The higher injection of liquidity at longer maturity terms is reflected in the increase in the residual term of these operations after the state of emergency was declared. Placements of government-guaranteed repos with terms of up to 4 years as part of the Reactiva Peru program in 2020 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), the latter being associated with the operations conditioned to the expansion of long-term credit and the rescheduling of Reactiva Perú loans. The residual term of these operations increased to a maximum of 750 days in November 2021, after which it has decreased to 445 days in August 2022 due to the progress in the amortization of government-guaranteed repos.

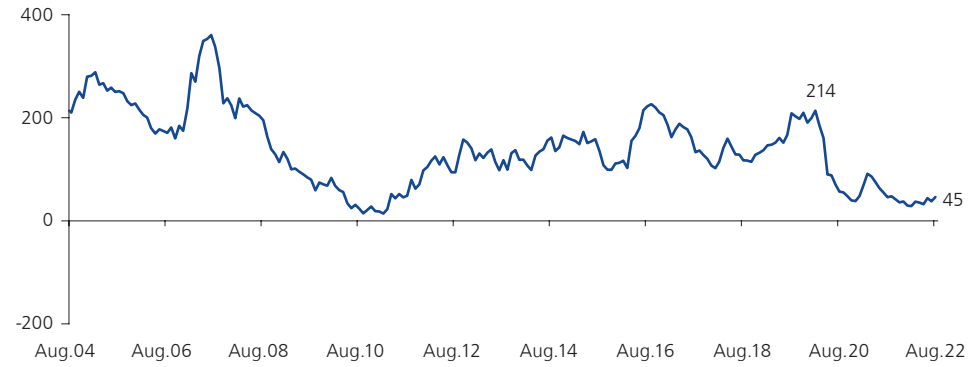
In addition, BCRP has been carrying out sterilization operations at shorter maturity terms, reducing the residual term of sterilization operations from 214 days in February 2020 to 45 days in August 2022.

Graph 83
RESIDUAL TERM OF BCRP INJECTION OPERATIONS
(In days)



Source: BCRP.

Graph 84
RESIDUAL TERM OF BCRP STERILIZATION OPERATIONS
(In days)



Source: BCRP.

Financial markets

72. Interest rates in domestic currency continue to incorporate the effect of the withdrawal of the monetary stimulus initiated in August 2021. Specifically, so far in the third quarter of 2022, BCRP has increased the benchmark rate by 125 basis points, from 5.50 percent in June to 6.75 percent in September, and this effect has been passed on to the most representative interest rates in the financial system. On the other hand, the rate of reserve requirements in soles has remained at 6.00 percent since May 2022, thus complementing recent increases in the monetary policy rate and improving liquidity control in the financial system.

Between June and September 2022, lending and deposit prime rates, which are highly representative of the market, increased by an average of 115 and 119 basis points, respectively, for operations with maturity terms between overnight and twelve months. By maturity, the largest increases in the third quarter were those observed in the one-

month and three-month maturity terms. The spreads between the 3-month, the 6-month and the 12-month lending rates and the benchmark rate are close to their pre-pandemic levels.

Similarly, banks' credit market interest rates also rose between June and September 2022. In the consumer segment, characterized by its high risk, the average interest rate of banks increased from 44.6 percent in June to 47.5 percent in September.

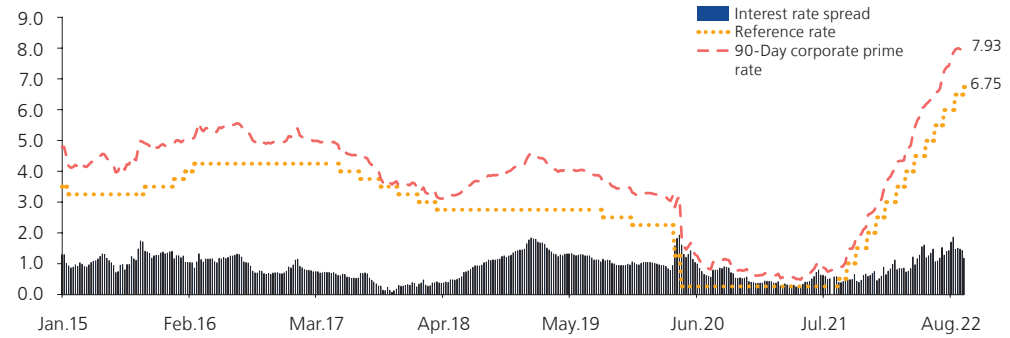
At the same time, banks' deposit interest rates continue to incorporate the impact of the gradual increase in the benchmark rate, but at a slower pace than lending rates. On the one hand, between June and September 2022 interest rates on corporate term deposits have increased 117 basis points on average for terms between one month and more than 12 months. On the other hand, interest rates on individuals' interest-bearing deposits with terms longer than 2 months increased by an average of 95 basis points in September 2022, while the average rate on CTS deposits increased from 2.15 percent to 3.37 percent between June and September.

Table 34
INTEREST RATE IN DOMESTIC CURRENCY 1/
(%)

		Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Jun.22	Sep.22	Historical average /2
Pasive	90-day corporate prime	2.8	0.2	0.1	0.4	0.9	2.6	4.3	6.1	7.4	3.4
	TIPMN	2.3	1.0	0.9	0.8	0.8	1.1	1.5	2.2	2.6	2.2
	FTIPMN	1.5	0.1	0.1	0.2	0.3	1.0	2.0	2.9	3.5	2.1
	Deposits up to 30-day	2.3	0.0	0.0	0.2	0.4	1.9	3.5	5.1	6.4	3.1
	Individuals	1.6	0.2	0.1	0.2	0.3	0.7	1.2	1.0	2.9	2.3
	Business	2.3	0.0	0.0	0.2	0.4	1.9	3.5	5.1	6.4	3.1
	On 31 to 90-day term deposits	2.7	0.2	0.2	0.4	0.7	2.2	3.8	5.5	6.6	3.3
	Individuals	1.8	0.5	0.4	0.4	0.4	0.8	1.7	2.2	3.0	1.8
	Business	2.8	0.2	0.2	0.4	0.8	2.2	3.9	5.7	6.8	3.4
	On 91 to 180-day term deposits	3.0	0.4	0.3	0.5	1.0	2.4	4.0	6.2	6.9	3.45
	Individuals	2.3	0.5	0.5	0.5	0.5	0.9	2.3	4.1	4.6	2.4
	Business	3.1	0.3	0.2	0.5	1.0	2.6	4.3	6.4	7.4	3.6
	On 181 to 360-day term deposits	3.3	0.7	0.7	0.8	1.6	2.9	4.4	6.1	7.3	3.8
	Individuals	3.3	1.3	1.3	1.4	1.4	2.9	3.6	5.4	6.4	3.6
	Business	3.3	0.4	0.5	0.6	1.6	2.9	4.7	6.4	7.7	3.9
	CTS	2.2	1.9	2.5	2.4	2.9	2.3	2.8	2.2	3.4	3.1
Active	90-day corporate prime	3.3	0.7	0.5	0.9	1.5	3.1	4.8	6.7	7.9	4.1
	TAMN	14.4	12.1	11.2	10.7	10.5	11.2	11.8	12.7	13.4	15.7
	FTMAN	18.2	17.6	18.0	14.7	16.7	20.9	23.3	24.7	27.0	20.3
	Corporates	3.8	2.5	2.2	1.4	2.1	3.2	5.0	6.8	8.0	4.9
	Large companies	6.0	4.6	3.9	3.7	4.2	5.7	6.8	8.3	9.4	6.6
	Medium-sized enterprises	9.3	6.1	8.0	7.3	7.9	8.8	10.8	11.9	13.5	9.8
	Small business	18.0	17.2	18.2	17.6	18.1	19.3	20.3	20.4	21.8	20.0
	Micro business	31.3	30.1	32.8	32.4	31.6	32.3	35.6	35.2	36.2	32.3
	Micro business 3/	44.5	22.6	40.1	43.1	44.3	38.8	37.3	39.2	39.5	39.9
	Consumer	40.9	39.5	38.6	38.7	38.8	41.8	42.4	44.6	47.5	41.6
	Consumer 3/	43.1	41.5	44.2	41.8	42.8	40.4	43.5	43.5	44.8	42.5
	Mortgage	7.0	6.4	5.9	5.9	6.4	6.9	7.1	8.1	9.3	8.3

1/ Annual rates for operations in the last 30 working days. In the case of credits and term deposits, it corresponds to the banking companies.
2/ Average since September 2010. In the case of consumer credit, it is the average since October 2019.
3/ Corresponds to the average of the financial system.
As of September 12.
Source: BCRP and SBS

Graph 85
INTEREST RATE IN S/: 90-DAY CORPORATE PRIME AND REFERENCE RATE
(%)



As of September 12.
Source: BCRP.

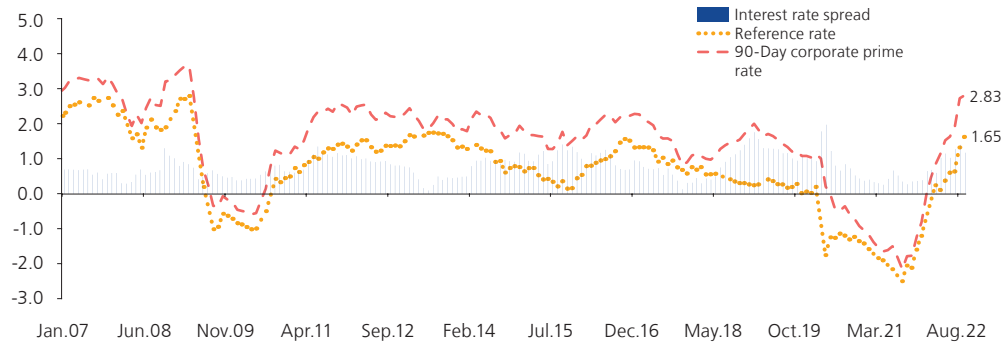
73. On the other hand, not only have interest rates in domestic currency been increasing in nominal terms in line with the gradual withdrawal of monetary stimulus, but also *ex-ante* real interest rates (deflated using inflation expectations). Thus, so far in the third quarter of 2022, the benchmark rate in real terms increased to 1.65 percent, while the 3-month corporate prime lending rate increased to 2.83 percent, the highest rate since March 2009 .

Table 35
REAL INTEREST RATE IN DOMESTIC CURRENCY 1/
(%)

		Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Jun.22	Sep.22
Pasive	90-day corporate prime	0.6	-1.5	-2.0	-2.1	-2.1	-1.1	0.5	1.2	2.3
	TIPMN	0.1	-0.7	-1.2	-1.6	-2.3	-2.6	-2.3	-2.7	-2.5
	FTIPMN	-0.7	-1.6	-2.0	-2.2	-2.7	-2.7	-1.8	-2.0	-1.6
	Deposits up to 30-day	0.1	-1.7	-2.1	-2.2	-2.6	-1.8	-0.2	0.2	1.3
	Individuals	-0.6	-1.5	-2.0	-2.2	-2.8	-3.1	-2.6	-3.9	-2.2
	Business	0.1	-1.7	-2.1	-2.2	-2.6	-1.8	-0.2	0.2	1.3
	On 31 to 90-day term deposits	0.5	-1.5	-1.9	-2.0	-2.3	-1.5	0.0	0.6	1.5
	Individuals	-0.4	-1.2	-1.8	-2.1	-2.7	-2.9	-2.0	-2.7	-2.1
	Business	0.6	-1.5	-1.9	-2.0	-2.3	-1.5	0.2	0.8	1.7
	On 91 to 180-day term deposits	0.8	-1.3	-1.8	-2.0	-2.1	-1.3	0.3	1.3	1.8
	Individuals	0.1	-1.2	-1.6	-2.0	-2.5	-2.8	-1.4	-0.8	-0.5
	Business	0.9	-1.4	-1.9	-2.0	-2.1	-1.2	0.5	1.5	2.3
	On 181 to 360-day term deposits	1.2	-1.0	-1.4	-1.7	-1.5	-0.9	0.7	1.2	2.2
	Individuals	1.1	-0.4	-0.8	-1.0	-1.7	-0.9	-0.2	0.5	1.3
	Business	1.2	-1.3	-1.6	-1.8	-1.5	-0.9	0.9	1.6	2.6
	CTS	0.0	0.2	0.4	0.0	-0.2	-1.4	-0.9	-2.7	-1.7
Active	90-day corporate prime	1.1	-1.0	-1.6	-1.6	-1.6	-0.6	1.1	1.8	2.8
	TAMN	12.2	10.4	9.1	8.3	7.4	7.5	8.0	7.8	8.3
	FTMAN	16.1	15.9	15.9	12.3	13.6	17.2	19.6	19.8	21.9
	Corporates	1.6	0.8	0.1	-1.0	-1.0	-0.5	1.2	1.9	2.9
	Large companies	3.8	2.9	1.8	1.3	1.1	1.9	3.0	3.4	4.3
	Medium-sized enterprises	7.1	4.4	5.8	4.9	4.8	5.0	7.0	7.0	8.4
	Small business	15.9	15.6	16.1	15.2	15.0	15.6	16.5	15.5	16.7
	Micro business	29.1	28.4	30.7	29.9	28.5	28.6	31.9	30.3	31.1
	Micro business 3/	42.4	21.0	38.0	40.7	41.3	35.1	33.6	34.3	34.4
	Consumer	38.7	37.8	36.5	36.3	35.7	38.1	38.6	39.7	42.4
	Consumer 3/	41.0	39.8	42.1	39.4	39.7	36.7	39.8	38.6	39.7
	Mortgage	4.8	4.7	3.8	3.4	3.3	3.1	3.4	3.3	4.2

1/ Annual rates for operations in the last 30 working days. In the case of credits and term deposits, it corresponds to the banking companies.
2/ Average since September 2010. In the case of consumer credit, it is the average since October 2019.
3/ Corresponds to the average of the financial system.
As of September 12.
Source: BCRP and SBS.

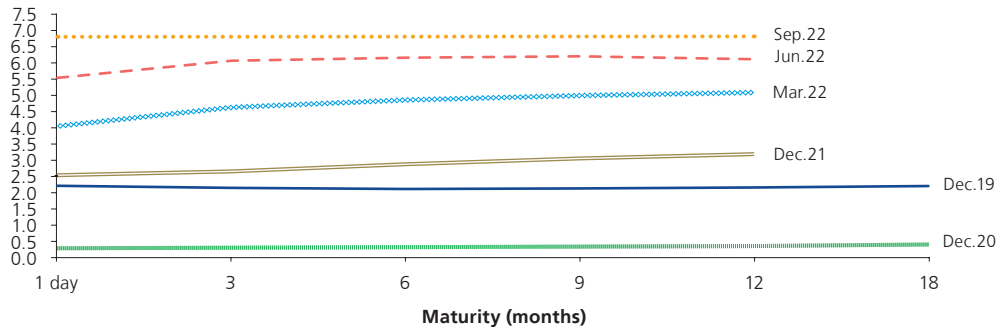
Graph 86
REAL INTEREST RATE IN S/: 90-DAY CORPORATE PRIME AND REFERENCE RATE
(%)



As of September 12.
Source: BCRP.

74. The yield curve of BCRP securities increased by an average of 71 basis points between June and September 2022, recording a lower increase than that of the benchmark rate in the same period (125 basis points) and that of previous quarters. Specifically, rates rose by 83, 69, 65 and 65 basis points at 3-month, 6-month, 9-month and 12-month maturity terms, respectively, in this quarter.

Graph 87
YIELD CURVE OF CENTRAL BANK SECURITIES 1/
(%)

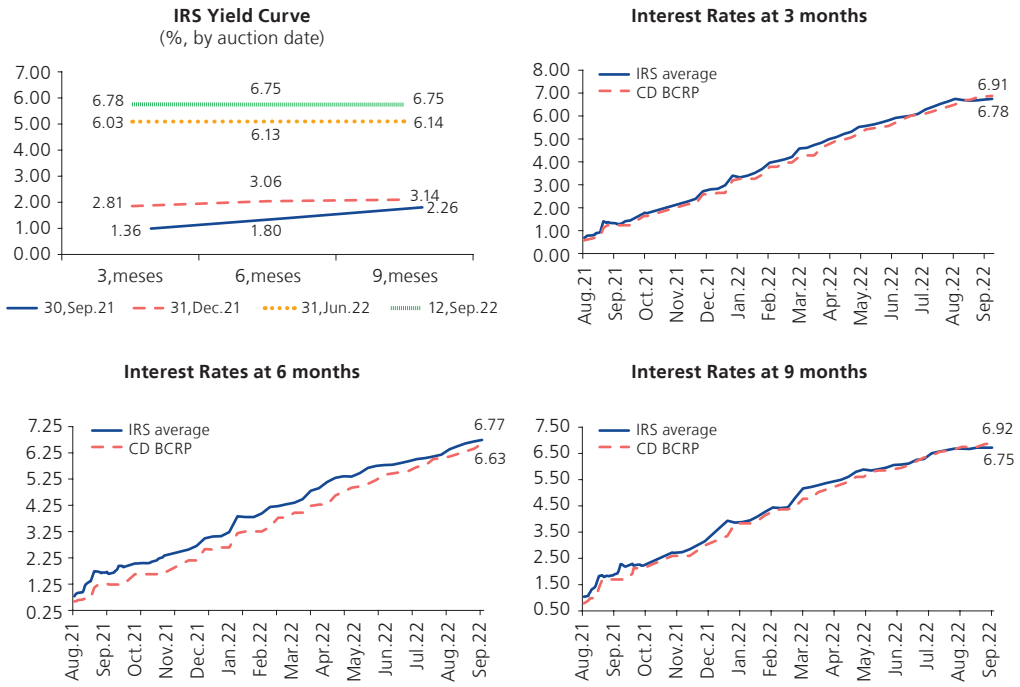


1/ Yield rate in the primary and secondary market of CD BCRP.
As of September 12.
Source: BCRP.

The average rates on auctions of Interest Rate Swaps (IRS) between the date of the first auction -August 23, 2021- and September 12, 2022 have increased in the 3-month, 6-month and 9-month maturity terms by 613, 600 and 575 basis points, respectively, in line with market expectation of new increases in the benchmark rate in the corresponding

terms during that period. The balance of IRS on September 12 amounted to S/ 3,710 million. So far in the third quarter, a total of S/ 1,145 million have been placed and S/ 3,370 million have matured.

Graph 88
INTEREST RATE SWAP (IRS) RATES 1/
(%)

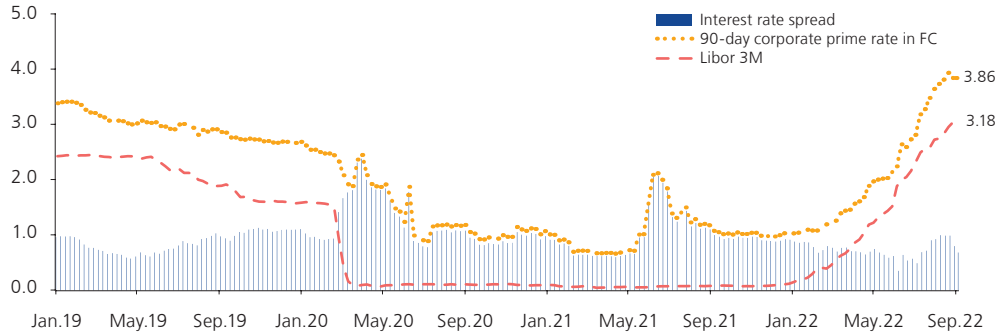


1/ Average rate of IRS auctions on the last available date.
As of September 12.
Source: BCRP.

75. On the other hand, interest rates in the dollar money market were influenced by the increase in the Federal Reserve's policy rate of 75 basis points between June and September 2022. In the interbank market, the overnight interest rate rose from 1.75 percent in June to 2.50 percent in September and the average daily traded amount in the third quarter of 2022 (S/ 52 million) remained at similar levels to those recorded in the second quarter (S/ 51 million) and below those in the first quarter (S/ 152 million). Lending and deposit rates for overnight and 6-month terms rose by an average of 124 and 120 basis points, respectively. The spread between the prime lending rate and the 3-month SOFR term increased from 54 basis points in June to 68 basis points in September 2022.

In the bank credit market in dollars, most segments showed higher interest rates in the third quarter, with the exception of credit for the small business sector. In the consumer segment, the interest rate increased from 33.8 percent in June to 38.1 percent in September, the highest level since September 2010.

Graph 89
INTEREST RATE IN US$: 90-DAY CORPORATE PRIME AND LIBOR 3-MONTH
(%)



As of September 12.
Source: Chicago Mercantile Exchange and BCRP.

Deposit interest rates in dollars show the same upward trend observed in lending rates. Interest rates on corporate deposits (average of 137 basis points) show a higher rate increase than those paid on personal deposits (51 basis points on average).

Table 36
INTEREST RATE IN FOREIGN CURRENCY 1/
(%)

		Dec.18	Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Jun.22	Sep.22	Historical average /2
Pasive	90-day corporate prime	2.5	1.6	0.2	0.1	0.7	0.4	0.3	0.6	1.7	3.0	0.9
	TIPMEX	0.8	0.8	0.3	0.2	0.2	0.3	0.2	0.2	0.4	0.7	0.5
	FTIPMEX	1.5	1.2	0.1	0.1	0.2	0.2	0.1	0.1	0.5	1.40	0.6
	Deposits up to 30-day	1.9	1.4	0.1	0.1	0.4	0.3	0.1	0.1	0.8	2.03	0.7
	Individuals	1.8	1.3	0.0	0.1	0.1	0.1	0.1	0.1	0.5	1.2	0.6
	Business	1.9	1.4	0.1	0.1	0.4	0.3	0.1	0.1	0.8	2.0	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	0.8	2.1	0.9
	Individuals	1.9	1.0	0.2	0.1	0.2	0.2	0.2	0.2	0.4	1.0	0.6
	Business	2.3	1.6	0.3	0.2	0.3	0.3	0.2	0.3	0.8	2.2	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	1.2	2.1	0.9
	Individuals	1.3	1.0	0.2	0.2	0.2	0.3	0.3	0.3	0.9	1.3	0.7
	Business	2.3	1.6	0.3	0.3	0.5	0.6	0.6	0.5	1.4	2.9	1.1
	On 181 to 360-day term deposits	1.9	1.4	0.3	0.3	0.4	0.7	0.6	0.6	1.7	2.6	1.1
	Individuals	1.4	1.2	0.3	0.3	0.3	0.4	0.4	0.6	1.4	2.0	1.0
	Business	2.5	1.8	0.3	0.3	0.5	0.9	0.7	0.8	1.8	3.4	1.2
	CTS	1.2	1.3	1.0	1.2	1.2	1.2	0.9	1.1	1.0	1.2	1.5
Active	90-day corporate prime	3.6	2.7	1.0	0.6	2.0	1.0	1.0	1.4	2.6	3.9	2.0
	TAMEX	7.9	7.6	6.1	6.3	6.1	6.7	6.7	6.7	6.9	8.0	7.5
	FTAMEX	7.6	7.1	6.3	6.0	5.7	7.8	7.6	8.1	8.1	10.0	7.5
	Corporates	4.0	3.2	2.0	1.8	1.6	2.1	2.1	2.5	2.8	4.5	3.0
	Large companies	5.5	5.5	4.5	4.3	4.3	5.0	4.3	4.2	5.1	6.5	5.3
	Medium-sized enterprises	6.9	6.6	5.9	5.9	5.9	6.1	5.9	6.5	6.5	7.6	7.7
	Small business	9.9	8.8	5.3	7.1	9.7	9.4	10.3	9.4	13.3	12.5	11.4
	Micro business 3/	7.6	7.7	4.8	7.2	6.5	11.8	17.1	10.2	14.3	9.0	13.1
	Consumer 3/		35.3	33.5	35.0	33.1	31.1	33.9	32.9	34.6	38.1	34.5
	Mortgage	6.1	5.6	5.4	5.0	5.2	5.6	5.0	5.1	6.9	7.4	6.8

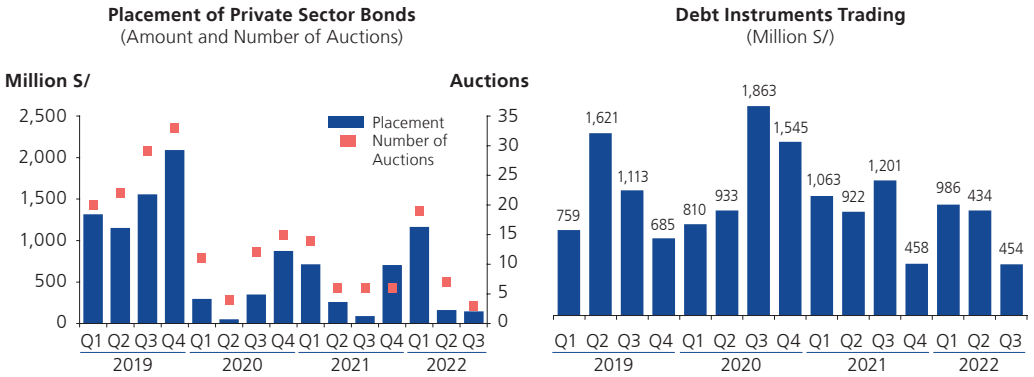
1/ Annual rates for operations in the last 30 working days. In the case of credits and term deposits, it corresponds to the banking companies.
2/ Average since September 2010. In the case of consumer credit, it is the average since October 2019.
3/ Corresponds to the average of the financial system.
As of September 12.
Source: BCRP and SBS

Fixed income market

76. The normalization of monetary conditions in developed economies and the increase in yields on Peruvian sovereign bonds have discouraged Peruvian companies from seeking financing in the international capital market during the third quarter of 2022. Thus, while in the local market, companies placed a total of S/ 148 million in public offerings –amount below that observed in the first and second quarters (S/ 1,164 million and S/ 165 million, respectively)–, no Peruvian company sold bonds in the international market.

The average trading of debt securities in the secondary market of the Lima Stock Exchange (BVL) in July and August 2022 amounted to S/ 199 million and S/ 256 million, respectively, a lower amount than the monthly average traded in the first quarter (S/ 329 million) and second quarter (S/ 311 million) of the year.

Graph 90
FIXED INCOME MARKET OF THE PRIVATE SECTOR



As of September 12.
Source: SMV.

Placements of non-resident entities that issued securities in soles during the third quarter amounted to S/ 275 million on September 12, a lower amount than the total sold in the first and second quarters of 2022 (S/ 669 million and S/ 425 million, respectively). The bonds were issued by six entities at maturity terms between 3 and 10 years.

77. The portfolios managed by institutional investors have continued to decrease, influenced by the devaluation of financial assets at the global level, as well as by the enactment of legislative measures requiring the liquidation of securities in negative environments. In the case of AFPs, the investment portfolio decreased from S/ 122.7 billion to S/ 110.8 billion between June 30 and August 31, 2022, mainly as a result of the liquidations of local and external investments to comply with Law No. 31478, which allows all members who have not reached retirement age to withdraw up to 4 tax units (UIT) from their Individual Capitalization Account, i.e. up to S/ 18,400. It is estimated that requested withdrawals of funds will amount to S/ 21.2 billion (17 percent of the portfolio value in June 2022) and that investment liquidations will be made until September 2022.

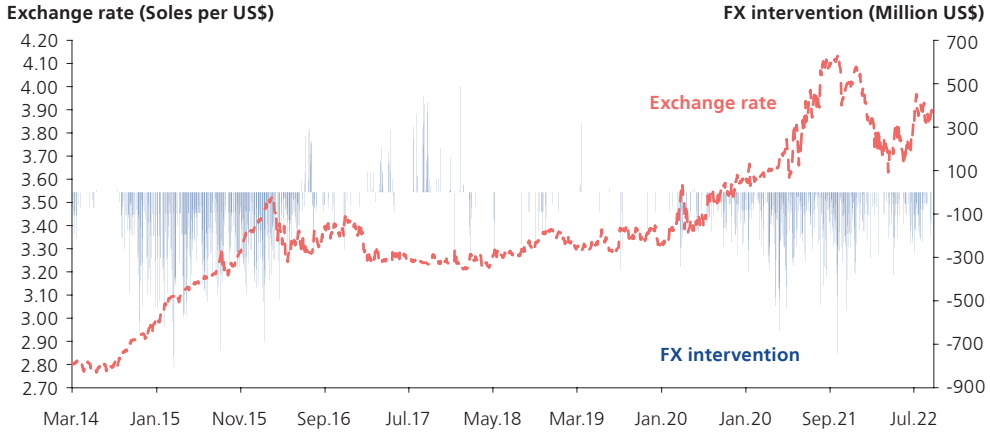
In 2022, AFPs made repos with BCRP for a total of S/ 4,250 million for a maturity term of 3 months. It is worth highlighting that these operations prevented the liquidation of securities of significant amounts in a short period of time from having undesired impacts on interest rates and the stability of the financial markets.

In the case of mutual funds, the amount of assets under management has decreased from S/ 32.5 billion in December 2021 to S/ 28.5 billion in August 2022. The number of unitholders has also decreased from 367 to 343 thousand in the same period. Moreover, the investment portfolio of insurance companies decreased from S/ 54.9 billion to S/ 54.7 billion between December 2021 and June 2022.

Foreign Exchange Market

78. The exchange rate of the Peruvian currency continues to be affected by the unfavorable external environment that contributes to the appreciation of the dollar worlwide, as well as by local factors. In July, the PEN exchange rate depreciated 2.5 percent, while the dollar index strengthened 1.7 percent. This was associated with changes in the sentiment of risk aversion towards assets of emerging economies because of: (i) expectations of a more aggressive adjustment in the Federal Reserve's policy rate, (ii) fears of stagflation at the global level, (iii) tensions between Europe and Russia over energy supplies, (iv) the reduction in the price of copper (7.7 percent), and (v) the increase in net demand for derivatives in the exchange market. In August, the exchange rate appreciated by 1.7 percent due to the high net supply of dollars in the local exchange market, favored by greater international risk appetite after the publication of lower-than-expected U.S. inflation data and the increase in the price of copper (2.6 percent). In September, as of September 12, the exchange rate has depreciated slightly by 0.1 percent, while the dollar index weakened by 0.3 percent during the month due to greater fears of an economic recession in the United States.

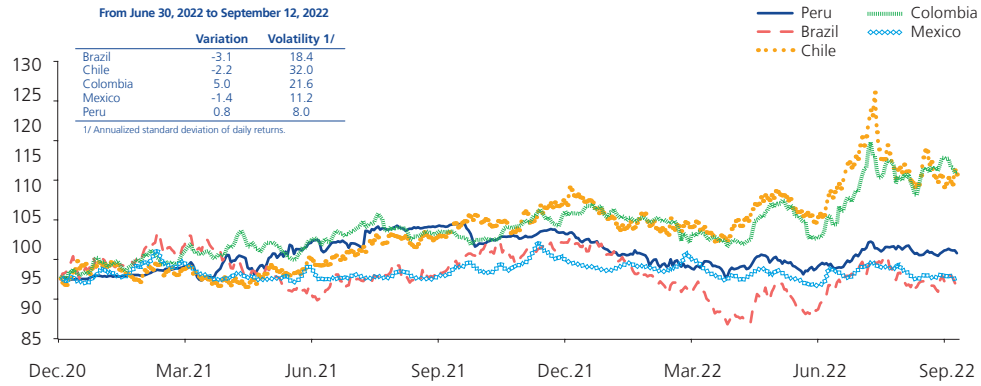
Graph 91
EXCHANGE RATE AND FX INTERVENTION 1/



1/ Includes Net purchases of US$ in the spot market and placement of CDLD BCRP, CDR BCRP, and FX swaps.
As of September 12.
Source: BCRP.

Between the end of June and September 12, 2022, Latin American currencies presented mixed performances in a context strongly influenced by a strengthening of the dollar at the global level, a reduction in the price of raw materials exported by these economies, and higher local risk in some countries. Volatility increased considerably in some countries (Chile and Colombia) due to the high local political noise, which caused their exchange rates to reach historical highs in July. This reflects that, although exchange rate volatility in the region is highly synchronized, idiosyncratic factors also explain exchange rate variations in each country. The DXY index strengthened by 3.5 percent in the third quarter of 2022.

Graph 92
EXCHANGE RATE INDEX [1/]
(Dec 31, 2020=100)



1 / An index increase indicates the depreciation of the currency.
Data as of September 12.
Source: BCRP and Reuters.

Between July and September, BCRP intervened in the foreign exchange market through auctions of FX Swaps-sales at fixed rates, placements of adjustable certificates of deposit (BCRP CDRs), and sales of foreign currency in the spot market in order to minimize volatility in the price of the PEN, in a context of high uncertainty in the global and local foreign exchange markets. Thus, BCRP placed a total of S/ 15,145 million in FX Swaps-sales at fixed rates at terms of 3, 6, 9 and 12 months and instruments amounting to S/ 15,390 million matured (S/ 14,127 million at fixed rates). In the case of BCRP CDRs, S/ 200 million were placed for a 3-month term. Additionally, BCRP sold US$ 114 million through the trading desk. The percentage of days with interventions in the foreign exchange market in 2022 is below that recorded in 2021.

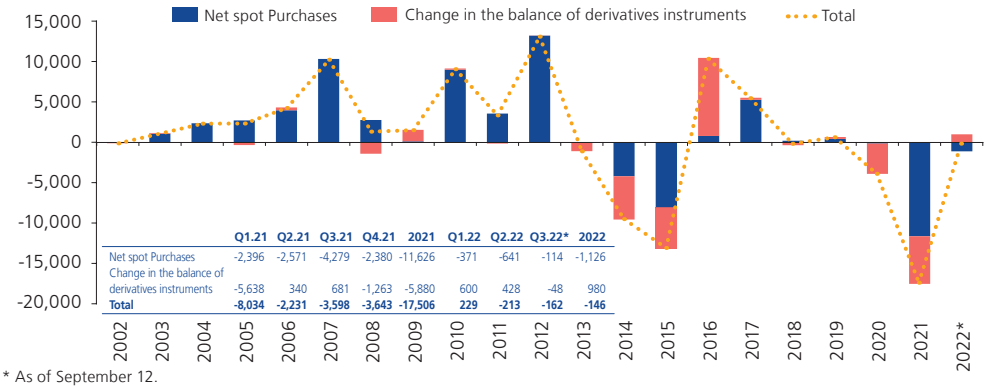
Table 37
NUMBER OF DAYS OF INTERVENTION

	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	Instruments	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 1/	175	17	84	86	10%	48%	49%	9.4%

1/ As of September 12.

So far in 2022, as of September 12, BCRP has made a net sale of US$ 0.1 billion in the foreign exchange market through sales in the spot market (US$ 1.1 billion). The effects of this intervention has been partially offset by the net maturity of FX swaps and BCRP CDRs (US$ 1.0 billion).

Graph 93
FX INTERVENTION OF THE BCRP
(Million US$)

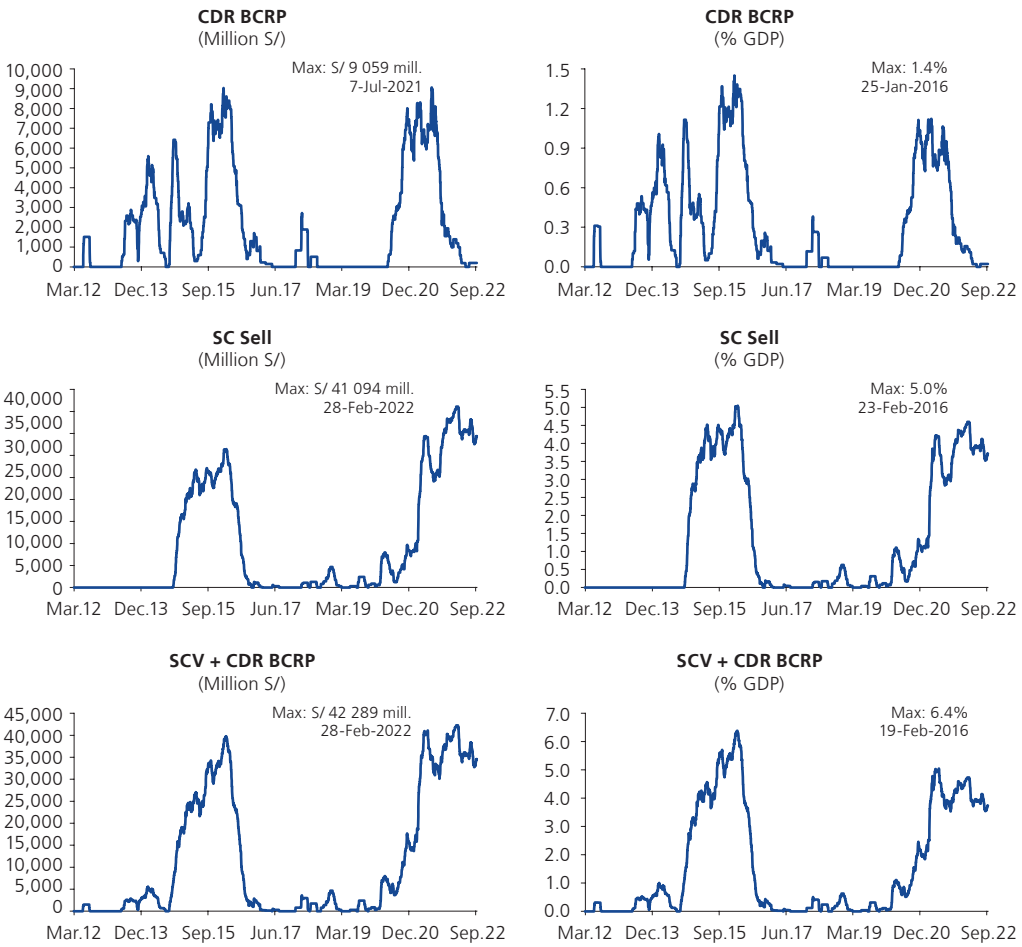


	Q1.21	Q2.21	Q3.21	Q4.21	2021	Q1.22	Q2.22	Q3.22*	2022
Net spot Purchases	-2,396	-2,571	-4,279	-2,380	-11,626	-371	-641	-114	-1,126
Change in the balance of derivatives instruments	-5,638	340	681	-1,263	-5,880	600	428	-48	980
Total	**-8,034**	**-2,231**	**-3,598**	**-3,643**	**-17,506**	**229**	**-213**	**-162**	**-146**

* As of September 12.
Source: BCRP.

Likewise, the average monthly amount of interventions in the foreign exchange market during the episode of greatest volatility (from January to November 2021) has been US$ 1,568 million, higher than that recorded in the period of the global financial crisis (US$ 1,296 million), and higher than in the period between February 2013 and April 2016 (US$ 614 million) and the period between December 2021 and September 2022 (US$ 40 million).

Graph 94
EXCHANGE INSTRUMENTS BALANCE

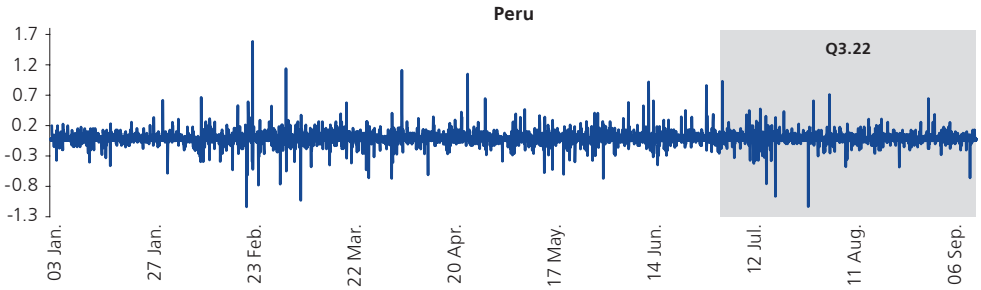


As of September 12.
Source: BCRP.

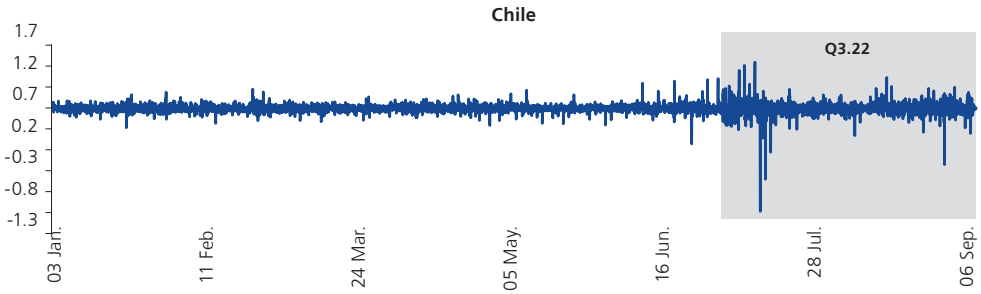
The accumulated balance of FX Swaps-sale and BCRP CDR as of September 12 was S/ 34.6 billion (3.7 percent of GDP). The increase in the average maturity terms of the instruments is associated with the demand for hedging over a longer horizon. Thus, in the case of FX Swaps-sale, the average maturity term has increased from 62 to 272 days between December 2019 and September 2022.

The level of volatility of the PEN in the third quarter of the year (8.0 percent) was lower than in the first and second quarters (10.2 percent and 9.5 percent, respectively). Based on the evolution of the exchange rate every 10 minutes between 9:00 a.m. and 1:30 p.m., the intraday variation in the third quarter has ranged from a depreciation of 0.94 percent (July 5, 2022) to an appreciation of 1.15 percent (August 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. It is worth mentioning that Chile and Colombia registered a significant increase in intraday volatility, mainly in July 2022.

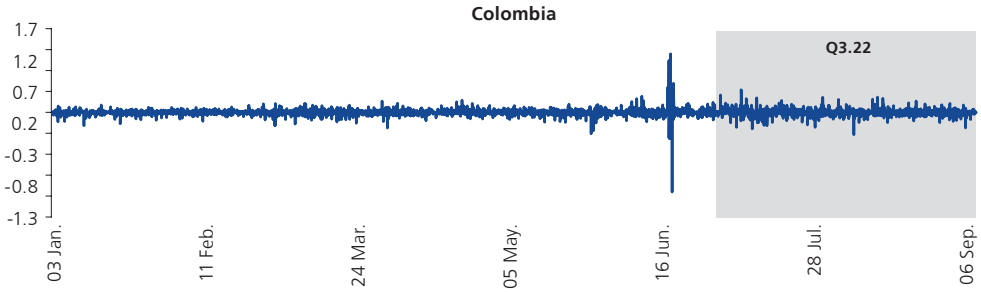
Graph 95
INTRADAY VARIATION OF EXCHANGE RATE 1/: 2022



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.

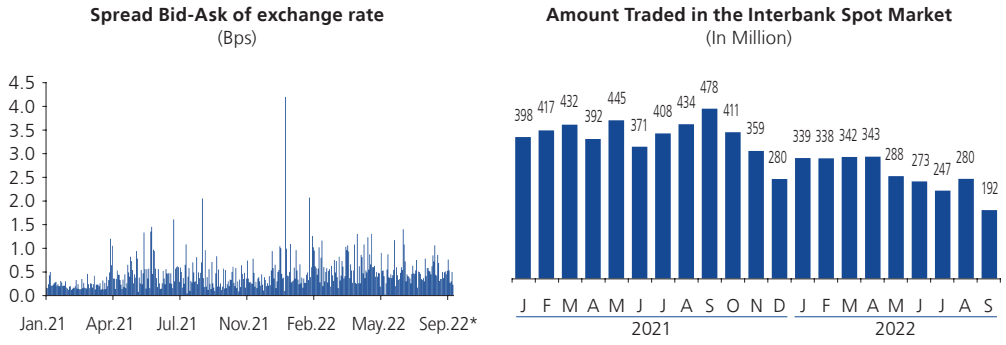


1/ % change every 10 minutes in the exchange rate between 8:00 a.m. and 1:00 p.m. A positive variation indicates depreciation of Colombian peso.

As of September 12.
Source: Reuters.

The lower volatility in the third quarter of 2022 was also reflected in the bid-ask spreads of the exchange rate, which ranged between 0.2 and 1.1 basis points, below the spread range of the second quarter (0.1 and 1.4 basis points). As of the latest available data, the spread has not returned to the levels prior to the first presidential round in 2021, although some stability is observed with respect to the first and second quarters of 2022. On the other hand, average daily trading in the interbank spot exchange market in July, August and September (US$ 247 million, US$ 280 million and US$ 192 million, respectively) is lower than the average in the first and second quarters (US$ 340 million and US$ 301 million, respectively), which is associated to the lower demand for dollars from non-financial sector clients.

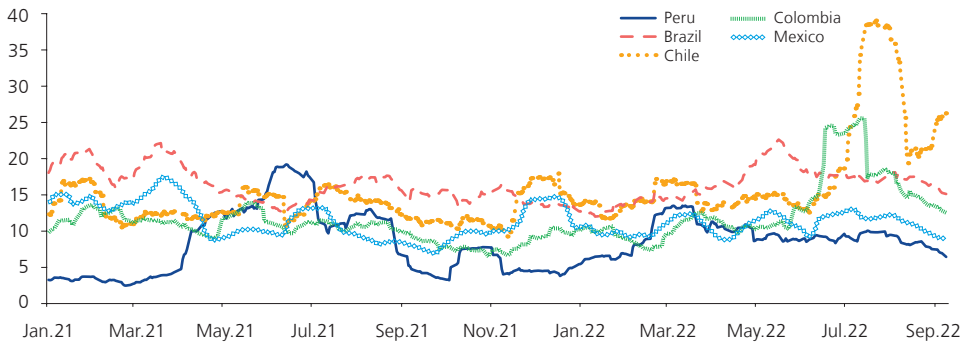
Graph 96
SPREAD AND EXCHANGE RATE NEGOTIATION



* As of September 12.
Source: Reuters and BCRP.

The historical volatility of the PEN exchange rate in 30-day moving periods observed in in July, August and September is the lowest in the region. Furthermore, 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 July and a reduction in May and August, in an context of greater uncertainty in international financial markets.

Graph 97
1-MONTH ANNUALIZED HISTORICAL VOLATILITY 1/



1/ Annualized standard deviation in the last 30 days.
As of September 12.
Source: Reuters.

Table 38

FOREIGN EXCHANGE VOLATILITY IN LATAM

	Historical (SD) 1/					Implicit 2/					GARCH(1,1) 3/				
	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	20.9	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	13.0	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	13.9	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	17.0	11.4	12.3	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	17.3	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	16.4	13.1	12.8	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	9.6	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	14.0	9.6	10.7
Jun.22	16.0	17.5	20.4	13.8	8.2	19.0	19.6	17.1	11.7	7.0	16.8	18.1	16.8	10.1	9.0
Jul.22	20.1	41.0	24.6	10.6	9.2	18.7	23.3	17.8	11.8	4.6	16.9	24.8	25.0	10.3	9.1
Aug.22	17.5	24.9	21.5	12.2	7.6	20.2	25.2	18.2	11.7	6.6	16.7	22.8	18.5	10.6	8.5
Sep.22	18.5	24.3	13.4	10.1	5.8	22.4	23.4	18.3	11.3	6.4	16.9	20.5	16.9	10.5	8.9

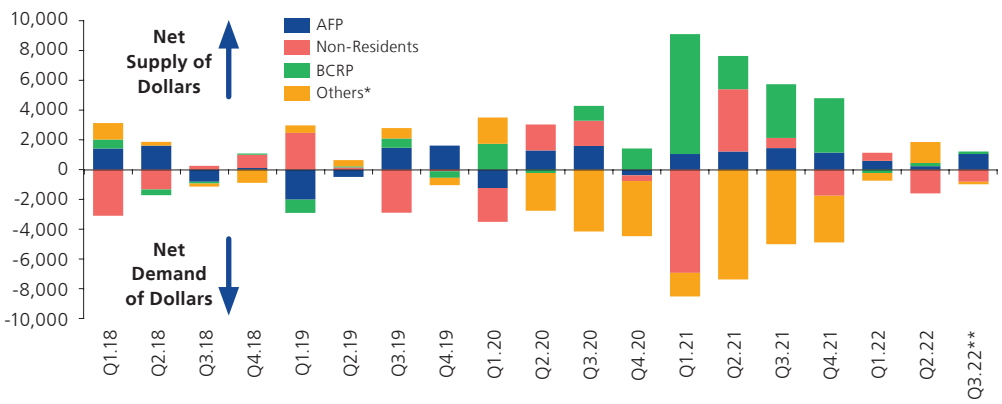
1/ Annualized standard deviation of daily returns.
2/ Corresponds to the resulting variable in the Black Scholes option pricing model. It measures the market's expectations of the exchange rate for one month.
3/ The model GARCH (1,1) applies a stochastic process to historical time series of the exchange 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 September 12.
Source: BCRP and Reuters.

As of September 12, foreign exchange flows from market participants in the third quarter of 2022 correspond to a net dollar demand for US$ 208 million, below that observed in the second quarter of 2022 (US$ 321 million). In the spot market, there was a net supply of dollars (US$ 1,771 million) that came mainly from AFPs and mining companies, while companies in the corporate sector were the main net demanders. In the derivatives market, net demand (US$ 1,979 million) came from AFPs and non-resident investors.

Graph 98

FLOWS TO THE FOREIGN EXCHANGE MARKET (SPOT AND DERIVATIVES)

(Million US$



* Other includes companies in the corporate sector, mining and retail sector.
** As of September 12.
Source: BCRP.

In the case of banking companies, the overall position has remained relatively stable in the third quarter, decreasing from US$ 192 million in June 2022 to US$ 159 million in September 2022. Banks' balance of net sales of Non-Delivery Forwards (NDF) with non-resident investors increased by US$ 605 million between the second and third quarters of 2022, reflecting the increased demand for dollars from non-resident investors observed in foreign exchange market.

In July and August 2022, non-resident investors had opposite positions. While in July they registered a net demand for dollars of US$ 1,943 million, mainly in the derivatives market (US$ 1,668 million) –the highest figure since March 2021 (US$ 3,759 million)–, in August their net supply amounted to US$ 1,553 million, of which US$ 1,493 million was forwards. These variations reflected in a reduction of foreign investors' holdings of treasury bonds (BTP) during the third quarter of 2022 (S/ 1,299 million).

The AFPs were the main net suppliers of US dollars in this period, with a total of US$ 1,048 million (US$ 2,383 million net supply in the spot market and US$ 1,335 million net demand in the derivatives market). Through these sales, they have been making the payment of members' withdrawals of their pension funds, in accordance with Law No. 31478. Between July and August 2022, the AFPs net settled external securities for a total of US$ 1,613 million.

On the other hand, the corporate sector registered a net demand for dollars amounting to US$ 2,732 million, mainly in the spot market, This flow was higher than that recorded in the second quarter of 2022 (US$ 2,364 million) but lower than that observed in the first quarter of 2022 (US$ 3,772 million), which is reflected in a reduction in economic agents' level of dollarization due to precautionary reasons.

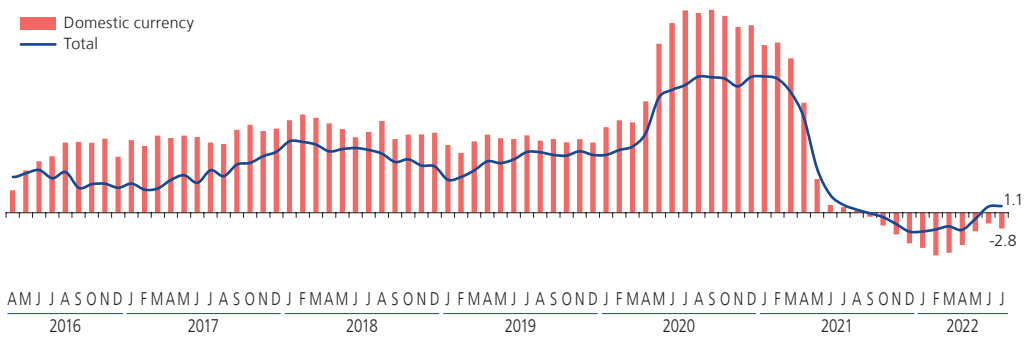
Mining companies stood out as net suppliers of dollars in the spot market during the third quarter (US$ 1,866 million), but with a lower net supply than in the second quarter (US$ 2,955 million). As evidenced with data to June 2022, mining exports maintain their positive trend after reaching in November 2021 a historical high not observed since January 1985 (US$ 3,941 million).

In this context in which a net demand for dollars prevailed in the local exchange market, BCRP offered net dollars to banks between July and September 2022 for net maturities of exchange instruments (BCRP CDRs and FX Swaps-sale) and net sales of foreign currency (US$ 162 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 is only available to countries with very solid macroeconomic fundamentals. 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

79. The year-on-year growth rate of private sector deposits was 1.1 percent in July 2022. By currency, deposits in soles declined 2.8 percent year-on-year, while deposits in dollars grew 9.1 percent in the last 12 months to July. The negative growth of deposits in domestic currency has slowed down since the second quarter of 2021 due to the statistical effect of lower growth rates in the second quarter of 2021 and due to local uncertainty.

Graph 99
DEPOSITS OF THE PRIVATE SECTOR BY CURRENCY
(Annual % change)

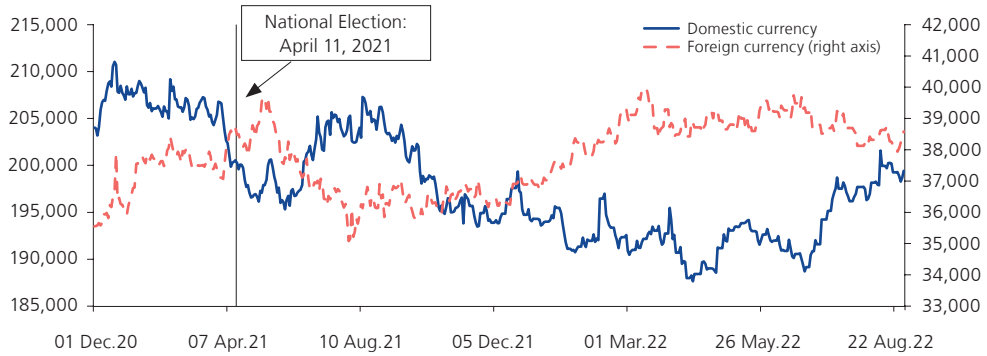


Source: BCRP.

The dollarization ratio of private sector deposits increased from 33.2 percent in December 2020 to 35.5 percent in July 2022. This increase is explained by the increase in the dollarization ratio of corporate deposits (from 36.8 percent to 40.2 percent) and by the increase in the dollarization ratio of individual deposits (from 30.2 percent to 31.8 percent).

Banks' total obligations subject to reserve requirement in domestic currency have recovered since July 2022 after the decline of previous months, increasing by S/ 6,928 million between May and August 2022. On the other hand, total obligations subject to reserve requirement in foreign currency decreased by US$ 693 million during the same period,, showing a slight downward trend in recent months after recording a positive evolution between December 2021 and February 2022.

Graph 100
TOTAL OBLIGATIONS SUBJECT TO RESERVE REQUIREMENTS OF BANKS
(In millions of S/ and US$)



As of August 30.
Source: BCRP.

In 2022, deposits in domestic currency are expected to grow at a higher rate than credit to the private sector in domestic currency (4.8 and 3.0 percent, respectively).

Table 39

MONETARY AND CREDIT ACCOUNTS OF THE DEPOSITORY CORPORATIONS (END-OF-PERIOD) 1

(Annual % change)

	Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Jun.22	Jul.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	-1.0	-1.9	1.5	1.5
Deposits in domestic currency	12.3	33.0	27.2	1.3	-0.7	-5.4	-6.7	-1.4	-2.8	4.8	8.3
Total deposits 1/	10.1	23.9	21.2	3.1	-0.2	-3.4	-2.0	1.5	1.1	4.5	5.7
Broad money in domestic currency	10.6	32.2	28.9	5.1	3.6	-0.7	-4.2	-1.3	-2.3	3.9	6.5
Total broad money 1/	9.6	25.3	23.6	5.5	3.0	0.0	-0.8	1.2	0.9	3.9	4.8
Credit to the private sector in domestic currency	10.1	19.4	17.3	7.6	4.2	5.6	7.7	6.6	5.8	3.0	6.8
Total credit to the private sector 1/	7.1	11.0	8.7	4.7	2.8	4.4	7.3	6.1	6.7	5.5	5.2
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	13.3	13.8	12.1	8.7

1/ Balances are valuated at constant exchange rate of December 2020.
* Forecast.
Source: BCRP

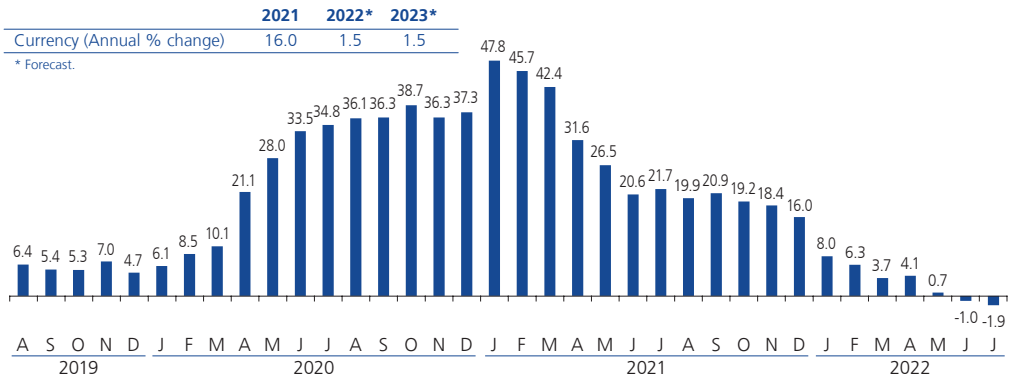
80. **Currency in circulation** grew by 16.0 percent in 2021 and declined 1.9 percent in July 2022 year-on-year. Moreover, it is expected to grow 1.5 percent in 2022 and to remain at 1.5 percent in 2023. After growing at historically high rates during the state of emergency[20], its growth rate would continue to moderate during the second half of 2022 as the factors that favored the increase in currency in previous years fade. As a result, currency in circulation is foreseen to grow at a slower pace than nominal GDP, returning to its pre-pandemic trend in the medium term.

After reaching historically high year-on-year growth rates in 2020 and in the first half of 2021, the pace of growth of currency in circulation started to slow down from the fourth quarter of 2021 and has even decreased slightly as from June 2022.

Graph 101

CURRENCY

(Annual % change)



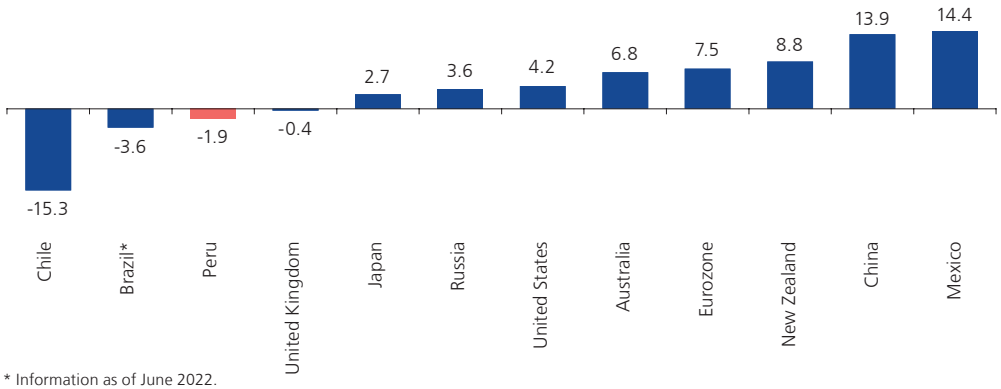
Source: BCRP.

81. The annual growth rate of currency in circulation in July 2022 was -1.9 percent, 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 second quarter of 2022 remains positive at 10.7 percent, a higher rate than that observed before the pandemic (-12.7 percent in the first quarter of 2020), but lower than that recorded in the first quarter of

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

2022 (11.9 percent). This reflects the fact that demand for cash has moderated in recent months, which is in line with the normalization path of monetary aggregates towards their pre-pandemic levels.

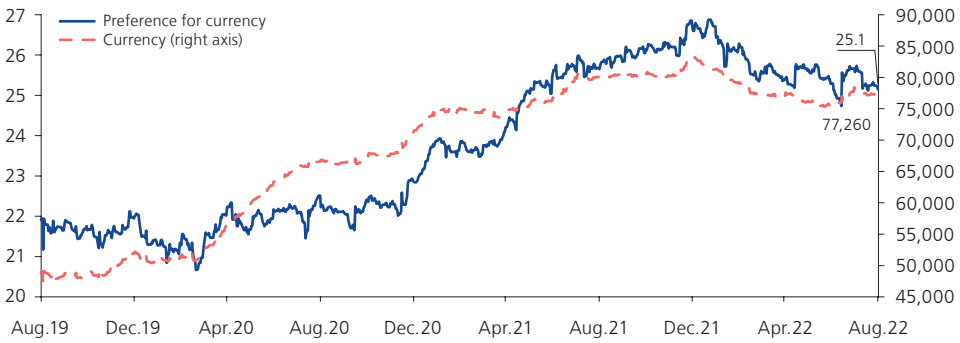
Graph 102
CURRENCY GROWTH BY COUNTRIES: JULY 2022
(% change)



* Information as of June 2022.
Source: Central Banks.

82. After growing steadily between April 2020 and December 2021, the preference for currency in circulation has been declining during the first, second and third quarters of 2022. It did so between January and July 2022, reaching a twelve-month low of 24.7 percent in mid-July, returning to March 2021 levels. Similarly, the preference for currency in circulation has continued to decline during August.

Graph 103
CURRENCY AND PREFERENCE FOR CURRENCY
(In millions soles and %)



Source: BCRP.

Credit to the private sector

83. The growth of **credit to the private sector** recovered in the first half of 2022 from a rate of 4.4 percent in 2021 to a year-on-year rate of 6.7 percent in July 2022 (13.8 percent without the loans granted under the Reactiva program). By segment, credit to companies grew 1.7 percent –a rate somewhat lower than that observed in December 2021 (3.9 percent)–, whereas credit to individuals, on the other hand, went from growing at a rate of 5.4 percent in 2021 to a growth rate of 16.5 percent in July 2022, driven by the

recovery of domestic demand. This faster pace of growth in credit to individuals is due to a significant increase in consumer credit (22.7 percent) and an increase in mortgage credit (8.5 percent). In terms of loans to companies, the highest rates of expansion were observed in the segments of loans to corporations and large companies (5.1 percent), while loans in the segments of medium, small and micro businesses recorded a drop of 1.8 percent.

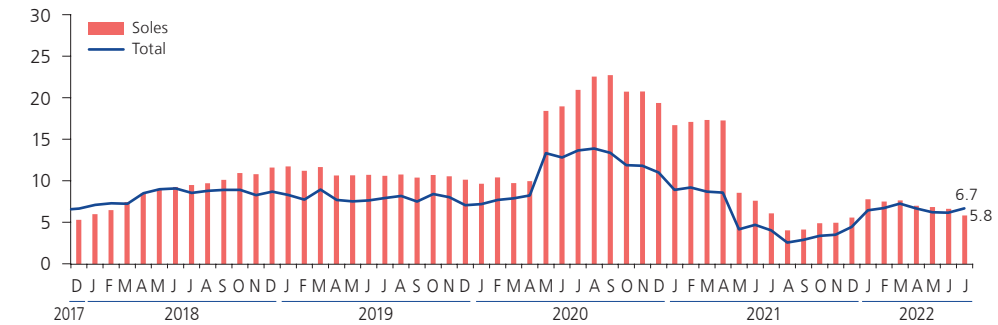
Table 40
CREDIT TO THE PRIVATE SECTOR 1/
(Annual growth rate)

	Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Jun.22	Jul.22
Businesses	**4.3**	**20.3**	**17.2**	**7.4**	**3.2**	**3.9**	**4.9**	**1.2**	**1.7**
Corporate and large companies	4.4	6.8	2.0	-2.5	2.7	8.1	10.7	4.1	5.1
Medium-sized enterprises, Small business and Micro business	4.3	36.2	36.4	19.5	3.7	0.0	-0.5	-1.8	-1.8
Individuals	**11.5**	**-3.1**	**-4.5**	**-0.3**	**2.1**	**5.4**	**11.7**	**15.9**	**16.5**
Consumer	13.3	-7.1	-10.5	-5.5	-1.8	3.9	15.1	21.7	22.7
Car loans	12.0	-2.3	-8.1	-0.3	3.0	7.6	13.8	12.6	14.3
Rest	13.4	-7.3	-10.6	-5.7	-1.9	3.8	15.1	22.0	22.9
Mortgage	8.8	3.0	4.6	7.3	7.6	7.4	7.3	8.3	8.5
TOTAL	**7.1**	**11.0**	**8.7**	**4.7**	**2.8**	**4.4**	**7.2**	**6.1**	**6.7**
Memo:									
Total without Reactiva Peru	**7.1**	**-5.4**	**-7.3**	**-1.6**	**5.3**	**9.4**	**14.0**	**13.3**	**13.8**

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

84. The growth of credit in soles, which had been slowing down since March 2021, reversed temporarily in March 2022, but slowed down again thereafter. On its side, the growth of credit in dollars has been decreasing since June 2020, but showed a reversal in December 2021. Thus, as of July 2022, credit in soles has grown 5.8 percent, while credit in dollars has grown 9.6 percent in the same period.

Graph 104
CREDIT TO THE PRIVATE SECTOR IN DOMESTIC CURRENCY
(Annual % change)



Source: BCRP.

Table 41
CREDIT TO THE PRIVATE SECTOR 1/
(Annual % change)

	Dec.19	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Jun.22	Jul.22
Domestic Currency	10.1	19.4	17.3	7.6	4.2	5.6	7.7	6.6	5.8
Foreign Currency	-0.3	-11.0	-14.0	-4.3	-1.7	0.3	5.7	4.4	9.6
Total	**7.1**	**11.0**	**8.7**	**,4.7**	**2.8**	**4.4**	**7.3**	**6.1**	**6.7**

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

Dollarization of credit and liquidity

85. The dollarization ratio of credit to the private sector, measured at a constant exchange rate, was 23.1 percent in July 2022, higher than the levels observed in December 2021 (21.1 percent) and in December 2020 (22.0 percent). An increase was observed in the dollarization ratio of credit to businesses, which rose from 29.0 to 32.2 percent between December 2020 and July 2022. On the other hand, the dollarization ratio of credit to individuals decreased from 8.6 to 7.2 percent during the same period. Moreover, the dollarization ratio of the segment of mortgage loans decreased from 12.5 percent in December 2020 to 8.9 percent in July 2022, while that of consumer loans increased from 5.8 percent to 6.0 percent in the same period.

Table 42
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	Jun.22	Jul.22
Businesses	**39.1**	**39.2**	**33.4**	**29.3**	**29.0**	**28.7**	**29.8**	**28.1**	**28.4**	**29.2**	**31.0**	**32.2**
Corporate and large companies	52.4	51.9	45.1	43.4	44.5	43.8	45.6	42.9	43.3	44.4	47.7	49.2
Medium-sized enterprises	40.6	40.8	32.0	26.0	23.5	22.5	22.0	21.3	21.8	22.1	23.0	23.7
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	3.3	3.3
Individuals	**9.6**	**9.1**	**9.0**	**8.8**	**8.6**	**8.4**	**8.5**	**8.0**	**7.5**	**7.5**	**7.2**	**7.2**
Consumer	6.5	6.2	5.9	5.8	5.8	5.8	6.4	6.1	5.7	6.1	6.0	6.0
Car loans	15.9	16.1	16.1	17.2	18.0	18.1	17.3	15.9	13.8	12.2	11.4	11.3
Credit cards	7.7	7.1	6.1	5.7	6.2	9.0	12.5	13.0	12.3	11.8	11.7	12.0
Rest	5.4	5.2	5.3	5.2	5.1	4.5	4.6	4.4	4.1	4.8	4.6	4.6
Mortgage	14.4	13.7	13.5	13.1	12.5	11.9	11.2	10.5	9.8	9.4	9.0	8.9
TOTAL	**27.4**	**27.5**	**24.7**	**22.3**	**22.0**	**21.7**	**22.6**	**21.3**	**21.1**	**21.4**	**22.2**	**23.1**

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

Non-performing loans

86. The ratio of non-performing loans (NPL) was 3.84 percent in July 2022, 0.07 percentage points higher than that recorded in December 2021 (3.76 percent). This result is mainly explained by higher delinquency rates in loans to companies, particularly because of the increase in non-performing loans granted to the segments of medium-sized companies, corporations and large companies. On the other hand, the ratio of NPL to individuals decreased in the same period, particularly in the segments of car loans and mortgages.

Table 43
NON-PERFORMING LOANS INDEX
(%)

	Dec.19	Mar.20	Jun.20	Sep.20	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Jun.22	Jul.22
Business	**3.71**	**3.82**	**3.51**	**3.54**	**3.73**	**4.03**	**4.04**	**4.60**	**4.60**	**4.80**	**4.81**	**4.81**
Corporate and large companies	0.62	0.64	0.67	0.85	1.04	1.09	1.16	1.08	1.08	1.28	1.45	1.38
Medium-sized enterprises	8.24	9.00	7.53	6.82	6.27	6.45	6.78	9.49	9.49	9.99	10.16	10.62
Small and Micro business	6.29	6.53	6.22	5.51	6.06	7.14	7.06	6.54	6.54	6.63	6.37	6.42
Individuals	**2.85**	**3.03**	**3.43**	**3.71**	**4.91**	**4.19**	**3.56**	**2.57**	**2.57**	**2.45**	**2.53**	**2.53**
Consumer	2.81	3.00	3.37	3.94	5.92	4.68	3.64	2.23	2.23	2.14	2.31	2.34
Credit cards	5.33	5.65	6.05	8.03	12.70	11.75	8.52	6.28	6.28	6.18	6.43	6.60
Car loans	3.75	3.86	4.78	5.58	5.85	5.74	5.51	3.72	3.72	3.74	3.54	3.56
Rest	1.46	1.62	2.04	2.01	3.07	2.95	2.45	1.35	1.35	1.28	1.39	1.39
Mortgage	2.91	3.08	3.51	3.39	3.51	3.56	3.47	3.01	3.01	2.87	2.84	2.79
Average 1/	**3.24**	**3.37**	**3.35**	**3.47**	**4.00**	**3.96**	**3.77**	**3.76**	**3.76**	**3.82**	**3.84**	**3.84**

1/ 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.

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

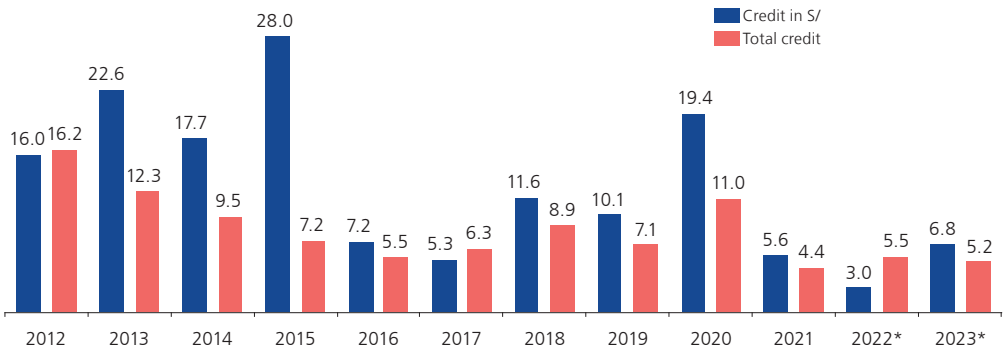
Projection of credit to the private sector

88. After recording a significant increase in the credit-to-GDP ratio in 2020, credit to the private sector in 2022 and 2023 is expected to grow at a slower pace than nominal GDP and to stabilize at pre-pandemic levels. Thus, the credit-to-GDP ratio is expected to show a rate of 43.9 percent in 2022 (after having reached a rate of 52.5 percent in 2020 and a rate of 45.0 percent in 2021). This forecast also assumes the recovery of economic activity to a level above pre-pandemic levels in 2022 (22.3 percent in nominal GDP growth compared to 2019). Subsequently, in 2023 credit to the private sector would resume its pre-pandemic trend, but would continue to grow at a slower pace than nominal GDP. This would reduce the ratio to GDP to 42.6 percent in that year.

Credit to the private sector in domestic currency is foreseen to grow 3.0 percent in 2022 and 6.8 percent in 2023, taking into account the disappearance of the statistical effect of the strong increase of credit in 2020 and the beginning of the amortization of loans granted under the Reactiva Peru program. Thus, total credit would grow 5.5 percent in 2022 (12.2 percent without the Reactiva Peru loans) and 5.2 percent in 2023 (8.7 percent without the Reactiva Peru loans). Thus, the credit dollarization ratio would continue to decline, reaching a level of of 21.8 percent at the end of 2023.

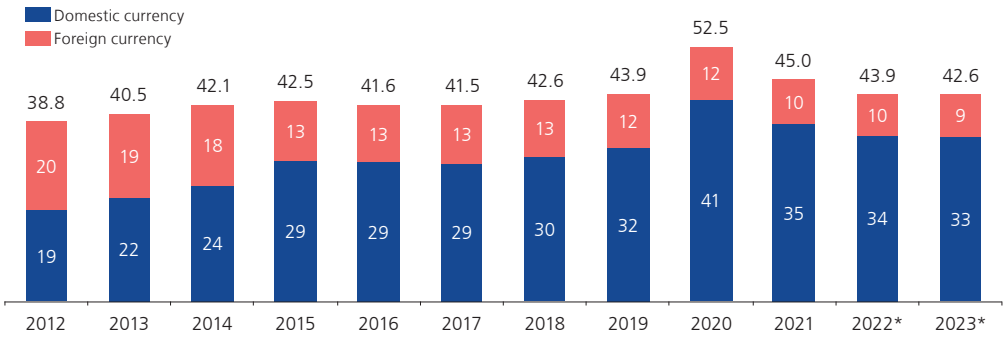
In line with forecasts for credit to the private sector, the growth of liquidity would pick up slightly (after remaining unchanged in 2021) and the growth of currency in circulation is expected to moderate, although both would grow at rates lower than nominal GDP in 2022 and 2023. The ratio of liquidity to GDP would decline from 60.7 percent in 2020 to 46.2 percent in 2023, while the ratio for currency in circulation in depository corporations would contract from 9.9 percent in 2020 to 8.3 percent in 2023.

Graph 105
CREDIT TO THE PRIVATE SECTOR
(% change



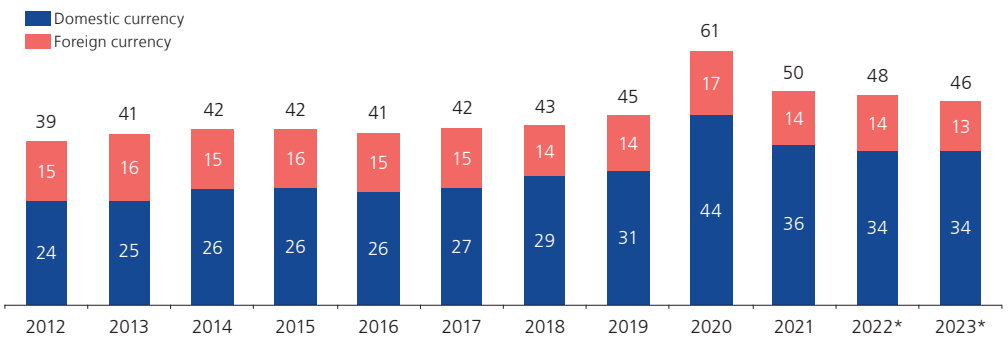
* Forecast.
Source: BCRP.

Graph 106
RATIO CREDIT/GDP
(%)



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

Graph 107
RATIO LIQUIDITY/GDP
(%)

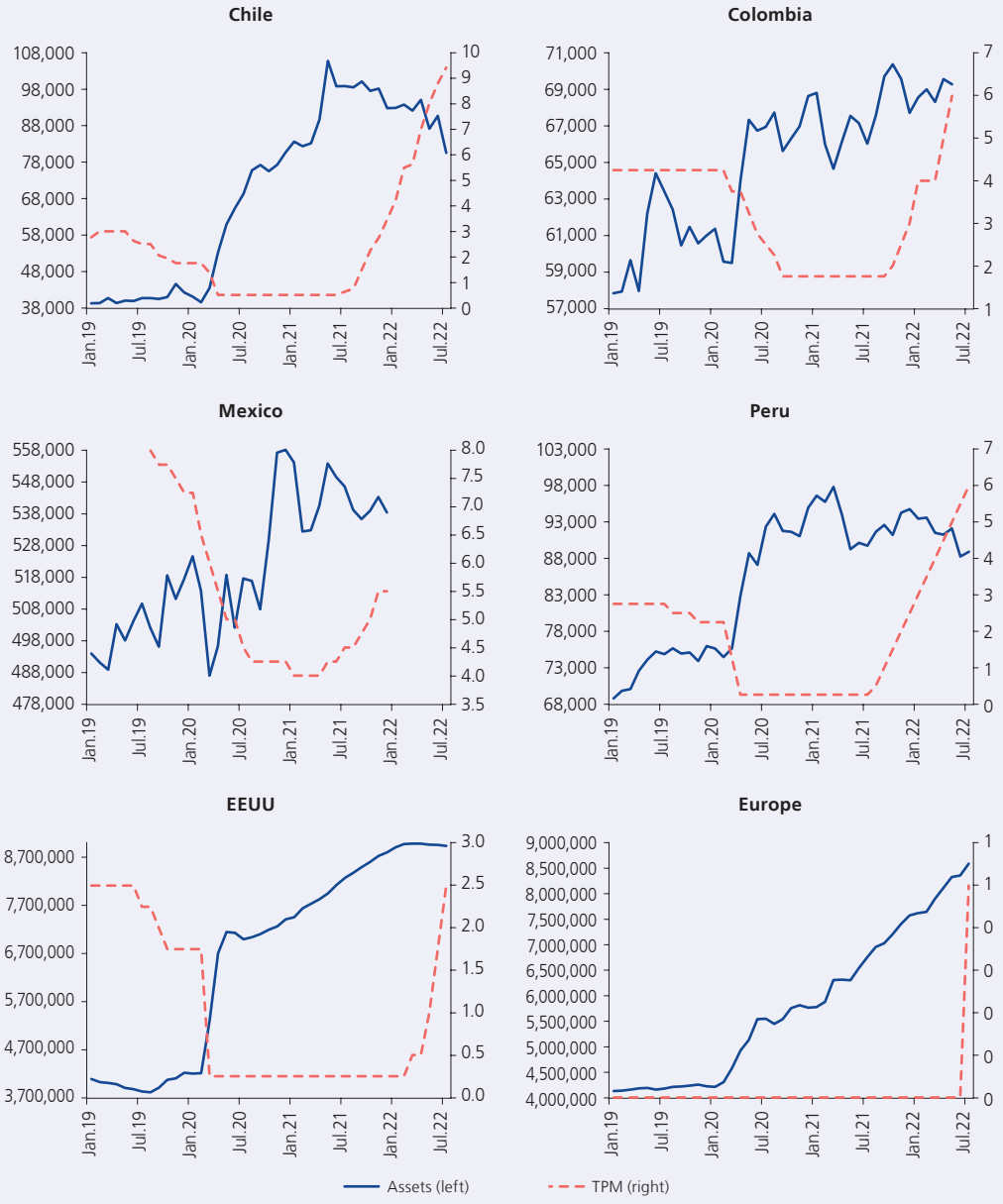


Note: calculated with constant exchange rate (December 2020).
* Forecast.
Source: BCRP.

Box 4
EVOLUTION OF CENTRAL BANK BALANCE SHEETS

As mentioned in much of the literature, the balance sheet of central banks plays a fundamental role in the implementation of monetary policy. During the 2008 Financial Crisis, they aroused interest given that most of these institutions, in developed countries, experienced a notable increase in the level of their assets. Since then (considering the Covid-19 crisis), the central bank balance sheet has become highly relevant for the analysis of monetary policy. The purpose of this box is to analyze how the size and composition of the balance sheet of the central banks belonging to the Pacific Alliance[21], the Fed and the European Central Bank has evolved in recent years.

TOTAL ASSETS AND POLICY RATE OF CENTRAL BANKS
(Millions of US$ and Percentages)



Source: Central Banks and Bloomberg.

21 Chile, Colombia, Mexico and Peru.

As shown in Graph 1, since March 2020 central banks have increased their assets in response to the crisis generated by the COVID-19 pandemic and, in turn, have reduced their monetary policy interest rates. After a sudden increase during the first months of the pandemic (March-June 2020), the growth of the balance sheet was subsequently more gradual. In the case of Peru, BCRP assets increased from US$ 74,437 million in February 2020 to US$ 94,145 million in August 2020, the level of assets remaining at an average of US$ 92 billion thereafter and with a balance of US$ 88,944 million in July 2022.

Moreover, in line with the normalization of monetary conditions initiated in the second half of 2021, the Central Bank of Chile, the Bank of Mexico, BCRP and the Federal Reserve (Fed) began to change their pattern of asset accumulation. The central banks of Chile and Mexico showed a decreasing trend in this pattern since the second half of 2021, BCRP since the beginning of 2022, whereas the US entity shows a constant trend since the beginning of 2022.

The rest of central banks would be expected to begin a phase of asset reduction given that the normalization of monetary policy at the global level continues. For example, the European Central Bank recently increased its policy interest rate in July, so it would be expected that this would lead to a simultaneous reduction in the size of its assets over the next few months.

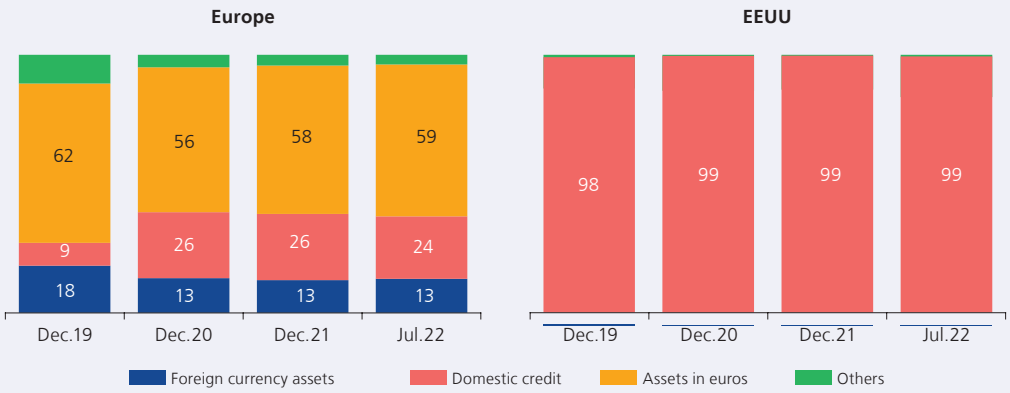
On the other hand, if we compare the composition of assets of the countries integrating the Pacific Alliance, we observe that all of them, with the exception of Mexico, increased their domestic credit as a result of the measures taken to mitigate the effects of COVID-19. Likewise, we also observe that Peru is the country with the highest Net International Reserves (NIRs) as a percentage of its assets in comparison to the rest of the countries.

COMPOSITION OF ASSETS
(%)

* Data from 2022 to May.
Source: Central banks.

In the case of the central banks of developed economies, the European Central Bank also increased its domestic lending sharply, while the Fed shows no change in the composition of its assets.

COMPOSITION OF ASSETS
(%)



Source: Central banks.

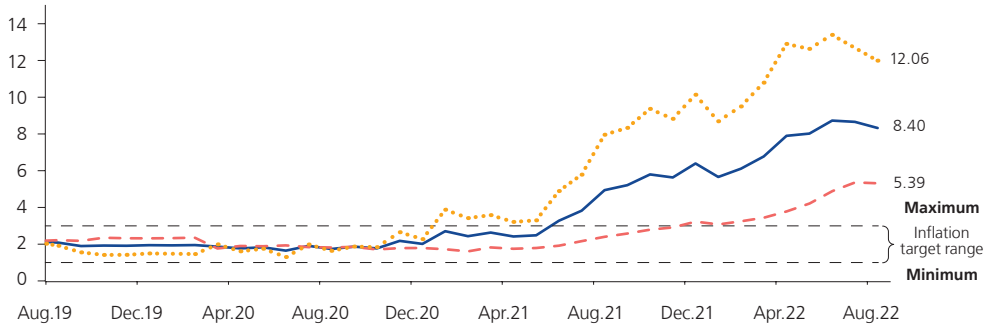
In conclusion, central banks increased the size of their balance sheets at the beginning of the COVID-19 pandemic with the aim of reinforcing the expansionary power of their interest rate cuts on the aggregate economy. This response, at least in the case of advanced economies, was very similar to that recorded during the 2008 international financial crisis. On the other hand, the countries belonging to the Pacific Alliance and the European Central Bank greatly increased their domestic credit due to measures aimed to alleviate the effects of COVID-19. Since last year, central banks have been reducing their level of assets, which is related to the normalization of monetary policy, thereby counterbalancing the effects of the high inflation rates recorded at the global level.

VI. Inflation and Balance of Inflation Risks

Recent inflation trends

89. Year-on-year inflation rose from 8.09 percent in May to 8.40 percent in August, after peaking at 8.81 percent in June. The August result is explained by increases in the prices of local transportation, meals consumed away from home, potatoes and eggs. Inflation excluding food and energy rose from 4.26 to 5.39 percent, above the target range, in the same period,. The different indicators of trend inflation are also above the target range, but showed a slow down in August.

Graph 108
INFLATION
(Last 12-month % change)



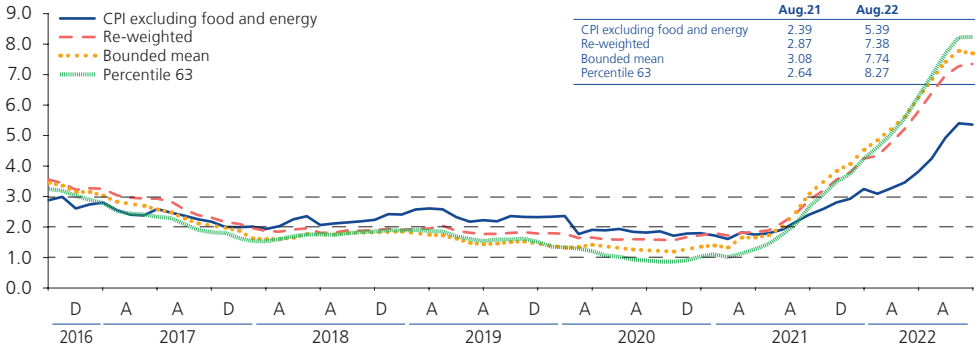
	Average 01-21	2019	2020	2021	Aug.22
CPI:	2.7%	1.90%	1.97%	6.43%	8.40%
CPI excluding food and energy:	2.2%	2.30%	1.76%	3.24%	5.39%
Food and energy:	3.3%	1.43%	2.22%	10.18%	12.06%

CPI — CPI excluding food and energy — Food and energy

Graph 109

MEASUREMENTS OF THE INFLATIONARY TREND

(Last 12 months % change)



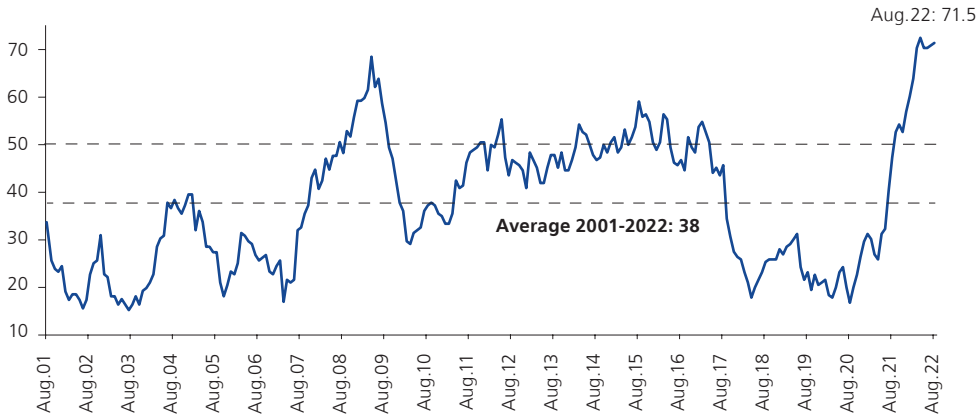
	Aug.21	Aug.22
CPI excluding food and energy	2.39	5.39
Re-weighted	2.87	7.38
Bounded mean	3.08	7.74
Percentile 63	2.64	8.27

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 over 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. Percentile 63: Corresponds to the percentage changes of the item placed in the 63th percentile

90. It is worth mentioning that 72 percent of a total of 186 items included in the Consumer Price Index recorded a year-on-year variation higher than 3 percent. Moreover, after reaching a peak of 73 percent in April, this indicator has remained close to 70 percent in recent months, with a slight rebound in August.

Graph 110

PERCENTAGE OF CPI ITEMS WITH YEAR-ON-YEAR PRICE CHANGE HIGHER THAN 3%



	Aug.21	Sep.21	Oct.21	Nov.21	Dec.21	Jan.22	Feb.22	Mar.22	Apr.22	May.22	Jun.22	Jul.22	Aug.22
Index	47	53	54	53	57	60	64	70	73	70	70	71	72
Number of items:													
Items with change higher than 3%	88	98	101	98	106	112	119	131	135	131	131	132	133
Items with change lower than 3%	98	88	85	88	80	74	67	55	51	55	55	54	53

91. The items most closely linked to the foreign exchange rate, international prices and contracts linked to the Retail Price Index (RPI) contributed 1.7 percentage points to cumulative inflation between January and August (6.13 percent). For reference purposes, it is worth pointing out that, in December 2020, these same items contributed 0.7 percentage points

to annual inflation (2.0 percent), while in 2021 they contributed 3.6 percentage points to annual inflation (6.4 percent)[22].

Table 44

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

	Weight 2009=100	% chg 12 months Dec.20	Weighted contribution	% chg 12 months Dec.21	Weighted contribution	Weight Dec.21=100	% chg. 12 months Jan.- Aug.22	Weighted contribution	% chg. 12 months Aug.22	Weighted contribution
CPI	**100.00**	**1.97**		**6.43**		**100.00**	**6.13**		**8.40**	
Items linked to the exchange rate	**14.06**	**1.66**	**0.21**	**4.25**	**0.54**	**14.58**	**3.12**	**0.45**	**4.69**	**0.73**
Appliances	1.29	-0.42	0.00	4.14	0.04	0.46	3.48	0.02	5.42	0.02
Personal care items	4.93	0.75	0.03	2.05	0.09	3.99	5.41	0.22	6.81	0.27
Cleaning articles	0.92	0.74	0.01	4.29	0.04	1.32	3.90	0.05	6.95	0.09
Medicinal products	2.08	5.53	0.11	1.61	0.03	1.62	1.70	0.03	2.01	0.03
Vehicle purchase	1.62	3.34	0.06	7.21	0.12	1.61	4.75	0.08	3.51	0.06
Spare parts and car wash	0.21	2.15	0.00	9.05	0.02	0.08	12.53	0.01	17.74	0.01
Vehicle repair	0.20	2.04	0.00	10.03	0.02	0.28	3.17	0.01	9.24	0.02
Rentals	2.41	0.50	0.01	1.76	0.03	4.45	2.02	0.09	2.40	0.11
Plane tickets	0.41	-3.32	-0.01	45.44	0.15	0.78	-5.19	-0.04	15.73	0.10
Items linked to international prices and exchange rate	**9.83**	**2.15**	**0.19**	**28.52**	**2.51**	**7.99**	**13.69**	**1.09**	**19.77**	**1.47**
Linked to food commodities	**7.03**	**4.83**	**0.30**	**21.32**	**1.35**	**5.84**	**15.35**	**0.90**	**19.66**	**1.09**
Chicken meat	2.96	6.63	0.17	23.40	0.61	2.70	4.02	0.11	10.04	0.26
Bread	1.92	0.25	0.00	15.50	0.26	1.35	15.57	0.21	21.14	0.28
Sugar	0.53	16.41	0.08	12.70	0.07	0.37	35.45	0.13	41.90	0.15
Noodles	0.54	5.60	0.03	10.39	0.06	0.32	27.62	0.09	31.25	0.10
Oils	0.52	4.09	0.02	63.49	0.29	0.38	5.22	0.02	8.29	0.03
Eggs	0.58	0.00	0.00	12.31	0.06	0.71	47.76	0.34	33.81	0.27
Fuels	**2.79**	**-4.20**	**-0.11**	**47.20**	**1.15**	**2.15**	**9.19**	**0.20**	**18.96**	**0.38**
Gasoline and lubricants	1.30	-11.16	-0.14	46.41	0.49	1.06	22.64	0.24	31.41	0.32
Gas	1.40	1.97	0.02	50.97	0.64	0.84	-2.17	-0.02	8.15	0.06
Other fuels	0.09	3.02	0.00	10.98	0.01	0.02	5.30	0.00	12.28	0.00
Consumption of natural gas for home	0.01	-5.26	0.00	26.98	0.00	0.23	-11.01	-0.03	0.63	0.00
Items related to WPI	**1.64**		**0.06**		**0.22**	**1.37**		**0.05**		**0.11**
Water consumption	1.64	3.03	0.06	11.57	0.22	1.37	3.68	0.05	7.93	0.11
Items related to the exchange rate, WPI and prices	**2.95**		**0.24**		**0.35**	**2.62**		**0.15**		**0.30**
Electricity	2.95	6.73	0.24	9.50	0.35	2.62	5.66	0.15	11.98	0.30
Total items related to the exchange rate, WPI and prices	**28.47**	**2.58**	**0.70**	**13.31**	**3.63**	**26.56**	**6.58**	**1.75**	**10.47**	**2.61**
Rest	**71.54**	**1.75**	**1.27**	**3.86**	**2.81**	**73.44**	**5.96**	**4.38**	**7.59**	**5.78**
of which:										
Meals outside the home	11.74	1.00	0.14	3.65	0.49	15.45			9.68	1.49
Local transportation	8.54	2.49	0.20	2.97	0.24	8.08			12.71	1.02
Services without transportation and water	24.61	1.62	0.39	1.75	0.41	28.44			3.87	1.11

Source: BCRP.

92. As for the evolution of inflation during 2022, in the period between the months of January and August, the general price level increased 6.13 percent. The CPI excluding food and energy prices grew 3.91 percent, while the component of food and energy prices grew at a rate of 8.86 percent. The prices of food and beverages increased 9.1 percent, while energy prices rose 7.2 percent, reflecting the 9.2 percent rise in fuel prices and the 5.7 percent rise in electricity rates.

22 The difference between the cumulative contribution to inflation between January and August 2022 and the corresponding contribution ito inflation in 2020 and 2021 only represents the direct effects of supply shocks affecting inflation and not the total effect of these increases (including second order or indirect effects).

Table 45
INFLATION
(% change)

	Weight	Dec.19	Dec.20	Dec.21	2022	
					Jan.-Aug.	August
CPI	**100.0**	**1.90**	**1.97**	**6.43**	**6.13**	**8.40**
1. CPI excluding food and energy	**55.3**	**2.30**	**1.76**	**3.24**	**3.91**	**5.39**
a. Goods	17.4	1.4	1.5	2.6	3.5	4.5
b. Services	37.9	2.9	1.9	3.6	4.1	5.9
Education	8.6	5.2	2.0	1.6	3.8	3.8
Health	1.5	1.5	1.2	2.8	5.6	6.3
Others	27.8	1.8	1.9	5.5	4.1	6.5
2. Food and energy	**44.7**	**1.43**	**2.22**	**10.18**	**8.86**	**12.06**
a. Food and beverages	**40.0**	**1.0**	**2.2**	**8.0**	**9.1**	**11.4**
Meals inside the home	24.5	0.6	2.9	9.8	10.5	12.6
Meals outside the home	15.5	1.7	1.0	4.5	6.8	9.7
b. Fuel and electricity	**4.8**	**4.3**	**2.1**	**24.4**	**7.2**	**15.1**
Fuel	2.1	-0.4	-4.2	47.2	9.2	19.0
Electricity	2.6	8.0	6.7	9.5	5.7	12.0

93. At a disaggregated level, the items with the highest positive contribution to inflation in the January-August period were meals away from home, local transportation, eggs, potatoes and fuel for vehicles, while the items with the highest negative contribution to inflation were domestic air transportation, avocados, natural gas, domestic land transportation, and telephone equipments.

Table 46
ITEM WITH THE HIGHEST WEIGHTED CONTRIBUTION TO INFLATION: JANUARY - AUGUST 2022

Positive	Weight	% chg.	Contr.	Negative	Weight	% chg.	Contr.
Meals outside the home	15.5	6.8	1.04	National air transportation	0.2	-25.9	-0.06
Local transportation	8.1	10.0	0.81	Avocado	0.2	-24.2	-0.06
Eggs	0.7	47.8	0.34	Natural gas	0.2	-11.0	-0.03
Potatoes	0.7	36.4	0.26	National ground transportation	0.3	-7.5	-0.02
Vehicle fuels	1.1	22.6	0.24	Telephone equipment	0.5	-4.1	-0.02
Personal care products	4.0	5.4	0.22	Natural gas	0.8	-2.2	-0.02
Bread	1.4	15.6	0.21	Tomatoes	0.2	-7.4	-0.01
Fresh fish maritime	0.7	29.5	0.19	Pepper	0.1	-6.4	0.00
Other fresh fruits	0.6	28.1	0.17	Meat of other birds	0.2	-1.6	0.00
Higher education	4.3	3.7	0.16	Pork meat	0.3	-1.0	0.00
Total			**3.64**	**Total**			**-0.23**

Foodstuffs

In the January-August period, the largest price increases were observed in the category of out-of-home meals, as well as in foods with a high imported content such as eggs and bread, and in agricultural products such as potatoes.

The prices of meals consumed away from home increased by an average of 6.8 percent due to the increase in the price of food inputs, as well as to the greater influx of the public to restaurants, which was influenced by the return to face-to-face activities at work and study centers.

The price of eggs rose 47.8 percent, reflecting higher production costs, particularly the increase in the international price of hard yellow maize in the first half of the year (cumulative variation to June of 34 percent). This result was also influenced by the higher demand for this product due to the resumption of school activities (preparation of lunch boxes), as well as by its lower relative price compared to other foodstuffs with high protein content, such as chicken and fish.

The increase in the price of bread was also associated with higher production costs; in this case, due to higher wheat prices, which drove up the price of flour (25 percent at the wholesale level). In addition, bakeries have also been facing higher energy costs.

In the case of perishable farming products, the item with the highest price increase was potatoes, which rose 36.4 percent. The price rise results from higher production costs due to higher fertilizer and pesticide prices. Crops were also affected by weather changes in the central highlands, including changes in the rainfall pattern in the first months of the year and subsequent frosts, which caused a decrease in the supply of the product.

Energy

Vehicle fuel prices rose 22.6 percent on average in the January-August period. The prices of 95 and 97 octane gasohol, which are not included in the Fuel Price Stabilization Fund (FPSF), increased by 30 and 32 percent, respectively, whereas the prices of 90 octane gasohol and vehicle diesel oil, both of which are included in the FPSF, had a lower variation (26 and 6 percent, respectively). On the other hand, the price of LPG for vehicles, another product included in the FEPC, decreased 11 percent due to the reduction of the upper and lower limits of the price band.

The increase in fuel prices reflected the rise in local refineries' ex-plant prices, in a context of rising international oil prices. The price of the West Texas Intermediate oil (WTI oil) recorded an increase of 30.4 percent in the January-August period (38.3 percent in the last twelve months). In August, the rise in oil prices reversed (-8.2 percent), which contributed to the drop in fuel prices in the domestic market that month (-7.5 percent).

On the other hand, the price of domestic gas decreased 2.2 percent, reflecting the update of the price band. Although a larger reduction was expected, the price was affected by the chain of intermediaries and by expectations of shortages in July, due to abnormal surges and the difficulty in landing gas.

Likewise, the price of natural gas for households decreased 11 percent, which was influenced by the fact that a single distribution rate was approved by the natural gas company of Metropolitan Lima Cálidda in May. This result was part of the 2022-2026 five-year plan approved by Osinergmin, with the aim of increasing the use of this fuel. A new list of prices was applied as of August 1, which resulted in a 6.6 percent increase.

Services

Local transportation, which includes fares in cabs, buses, minibuses, *combis* and motorcycle cabs, recorded successive increases in the January-August period, recording an accumulated variation of 10.0 percent. This result was influenced by higher fuel prices, as well as by the increase in tolls and the higher prices of spare parts. In addition, bus fares on complementary corridors were adjusted in May, while fares in the Metropolitan Transportation System were raised in mid-July.

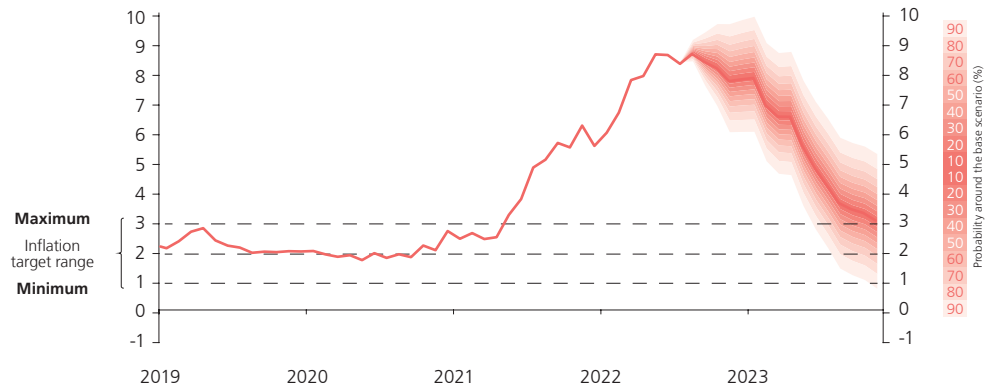
In contrast, domestic air fares and interprovincial bus fares decreased 25.9 and 7.5 percent in the January-August period, reflecting the reductions recorded after the seasonal increases in December 2021 and July 2022, as well as lower fuel prices in August.

Forecasts

94. 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, year-on-year inflation is projected to return to the target range in the second half of next year. This forecast assumes the reversal of the effect of transitory factors on the inflation rate (international food and energy prices) in a context in which inflation expectations return to the target range, the gradual withdrawal of monetary stimulus continues, and GDP is close to its potential level.

Graph 111
INFLATION FORECAST: 2022 - 2023
(Last 12-month % change)

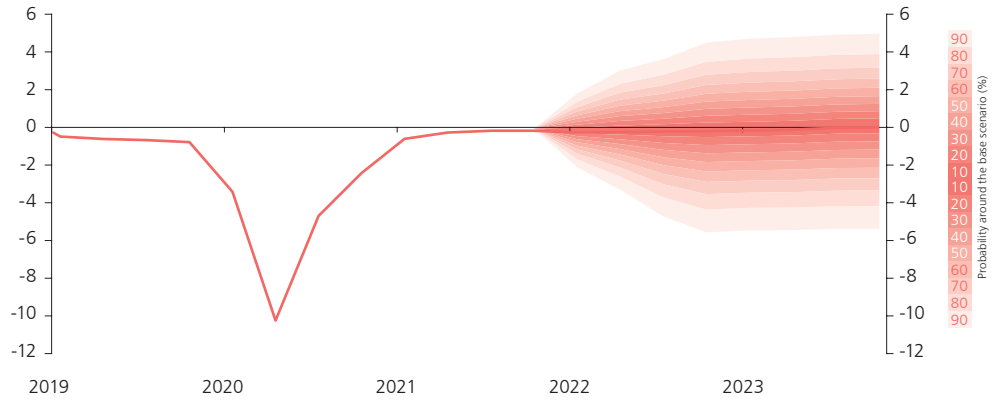


Note: This Fanchart presents the distribution of possible values of the demand gap forecast over the projection horizon. Its central line is the distribution mode and shows the projection of the base scenario presented in this Inflation Report. Each pair of bands of the fan (each tone or shade) accumulates a 10% probability, and indicates the possible values for the evolution of the demand gap in the forecast horizon associated with this level of confidence.
Source: BCRP.

Graph 112

DEMAND GAP FORECAST: 2022 - 2023

(in percentage of potential output, quarterly average)



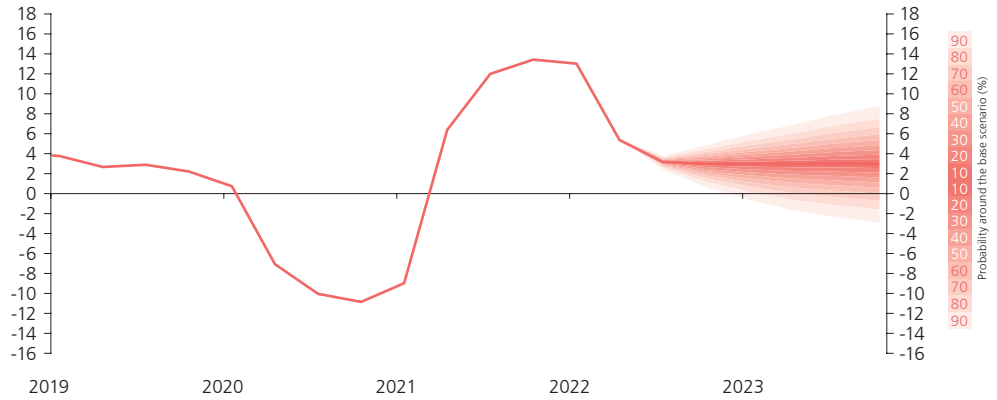
Note: This Fanchart presents the distribution of possible values of the demand gap forecast over the projection horizon. Its central line is the distribution mode and shows the projection of the base scenario presented in this Inflation Report. Each pair of bands of the fan (each tone or shade) accumulates a 10% probability, and indicates the possible values for the evolution of the demand gap in the forecast horizon associated with this level of confidence

Source: BCRP.

Graph 113

GDP GROWTH FORECAST: 2022 - 2023

(Last 12-month % change)

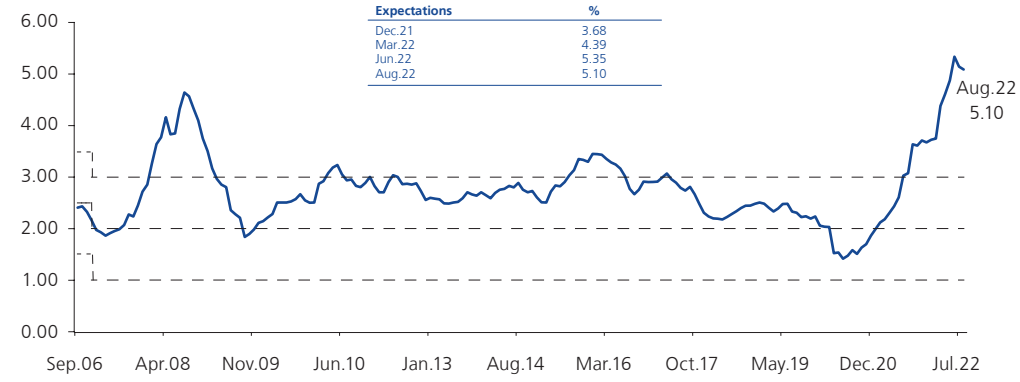


Note: This Fanchart presents the distribution of possible values of the demand gap forecast over the projection horizon. Its central line is the distribution mode and shows the projection of the base scenario presented in this Inflation Report. Each pair of bands of the fan (each tone or shade) accumulates a 10% probability, and indicates the possible values for the evolution of the demand gap in the forecast horizon associated with this level of confidence.

Source: BCRP.

95. Inflation expectations, calculated on the basis of surveys conducted among representatives of financial and non-financial firms, as well as among economic analysts, reveal an expected inflation rate that ranges between 7.0 and 7.3 percent in 2022 and between 4.0 and 4.3 percent in 2023. Expectations of inflation in twelve months' time rose to 5.10 percent in August 2022, a rate temporarily above the upper limit of the inflation target range.

Graph 114
EXPECTATIONS OF INFLATION FOR THE NEXT YEAR
(% points)



Source: BCRP.

Table 47
SURVEY ON INFLATION EXPECTATIONS
(%)

	IR Dec.21	IR Mar.22	IR Jun.22	IR Sep.22*
Financial entities				
2022	3.50	3.80	5.50	7.30
2023	3.00	3.00	3.55	4.00
Economic analysts				
2022	3.55	4.00	6.00	7.30
2023	2.80	3.00	3.80	4.00
Non-financial firms				
2022	3.21	4.00	5.80	7.00
2023	3.00	3.20	4.00	4.30

* Survey conducted as of August 31.
Source: BCRP.

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

Table 48
SURVEY ON MACROECONOMIC EXPECTATIONS: EXCHANGE RATE
(S/ per US$)

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

* Survey conducted as of August 31.
Source: BCRP.

Average import prices are projected to increase by 13.6 percent in 2022, mainly due to the increase in the price of oil and some foodstuffs such as maize, wheat and soy. On the other hand, a decrease of 2.0 percent is expected for 2023, basically due to a partial reversal in the price of these products. As for the expected exchange rate, the survey results as of August show levels of S/ 3.90 for 2022 and between S/ 3.85 and S/ 3.90 for 2023.

The aforementioned effects are expected to contribute to the return of inflation to the target range over the forecast horizon.

Balance of risks to the inflation forecast

97. Risks to the inflation projection continue to be biased upward based on the following shocks:

- **Domestic demand shocks**

  If consumer and business confidence does not recover, this could result in lower growth in private sector's consumption and investment. Likewise, delays in the execution of public spending, especially investment, could contribute to 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**

  In the forecast horizon, there is still a risk of a slowdown in global growth, which would imply lower demand for our main export products (external demand) because of: i) a more accelerated withdrawal of monetary stimulus in advanced economies due to the persistence of inflation at the global level and its likely impact on inflation expectations; ii) geopolitical tensions; iii) new disruptions in global supply chains, and iv) the possibility of a resurgence of waves of contagion, the appearance of new strains of COVID-19 or other diseases.

- **Food and energy price shocks**

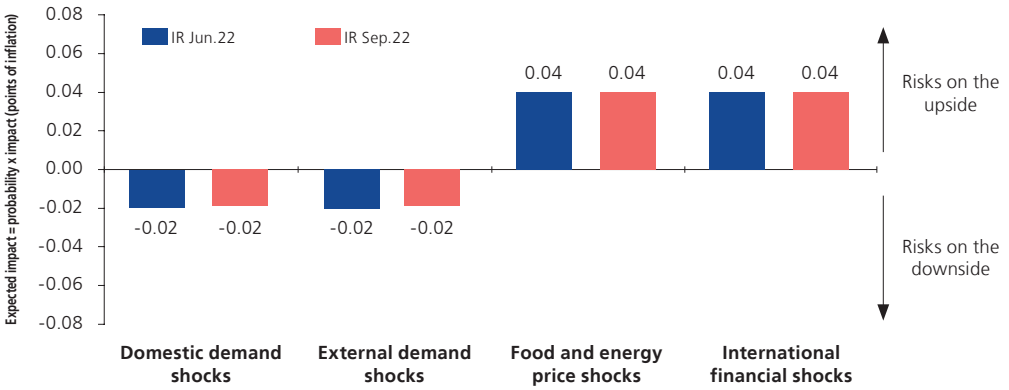
  Despite the current moderation in the increase in international food and fuel prices, further disruptions in global supply chains and geopolitical tensions could exacerbate and prolong the current energy and food crisis, which would result in higher fuel, food, and fertilizer prices and higher transportation costs.

- **Financial shocks**

  A faster early withdrawal of monetary stimulus in advanced economies or greater political uncertainty and its effect on economic growth could lead to episodes of capital outflows. These factors could generate upward pressures on the exchange rate and, therefore, higher inflation over the forecasts horizon.

Graph 115

BALANCE OF RISKS AGAINST THE BASE SCENARIO

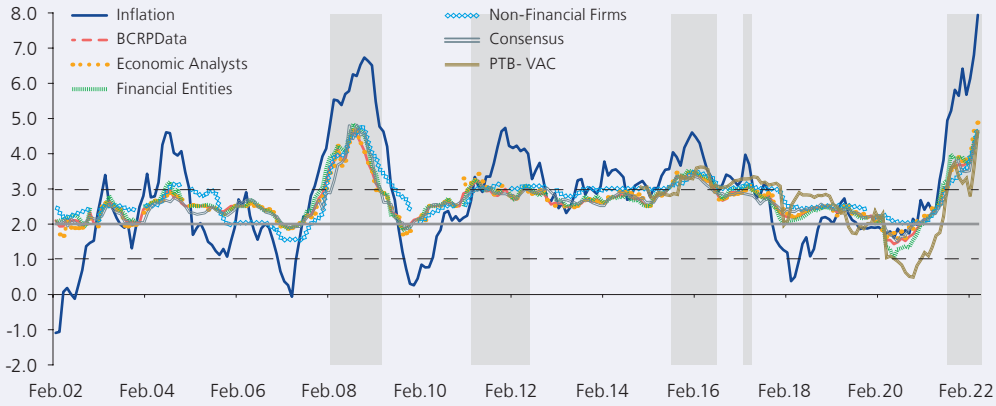


Source: BCRP.

Box 5
STYLIZED FACTS ON INFLATION EXPECTATIONS

As part of the inflation targeting scheme, BCRP monitors various measurements of inflation expectations, because expectations are an important determinant of inflation. This box is aimed at evaluating these measurements, which includes studying their statistical properties and assessing the quality of their implied forecasts (accuracy and bias). Thus, the different metrics of inflation expectation available are strongly correlated, they are less volatile than inflation and they are remarkably persistent. It is also worth pointing out that the reference measure of expectations used by BCRP is the one with the lowest implied forecast error.

INFLATION AND MEASURES OF INFLATION EXPECTATIONS



Note: Monthly data from February 2002 to April 2022. All measures of expectations are about inflation 12 months ahead. BCRPData corresponds to the expectations published on the BCRP website. Likewise, Economic Analysts, Financial Entities and Non Financial Firms correspond to the inflation expectations of economic analysts, financial companies and non-financial companies in the survey of macroeconomic expectations of the BCRP, respectively. Consensus corresponds to the expectations published in the Consensus Forecast magazine. Finally, PTB-VAC is the break-even expectation, calculated as the difference between the PTB 2024 and the VAC 2024. Shaded periods refer to to disembedding episodes.

This reference measure is the inflation rate expected in 12 months' time published in the BCRPData application.[23] In fact, this measure is used as input for the Monetary Policy analysis by BCRP (see Montoro (2019) and Winkelried (2013)).[24] Likewise, some alternative measures from the disaggregation of expectations in BCRPData (i.e., economic analysts, financial entities and non-financial firms), *Consensus Forecast* and a measure of long-term inflation expectations are evaluated based on the difference between the nominal interest rate of the BPT2024 and the real interest rate of the VAC 2024 sovereign bonds, as can be seen above.[25]

Statistical properties

As regards statistical properties, the following table summarizes the correlations between the types of inflation expectations measures considered. Thus, it highlights that all measures of expectations are

23 The 12-month forward measure of inflation expectations is constructed as a simple linear interpolation of the median values of the inflation forecasts made by economic analysts, financial entities and non-financial firms for the current year and next year.

24 Montoro, C. (2009). El sistema de proyección del BCRP. Revista Moneda 142, 22-24. Winkelried, D. (2013). Modelo de Proyección Trimestral del BCRP: Actualización y novedades. Revista Estudios Económicos 26, 9-60.

25 The Consensus Forecast projection (prepared by Consensus Economics Inc.) gathers information on inflation forecasts for the current year and next year from economic analysts and financial firms in Peru and around the world. On the other hand, the measure of long-term inflation expectations in the literature is known as "break-even" inflation expectations.

remarkably correlated with the metric reported in BCRPData. Even the measure showing the lowest correlation (BTP-VAC expectations) presents a significant correlation (83 percent).

CORRELATION BETWEEN MEASURES OF INFLATION EXPECTATIONS

	BCRPData	Economic Analysts	Financial Entities	Consensus	Non-Financial Firms	PTB-VAC
BCRPData	1.00					
Economic Analysts	0.99	1.00				
Financial Entities	0.99	0.97	1.00			
Consensus	0.94	0.94	0.91	1.00		
Non-Financial Firms	0.98	0.98	0.97	0.93	1.00	
PTB-VAC	0.83	0.79	0.84	0.85	0.84	1.00

Note: Monthly data from February 2002 to April 2022. All measures of expectations are about inflation 12 months ahead. BCRPData corresponds to the expectations published on the BCRP website. Likewise, Economic Analysts, Financial Entities and Non Financial Firms correspond to the inflation expectations of economic analysts, financial companies and non-financial companies in the survey of macroeconomic expectations of the BCRP, respectively. Consensus corresponds to the expectations published in the Consensus Forecast magazine. Finally, PTB-VAC is the break-even expectation, calculated as the difference between the PTB 2024 and the VAC 2024.

Similarly, the second table complements the statistical description of these measures. An aspect that stands out in this table is that, in the sample evaluated, all inflation expectations metrics remain systematically in the upper part of the target range. All of these measures are less volatile than inflation in the past 12 months. As documented in Bernanke (2007), this greater relative stability is an indication that inflation expectations would have remained anchored in the target range.[26]

STATISTICS

	Obs.	Mean	Median	Estandar Deviation		Serial Correlation	Correlation with Inflation
				Abs.	Relative to the Inflation		
Inflation	243	2.78	2.70	1.52	1	0.92	1.00
BCRPData	243	2.64	2.54	0.57	0.38	0.94	0.85
Economic Analysts	233	2.65	2.50	0.60	0.40	0.90	0.87
Financial Entities	234	2.68	2.58	0.65	0.43	0.92	0.85
Consensus	243	2.61	2.56	0.57	0.37	0.93	0.84
Non-Financial Firms	234	2.75	2.80	0.62	0.41	0.93	0.82
PTB-VAC	90	2.58	2.82	0.88	0.58	0.90	0.57

Note: Monthly data from February 2002 to April 2022. Inflation is 12 months. All measures of expectations are about inflation 12 months ahead. BCRPData corresponds to the expectations published on the BCRP website. Likewise, Economic Analysts, Financial Entities and Non Financial Firms correspond to the inflation expectations of economic analysts, financial companies and non-financial companies in the survey of macroeconomic expectations of the BCRP, respectively. Consensus corresponds to the expectations published in the Consensus Forecast magazine. Finally, PTB-VAC is the break-even expectation, calculated as the difference between the PTB 2024 and the VAC 2024.

The table shows that the various types of inflation expectations are highly correlated with total inflation; however, it is noteworthy that the correlation between inflation and BTP-VAC expectations (57 percent) is significantly lower than that of the other variables. Similarly, high persistence (measured by serial correlation) is observed in all the measures evaluated. This suggests that expectations show high persistence in their dynamics and, therefore, unforeseen macroeconomic events are expected to have long-lasting effects on them.

Another relevant feature among the different measures for expectations is that those formed by non-financial firms and investors (BTP2024-VAC2024) tend to have a negative bias. Table 2 shows that they have a median higher than the mean and that therefore in history have reported lower values of inflation expectations.

26 Bernanke, B. (2007). Inflation expectations and inflation forecasting. Speech given at the Monetary Economics Workshop of the National Bureau of Economic Research Summer Institute.

In the case of the inflation expectations of non-financial firms, this is consistent with international evidence that firms' inflation expectations show inattention about inflation dynamics or about the inflation target range (Coibion, Gorodnichenko, and Kumar, 2018). [27]

The case of break-even inflation bias and its lower correlation with inflation is the result of the fact that these expectations also include risk premia, in addition to reflecting forecasts of future inflation. Gürkaynak, Sack and Wright (2010) show for the United States –a market with greater liquidity than the Peruvian market– that this measure of inflation expectations based on bonds also reflects an inflation risk premium, and a liquidity premium differential between nominal and real bonds.[28]

In addition, at each point in time, under this measure, expectations reflect different time horizons, given a fixed maturity of the bonds. Moreover, the estimation of this measure is inaccurate due to the lack of long historical series and the illiquidity of indexed bonds in the Peruvian market (Armas, Vallejos and Vega, 2011).[29]

Attention to the juncture and prediction error

In order to assess agents' attention to inflation dynamics, the following table evaluates the correction of expectations in 2018. This table shows that non-financial firms revise their expectations with some time lags. In the 2018 expectations surveys, the various agents surveyed were asked about their forecasts for year-end. Despite the fact that the executed inflation for the close of 2018 (2.2 percent) was already public when the last survey with that question was conducted (January 31, 2019), non-financial firms did not update their forecasts.[30]

EXPERIMENT ON THE EXECUTED INFLATION FORECAST 2018

Survey Date	Economic Analysts	Financial Entities	Non-Financial Firms
	2018 Annual Expectations		
September 30, 2018	2,30%	2,20%	2,30%
October 31, 2018	2,26%	2,00%	2,30%
November 29, 2018	2.20%	2,20%	2,30%
December 31, 2018	2.25%	2,20%	2,30%
January 31, 2019	**2.20%**	**2,20%**	**2,30%**

Note: All measures of expectations are about inflation at the end of 2018. Economic Analysts, Financial Entities and Non-Financial Firms correspond to the inflation expectations of economic analysts, financial companies and non-financial companies in the BCRP macroeconomic expectations survey, respectively.
Source: BCRP Macroeconomic Expectations Survey.

If inflation expectations are considered to be the product of agents' forecasts of future inflation, an additional mechanism can be designed to evaluate them. Thus, if agents understand the economic environment and remain attentive to the juncture, the Root Mean Square Error (RMSE) of their inflation forecasts will be lower. The graph below also reports the implied RMSE of the various types of inflation expectations. As can be seen, the measure of expectations currently monitored by BCRP (the expectation in BCRPData) has the best ability to predict inflation with the lowest RMSE. In contrast, the least accurate

27 Coibion, Gorodnichenko, and Kumar (2018). How Do Firms Form Their Expectations? New Survey Evidence. American Economic Review. Vol. 108, No 9.

28 Gürkaynak, Sack and Wright (2010). The TIPS Yield Curve and Inflation Compensation. American Economic Journal: Macroeconomics. Vol. 2, No. 1.

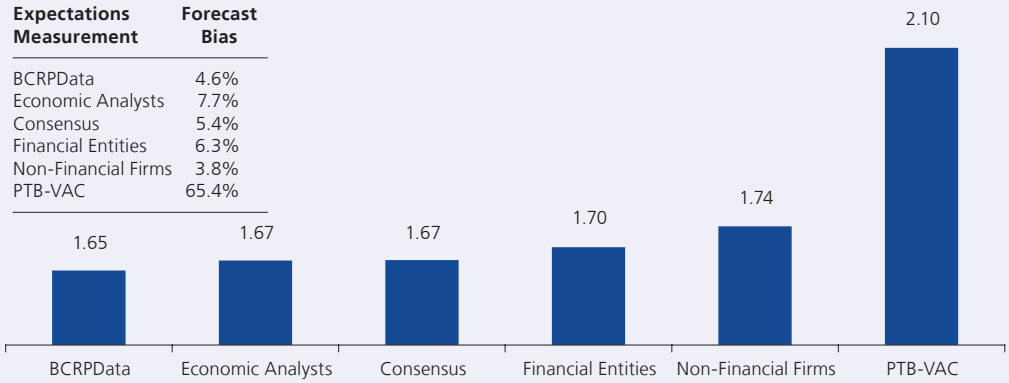
29 Armas, Vallejos and Vega, (2011). Indicadores tendenciales de inflación y su relevancia como variables indicativas de política monetaria. Revista Estudios Económicos 20, 27-56.

30 On January 1, 2019, the INEI published that inflation at the end of 2018 was 2.2 percent. Thus, this information was already public knowledge 30 days before the survey.

forecasts correspond to those of non-financial firms and those based on break-even expectations (RMSE of 1.74 and 2.10, respectively).

ROOT MEAN SQUARE ERROR (RMSE) AND FORECAST BIAS

Expectations Measurement	Forecast Bias
BCRPData	4.6%
Economic Analysts	7.7%
Consensus	5.4%
Financial Entities	6.3%
Non-Financial Firms	3.8%
PTB-VAC	65.4%



Note: Monthly data from February 2002 to April 2022, with the exception of PTB-VAC whose sample begins in November 2014. All measures of expectations are about inflation 12 months ahead. BCRPData corresponds to the expectations published on the BCRP website. Likewise, Economic Analysts, Financial Entities and Non-Financial Firms correspond to the inflation expectations of economic analysts, financial companies and non-financial companies in the BCRP macroeconomic expectations survey, respectively. Consensus corresponds to expectations published in the Consensus Forecast magazine. Finally, PTB-VAC is the break-even expectation, calculated as the difference between the PTB 2024 and the VAC 2024. For its part, RMSE is the root of the Mean Square Error.

Moreover, the previous graph additionally reports the estimated forecasts bias. In this metric, values above 100 percent indicate an overestimation while values below 100 percent represent an underestimation. In general, all measures of expectations underestimate future inflation, which suggests that all agents always expect lower projected inflation. An aspect standing out is that the expectations of non-financial firms show the lowest inflation underestimation bias. In contrast, investors' expectations (break-even) underestimate future inflation the most, which is consistent with their higher RMSE.

Finally, the ability of time lags of inflation and its expectations to predict the current values of inflation and its expectations is evaluated.[31] In general, lags are found to be good predictors of inflation and inflation expectations in almost all cases with the only exception of lags of break-even inflation expectations. Consequently, at the 95 percent confidence level, we find that investors' estimates of inflation do not significantly predict inflation, even though inflation does.

In conclusion, there is significant heterogeneity among agents in the formation of expectations, which tend to be correlated both with each other and with actual inflation. In addition, these measures have a remarkably persistent dynamic with less variability than that of actual inflation. The BCRP's benchmark measure of expectations, BCRPData inflation expectations, presents the lowest inflation forecast errors with one of the lowest biases. Therefore, among the measures evaluated, this expectations metric has the best properties for use as a proxy for aggregate inflation expectations. In contrast, break-even inflation and non-financial firms' expectations of inflation recorded a poor performance. In addition to their poor predictive power, they show excessive variability and, in the case of non-financial firms' expectations, signs of inattention to recent information.

31 Several Granger-like chance tests were performed. These were tests on a Vector Auto Regressive (VAR) model formed by inflation and one of the measures of expectations (i.e., 6 bivariate VAR models were evaluated). All VARs include 2 time lags (optimal number according to the BIC criterion).